博士論文

Visual Analysis
of Katsura Rikyu Formal Elements in Relation to Tobiishi Pattern

（桂離宮庭園における飛び石パターンの視覚的分析）

コンチャレヴィック　ボヤン　ミラン

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Ph.D. Candidate Bojan Milan Koncarevic

DISSERTATION

Submitted in fulfillment of the requirements for the degree of Doctor of Philosophy in Architecture in the Graduate School of Engineering, Department of Architecture, Professor Kuma Kengo Laboratory of The University of Tokyo

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Laboratory Professor Adviser:

Professor Kuma Kengo

Abstract

Katsura Rikyu, detached palace and garden complex situated in Kyoto, is a tea ceremony spatial enclosure, which becomes consists of dominantly natural and artificial formal elements. They are brought into the garden enclosure to establish a mutual meaningful relationship within themselves in order to impress with certain visual experience pursued along the designated garden pathway.

Hereby stands *la question problematique* of how to perceive, document and understand these *Katsura* garden physical forms relationships that are visually noticeable and what is the cognitive meaning they hold. However, garden physical forms positioned along the stepping tones pathway do not stand for solid and separate entities in relation to human field of view. They visually and physically overlap while creating an instant and mutual visual experience while one steps along the path one has to follow. Thereby, in order to understand the cognitive, intangible logic one has to research on visual images records and drawings that hold scientific research clues. Therefore, one has to research on garden physical forms visual and physical dependencies in relation to the field of view coordinates from exact stepping stones coordinates. That is going to reveal how one understands the garden environment.

There is almost no clear authority that present first design ideas about the garden. That being so, final research aim is concentrated about *in vivo* selection of relevant research objectives in forms of the garden physical forms attributes. Secondary question arises of how to collect data those attributes and how to use them in a proper manner of a scientific analysis in order to understand and scientifically represent the visually noticed relationships. However, the final research aim undoubtedly becomes how to make a comprehensive scientific representation of Japanese aesthetical philosophies in design and tea ceremony applied in *Katsura Rikyu*. This is how research question about aesthetic visions, according to which garden is assembled, become not only perceived as immaterial values. They become represented in forms of according data diagrams and graphs where the origin of cognitive understanding that is lies visually provoked.

These garden dominantly natural physical forms, brought in artificially envisioned dependencies, are positioned in order to be intentionally perceived from exact *tobiishi* stepping points. These points of view develop an intended field of view content that succinctly develop an intended cognitive understanding according to these visual images.

Garden clockwise pathway is established as the precisely choreographed stone pattern from where the garden formal logic becomes noticeable and obvious.

Dominant research method is to select dominant dependencies among garden formal elements and measure them in those dependencies attributes- parameters in how they develop in each of the stepping stone coordinate. Finally these dependencies are transferred from the images and drawing mediums into graphs. These graphics represent simultaneous changes of these various parameters attached to the formal elements. That makes possible to compare changes in values of these various parameters in the same stepping spots and identical time moments. These simultaneous changes in following those values reveal certain relations among the garden physical forms. Their changes are dependent to each other and one can

notice the pattern in those changes that has a meaning according to the final visual and emotional experience they need to evoke. That finally strives into hidden formal logic of the garden formal continuum, which can be scientifically represented using this method.

As a result, it is noticed how these various but specific physical forms parameters, which describe each of the garden formal elements, are simultaneously changing as the human field of view proceeds from one to the other *tobiishi* stepping point. That creates a unique and continuous visual experience of the garden formal elements continuum that leads toward further tea ceremony experiences.

This pilgrimage becomes an obvious paradigm of how the artificial and natural physical forms are meaningfully assembled into the continuous form of the tea room ceremony outer space disclosures and inner space enclosures. The rise of the whole stepping experience develops in front of *Shokin-tei tokonoma* screen as a paradigm of how intangible and tangible attributes are integrated. That makes the whole set of the stepping, visual and body motions activities a preparation measures that have to be undertaken in order to gain specific physical and spiritual state of mind. That makes one ready and blessed to enter and enjoy the ceremony. Overall, simultaneity becomes a crucial key word where time is given spatial representation in the formal elements mutual comparison.

Acknowledgements

This research project would not have been possible to be imagined and proceeded without the support and belief of several people, friends and various academic institutions. Thereby I am deeply thankful and honored for being The University of Tokyo, Professor Kuma Kengo Laboratory Special Fellowship student. That provides an exquisite status with the research and life given funds in order to accomplish numerous research visits to the *Katsura Rikyu* garden complex in Kyoto.

Overall, I dedicate the most sincere gratitude to my mentor and Professor Kuma Kengo who believed into the research aim from the very first meeting in order to develop and emanate a unique research and final thesis design. Our meetings occasionally but undoubtedly honorably occurred in the midnight terms of his working hours at his University and working office. That is where I have found an endless inspiration for design and research persistence in my future life efforts. His wisdom was crucial in moments when the research design needed to advance to the higher level.

The deepest gratitude I direct to Professor Radovic Darko for his constant physical and virtual being there for me to directly advise and advance the research progress on site, at the very meeting moments. He offered an endless theoretical and practical background of his personal and academic experience as a resource for the further thesis development to the final stage. He was a professor and a colleague with the highest level of humanity and ethics. Especially hereby I thank him for improving the methodology of the research project.

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1 Introduction

1.1 Introduction to the research objective

1.1.1 An environment that consists of both natural and artificial physical forms : *Katsura Rikyu* case

‘Ask a Japanese gardener the secret of gardening and he will hold up his pruning shears, this pruning… allows a more natural, and at the same time, more ideal beauty to emerge… The beautiful garden lives. The gardener merely makes this beautiful garden more visible.’
‘There is pruning and replacing but these results in revealing of a line which nature itself created and then obscured in its own plentitude.’
[Cabanas, 1997, pp.68, 71]

Creation achieved in a relationship among two holders – nature and artifacts, inevitably activates many common senses impressions. These senses are various: tactile, hearing and dominantly visual etc. Human initiates that kind of new relationship in order to support certain activity to be pursued in that new environment with correlation with both artificial and natural physical forms that do not exist separately anymore. Their physical forms become mutually determined while assembled in a unique composure.
Thence, these two exist and become understood only in those relationships through visual and other senses impressions. Visitor of that kind of environment notices results of their relationship. That being so, one variously perceives these newly established relations and further interacts with those relations in order to conduct certain activity in that environment built with those relations. Furthermore, visual experience of those relations leads toward cognitive understanding how these relations are deifined. Thus, one can pursue further activity in that kind of environment with its absolute visual and cognitive understanding. Visitor obtains both, visual – tangible and measurable and finally cognitive – intangible and immeasurable impression about new site one is situated. With last impression that new activity predicted to be pursued is fulfilled with absolute coordination with natural and artificial newly established amalgam at the level of what cannot be seen.
Nietzsche hereby stated: ‘We have no right to ask *who* it is who interprets. It is interpretation itself, a form of the will to power which exists not as a being, but as process, a becoming, as passion.’ [Barthes, 1998, p.62]. Nevertheless, those two enter into relationship and of course preserve their separate figurations in mutual relationship. Furthermore, ‘representation, on the other hand, is embarrassed figuration’ [Barthes, 1998, p.56]. It has to be further observed, thought out and finally cognitively understood. That is when that relationship is absolutely deciphered and capable to be repeatedly applied.

Figure 1 : ‘Married’ rocks of Meoto Iwa [夫婦岩], which means Loved one-and-loved one Rocks : Futami sea, Mie, Japan ; rocks are joined by a heavy *shimenawa* rope as assumed as sacred part of the neighbouring Futami Okitama shrine; they represent the fruitful union of *kami* creators - Izanagi and Izanami gods spirit and mutual dedication of woman and man [bigger rock] which results in the marriage act;

They obviously represent an interaction between artificial physical form – ropes and naturally made rock lands.

Thereby becomes new kind of environment consisted from artificial and natural physical forms that visually create a unique, single impression about their relationship. It further results in unique, single cognitive impression of a religious matter;

However, the question that hereby firmly arises is the possibility to represent, to measure this relationship between artificial and natural in that new environment. Both holders, artificial and natural, their physical form attributes, have to be separately observed, measured and represented.

Consequently, there can be noticed how their separate attributes mutually correlate in values of their measures and therefore create new environment. In order to understand it completely, one has to grasp in these measures and there mutual dependencies. One has to grasp how certain changes in artificial or natural physical forms result in certain changes in respectively natural or artificial physical forms. Thence, certain natural environment, a 'natural garden'- *niwa,* has been tackled with human presence and become a place of an interaction of a singular human made artifacts and singular naturally made formal elements. Therefore, human initiate this new relationship with certain reason, logic that unavoidably has rules.These natural places intended to enter in relation with artificial physical forms is often marked with rectangular voids often seen in temple environments. They are marked with *shimenawa* rice straws [Fig. 3]. It means that they are prepared to be confronted with artificial influence, from the outside of that uninterrupted void, *niwa.*

Masao Hayakawa claims the word *niwa* firstly appears in *Nihon Shoki* 'where it is used to refer to a place purified for the purpose of summoning deities, a point of contact and communication with the spiritual world' [Mitchell Bring and Wayembergh J., 1981, p.145] and 'worship of gods' [Hayakawa, 1973, p.27]. Present day equal practice of enclosing previously mentioned rectangular void with twisted rope around thin bamboo joint pillars is evident in - *yorishiro,* a landing space for *kami* gods.

Hereby represents a mere 'physical attempt to literally capture and tame the spiritual force' of a singular, physical natural environment [Hendry, 1997, p.91] with which one artificially engages in an interaction. 'Its early prototype would seem to have been an attempt at mediation between the cultural world of humans and the supernatural world.' [Ibid, pp.92].

It appears a question of how a garden designer relates toward the naturally found, future garden area in order to create the garden within that sort of natural environment. 'In the eleventh century the first extant document about gardening in Japan was written' [Ibid, p.93] answering this question. *Sakutetiki* [Manual of Garden Construction] is usually attributed to the powerful 11th century Yorimichi family member Tachibana-no-Toshitsuna, son of Yorimichi who was the son of Michinaga. Michinaga's villa site was converted into a sacred Buddhist temple site by Yorimichi in 1052. 'Like later gardens of the 12th to 13th centuries, 'it aimed to reconstruct the Jodo Buddhist vision of paradise on earth' [Ota, 1972, p.113] in a sacredness of garden with specific relationship toward nature. In the Manual are written three overall principles. They 'make a very clear connection between observing nature and creating gardens' while reacting with that natural environment [Tachibana-no-Toshitsuna, Sakuiteki, 1976, p.1] in order to create new kind of equally artificial and natural environment.

Figure 2 : *Shimenawa* rice straw rope tightened with bamboo corner pillars and marked with sacred white papers encircles the sacred space of *yorishiro* in front of shrine in Tokyo;

These straws and papers mark a natural environment that is changed with artificial formal elements. They mutually create new kind of environment;

These rules determine how to create visual experience of that new both artificial and natural environment. They order how to modify natural formal elements found at the natural site that is an object of interaction between nature and human.

The main objective of those rules is to change physical attributes of physical forms found at the site only their values and not in their existence. Nonetheless, these physical attributes are given new values in order to engage in relationship with artificial physical orms that equally hold certain values of their physical attributes. Overall, they both serve to satisfy new artificial activity they have to carry on with their values. In the manual it is written that it is expected from the garden designer 'to design each part of the garden tastefully, recalling one's memories of how nature presented itself for each feature' [Ibid, p.1] before it was modified by human. Hereby placements and other physical form attributes given to various kinds of stones, trees, waters and earth lands become substantial in materializing the intercourse among human and natural environments.

In case of Katsura Rikyu garden, tea ceremony presents artificial activity that is integrated in absolutely natural environment with artificial forms of tea houses, pavilions, villas etc. Nevertheless, it did not ruin previously singular natural identity of the site. It rather adapted those natural physical forms and potential of their attributes to carry on tea ceremony and its artifacts in their mutual support. That being so, natural environment is expected to host human presence from the point of entrance to natural environment to tea house *nijiriguchi* entrance. Stepping path that carries visitor presence therefore becomes the line of concentration of that kind of new environment. Moreover, since both natural and artificial site serves to tea ceremony act conducted by man, its arrangement is positioned dominantly along stepping path that is the place of that human presence and inevitable activity. Natural and artificial physical forms found at that path site are adapted to host human presence and its visual experience in their coexistence. Visual experience becomes the most dominant impression of that new environment. Visitor has to step and observe and finally engages tea ceremony in tea house enclosures. However, visual experience of natural artificial psychical forms, tangible forms serves to lead toward and understand cognitive, intangible realms of tea ceremony.

'Known as the *roji*, or dewy path, this kind of garden was designed to help participants in the tea ceremony to prepare themselves psychologically as they approached to the tea house' [Teiji, 1973, p.69]. It represents a journey 'from mundane to the ritual' according to the anthropologist Dorinne Kondo and its visual experience is a key impression to uphold whole method of architectural design in Katsura Rikyu. The stepping path along which visual experience develops is described as a 'path to Enlightenment' that in Zen is supposed to lead to a state of 'emptiness' [Kondo, 2010, pp.291-294]. *Mushin*, a performative tea ceremony outcome, 'is not something that focuses on the internal state of mind, rather, it should lead to '*zanshin*' [loosely translates to 'awareness']: the intangible, heightened state of awareness of an intangible, tea ceremony relationship established between host and guest, and host and *tokonoma* imaginary representation.

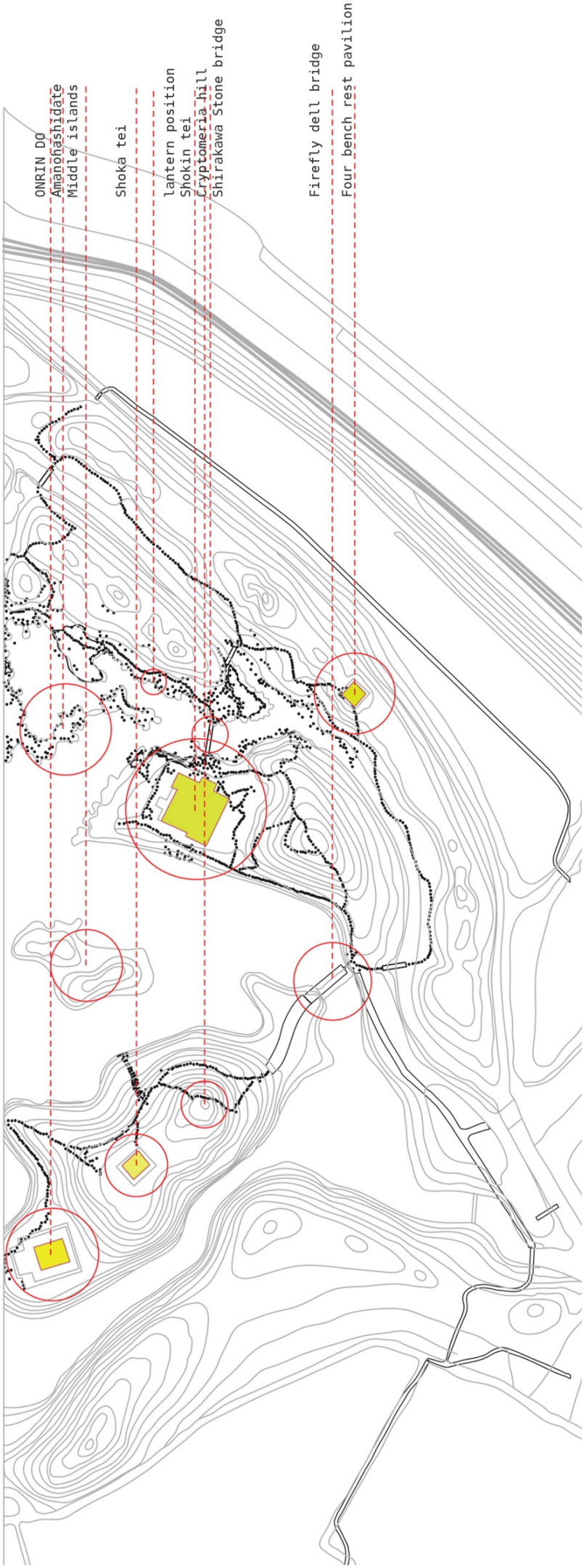

Figure 3.4 : Moral properness hereby refers to of how to construct a meaningful garden formal logic physical form, while using the lowest quantity of the artificial formal elements in accordance with the given environment physical form conditions;

human and nature existence are equally integrated and nevertheless respected in their visible and invisible attributes, tea ceremony tangible and intangible acts and values become established and practiced;

artifacts physically and visually divide Imperial stepping pathway at many sub-pathway portion;
field of view experience are concentrated about these artificial objects which are the final visual point of their development;

That being so garden complex in Kyoto, namely *Katsura Rikyu* formal elements are not treated according to the design vanity of various designers who were involved. They are assembled in the garden formal elements continuum to achieve human envisioned formal logic, but without disregarding the formal logic of the both physical forms. The designers did not establish a style that has to be bluntly followed, but rather a proper treatment of the physical forms in order to support artificial design idea.

This treatment brings minimum changes in their physical attributes. They tended to comprehend their natural formal logics and to manipulate over them without harming them, while establishing the human envisioned design method. Natural physical forms are therefore given new measures in their attributes that create certain artificially imagined visual experience. Finally, this visual experience over new kind of natural and artificial environment and their relationship, shapes main impression about tea ceremony outdoor and indoor. Hence, natural physical forms are visually recognizable with their previously inherited natural attributes that are positioned, modified and cultivated in order to pursue certain relationship with artificial physical forms: tea houses, waiting pavilions and villas. This relationship results in successful tea ceremony.

Figure 5 : Katsura Rikyu garden in Kyoto : natural physical forms [tobiishi, stepping stones, greenery in forms of trees and side bushes, terrain etc] and artificial physical forms [tea house,*engawa* platform, side fence etc] are assembled in a new kind of environment in form of Katsura Rikyu garden.

They are brought in relationship among their physical forms. Both, natural and artificial physical forms possess their own attributes. These attributes are arranged in order to create unique environment but without changing the character of being natural or artificial.

Visitor steps through this new environment of the garden while stepping along tobiishi path. Visual experience obtained along tobiishi path concentrates about relationship between natural and artificial physical forms. One follows the path, enjoys this kind of visual experience and succinctly enters tea house photo [above: deep traits of a house at far perspective].

One visually perceives physical, tangible forms of the garden environment, and accordingly cognitively understands intangible form of outdoor and indoor tea ceremony activity;

Figure 6 : Katsura Rikyu garden in Kyoto : rain water collectors made and assembled from naturally found stones units and walking lanes barriers made from bamboo branches tied with rice straw ropes; they are positioned at and along the garden lanes;

Natural physical forms are positioned and assembled to satisfy artificial design method, while preserving their natural attributes;

Figure 7 : Katsura Rikyu garden in Kyoto , tea-house at the end of the Imperial Pathway : rice paper mats attached to windows frames next to screens assembled with bamboo pipes laced with dried plants branches into firm oeuvre;

Artificial purpose is satisfied while their natural attributes are preserved but modified in their position and composition;

One visually perceives how artificial and natural physical forms are assembled together in order to create new kind of environment [window frame in this case];

1.1.2 Measurability of attributes of *Katsura Rikyu* natural and artificial physical forms based on their visual experience

Beauty is a kind of mystery, which is why it cannot be grasped adequately through the intellect. [Soetsu Yanagi]

Natural physical forms integrated in Katsura Rikyu garden and engaged in relationship with artificial physical forms are not taken from their physical attributes. They are changed in their attributes measures since they have to have certain values in order to collide with artificial physical forms without obstructing each other. Thence physical form of that kind of natural formal element is predefined prior to their selection and mere integration in garden complex. That makes crucially needed to discriminate between essential - selected physical form quantity and incidental parts-remaining physical form quantity from natural state of physical form of those natural formal elements. Essential part of the applied garden natural physical form is a dominant part of it. It dominantly builds relationship with artificial physical forms. Nevertheless, before it engages in new kind of environment the whole natural physical form was incidental in its physical attributes since it grew without artificial influence or adaptation. Therefore, next to the most dominant part of natural physical form also exists an incidental reminiscence of spontaneous natural growth.In case of natural formal elements in Katsura Rikyu, engaged in relationship with tea houses and other artificial physical forms, their essential part of natural form is selected and adapted in its attributes in order to build certain relation with artificial forms that is visually experienced. Nonetheless, certain minor amount of their incidental, independent part of physical form remains intact, but it does not harm that relationship and imagined visual experience.

That makes field of view and garden plans content possible to be divided in natural and artificial physical forms they consist from. Thus these forms can be represented in those forms of separate essential natural and artificial physical forms engaged in coexistence but still possible to be separated.

These both physical forms are to be measured in their attributes values. Thus, one can establish a research on each of physical form that builds the garden in each of their attribute.

Finally, there can be revealed and understood how these attributes mutually calibrate their values changes in order to make physical forms capable to coexist as it is imagined by the garden designer.

Overall, that is a scientific base to grasp in what kind of relationship and mutual coexistence they are situated within the garden outline in order to fulfill tea ceremony activity.

Furthermore, one can grasp in how these research results in their tangible relationship determine tea ceremony intangible realm. Overall, tea ceremony evokes not only spatial orders but also basically immeasurable psychological and emotional ones, which can be measured through measurable relationship between natural and artificial physical forms that build Katsura Rikyu garden.

1.2 Introduction to the research instance

1.2.1 Research base : prior determined visual experiences of the garden formal continuum based on prior determined stepping activity

Within the Katsura Rikyu garden complex one witnesses predetermined manner how to conduct visual and stepping activities. There are prior determined: direction of stepping activity, stepping coordinates in forms of tobiishi stepping stones, direction of field of view development and content of visual experience. Therefore there is a common aesthetic denominator that is expected to be cognitively experienced after conducting these previous sensorial and physical activities within the garden outline. Therefore, we may conclude that if a walking lane through an environment was not established as it was within *Katsura Rikyu* complex, then there would be abundantly many ways of how one may step through the garden and establish many unique visual experiences. Adequately there would have been many different cognitive understandings of such an environment that would bring in a confusion on esthetical and cultural meaning of the garden *per se.* Therefore, artificial and natural physical forms that belong to the garden are predetermined in all of their physical attributes, positions and orientations. However, these attributes measures determine their mutual relationships that pursue certain visual experience about them that cordially defines definite cognitive understanding of the whole garden complex. These relationships among their physical forms are firmly decided to relate to the visual experience that develops in coordinates of firmly stepping stones pattern.

Very strictly defined stepping manner becomes a unique set of stepping points that further become coordinates of human visual experiences of the garden formal elements. These elements are several physical forms sustained of groups of greenery, architectural, landscape and stone units formal elements, which become an inevitable part of visitors field of view development in their interaction with artificial forms of tea houses, pavilions, villas etc.

However, the whole garden complex is mutually conditioned and prior defined in its physical forms disposition, stepping activity they pursue and visual experiences they evoke. Hence, they are uniquely and inevitably solely perceived with eye sense from tobiishi points. These mutually established conditions that are visually perceived only in those points put forward these stepping points as a coordinates to apply research methods. Further researches on natural and artificial forms, that assemble the garden, are based solely on every mean of a research method conducted only in those stepping coordinates. An overall research purpose thus is to understand how these prior determined relationships among the physical forms work, coexist and what is their result in garden physical forms measures in their attributes, but relating solely to the field of view coordinate, orientation and direction. Overall, these measures and their mutual calibration are defined in order to indeed manipulate with field of view development.

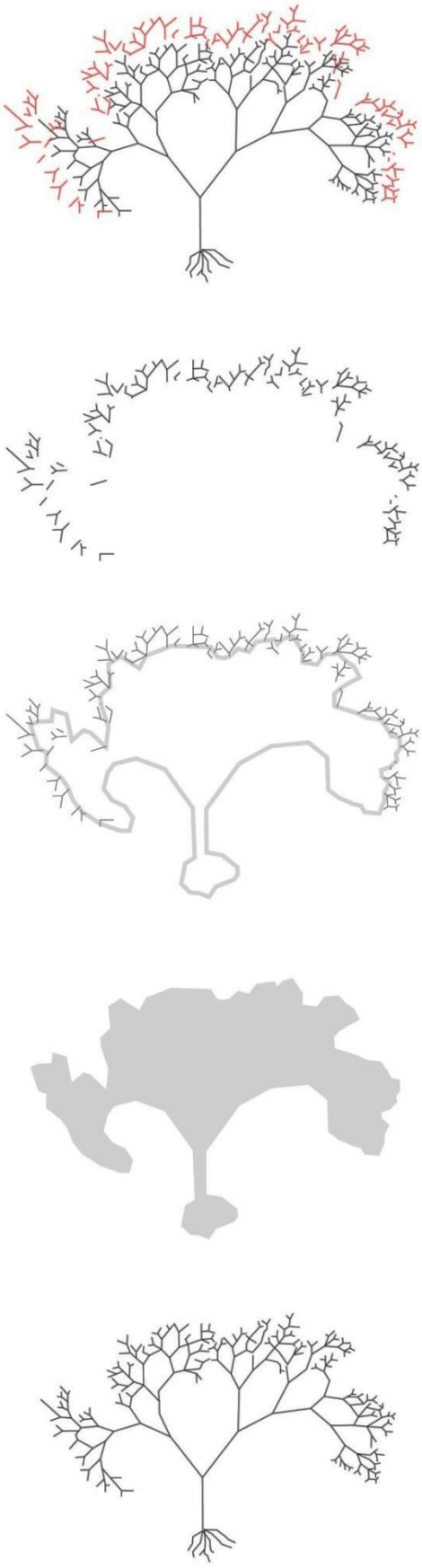

Figure 8 : Graphical depiction of an incidental physical part [red line] of greenery physical form and essential part [grey field] that prevails in visual experience and later analysis of its cognitive understanding;

Both of them originate from identical branching constructive logic that is constantly gardened in order to keep the preferred dominance of the essential part, but without denying essential part of the physical form

1.2.2 Research instance : field of view content content collected in *tobiishi* stones

Garden formal elements are intentionally positioned and defined in their physical forms attributes. Therefore the clockwise circular stepping activity within the garden becomes a stepping line marked with tobiishi stepping stones. It consists of stepping stones coordinates from where those garden physical forms are successively visually experienced.

If one takes other walking lane than it is prescribed, one is not going to visually perceive those physical forms relationships as it is intended. They would not leave necessary visual experience impression in order to correctly experience tea ceremony houses physical forms. Their artificial physical forms are engaged in certain physical relation with garden natural physical forms that can be visually perceived solely from tobiishi stones coordinates.The measure of the field of view angle and manipulation done with it becomes the measure of the garden formal elements relationships choreographed toward human stepping activity, which is the field of view holder. Therefore, only while following the staged *tobiishi* disposition and regarding its certain visual revealing from the standing [stepping] points, the garden formal elements reveals their commonly conditioned formal logics. That means that each of these elements is meant to accomplish and prove their reason of existence in their physical and visual constructs, only when they becomes juxtaposed to each other, and finally perceived in their positive dependencies from stepping stones stepping points.

The garden formal continuum has its continuous and instantaneous reason of all of the formal elements that works at once and that has to be perceived at once. There are not perceived those physical forms separate existences in field of view, but rather their relations in forms of physical interactions of their separate bodies. Nonetheless, every element has its innate physical form logic being of course calibrated with other physical form before it was decided to be inserted in the garden complex. Therefore the garden became dependent on every physical form which stipulates a unique visual continuum inherited from tobiishi stones stepping continuum. Each of the physical forms stands for multiple relations toward the other physical forms, which become multiply visually perceived. Nonetheless, human perceives partial sets of the formal elements multiple physical and visual relationships from different stepping points. One obtains complete visual experience of all of these relationships after stepping along complete tobiishi pathway Since the stepping activity is a continuous act of developing field of view, according visual and cognitive experiences are also continuously developing in frames of these partial field of view sets. Therefore becomes continuous development of cognitive experience. It becomes assembled from these successive developments of field of view captions. Many captions form continuous visual content that furthermore become a collection of many separate cognitive impression. Overall they become connected in cerebral processes and bring up a single and complete cognitive impression about visual experience created along tobiishi path. It reveals a content of the garden physical forms relationship in their attributes. Attributes values, their numbers thus become research instance to represent cognitive impression.

1.3 Introduction to the research purpose

1.3.1 Visual experience of the garden physical forms physical dependencies as an instance of their cognitive comprehensions

Katsura Rikyu overall visual impression by a visitor becomes a patched composure of continuous visual experiences after conducting clockwise stepping activity along visitor intended Imperial Pathway. These physical forms overlapping border [being next to each other] among the garden physical forms became equally undistinguishable. Thus the patching border becomes without a clear [separating/connecting] line among two garden physical forms either they are natural or artificial. Their singular outline becomes visually undistinguishable even though it exists. Therefore, only in an other formal element one can recognize the border of the previous formal element and *vice versa.* Hence, one cannot research on visual experience of a single garden physical form without including in the research the other ones with whom it is engaged in relation. However, therefore there is no dominant garden physical form that prevails and dominantly forms the visual experience along tobiishi path. Moreover, one dominantly perceives their mutual relation in physical matter.

In order to research these physical forms and furthermore reveal cognitive forms they evoke after being visually perceived, one has to understand these relations. Their attributes obtain certain values with which these attributes are solely mutually collided. Hence, certain attributes with certain values that result in proportion in mutual changes are responsible for these relations. That makes many garden physical forms to be engaged with many other physical forms within the same garden with certain logic. These proportions in physical forms relationships are collided and oriented in their significant dependence in relation to tobiishi coordinates. They are not visually perceived from any other parts of the garden complex. Therefore, their artificially imagined and staged visual experience occurs solely from stepping stones units. Those are unique coordinates where develops according cognitive impression about their physical forms relations.

These relations are established in artificially manipulated values of naturally established attributes of natural physical forms. Nonetheless, they remain natural physical forms with tendency to develop independently in their physical form growth. Even though this tendency exists out of design oriented order, these incidental growths of attributes unexpectedly enhance their relations. They additionally make these relations more interweaved and therefore additionally diminish their separate visual perception. The measure of their further growth becomes positive measure of their more deepened physical relationships.

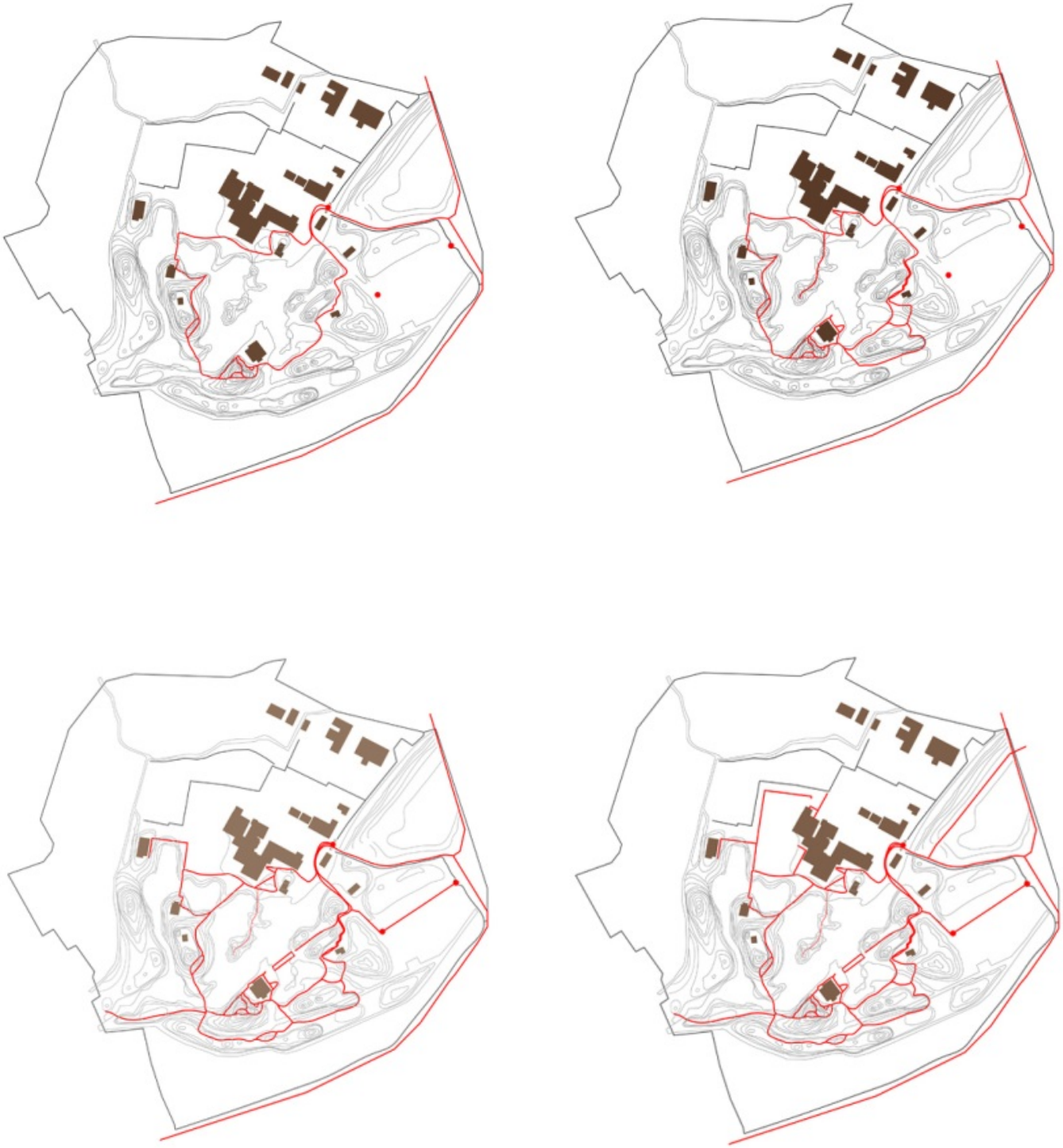

Figure 9, 10, 11, 12 : *Katsura Rikyu tobiishi* pathway [red line] , including outer approaching lane,
with its stepping pattern linear development from the 17th century upon present time :
field of view becomes one of the garden constituting formal elements which engage into physical form relation with all of the other garden formal elements;
hereby field of view is observed as an immaterial, physiological physical form apparatus of a human body tissue capable to visually collect and cognitively process garden formal elements visual representations;

Upper left : 17th century
Upper right : 18th – 19th century
Lower left : 19th – 20th century
Lower right : today

Figure 13 : Secondary physical form becomes in visual or physical overlapping among two garden formal elements [mainly greenery] : it belongs to both of two essential parts but is firmed in its definition with incidental parts that makes this overlapping thicker;

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Two construction logics create and therefore share common secondary physical form where their logics overlap and certain outline; none of them can be visually observed neither analyzed as independent thus that has to be done comparatively and instantly;

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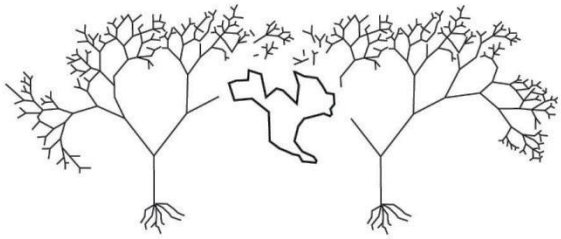

Incidental physical forms parts make two greeneries more interweaved and mutually determining in their visual impression; garden formal element thus create more obviously continuous visual experience while stepping along *tobiishi* pathway;

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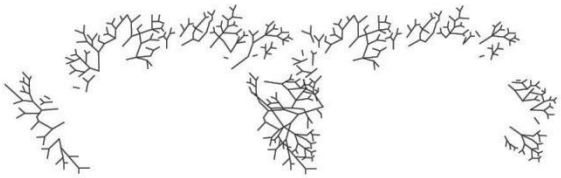

Greenery elements construction physical forms establish clear outlines within which they are intended to artificially grow; these outlines are consequently observed in research analysis how they constitute certain logic of the garden field of view developing

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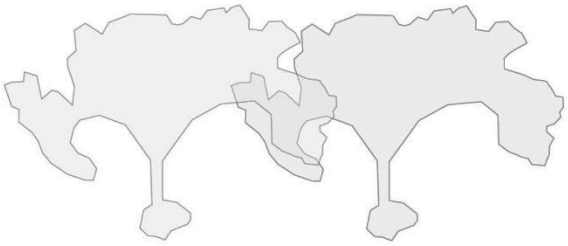

Even though the research is concentrated about the outlines, primary physical forms that are overlapped in their secondary physical forms, it originates in construction physical forms;

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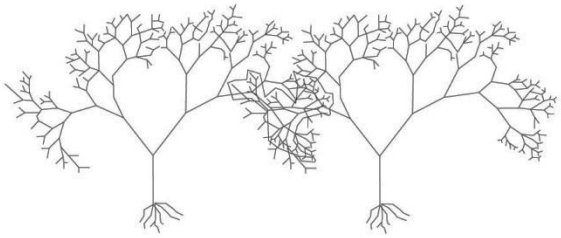
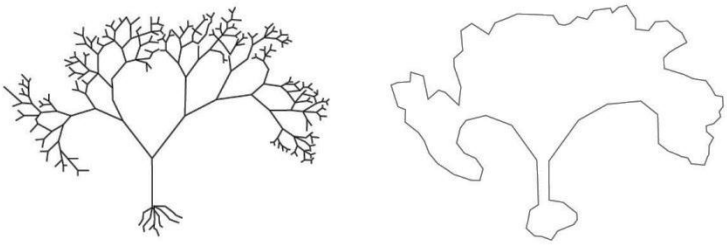


These construction physical forms are artificially manipulated: positioned and gardened, in order to establish imagined outline that pursues intangible logic that has to be visually experienced;

6



1.3.2 Addendum : Natural growth as the measure of more exquisite physical dependencies among garden physical forms

Katsura Rikyu garden is created and prior envisioned without any higher technology device. That makes it more possibly exposed to certain mistakes in design method that consists of artificial manipulation of natural physical forms. Nonetheless, since they originate from naturally, a spontaneously developed form, the garden inevitably preserves certain amount of independence in their physical form development.

On the other side, visual experience of these kind of new environments consisted of natural and artificial physical forms becomes closer to visual experience of completely natural garden. Since its construction started in 17th century, the level of spontaneous natural development and physical overlapping among separate elements of the nature [greenery, landscape, stone pathway] and architecture [tea houses, main *shokin tei*] etc has grown and changed into closer to the state of being an absolute wilderness. In present time the garden resembles like human has never influenced its growth and creation even though it does not harm artificial design method. That being so is due to the garden physical forms artificially applied maintenance of their form and shape by Katsura gardeners.

Since the quality of the garden construction and design technology was lower than it would have been applied today, the level of the garden physical forms incidental amounts is higher than it would have been in present time. Incidental amount refers to naturally grown parts of their physical forms not decided by human artificial intention.

Nonetheless these unavoidable lack of the technology manipulation which would have diminish those parts, these designer's small formal overlooks relaxes the field of view. Thence, human does not become visually aware of the garden physical forms artificial origin and their separate selection. It occurs due to these physical forms overlapping parts. They become even more distinguished with minor growth of incidental, natural parts of those physical forms that has grown in last few centuries. However, visually and formally those parts made the formal continuum visually and physically closer to themselves and more interweaved likewise in natural environments. That is how the garden possesses today obvious formal independence, even though it is an absolutely artificially envisioned and constructed complex.

The level of the incidental, natural amounts of garden formal elements is the most important for the field of view and according cognitive continuity. One does perceive more extensively the garden environment as a continuous development of many physical forms. One perceives their relationships rather than their separate physical forms. That kind of visual experience rather concentrates more on understanding of their mutual relations and how their attributes collide together. This kind of visual continuity makes surprisingly clear method to reveal design method of how they work together. Starting therefore from their separate attributes as parts of their visual experiences and further

observing methods, researches visitor can more deeply understand these separate physical forms through all of their separately researched attributes, not *vice versa*..

Therefore, the present time computer analysis of the *Katsura Rikyu* formal logic, which determinates certain visual experience representations, has to expect certain level of measurement incorrectness attached to the garden essential formal elements. This incorrectness o contrary becomes the measure of the elements connectedness even though classified as mistake. Nonetheless, in the emotional and cognitive representation of their visual representations, this incidental incorrectness actually intensifies the physical and visual continuity of the essential parts of the garden physical forms. It expresses more obviously their attributes relationships and dependencies.

The incorrectness is classified as trees or bushes crowns natural growth circumference or their seasonal density deviations, landscape earth plastic deviations etc. These formal, plastic and qualitative growths define the level of the incidental of each element. These growths intensify the overlapping quantity and quality of any of mentioned natural or artificial form.

Hereby it means that *Katsura Rikyu* artificiality inevitably becomes lower in time, but their artificial design method more intensified in its visual representation. However, these natural growths occur on the basis of artificially decided natural physical forms in all of their other attributes. This process of artificially decided essential and naturally grown incidental counter balance becomes the main controversy in close relation between the garden casual visual experience and further serious, cognitive research. Hereby it preserves the very Japanese animistic sense of the design method. Since it occurs within the natural environment an artificial design method is based on attributes of natural physical forms found at the site. Hereby the level of the artificial design distortion equals the level of formal alligation of those physical forms and their attributes. They are not destroyed or diminished but rather adapted in order to satisfy certain artificial activity [in this case tea ceremony] with changes in those attributes values [numbers], their position and orientation. Their complete logic of existence and growth remains preserved.

2 *La question problematique*
on the *Katsura Rikyu* formal elements and stepping patterns visual analysis

2.1 Cognitive comprehension
of the garden formal elements visual representations in *tobiishi* stepping points

2.1.1 *Tobiishi* aligned formal continuum divided in visual sequences

Each field of view belonging to the each of the *tobiishi* pathway stone element is staged and predicted to happen. Therefore the walking transition in between these stepping points is equally controlled and devised as a continuous gap among stepping visual experiences. This gap is fulfilled as one more field of view frame only if a visitor does not look down in order to step right on the stone.
We may develop this field of view film of inevitable sequential experiences of the environment as comparable frames and decipher each element formal transition onto the others. This transition is translated into cognitive process of understanding the collected visual frames. Thus, the translation of the garden formal elements physical forms physical and visual transition results in certain data drawings and graphs. This resulting is possible only if the cognitive representation is translated into presentable forms of values. These cognitive forms of values can be simulated and extracted while observing and researching field of view simulation with continuously taken camera frames. Hey undoubtedly reveal the formal logic and cognitive meaning of the visual representation of the *Katsura Rikyu* garden in relation to the human being as a holder of those recorded visual experiences.

2.1.2 Research rationale:
visual and physical distances among visitor and garden formal elements

The meaning of the human passage through the natural garden as an artificial creation becomes crucial condition in order to comprehend designers' design ideas integrated into the *Katsura* garden formal continuum. This condition has dual aspect due to the character of human body presence along the designated *tobiishi* pathway stepping points. This presence covers the aspect of the human body physical and visual position in relation toward the garden elements which brings two kinds, visual and physical distance toward those garden formal elements.
However, these distances equally and accordingly hold dual nature. That means that human body visually perceives garden element at the certain physical distance while understanding his position in relation to that element and how one can approach to that element. That means that while walking along the garden lane one can see the pathway extension which reaches the observed garden physical

form. Nonetheless, human can just visually perceive the element without having any clue about their real stepping, an approaching distance. One can only understand the designated garden physical form as an object of visual experience without understanding how that form can be physically reached. Hereby, human often cannot understand the proportion of his body toward this physical form since it does not have any relevant and comparable physical form within the same layer of field of view. These two kinds of distances are either working separately or along each other in relation to the human body stepping position. Therefore certain elements in certain *tobiishi* point appear, hide, reveal etc.. in an order to create rather meaningful but always continuous visual experience of the human who entered and uses circular pathway that is not always continuously perceived and understood.

The tea houses and *shokin tei* living spaces [artificial elements] positioned within the garden, equally take part within this field of view interplay of visual and physical distances with other elements [natural elements – greenery, stones, landscape] in relation to the visitor presence. Nonetheless, they become the cutting points of the field of view sub-pathways division where the stepping activity is introduced to the tea-ceremony activity. These tea houses become not only the objects of visual perception, but also the final functional destination from the point of the main gate act of entrance into the garden. That gate is the starting point of the each professional and tourist tour but except the emperor nobody passes through. There is the secondary gate which reversely takes inside the complex and then to the main gate belonging pathway area, where the walking tour indeed starts. Only from here the guidance is activated and the visual experience is possible to be continuous to the succeeding parts of the garden complex that are going to physically and visually develop in front of visitors. Hence, the meaning of the visual to physical distances which are intentionally established among human and garden formal elements is to gradually introduce those two as a holder and subject of the visual and cognitive comprehension.

Therefore, before one finally commits the act of a tea ceremony, one has to be gradually introduced, both physically and visually, into specific state of experience that prepares human equally both visually and physically to join the ceremony. Therefore, each of the visual to physical distance switches among garden physical forms is carefully orchestrated in order to enhance the tea ceremony tangible and intangible values.

Being as such, garden formal elements can be visually and physically comprehended as an equal part of a tea ceremony final act, where cognitive comprehensions of each of their mutual dependencies finally extend into the cognitive *chanoyu* comprehension.

2.1.3 Division of the garden stepping pattern into sub-pathways

The numerous shifts among the visual and physical distances between human and garden formal elements occur separately or instantly while walking from the point of the main gate to the points of the tea houses and *shokin tei*. The formal changes and continuous visual development of the garden formal elements [greenery. stones, landscape] mediate among human being physically and visually distanced from the architecture units [tea houses, *shokin tei*, bridges] with the tea ceremony functional zeniths of the whole *Katsura Rikyu* complex. Thus the greenery and landscape developments are coordinated with the human body positions and manner of the walkway it conducts in relation to those firm units. Hereby human enters into visual and physical changes of experiences of those relationships while it walks along the *toebeishi* pathway. Its body and mind are exposed to the intentional environmental changes.

The main *pasia* of the *Katsura* garden environment changes thus derives from how to stage and formally determine a visual, physical and final thought process that human has to surpass. The main gate of the garden, the entrance gates of the tea ceremonies or awaiting pavilions and *shokin tei* are the starting and ending points of many continuous visual experiences among two stepping points within the garden stepping pattern. Their architectural firm positions are thereby passing, ending and starting points of the garden natural elements formal sub-pathways, which they mark at both stepping ends. Thus, the whole garden formal continuum is accordingly visually and physically divided into the stepping sub-pathways that are determined by the pavilions positions.

Each stepping sub-pathway is a walking directed visual experience of certain garden formal elements that are intentionally relevant for that section. Formal elements of the same origin but belonging to different sub-pathways are visually and physically deployed with their differently employed physical forms attributes.

2.2 Juxtaposition of the garden formal elements, stepping stone pattern and human body as the basis of the study hypothesis

The garden *tobiishi* pathway, defined with the carefully positioned natural stone items, becomes the garden continuous walking attractor line. It determines the field of view points from where it is obvious the whole logic of the visual and physical succession of the natural garden elements and pavilions visually and physically relevant to that walking line. Therefore, each *tobiishi* stone item that is put at the pathway line directs the human walk and its overall accomplishment character with a single or multiple visual experiences carried out in that very point. Consisted of the successive stones lining up, the *tobiishi* pathway directs the human being walking direction, its body position and the

manner the walk is performed. Therefore these stone walking units carry certain physical characteristics which are in accordance with the garden elements disposition.

This accordance is manifested in pathway stepping manner directed by these stones physical characteristics. There are several of these characteristics, parameters, which are emphasized and therefore triggered in each stone. They differ in their kinds or in their attributes, according measures and values due to the influence they have to transmit to the human stepping feet. The selection of these dominant parameters and their data values is coordinated with the garden formal elements [greenery, landscape, pavilions], which have to be specifically visually and physically experienced from certain visual and physical distance. Distances become specific for each of the stepping stones while maintaining the whole garden formal continuum. As each of these distances is unique, they have to be experienced from unique points along the garden pathway. Successively, in these very points are positioned appropriate *tobiishi* units with appropriate attributes they carry. Consequently, they determine the manner one is going to follow while conducting walking activity along the stone units. The walking speed and pauses, walking body coordinates and walking directions, direction and relative angles of field of view, all are minutiously orchestrated and decided upon certain *tobiishi* stones parameters. Thus, these mutual connectedness of garden formal elements and human walking activity does not happen without *tobiishi* stones mediators. On site, they occur and change toward each other simultaneously.

The whole purpose of this human body motion manipulation is to control its field of view parameters exactly according to the *tobiishi* stones parameters which are coordinated with the garden elements. Consequently, *tobiishi* pathway acts as a formal mediator among the garden elements formal logic that has to be finally cognitively though-out by the stepping human. Hence, the human feet manipulation is transmitted to the whole human body as the carrier of the visual experience and whole nervous system. However, the position, speed and the direction of the human feet perfectly matches up with the rest of the human body. Subsequently, the final coordination among the walking human and the garden elements formal logic is indeed carried out with the exact pathway stone setup. Therefore, the essential form of each stone item determines the following garden elements visually perceivable form from the point of standing exactly in those stone items. Nonetheless this designer's envisioned relationship among garden formal elements and garden stone items parameters, which manipulate the human field of view, these stone items kept certain amount of an incidental form. That means that even they manage to direct the human walking preferences and thus manipulate its field of view, they are not mandatory completely designed and materialized to achieve only this mediating role. These stepping units preserved their naturally token attributes that allows their formal logic incidental part to materially exist without endangering human stepping activity fulfillment.

These *tobiishi* stones are either token as being naturally found [they were kept in their natural shape and vertical orientation toward the ground] or they become partially or completely artificially processed ones [*shin, so, gyo* – in the prospective order] in minor amount. Nevertheless which formal

type they belong to out of these three types, they absolutely fulfill their human field of view manipulation. Their incidental form relates to the formal framework of each stone item [formal border of each unit]. The linear and surface formal border of their edges keeps certain or complete amount of the formal independence while keeping their natural form origin. Therefore the level of their edges artificial processing and brushing varies in each unit. This imperfection of the *tobiishi* units is of rather visual character. Even though they are classified as the stepping garden elements, they belong to the field of view equally to the other visually experienced garden elements along the pathway when they are not stepped on. The level of their incidental formal [natural imperfection] matches their physical relationship to the garden environment [other formal elements] while supporting spontaneous visual experience of unpretentious wilderness of the garden.

With the higher presence of the natural garden elements around the *tobiishi* pathway the stone units incidental form surplus becomes more expressive and in higher amount. Differently, with the closer presence of the artificial garden elements [pavilions] the level of their incidental form surplus becomes lower and the units become of almost perfectly artificial form. Hereby it is obvious how the stone garden elements,, with all of their physical characteristics in the garden are positioned in order to sustain the visually and cognitively continuous and meaningful formal experience of themselves and other elements along their lining pathway without any supremacy. Consequently, along the higher level of wilderness within the garden formal continuum the stone items appear more irregular, naturally token. They appear absolutely squared at tea houses shorter physically distance. Hereby, *tobiishi* stone items follow the character of the other garden formal elements in order to harmonize their own physical forms towards them. They equally belong to the field of view and therefore equally constitute the visual experience of the garden physical forms dependencies as being one of them. Therefore, they gradually constitute human body presence manipulation. They become parts of a mere visual orientation of succeeding walking direction and determining the point of the very next step.

Hereby lies the hypothesis basis of the research project and that is that each of the stepping points is orchestrated with the formal elements that are visually noticeable from that stepping coordinate. They become uniquely visually and physically positioned toward each other and toward that stone item in order to evoke already prescribed visual representation of themselves in that very point. The hypothesis manifests in a different garden physical forms attributes and their following values according to the visual and physical distances shifts that develop with stepping stones succession. Nonetheless, thereby appears the very eastern, Japanese concept of the artificial construction relation toward the given environment. The aim of a design becomes how to conform the garden formal elements and their absolute intangible and tangible logic in accordance with any kind of otherness at that very site. Therefore, the hypothesis as a strict and direct statement diminishes itself since it is previously defined without any designer vanity based design idea, established prior the environment analysis. Nonetheless, it reappears as a soft system capable to employ other formal elements in order to distinguish oneself.

3 Theoretical frameworks of the research hypothesis

3.1 Various juxtapositions integrated in *Katsura Rikyu* physical forms

3.1.1 Garden formal elements as two-fold: sacred and secular coexistence

Tobiishi pathway may be understood as a *torii* void passage of the *kami* spirits, which are possible to enter the visible *haiden* position in front of the *tokonoma* of the tea room. Simultaneously, the pathway is a clear stepping stone lane which takes visitors very directly into the tea room where they practice a tea ceremony in front of the same *tokonoma* screen.

The garden firstly intended single visitor, Emperor himself, also has a two-folded spiritual domain of being a descendant of *kami Amaterasu* herself and a human being bodily equal to other Japanese people.

Thirdly, *Katsura Rikyu* garden is a unique complex of physical forms where one can find clearly integrated tastes and formal attitudes developed in *Jomon* and *Yayoi* periods. Hereby they productively coexist.

The garden architecture buildings, *shokin tei* and tea rooms hold both of these periods' aesthetic psotulates. The main *shokin tei* prevails toward the *Yayoi* period, whereas tea room pavilions, waiting pavilions and other pavilions dominantly express the *Jomon* approach in their materiality, later developed in *wabi-sabi*.

The imperial pathway visual experience is dominantly envisioned according to *Jomon* taste. Several tea room pavilion standing plates offer borrowed sceneries and deeply layered horizon field of views, which are clearly envisioned according to *Yayoi* aesthetic taste. Overall, *Jomon* taste stepping stone pattern brings a visitor from and to the *Yayoi* formed *shokin tei* houses where one can enjoy *Yayoi* taste views.

Obviously, *Jomon* and *Yayoi* aesthetic tastes coexist in both experiential [visual] and physical form logic of the garden, which in their tastes are finally cognitively though-out.

Another two-fold manner of garden physical forms is found in selections of natural elements that form the complex physical form and visual logic of the garden.

Greenery elements consist of dominantly tree like physical forms. The stepping pattern units are absolutely consisted of the stone material units.

However, the stepping stone items are assembled into the *tobiishi* pathway pattern, while preserving their naturally found physical form and horizontal vertical orientation. Even if the stone unit is found in illogical position in relations to its natural physical form proportions stability, that position cannot be changed if that stone item is decided to be integrated into the *tobiishi* pattern. It is kept like that as

it preserves the forces of interactions that put that stone item in the found position within nature. Therefore, its material and spiritual worlds of natural forces- *kami* spirits, are kept while assembled into the stepping pathway pattern.

The *chre-hodos,* natural forces, that initially formed stones in their material, physical form and representation and orientation in nature, are taken as supreme *tobiishi* units' selection criteria. Nonetheless, in some parts of the *tobiishi* pathway pattern, nearby the tea room pavilions and *shokin tei,* the stepping stone items become partially or absolutely artificially formed [natural stone units are shaped into rectangular or elliptical units]. Therefore becomes the stone units overall classification into *shin, gyo, so* groups of stones, whereas *shin* [naturally found stones] dominates with almost 90% of the total number of stone units applied into the stepping pattern.

The same methodology is followed while selecting and applying the greenery, trees physical forms into the coherent garden physical forms continuum and continuous visual representations they evoke along the stepping pathway. The tree trunks and crowns and their primary physical forms are selected as such in order to fulfill that certain continuous garden formal logic. Thereby occurs minor growth amounts of their incidental parts in their crowns and overall greenery formal elements other outlines [not all greenery elements possess crowns : bushes, high grasses and plants etc] that are tolerated. Otherwise, the greenery formal elements have to be constantly garden in order to preserve their initial natural formal elements outlines. Finally, they become artificially gardened natural forms of greenery formal elements. Obvious duality of artificial and natural coexistences works together in relation to the stepping visitors inevitably observing these greenery physical forms. In the other case, naturalness would absolutely prevail and condition other visual and cognitive experience of the pathway formal continuum. That would initiate artificially meaningless disbalance in the field of view continuity. Garden formal elements would have entered into naturally reasonable interactions that would not support artificially envisioned visual and cognitive experience one has to pass in order to walk along the Imperial pathway and practice *chanoyu* ceremonies. Hereby duality of naturalness and artificiality maintain the garden as one of the highest assets of Japanese culture in both, intangible and tangible values, which meet in these dualities connectedness.

Same notice may hereby refer to the *bonsai* practice where the greenery physical forms keep the visual presence of almost all of their physical forms developing phases, whereas they physically exist in a single, present time physical form. They become physical forms with several temporal orientations which are instantly visually perceivable even though the plant is in a single biological phase expressed in several visual states. The plant, greenery formal elements stay always young in their visual revealing but their biological [metabolism] state is much older and developed. This again a sample of duality where within the garden are kept several temporal physical forms as a unique visual experience whilst they actually do not exist in biological manner. This is how human intention of how to preserve both natural intangible values [metabolism of a plant] and artificially preserved physical form of a plant need to accomplish garden visual experiences.

Both of these decisive and being as such dominant *Katsura Rikyu* garden formal elements [stepping stones, pathway greeneries] obviously also successfully integrate[d] their taboos and predominantly spiritual attributes into their future garden setting.

Thence, they preserved their sacred character that makes them distinguishable and therefore used to pursue garden design formal logic. Both of these physical forms, trees and stones are considered to be sacred elements where *kami* resides in centuries long history of the mainland.

Consequently they are thought to be supreme forms of *Shinto* shrines [enshrining gods themselves]. Hence they are often marked, roped off with the specifically knotted ropes [*shimenava*] which announces those trees and stones as sacred houses of the *kami* spirit. They can be found within inner and nearby areas of the *Shinto jinja* shrines. Usually they are positioned along the pilgrimage roads or inner woods with the specific *kami* spirit inhabiting these stones and trees natural physical forms.

3.1.2 Explanation of physical form of Ise shrine in relation to *Katsura Rikyu* intangible asset

Within *Shinto* resides unique religious expression where the god spirits do not take any physical form or representation. They are rather linked and originate from the artificial [shrines, *shimenawa*, *shin-no-mihashira*] and natural elements [stone, ground, mountain] and beings [animals, plants] etc. Thence, the *Shinto* and the ordinary life sprung from the same roots, whereas Shinto religious rites and spirits become in the inevitable interactions of humans and natural environments.

Human intention to establish these relationships is primordially driven with the mere survival ambition and thus, without any sort of vanity in needs that drive this ambition. Therefore, neither the survival need for the food, nor the constructions of settlements were brought up with the artistic needs or any kind of personal vanity. Each act of human spirit [to envision something] or human body [food production, various constructions etc], were directed toward the common idea of the improvement in spiritual and survival interaction. Improvement means to fulfill human needs and maintain intangible and tangible values rose in their society. Therefore, religion and culture work together with basic production of necessary material items [food, products etc]. Nonetheless, the material resources which humans come in interaction are assumed to be inhabited with *kami* spirits. Thence, interactions among religious moral scale and gods spirits and human production becomes inevitable.

The spirits themselves are assumed to dwell not only in deliberately sacred, but every stone and greenery physical forms [*iwakura*] and the artificial elements which belong to the *jinja* complex. Besides these natural and artificial forms that are inhabited with the respect and honor to *kami* spirits, there are shrine enclosed voids that do not represent the spirit embodiment, but rather the materially enclosed emptiness, which is expected to be possibly inhabited with the *kami* gods. Religious human comes in an inescapable interaction with these spirits. It occurs whether one goes to shrine to pray or engages a production activity that uses very material resources, those spirits inhabited volumes.

Figure 14 : *Iwakura* rock wrapped with *shimenawa* rope at the closer area to Shinto shrine in Kyoto;

Figure 15 : *gohei* sacred white papers tied to the *shimenawa* rope [whiteness hereby equals presence of a *kami* spirit and therefore the measure of sacredness of this selected stone nearby Shinto shrine]

Hence, *Shinto* shrines establish and proceed with the quintessential form of architecture volumes dedicated to certain gods. Quintessential attributes of shrines reflect in their construction, which becomes accomplished with optimum amounts of resources assembled in an optimum volume enclosure. The void of these enclosures is a focus of the whole constructions that is to be dedicated to gods. These gods' spirits appear and dwell in these voids occasionally and without human confluence. Visitors can pray and hope for those *kami* to appear, accept and accomplish their very pray. The space for the prays manner to be pursued, logic of the shrine complex which has to accommodate the environment landscape, *Amaterasu*-kami items collections dedicated to the goddess and other spirits, specific usage of material in construction etc is what becomes the most important and inherited as an equally tangible and intangible set of Japanese cultural heritages. These intangible skills make each of shrines to be slightly different in their appearance, but equal in these logics satisfaction.

Hereby it is not the highest goal to preserve the constructed shrine volume and the material aesthetics of the mere space. The subject of the highest importance is how the construction elements [craftsmanship knowledge], mostly wooden crossings and joints details, are made and assembled and how this knowledge has to be passed to the next generation. Only in that case, Japanese community people are sure that their successors are going to be capable to preserve their religious and practical life uniquely integrated production of spaces, as they are going to know how to materialize them. Thereby lays parallel and mutually influencing and succeeding development of the architectural model of houses and Shinto shrines in Japan, which apply identical details of wooden construction logic, dimensions, joints connections etc. One can distinguish construction skills applied in shrines construction in primordial *hokora, sestsumassha* and Shinmei-zukuri, then Taisha-zukuri, Sumiyoshi-zukuri and Kansai developed Nagare-zukuri and Kasuga-zukuri clearly influenced by the Chinese Buddhist taste entered through Korea. As for the housing construction taste [style is not good to be used in describing Japanese architecture and design] there are Sen-no-rikyu taste concentrated around merely *shidnen* [moya] central room, than much more complex Shoin-zukuri, Shinden-zukuri, Buke-zukuri, Sukiya-zukuri etc. One can separate visually perceive different forms of architecture, but also notice same forms of construction logics that are differently applied. Here it is important to highlight that each Shinto shrine, nonetheless it was dedicated to supreme gods suspected its form according to the landscape outlines. Therefore, its spaces composition, levels and approaching manner [in relation to the position of the sun] is primarily decided upon construction logics interactions with the environmental physical and phenomenal conditions. However, gods' spirits are contained in every forms of that very environment. Thus, the shrine itself is going to equally contain those spirits. In front of its *haiden* hall of worship and prayers offerings in form of *heiden* hall, there is indeed *honden,* a room, the shrine sort of *moya.* It contains those kami spirits shintai, namely 'the sacred body of kami' as those gods material repositories [Smyers, Karen Ann, The Fox and the Jewel: Shared and Private Meanings in Contemporary Japanese Inari Worship, University of Hawaii Press. Honolulu, 1999, p.44]. Overall, final architecture form becomes in interactions among construction heritage and

impressions about the nature, the environment. This kind of cultural and religious integrated application affirmatively results in endless variations, adaptations and improvements potentials, without having a slur over previous achievements in knowledge. It is obvious, what is underlined is the immaterial knowledge, not the material architectural artifacts assembled according to that knowledge.

Paradigm *par excellence* of this kind of integrated religious and cultural heritage is beyond the shadow of a doubt the shrine complex in Ise. It is repeatedly disassembled every twenty five years and identically assembled at the neighboring plot. Twenty five years period is approximately enough for an ordinary Japanese man to get married, raise family and get a son. He used to pass the practical construction knowledge skills previously discussed to his son. That is how the intangible heritage is preserved. Today, the main form of the preservation is digitalized and protected by the authorities as the intangible value of the national importance. In practice, it is continued by the shrine monks and Ise area local people. Their families have been involved in this custom for centuries. Thus, an ordinary families' life rhythm in their generations becomes a supreme denominator of the houses and shrines constructions durability, meaning and direct application in those lives.

Hereby, human do not endanger and question an inevitable and supreme presence of *kami* spirits within both built and rebuilt shrines plots. Their constant presence is assumed as an immaterial representative of their inhabitation of each segment of natural environment that becomes deliberately marked. The mark set consists of pine wood battens vertically positioned in rectangular array in the central point of the plot and covered with small, *zukyia* taste roof element. That encloses small void inhabited with that plot supreme *kami*. Those battens themselves are inhabited with the secondary spirits and are also assumed as sacred. This reliquary, namely *shin-no-mihashira*, is positioned beneath the main shrine elevated floor level and being as such is detached from any kind of active visual or physical interaction. That intensifies gods' presence more prominently as an intangible phenomenon, which is put forward within the *Shinto* shrines complexes as the very tangible artifacts.

One of the ancient, common place terms, which can depict a presence of the god within the void or natural elements is Barakah [Baraka]. 'It is an ancient Sufi word that can mean the breath of life from which the evolutionary process unfolds. And in one sense, *Baraka* responds to this process through an exploration of ritual. If we consider an authentic ritual to be a medium for heightening our inner experience at the very least that of an interconnectedness, while potentially going beyond the strictly personal, loosening our identity to time and place.. there becomes a whole life as a ritual' [Scher, 1993, p.1]. Similarly, one can define *shin-no-mihashira* as a material form of sacredness, through which flows and that is inhabited with gods spirits [Barakah]. Further, it transmits these spirits into other things or get make them close to human in their prayers and interactions with natural formal elements that indeed carry those spirits.

Certain form of *shin-no-mihashira* in form of sacred pillar stabbed into the ritual ground, can be seen as the central point of the dancing rites that occur in some tribes in Africa. They position few rather

Figure 17 , 18 : Sanja-Matsuri festival portable shrines [mikoshi] are held and carried through Tokyo streets in time of the festival in order to celebrate *kami* deities; these spirits are expressed in relics that are attached around and within the carried shrine in forms of sacred bird that symbolizes Amateratsu spirit, *tori* gates that mark the void for possible passage and presence of the spirit within the inner empty room that is hidden from the public view;

higher colored battens in the ground and then conduct group dances and according songs by the selected members of the tribes and few *shamans,* highest tribesmen priests. The dances evolve one after another and then finally all of them get into a common act of ritual dance and verses they pronounce. The ritual occurs around the sacred batten at the certain distance where such a created void keeps the awe to the possible god spirit presence they physically and orally invoke. 'Brad Keeney, an anthropologist who has trance-danced with the Bushmen for many years, is emphatic that an inexperienced outside observer has no means of comprehending what occurs in the process.. these rituals actually *do* bring the ancestors from the spirit world into their village ceremonies. [Bender, 2007, p.7] and one has to engage the performance to be physically and therefore spiritually engaged. As assumed for Bushmen people, everything that is artificially conducted and touches upon the natural physical forms, touches upon the spirits which dwell or are invoked by those physical forms. Within Maya tribe ordinary life there was a religious axiom that there is life-force in everything and that we have to imbue the things we create with those spirits.

The natural formal elements in forms of *iwakura, satoyama, yorishiro,* being deliberately roped off due to *kami* presence within their physical forms volumes, are importantly positioned in close vicinities to the shrines. They represent gradual decrease in amount of artificial physical forms made in and around the Ise Jingu area. This process may refer to the decrease/increase of the level of artificiality proportional to the distance from the main shrine area. As we go further from the main shrines localities into the woodland, number of these physical forms become lower in forms of sacred landscapes, stones, rocks and trees, which are artificially positioned and distinguished as being indeed sacred. Hereby it can be understood animistic section of Shinto belief. It is noticeable in the attitude to manipulate with natural formal elements without harming their naturally given attributes. At the other side they are involved in final aims of creating certain artificial expressions in both secular and previously discussed sacral discourses. Japanese society tends to adapt and absorb oneself in nature, with the final aim to comprehend and conquer it while maintaining mutually sustainable synthesis. Hence, the religious life becomes visible and perplexed within the ordinary life environment and natural elements and voids. These tensions between the ordinary life territory and religiously marked territory [*okutsu-iwakura*] thus becomes more relaxed as they become visually and physically connected through the realm of the human ordinary and religious life activities. Thereby the ordinary life survival morality in food harvesting and production is transferred into design activities even in the most contemporary related acts. Nonetheless, human do not endanger the natural resources integrity and renewal processes within these 'harvestings' in material, cultural and religious productions.

Katsura Rikyu garden exactly holds these tensions and relaxations of the human visual and physical affirmative disturbances of the garden formal elements, while exactly nominating and dominating the natural sacredness physical forms of stones and trees.

Thereby, sacral and secular tangible and intangible formal elements affirmatively coexist while enhancing each other. Within Katsura Rikyu they are crucially dependent on each other.

3.1.3 Garden various physical forms embodiments of intangible deities

Japanese peasants [may relate to salary men in contemporary means of environment] needed to accomplish act of mutually comprehensive and inclusive physical relationship toward environments' formal elements, in order to pursue final food and livestock production that relies on those environments. This relationship determines those productive acts in both immaterial and material final results. Since those acts are initiated by human needs to maintain biological survival [different times stipulate and widen definition of what is biological survival], they are classified as morally proper due those biologically inevitable [and therefore religiously justified] reasons and aims they are enacted for. In order to start and further pursue certain act of intellectual and physical action toward those formal elements, they had to be comprehended and then affirmatively abused in order for human to get some kind of respectful, moral use from them. This use is either in forms of food or shelter, or in any forms of contemporary highly diverse definitions of comforts and needs differently comprehended in novel times and novel environments.

This kind of behavior cannot be attached only to formal elements as targets of those interactions, but rather to other kind of beings, including animals, plants etc. Their organisms are equally driven with the mere territory of the power of interaction with the other environments or organism. Thence, those interactions accomplish along with simultaneous understanding of those other beings spirit or a mood condition according to the sense of smell, pheromones, hormones perceptions, behavior perception etc. Their mutual perception of this kind determines their interaction in its totality.

Having this kind of overview of human and other organism coexistence with environment and other beings, there emerges certain primordial cosmology and earth-logy. It developed in accompanying religious acts of Shinto belief that follow those interactions' production acts of human survival. This kind of correlated development of religion, culture and human biological survival in centuries evolved in present various design tastes. They, in their very core, carry the same moral postulates that spread and unify secular and sacral aspects of present 21st century human ordinary life in Japan. Therefore, it appears as possible to maintain a conscious balance among gods inhabited within each of the environments' formal elements and humans that touch upon their physical forms logics.

Natural physical elements in Japan were firstly assumed to be filled with the incomprehensible forces [*ke*]. These forces [*mono*; *mononoke; Mana*] were believed to permeate the palpable and void matter of those formal elements volumes and in what they are in their intangible formal logics. Primordially, the notion of their intangible formal logic was attached to the force they hold as a response to any interaction initiated by human. Lately, the force was attached to certain spirit that is accordingly named. Thus, this spirit is prayed prior to any kind of action accomplish by those humans that again tackle the same formal element. Those prayers assure bless from those forces, those spirits contained, that human envisioned action that touch upon those elements is going to be successfully and fruitfully finalized. Dominantly interesting and human lives important physical forms of matter are made of

rather solid minerals – rocks and stones, and wooden mass – living greenery elements, along with earth made landscape portions which are given each a supreme *kami* spirit.

They were examined and comprehended in order to make their spiritual logic, which determines their physical form logic, palpable and finally usable and cultivated to other natural physical forms [tools for the agriculture and livestock; hunting; fighting]. Depending on the region of the Japanese mainland, dominant human activity differed according to the environment conditions and resources. Hence, there were different natural material physical forms, which were tried to be comprehended and employed in different techniques, while keeping their sacredness, heir intangible formal logic. Different kinds of environments conditioned different kinds of interactions to be affirmatively achieved and therefore finally determined human life productions. Thus, different interactions were applied in North-Eastern Japan mainland, which was under the hunting culture of the north Asian societies, while the Kanto plain was under the South-Eastern Asian food-gathering people foundations heritage applicable in those areas. Different *fudosei* accordingly differs in different life discourses.

The question is whether those spirits forces were embodied or inhabited in those various *fudosei* formal elements. Hence, early *Jomon* period is declaratively period of the *mononoke* spirit setting, which was embodied into the rocks and other stone natural elements. The roots of this kind of very primordial *Shinto* religious embodiment of the *iwakura kami* spirit are obvious in the Mount Miwa Yamato region Omiwa shrine. In the footstep of the mountain is an actual hallway with tree sacred rocks positioned within its defined cave shelter. These stones cannot be seen while they are intensively worshipped. However, this depicts still very extensive distance and fear [incomprehensibility] of the *kami* spirit that still persists as a sort of religious continuity. The *iwakura* rocks cannot be neither seen nor observed. Therefore, they were assumed as merely physical representations of the sacred spirit. This was supremacy *per se* that marks the level of those times society development in Japan that still did not have enough of knowledge to decipher the environments they belonged. That beings so, one can say that the level of the technological development and depth of interactions with environments is proportional to the *kami* spirit comprehension change. It differed from being embodied in forms of environment formal elements leading to its final cognitive image of being inhabited within their volumes.

TheOmiwa shrine *kami* deity, embodied in the 'hidden' rocks, is named *Omono-Nushi-no-kami* – The Deity Who is the Master of All Things, or more direct *Iwa-okami* [The Rock Deity]. This was the period when the stone physical forms were observed as the mere tangible representations of spirits. Successively in time, gods' spirit came to be more differentiated in individual animistic deities sheltered in rocks and stones called *iwakura.*

3.1.4 Convergence of religious practices and life activities in Katsura Rikyu

The firstly established *Onamuchi-no-mikoto – Sukunahiko-na-no-kami* [The Go Who Dwells for Many Generations in Rock Cave] according to the archeologists Masao Oka, Namio Egami and Taro Wakamori, entered Japan rock seashores [*oki* spirits coming from the deep offshores]. Its origins are found in matriarchal feminine society based on wet rice cultivating and hunting, which was founded in Southeastern Asia and entered Japanese mainland in *Jomon* period. By the later *Jomon* period Japanese became very acquainted with the clay modeling itself and therefore introduced the earth-mother deities' figures. They were represented with the clay masks and female figures with the exaggerated representations of their private parts. These represent the fertility amount in and exaggerated manner. They served to celebrate the act of becoming and the mystery of procreation of the human, natural physical forms and the earth giving food [crops].

However, that time society did use those units in their naturally found state which initiated their own religious and everyday life rituals role. These had to be conducted before the usage of any kind of those units. Equally, there was conducted another prayer before there were introduced any changes in their forms. Thereby, in Katsura garden are applied most of stone units with minor changes in their physical forms attributes. However, their naturally found horizontal and especially vertical orientations are highly preserved, since their orientations represent the character and directions of natural forces [read spirits]. If they are intact and integrated into garden stepping patter logic those spirits are going to be mercy and support the act of the artificial constructions applied in the garden complex. Concave or convex, horizontal or upright, these physical attributes of stones and rocks were attached in order to define in respective order female or male spirituality held by the stone.

The level of the preservation of the artificially organized and distributed garden stone units' naturalness, visible in their natural attributes, became an obvious visual experience of living presence natural forces within the garden. They actually stand behind those stones creation processes that occur in nature that belong to certain *kami* spirits. Thereby they kept the traces of the past forms of becoming as parts of their definite, present physical form and visual logic. This is how natural forces dwellings obtained their first forms of dwellings in forms of embodiments. Nonetheless, the stone items kept not only a single physical form related definition of their religious impart, but rather how they physically and spiritually determine the physical form and the spirituality of becoming of their wider belonging environment. Therefore, the shrine physical form does not relate to the single *kami* house enclosure of the main complex building[s].

Overall character of such a Japanese religious and ordinary life postulates were dominantly matriarchate oriented, flourishing from the food production which a dominant survival note of the whole Japanese mainland society along with livestock, hunting and fishing. Therefore, the whole creative concept of that time society was primordial and directly oriented toward the natural forms

Figure 19 : various kinds of stones, with their naturally found horizontal disposition created by natural forces, are used to determine artificial horizontal surfaces and determines human behavior; new forces are established that manipulate with human walking character and according visual experience of the environment they belong

reminisces or optimum survival amounts physical forms resoruces. There was no room for the sublime or profound expression of the aesthetics and philosophy into the creative and art forms glimpses of that period. The highest profoundness was attachment of the spiritual dwelling to the natural physical forms and even food items [crops, rice, cereals], which became the highest form of the profound immaterial aesthetic. What is highly specific is the immediate and conditional development of the food production, tools techniques development, construction knowledge, architecture taste and religious material definition. If one of these aspects have changed, all the other would have suffered immediate physical form, visual and formal logic accommodations.

The southern islands of Japan brought from China and Korea more advanced and lately adapted techniques of the wetland cultivating and hunting and primarily fishing harvesting, as well as the engineering skills with the iron tools and equipment. This led to the development of the raised floor architecture and its details and joints, which instantly emanated into the construction of the separate spaces for the rites practices and supreme dwelling of the *kami* spirits along with *iwakura* items. Here is the establishment of the religious complexes as how they exist and persist today where the emptiness of those new rooms became an invisible, intangible embodiment of the *kami* spirits. Thereby, sacred stones and woods reclaimed the same change in religious attitude concerning notions of embodiment toward enshrinement.

We can establish a direct comparison between *Jomon* and *Yayoi* period in their basic postulates based in and relationship toward the food and physical forms productions. During *Yayoi* period with more stable community in comparison to the primordial *Jomon*, makes the last one redefined into more refined and broader sense of cultural and material productions. These were not strictly attached to the mere survival and solely resources based aesthetic affection directed to nature and its formal elements palette.

Jomon people sought to observe natural emanations and following physical forms material and phenomena related uncertainties in fear and trembling. Each spirit became a mark of awe and level of established comprehension. Thus, the knowledge attached to these natural physical forms became more extensive and deeper in their interactions and part of an ordinary life involvement. The sacred natural formal elements of *iwakura* and *yorishiro* items became to be more developed into *kami* enshrinement, rather than an actual visual form of the exact gods' spirits embodiment. In Jomon period, he embodiment of those sacred items has been introduced as the intangible gods' forces were visible in their very intangible effects in physical forms logics. Hence, the items were observed as the mere bodies of the gods' themselves since they could not explain or differently attach those forces. O contrary, in Yayoi period of further technological advancement and cognitive improvement, those forces became to be more comprehensively understood and therefore applied in following everyday life productions affected by those forces. Thereby, each of the forces was entitled with certain spirit and its name. To interact with those forces meant and still means to interact with certain source *kami* spirits. Before conducting any of these interactions' acts, one has to offer certain prayers and conduct

according rites and ceremonies directed to this source *kami*. These are going to assure the spirit to be merciful and allow those interactions in favor of both, world of gods and world of humans.

Yayoi period established a sense of further comprehensions of the natural physical forms. It was not related anymore to the mere understanding of primary utilitarianism of the natural physical forms, but how these already established comprehensions may be introduced into other artificial and natural physical and immaterial forms which take part within the ordinary human life. Thereby, philosophy and aesthetics were established and discussed at the level which can reinterpret the forms of the natural physical forms comprehensions and following acts of human artificial creations, which applies those forms. That is how the spectrum of the physical forms intangible meanings became wider than the primary, primordial and obvious physical form emanation into their further applications. New forms of comprehensions questioned how they can differently trigger human cognitive experience of their natural and artificial environments and apply that knowledge into natural and artificial environments. They sought to make a human to understand and accommodate the natural and artificial environments not only to the mere basic consciousness of the visual experience, but to deepen the cognitive understandings of what those formal elements can further represent in living environments.

However, the food production and architectural safety of the society settlements established a secure level of the survival in Jomon age. Thus Yayoi people felt a higher feeling of stability and fulfillment, which brought a higher level of their relation and comprehension of the environments along with their *kami* spirits. Hence, *Yayoi* people did not need to embody the mere *kami* spirit in a form of a stone item since they understood that item form more deeply. Thence, that stone item sacred attributes were released in intangible connotation. The religious practice became more inner, cognitive and spiritual category and more comprehensively and directly bounded into meaning, usefulness and properness of the ordinary life practices. Their *kami* inhabited in those stone units was actively interacted with while following the moral norms of what the proper interaction indeed is. Hereby sacral and sacred instantaneous engagement within human to environment [stone items] interactions with certain cause means that relationship is both proper and useful in acquiring a unique meaning. One can remind of and involve renaissance established *venustas* , *firmitas* and *utilitas* as a unique and unified values pursued in esthetic- artful and ordinary life practices.

3.1.5 *Katsura Rikyu* stepping pattern as a *shiki* space where human and *kami* deities presences meet together

Katsura Rikyu garden complex embraces *Jomon* and *Yayoi* different times and practices definitions into a coherent garden physical forms and visual continuum of stones, greenery, landscape and architecture formal elements. The dualism in sacral and sacred attributions of the stone and tree elements, which dominantly determines Katsura garden formal continuum, develops respectively into

both the human and gods' deity's spaces. Hereby one can recognize the influence of the final stage of *Jomon* period development, which gradually proceeded into *Yayoi* period. Thereby instead of thinking in terms of images of the deities, it is thought in terms of how to determine and symbolize the space possibly inhabited with those various *kami* spirits. Accordingly, that space physically and spiritually had to be confined not only to the presence of spirits, but also the praying ceremonies conducted by visitors and *kannushi* [*kami* master] and *shinshoku* [*kami* employee] priests in *Honden. Honden* is a worship hall with settled worship items that symbolize the *Amaterasu* and other supreme *kami* spirits. In terms of the garden formal continuum sacred is contained in sacral formal elements positional continuity that envelopes the sacred spirits passing pathway. They start in sacred gateways, sacred paths and lantern, then stone and tree elements themselves occasionally marked with *shimenava* ropes and finally tea house enshrined *Tokonoma*, with elements of shrine *haiden* voids and *torii* pathway fulfillment that marks the tangible space which is dwelled by intangible supreme spirits. This is where human and gods meet in the final accomplishment of the *Katsura Rikyu* Imperial Pathway in front of the *cha-no-yu tokonoma* screen, which itself visually represents tangible but physically intangible seasonal scenery.

Katsura garden complex possesses all of these elements [sacred pathway, sacred physical forms, *tokonoma*], which do not serve solely to enshrine the gods spirits and assure interactions among humans and those gods. Firstly established, it served actively and only to the Japanese cosmology tangible gods' successor in physical, human form of Japanese Emperor [having a gods spirit dwelled within human physical form]. This is one more, an active being volume, in a form of an emperor and its family members, where intangible spirits of gods and very tangible body of a human coexist in mutually supporting form of interactions.

Also, the *Katsura* garden complex consists of extensively pebbled areas, which evenly include the mere pathway *tobiishi* pattern or might serve in stepping purpose in one sees a reason to conduct it. They were named *shiki,* which can be put in the same group of notices along with the rice straw roped off emptiness – *yorishiro,* or with stone items encircled empty areas of surfaces, which are named *iwasaka*. These three, *shiki, yorishiro* and *iwasaka* are the spaces where human and *kami* gather within or around those areas in human held rites and festivals in which gods' spirits and humans involve in an interaction.

The *Katsura* garden *tobiishi* stepping pattern thus may be equally proclaimed as a *shiki* enclosed area where the stepping points are delineated with the exact stone items settlement. The stepping pattern and according human [emperor] stepping or standing presence is exactly marked. Since the stepping pattern is a set of stepping points from where the garden formal logic is visually experienced and finally cognitively comprehended, it becomes a holder of the aesthetic truth, intangible formal logic of the whole imperial pathway visually concerning formal continuum.

Therefore, in these stepping points human are capable to recognize and enter in perfectly staged visual interaction with the garden formal continuum. Only in these points one can correctly visually

recognize and cognitively understand the intangible formal logic of this continuum that is envisioned by designers' taste that carries a visitor from the point of gates to the point of *tokonoma* screens Thus, that intangible logic, esthetic truth has to be visually and cognitively perceived. Only in that case one enters in proper interaction with artificially envisioned natural formal elements, while stepping through the garden. If one marks those intangible logic of 'standing there' as those natural formal elements *kami* spirits, that makes a unique and single chance for one to enter in proper, moral interactions with those artificially envisioned forces, gods' spirits of the garden formal continuum. Hereby, *tobiishi* stones' units become a *shiki* space where human and gods meet in proper physical forms relationship among those humans and the natural formal elements, which are enshrined with the gods' spirits. Since that relationship is proper, humans properly, and as it is artificially intended, experiences those formal elements continuum in their field of view.

Lastly, *tobiishi* stone units are selected and positioned in order to maintain this moral interaction, while their naturalness is not harmed. Finally, their forces, *kami* deities that forced and further conditioned those units physical forms tangible formal logic are prayed and respected in order to use those tangible physical forms' attributes to manipulate the visitor steeping activity. Thereby, each of these units becomes a coordinate where human and *kami* meet in mutually supportive interaction. Human fulfills his visual and cognitive experience in envisioned manner, while the stepping stones are preserved with all of their naturalness. The natural attributes of the stones pursue their duality. It determines human stepping activity and further manipulated field of view, while the stones continue their naturally found, independently developed intangible formal logics.

3.1.6 Yamato court and Izumo people interaction as a source of an artificial creation applied in Katsura Rikyu

Historical duality that is equally applied in *Katsura Rikyu* garden is that among Yamato court and people with their *tenson korin* myth, and the southern Izumo people with their Ise myths of belief in *Amaterasukami* and *Ogetsu-Ukemochi* myths along with their firstly established *Omono-Nushi* worship. These two groups of religious cosmologies engaged in intensive interactions that affected both, sacred and according sacral issues. Hence, in order to assure mere survival while being under intensive assimilative influence of the Yamato court, Izumo people transferred the *Omono-Nushi* into *Okuni-Nushi,* a powerful unifier spirit that kept its attributes along with the name change. That is how the continuity in their interaction kept both of sides preset in favor of further complexity that occurred in centuries ahead.

Omono-Nushi deity was a hero-deity of Izumo. It resisted the divine ancestors of the *Yamato* Imperial Court to the last, when Izumo people finally surrendered his country in favor of erecting a palace for their hero deity unifier, formal predecessor of present Ise shrine complex. Yamato people are actual

predecessors of the future Imperial family. They, initially and the most probably reached the Japanese mainland over the Korean peninsula to the southernmost island of Kyushu, from where they migrated to the island of Honshu. Their spiritual and myth originates from the northern, Altaic languages region.

However, *Ise* people established sacred scale of gods, which relate to the myth of *tenchi kaibyaku,* the Japanese archipelago creation with which they were involved. The names of the highest *kami* spirits are *Tsukiyomi, Susa-o-no, Amaterasu, Toyuke* [last two are Ise shrine worshiped], *Izanagi and Izanami kami* prototypes. They came into existence during late *Jomon* and early *Yayoi* period where their worship houses, basically assumed as the natural physical forms, became the elevated shrine complexes. They are based on the primordial agricultural and fishing firstly established deities, which dwelled within those fish, stones, earth, water, crops, animals' physical forms etc. However, in *Yayoi* period they became to be worshipped within the elevated sanctuary forms as above mentioned. This form of the shrine became in period from the 6th to the 8th century, while being influenced by *Taoism and Buddhism* temple and chapel houses, which finally influenced the constitution of the tea room pavilions. Thereby, same form of architecture paradigm established itself within sacral and sacred functional dispositions. *Katsura Rikyu* garden itself is thus consisted of both.

It consists of *tobiishi shiki, yorishiro, iwakura etc* of the *Jomon* period. Their tea rooms suffer from both *Jomon* and *Yayoi* aesthetic forms, while having *Jomon* based mountain hut aesthetics with *Zennism* determined *tokonoma* background, whereas main *Shokin tei* completely or other *Shokin tei* partially suffer from *Yayoi* and Wabi-sabi aesthetic form. The garden overwhelms in both forms of *kami* enclosure, *Jomon* natural physical forms and tea room *tokonoma* screen aesthetics which originate from the *Zen* determined chapel form for monks, which represents the form which suffers under influence of *Yayoi* form of the elevated sanctuary established by *Ise* people.

Thence, the whole garden physical form and visual logics are perplexed with religious and food production oriented *kami* admiration, originating in southern and northern Japanese mainland.

Similar simultaneity can be noticed within the Ise shrine complex where some of the subsidiary shrines that existed from earlier periods remained in forms of *iwakura.* Examples are *Takimatsuri-no-kami and Okitama-no-kami.* Within the Ise complex we can still find the shrines that enclose sacred stones or the stones are merely positioned bellow the elevated sanctuary floor. Hereby different time definitions of the religious to ordinary life common places of what are sacred elements and spirits and how they are observed and imagined, exist simultaneously in present sacred and sacral physical forms continuity and their visual experiences.

Overall, *kami* deities are presently considered to dwell within waters, wells, rivers, pool, waterfalls, sea [waves, inlets, ships etc], mountains etc or the soil, the plains, reeds, rice plants etc and overall natural phenomena like moon and sun. *Tenchi kaibyaku* myth is expansively open in front of us in these numerous deities linked with the ordinary life and religious feelings. This is the very first spontaneous and inevitably simultaneous and perplexed physical and spiritual forms coexistence

indeed characteristic for the Katsura complex. This dual coexistence is visible in the shamanism of the northern, Altaic type of culture, which influenced the southern mainland that entered in final coexistence with northern mainland, while causing their cultural and human welding. The Altaic *tenson korin* myth has a perpendicular gods universe representation consisted of Heaven, earth [deities dwelling] and nether [bad spirits].

Nonetheless, *Yayoi*, later Ise cosmologic representation of the above mentioned *kami* developing is of horizontal spread. Therefore, the religious spread of the *kami* becoming and universe becoming has no strict vertical hierarchy or a pyramidal view of the world. Neither one of them dominates in forms of intangible nor do tangible attributes, while their coexistence determines the ordinary life application of them both [physical forms and forms of spirits]. Since they originate from the Ainu and Jomon ordinary life set of equally important and connected activities where people firstly met *kami* natural representations, these interactions retroactively confirm their horizontality in contemporary life applications. Therefore, *Katsura Rikyu* garden for example extensively horizontally assemble physical forms continuum, without any physical forms or visually dominant formal elements. This marks not only the visual and stepping activities of the present visitor, but also the cognitive understanding to be spread n horizontal direction. Horizontal hereby means that there is no dominance in the garden formal elements spread that trigger both visual and cognitive activities. Horizontal spread means that what becomes perceived are those formal elements interactions where none of them dominates, similar to *kami* spirits pread.

However, the Ise spirits constitution suffered from later confluence with Altaic perpendicularly organized universe. Hence, *Amaterasu and Takami-Musubi* heavenly deities ordered their heavenly grandson *Ninigi* to leave its rock abode in heaven and to descend to the mountain *Takachiho* in order to rule over the earth. That is how one branch of the horizontal *kami* spirits constitution of the *Ise* people partially suffered from shamanistic perpendicularly oriented branch of cosmology, but without any further and noticeable changes.

3.1.7 *Iwakura* and *himorogi* physical forms presence in the garden

The garden most important physical forms, which constitute the garden formal elements continuum in its visual and cognitive logic, are *tobiishi* stepping stones and still not more thoroughly discussed greenery trees, arrayed along pathway. Originally, observation of a tree as a sacred formal element in general culture and religion in Japan, originate from the Altaic people cosmology about spiritual deities and their intangible comprehensions and according tangible representations. However, northern, Altaic language myths carry out tales of gods deities descending into trees, more specifically *mayumi* tree at the top of the mountain, where the heavenly deity orders its offspring [old Korean legend which influenced *tenson korin* myth]. Again, it can be noticed shamanistic, vertical

dispositions of spirits, where shamans [*miko*] female mediums act as a bottom prayer holder in perpendicular relationship among the deities in heaven and bellow, nether and man on Earth.

The *mayumi* tree, sort of *sakaki* tree [which was used to position the mirror to call the *Amaterasu* deity to come out from the cave and look at herself.. after she hid herself] was apparently a symbol used by *miko* to recall the spirit deities. *Sakaki* tree item is an actual prototype what was later named as *himorogi.* Therefore, *sakaki* tree branches even today retain their prominent presence within the *Shinto* ceremonies and rites as a significant marking element of the connection among the deities and human. They are held at the top of the shrines carried by people in Kyoto, Tokyo etc during promoting and widely visited Sanja Matsuri festivals. While pulling and holding the portable shrines through the streets during days long ceremonies, celebrators recall the supreme *kami* spirits to inhabit those streets and shrines and mercifully fulfill their prayers through the sacred tree sample. Thus, the people remain without the knowledge if the spirits really honored them with their intangible presence. Nevertheless, they remain satisfied and with the great hope and happiness. Overall, the key word remains 'to recall', paradigmatically *Amaterasu* supreme goddess and in further times to ceremonially recall every other other *kami* gods' spirits. Thus, *sakaki* tree becomes the medium of interaction among those tangible human and intangible spirits.

Hence, *Amateru* means to shine in heaven, while the whole name means 'the supreme, noble being of August *kami* spirit that shines in the heaven'. According to *Kojiki* and *Nihon Shoki* records of Japanese history and religion tales, along with her brother of *Susanoo,* the goddess of seas and storms and brother of *Tsukuyomi,* the god spirit of the moonlight, she was born from *Izanagi* the most supreme spirit. He entered the underworld to same *Izanami* and while washing some of his face parts, all of previously mentioned were successively born. *Amaterasu-omikami* is the sovereign goddess of the sunlight that inhabits the sun itself.

While suffering from the rivalry with her *Susanoo* brother, she entered in various suspicions and challenges with him. That resulted in him destroying her rice fields and other serious rampages. After these events, while being in grief and sadness, she hid herself in heaven rock cave [*Ama-no-Iwato*] and left the sun for a long period of time. Due to this event, her brother Susanoo was punished by being banned from entering the Heaven. They resolved their conflict when Susanoo invited Amaterasu-Omikami to come out from the cave and inhabit the sun again. He was trying to do so with various present offerings in order to praise her to appear and to close the cave gate behind her or to just simply make her will to change. Accordingly, he gave to Amaterasu the sword of Kusanagi-no-Tsurugi as a gift of sincere reconciliation.

Ever since, during the ceremonies in praise of *kami* spirits to appear and dwell the praying room various offerings [presents, food, drinks etc] are brought at the table inside of *haiden* or at the table in front of the shrine entrance area. One of those offerings to praise the Amaterasu-Omikami to come out from the cave is the sacred mirror and various *sakaki* wooden items. Multiple arrays of thereby are attached to hang at the portable shrines' sides during Sanja-Matsuri festivals. They are also intended

to praise for the *kami* to bless the ceremony people with its intangible presence. Since each of these mirrors reflects the environment, they inevitably represent the sacred spirits presence in forms of their tangible dwelling formal elements. Hence, those formal elements are the formal elements that assemble those environments. According to the historical and religious chronicles, *Amaterasu-kami* left in her own will several offerings to her descendant Ninigi: the mirror Yata-no-Kagami, the jewel of Yasakani-no-Magatama, and the sword of Kusanagi-no-Tsurugi. These sacred offerings represent the three Imperial Regalia of Japan, which are therefore held in prominent Shinto shrines. Only Imperial family has an official access to these formal elements and their enshrinement areas dedicated to these offerings and the *kami* spirits they are honorably and modestly offered.

The worship of *Amaterasu* has been described as 'the cult of the sun' [Wheeler, 1952, pp. 393–395], that originates in the pre-archipelagoan primordial worship of the sun and sunlight. The forces of sunlight given to sun are entitled with intangible goddess enlightment and purity. They are assumed to inhabit the volume of the sunlight embodiment, to which, in every *Shikinen Sengu* ceremony, new items, dishes, clothing and food are accordingly offered to the goddess. Thence, the Ise Shrine inner shrine, Naiku, is dedicated to *Amaterasu*. Among the others, it enshrines within its *haiden* compartment the sacred mirror, *Yata no Kagami*, along with various other sacred offerings.

Among these sacred offerings there is a wooden item with which *Amaterasu* goddess [Ōhirume-no-muchi-no-kami] was recalled to come out from the cave with many others offered items. Thereby one can distinguish *sakaki* or namely *himorogi* tree. That offering marks an introduction of the sacred wood from a northern shamanistic into the southern animistic symbolism of the solely sacred stone units of *iwakura* and *yorishiro*. Nonetheless, this cordial introduction did not mean an absolute shift and oblivion of the stone *iwakura* to the wooden *himorogi*, but rather an introduction of one more sacred formal element considered to be inhabited with *kami* spirits. Hence, *shimenawa* rope equally marks the wooden trunk [*yorishiro*] where *kami* dwells, as well as it marks the stone *iwakura* and *shimenawa* emptiness in southern animistic symbolism. Consequently, wooden offering, a *himorogi* tree, embraced an additional shamanistic symbol that had been solely attached to the naturally found sacred, whereby they both became considered to be inhabited with the spirits more closely named *kodama*.

One can underline the *Katsura* garden inborn formal continuum that is plunk consisted of indeed these two, wooden and stone formal elements with both of their sacral and sacred formal attributes. Hereby stones' physical form logic embraces the most important stepping and visual coordinates of the whole garden representational and mere cognitive discourses, directed toward the wooden, greenery formal elements. Coincidentally or not, the garden formal logic can be visually experienced and cognitively researched and thus comprehended, only if the greenery formal elements are visually observed along the *tobiishi* pathway, in those coordinated stone stepping points.

This unique example of an artificially indoctrinated dependant duality is established in the spirit of the *shintoism* practiced duality in Japanese religious and ordinary life dependence.

Figure 20 : sacred stone, positioned with its natural form, as stepping unit an a graveyard monument posture where *kami* spirit is invited with *tori* gate to honor sacred environment with its presence : each stone has its gate and *shishi* figures [the site belong to Fushimi Inari shrine complex]

Figure 21 : *himorogi* sacred tree, in its naturally found shape, is carried and celebrated with portable sanctuary during the festivities in Kyoto central area

It even holds the characteristic background in *Amaterasu* myth of tangible and intangible expressiveness of her in tangible form of sun and intangible form of sunlight. Intangible and tangible dependencies hereby are mutually conditioned in the tangible garden formal elements and their intangible visual representation and cognitive comprehension. If they both are equally included in interactions of their sacral [tangible] and sacred [intangible] attributes they become inevitably fulfilled and practiced.

Hereby it can be taken an example of *shin-no-mihashira* [sacred central post] assumed as a unified sacred physical form of the two, *yorishiro and himorogi* into oneness. It means that it hold both, tangible, material envelope which holds the intangible emptiness inhabited with intangible presence of *kodama* spirits. Northern Emperor, *Sujin* successor *Suinin* ruled when Ise complex was constructed at the preexisting late Jomon sacred territory, assembled with primordial rock deities' shrines. Succinctly, Ise shrine with *shin-no-mihashira* introduction into the complex, acquired the introduction of *himorogi* into *iwakura* realm where they dependently emerged into meaningful two-folded physical form of exactly *shin-no-mihashira*. Thence, within *Naiku Ise* shrine *honden* hall, main worship object is the mirror which is positioned in a cylinder of cryptomeria wood at the elevated floor. It stands exactly above the *shin-no-mihashira* wooden posts encircled emptiness, positioned bellow the offering posture belonging floor area.

Shin-no-mihashira wooden posts are half buried into the ground whilst their single two-sided roof does not touch the above floating shrine base. Folding of silk material are inserted within these battens encircled volume and then covered with *sakaki* tree branches. Thus these battens array establish semi-transparent enclosure in form of wooden screen fences [kind of *renjigoshi*]. This whole sacred boz is formed in such a manner to initiate one to think about visually intangible but physically tangible content of the *shin-no-mihashira* box while one feels and knows for its presence.

O contrary, following the northern tradition Emperor *Sujin* reign period, *himorogi* trees are vertically revealed and therefore positioned at *shiki* for the worship of the Great Deity. Thence, during the *Shinto* festivities of public character, the sacred tree is positioned and visually protruded on the top of the carried out portable sanctuaries. That is one of the another forms of the *himor*ogi sacredness that is actively involved with the south Ise people animistic culture of the horizontal progression during the ceremony, while being orthogonally dominating above the figural part of the processions. This is one more actively practiced sample of the two-fold involvement of wooden sacred physical forms with both, southern and northern Japanese mainland backgrounds.

Consequently, *Katsura Rikyu* garden both stone *iwakura* and wooden *himorogi* and *yorishiro* primordial forms of shrines, are integrated in the garden complex with their intangible sacredness and tangible physical forms. Finally, they visually, physically and functionally and therefore tangibly mediate among *tobiishi* directed stepping human and various garden *kami* deities, intangibly inhabited within their tangible physical forms' attributes.

3.2 *Dérives autour de la cérémonie du thé*

3.2.1 Complete visual experiences along *tobiishi* paths determined by final visual revealing of the garden tea houses

Human body nervous system experience of the *Katsura Rikyu* garden formal elements' appearances dominantly originates in several sensorial organs. The most dominant sensorial experience that marks the walking tour along the circular lane inevitably becomes the visual experience. The formal elements are positioned to attain this visual experience according to the garden designer's intention [Enshu taste]. They are artificially processed and positioned natural elements – greenery, landscape and the *tobiishi* stone items. Their mutually correspondent positions are ordered and visual experiences defined in certain accordance. It ordinates and conditions notices of final visual experiences of tea and *shokin tei* pavilions belonging to the peak of the separate field of view developments. [Research design]

However, pavilions acquire their own formal logic as an equally important part of the *tobiishi* walking lane formal elements. Even though they are the final visual aim physically holding finally targeted diverse experience of tea ceremony rite, they are just one among the others of the garden formal elements. They belong to its overall comprehensive formal logic since they equally belong to the final part but continuous field of view. In spite the final dominance of the tea ceremony pavilions visual experience of its physical appearance, the last is subordinated to their own functional dedication. The garden elements formal logic is built in relation to the tea ceremony and *shokin tei* pavilions, but these programs are not known or at least not experienced until these houses are finally physically approached and entered. These houses functional dominance cannot be visually perceived and cannot express itself even though that tea ceremony program is integrated in physical appearance and orientation of each of those tea houses. The program is determined according the stepping activity from *tobiishi* stepping units to *nijiriguchi* entrance. This final actually defines *nijiriguchi* position and its relation to the whole tea ceremony that starts from that very entrance hole and continues along accordingly positioned and assembled *tatami* units.

Therefore, the whole garden formal and visually developing logic built around *tobiishi* walking lane finds its physical dissolution in intangible tea ceremony program rites. These are based in *shokin tei* formal logic concentrated around guest-host spatial relation.

This self-diminishing process of the pavilion functional dominance towards its visual unimportance that is the final visual reach of the *tobiishi* line, establishes subordinating change from *tobiishi* directed visual experience into complex tangible and intangible experience of tea ceremony. Overall, that explains the *Katsura Rikyu* garden stage in how to make a visual, physical and other senses based continuous connection among tangible garden formal continuum and equally tangible and intangible

experience of the *chanoy* ritual. However, intangible feelings, moods and that are triggered in human while he steps along the stone units' lane are intentionally developed and therefore meaningfully introduced to the ones evoked during the ceremony rites. Overall they are based in tangible formal elements. Tangibly - visually and physically, these intangible experiences meaningfully continue and develop in meaningful relation among garden formal continuum [garden formal elements] logic along *tobiishi* lane and tea room [*nijiriguchi, tatami, tokonoma,* tea utensils etc] formal logic.

The whole *Katsura Rikyu* garden complex from the point of the main gate entrance to the point of the tea ceremony proceeding and following practice, is defined as the tea ceremony physically and visually belonging space. Before reaching the final point of the tea room *nijiriguchi* entrance, the human being has to pass through physical and psychological experience transformation. Both of these are directed and dependent on the visual experience that happens during the *tobiishi* directed circular pathway walking tour.

The point of human physical position and acquired body form [vertical, horizontal, bowing], walking direction, walking manner, walking pauses and the character of the walking motion is directed through the *tobiishi* stone items formal logic. Walking human becomes more aware of each step and the manner it is conducted. Accordingly, the level of the human awareness of its body shape and position, body formal moves and muscle contraction gets higher. Consequently human becomes more aware of its physical characteristics and its own body motion formal activities. Therefore field of view experiences more carefully and comprehensively body dimensions and physical relation toward the garden formal elements in visually collected data about the lane following surrounding. This data are finely visually perceived and then processed by the brain visual core centers. That is where the human awareness of its own body becomes higher due to the field of view content transformation. However this transformation is introduced gradually from the point of the main gate to the point of the waiting pavilion and first tea pavilion *nijiriguchi* entrance.

Carefully determined by the *tobiishi* stone items, according stepping motion does not result only in field of view appearance transformation, but also in character of the human body motion in its visual and physical carefulness. The parameters of the stone items inserted along the ground pathway settle very fixed way the walking motion is going to be carried out. There becomes extensively defined body walking performance coordinated by the stone stepping points. Stepping stones manipulated performance directs the walking speed and direction, stepping distance and pause points and intervals. That finally defines the duration of the field of view and the number of visual frames that form field of view developing image [Research design]. These visual and emotional manipulations are a clear set of preparations of many kinds for the tea ceremony pavilion space that has to be also visually and emotionally, intangibly experienced. Thereby the whole garden complex becomes a tea ceremony belonging environment where the level of one's awareness of itself and its surrounding is set to the higher level of their visual and intangible experience.

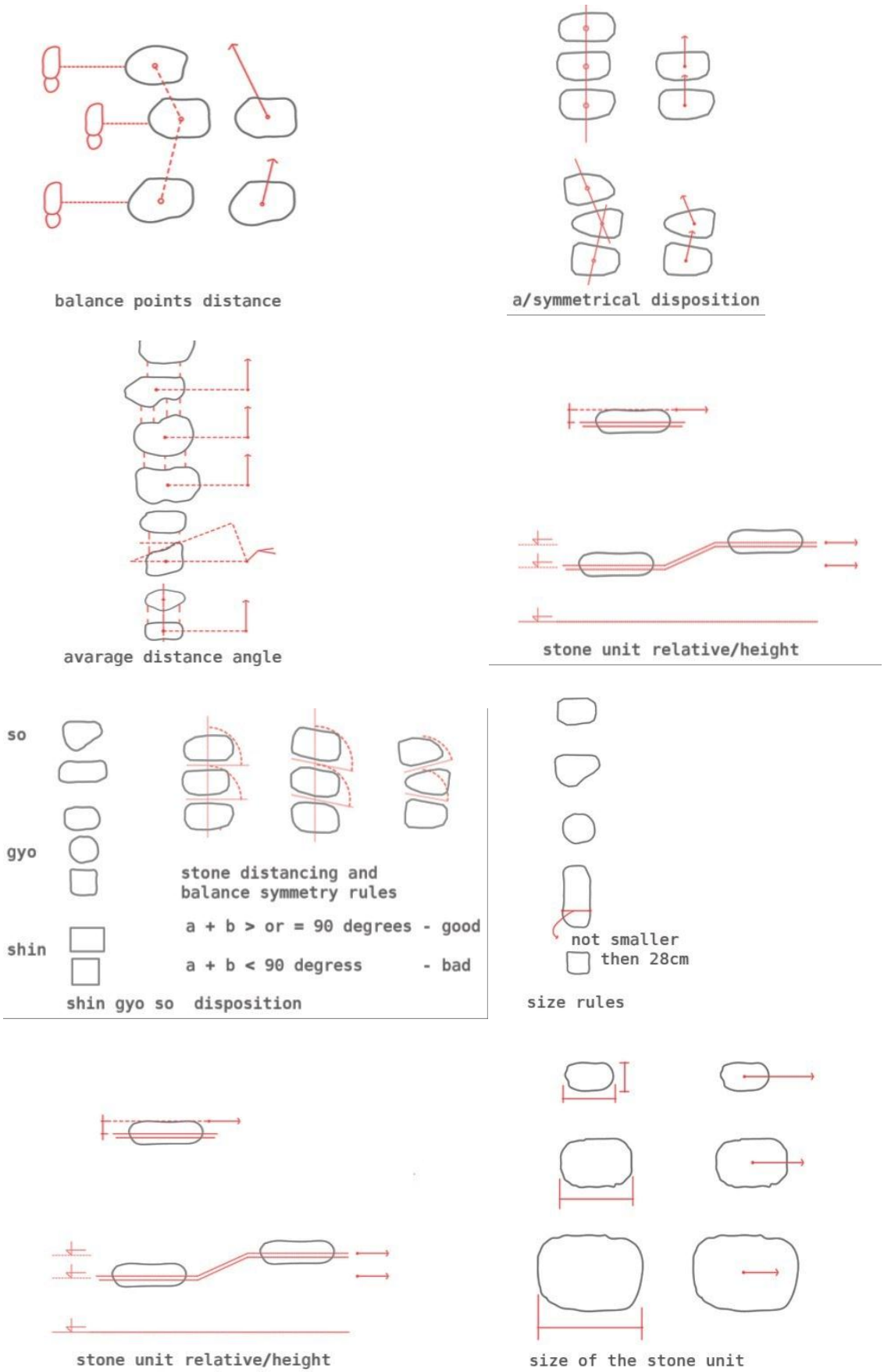


Figure 22 : Stepping manipulated visual experience leads towards the tea houses and carefully integrates with further *tatami* manipulated stepping, bowing and sitting activities;

the size and other attributes of the *tobiishi* units are decisive in these manipulations, since they can exactly accept various human feet size and stepping distance and carry out specific human body motions and behaviors along the garden pathway while accommodating human body stepping proportions [stepping height, length, angle, direction, range etc.];

Diagrams present various attributes of the stepping stones units that are pursued according to human body proportions; they are not unique but vary in certain range of various but proper values;

That deepens and makes equally higher the awareness with which one is going to join and embrace visual and intangible experiences offered during tea ceremony proceedings. That makes the ceremony to functionally and physically begin even before one enters the pavilion and takes place in prior set of host-guest interaction. Overall, guest cannot occasionally physically and psychologically join and bluntly practice the rite without his carefulness is extended in *tobiishi* walk. Finally, these preparations introduce a guest into the merely sacred tea room volume with the decent and suggested level of the observation capability and spiritual tranquility. The tranquility consists in *tobiishi* walk obtained calmness and visual and nervous awareness that make one unofficially allowed and blessed to be the part of *chanoyu* rite. This is where the field of view precision and high awareness is mutually conditioned with the inner, intangible tranquility. This balance makes one capable to absolutely immerse in the garden tea ceremonies' practices and *in situ* understanding.

The balance among outer and inner environment actually relating to *chanoyu* is maintained with stepping introduction consisting of the ground inserted stone units outside the tea rooms and its continuation in forms of *tatami* units inside the tea rooms. That becomes an intentional and careful physical disposition of the stepping material forms. They make human to be more aware of its own stepping and observing body and therefore its physical and visual relation toward the natural and tea room formal environment. Outer garden environment stone items make human body to acquire vertical walking motion where its field of view directions and walking characters are undoubtedly manipulated following the stepping stones attributes. Thereafter its immediate stepping physical relation toward the environmental ground determines complete stepping lane visual experience. Finally, stepping manipulated visual experience leads towards the tea houses and carefully integrates with further *tatami* manipulated stepping, bowing and sitting activities along with visual experiences related to the tea room interior and views. The size and the character of the *tobiishi* units are decisive in these manipulations. They can exactly accept various human feet size and feet stepping distance and therefore variously but staged in advance carry out specific human body motions and behaviors along the garden pathway. The same happens inside of the each tea room. The *tatami* units need to initiate exact human body bowing, kneeling and laying positions practiced during the mere tea ceremony and exactly related to the tea ceremony host spatial and functional behavior. *Tobiishi* units' sizes are undoubtedly accustomed to the distance from the tea houses *nijiriguchi* entrances and prior positioned veranda stepping portions. While approaching to the *engawa* veranda, stone units become gradually larger and higher. That makes human to commit slower, harder steps that are almost to end ahead of the last stone. Finally, before reaching final stepping plane before the special entrance, larger stone surface make human to stop walking, take off his shoes. Visitor gradually commits bowing moves while curiously but respectfully prepares to enter into the sacred *chanoyu* area.

Successively, *nijiriguchi* entrance points on human body position change from the bodily vertical [walking activity] to the bodily horizontal [bowing, kneeling, sitting] visual experience. Its size and low position makes human body to extensively bow while entering into the tea room. That effort that

Figure 23-34 : *Katsura Rikyu* tea houses closer parts of *tobiishi* pathways that explains how human stepping activity, body posture and following field of view direction is oriented toward *nijiriguchi* entrance; one can notice how the size of the stepping stones units increases and human vertical body posture is becoming closer to bowing position that is going to soon bring the visitor to the firm sitting position at *tatami* units

has to be undertaken deliberately marks the end of *tobiishi* manipulated tea ceremony preparations that finally result in mere proceedings prepared inside of the room.

Therefore the final tea ceremony kneeling position of the human body is acquired while originating in stepping activities. Nonetheless, the change of activity acquires the change in size and further attributes of the stepping units. The whole garden formal element's visual experience changes along the activity transformation that occurs while approaching the tea houses. Even the character of the stiff and solid rock material of the stepping units and the soft reed enveloped material of the *tatami* units relates carefully to the human physically, visually and functionally changing relation toward the *Katsura Rikyu* formal environment. Stepping activity aims for the solid material which can easily retract and support walking activity and easier visual experience of the garden environment. O contrary, *tatami* units host human body sensitive sitting and kneeling tissues very carefully with its accounted softness. They make human being introduced into the tea ceremony with an optimally favorable but pleasant physical comfort that accustoms the body surfaces.

These sets of the garden elements physical determinations to the *tobiishi* led human make one's psyche to become more visually focused and not distracted with unnecessary sensorial experiences that would be caused with wrong material selections. Consequently, human becomes calmer and visually aware of his and garden formal existences along which one commits its moves or that become visually experienced. All of his senses are intrigued and triggered with carefully envisioned garden elements formal behavior along its walking activity. Human thus gradually becomes absolutely introduced and led through the garden and finally immersed into the tea ceremony pavilion interior and very intensive ceremony acts.

Thus its absolutely concentrated visual experience takes on a decisive role for its psychological transformation. It sets a higher level of the human psychological awareness and nervous system calmness necessary to absolutely enjoy and understand tea ceremony rituals.

The whole Imperial garden pathway formal continuum therefore becomes visual and formal introduction into the formal environment of the tea room. Stone items visually and physicaly change to *tatami* items whereas garden nature visually and formally is taken place with *tokonoma* screen. Formally separating, but still walking and visually continuous border element among the garden pathway and pavilion interior becomes mere *nijiriguchi* entrance. It becomes a simple void passage that actually marks the change of two environments and end of the field of view physical, nervous and cognitive developing.

Thus, *Katsura* garden visual experience and the very concentrated layout of formal elements can be simplified to the garden formal elements positioned along the *tobiishi* pathway, walking determining pathway *tobiishi* stone items and the *tatami* items surrounded with tea room and *tokonoma* interior. This very formal succession may be observed as the continuous circular pathway formal succession, *circulus vitiosus* which carries complete formal and visual garden logic.

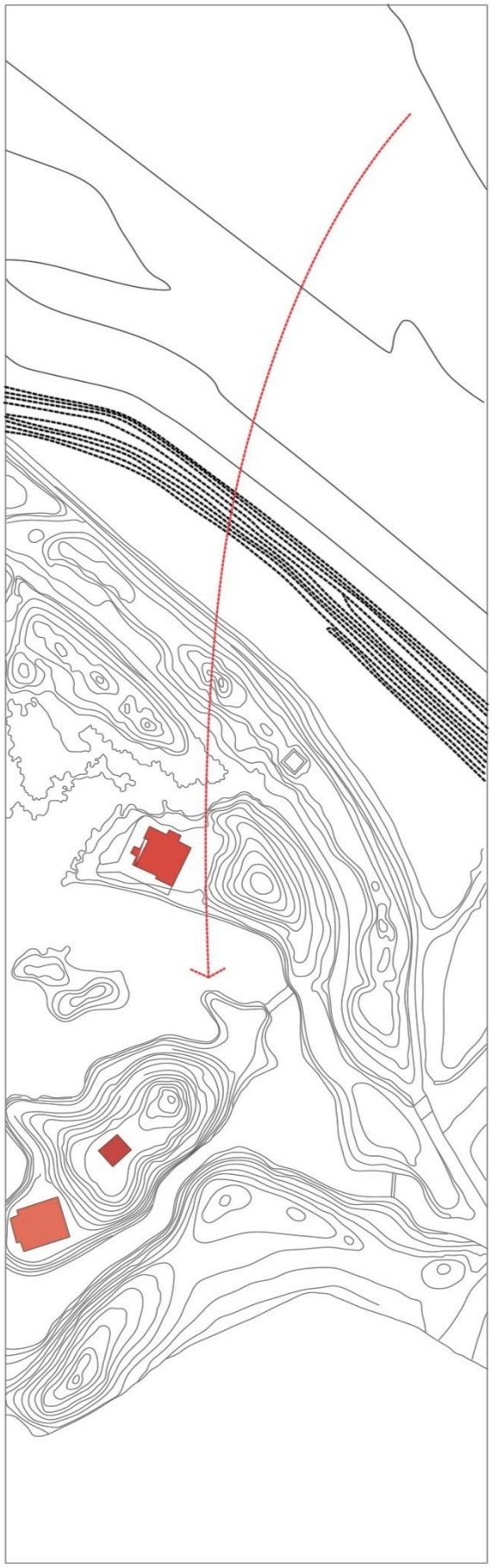


Figure 35 : Approach form the Kyoto city along the street and river side followed with bamboo fence and wood along with *Katsura Rikyu* tea houses [red color] partial disposition :

the question arises of how one is taken to the garden while experiencing gradual visual [bamboo fence and wood – darker lines] and physical environment change [long walk aside of the complex bamboo fence while noticing glimpses of *Katsura Rikyu*]

3.2.2 Tea houses visually, physically and functionally extended to the garden physical forms

The tea room functional and formal border is primarily defined to dissolve uncomfortable climate influences of cold winters and persistent summer heat, to mark the separation of the room pavilion part from *tobiishi* field of view and to enclose and protect imaginary visual experiences of *tokonoma* representation. Otherwise, one does not experience strong physical nor visual separation among these two entities, outer garden and inner tea room space. That means that *Katsura* garden field of view and body motion manipulation are staged and conditioned with two main design aims. They make human complete experience of the pavilion architecture not secluded only to the singular solid form, but rather physically and visually expanded to the outer garden elements formal continuum that precedes them. Thence the garden becomes tea houses' background stage horizontally connected with following stepping stones' to their *tatami* items' stepping pattern. [Research design] This horizontal relationship reminds of sublime version of Toyama Noh theatre stage representing Edo Noh era established in 16th century. Meiji Noh era, mainly existing in Japan cities refer to Meiji theatres where the Noh stage is treated independently within a separate architecture form as a separate function. Nonetheless, in the beginning of the theatre development the stage was almost completely inside nature. Thereby, the 'Toyama' stage physical and visual background is not artificially designed and constantly adapted, but rather dependent on the natural environment seasonal and physical attributes' changes.. The void behind the actors' stepping horizontal stage frames the real-time, simultaneous present space with changes in present time. This kind of 'present' background makes the audience and the stage closer since from that moment they share the context they belong to. The audience can even visually perceive borderless connection with the stage environment and even more intensively immerse in Noh performances catharsis they are intended to experience. Nevertheless, they are not allowed to step on the stage nor to come behind and research on the character of that connection. However, the Noh world of death and the real world of life have to remain separated in fragile but still existing sense. Between the sitting area and the performing area are placed *Shirasu* stones that mark this separation similarly to the antique Greek Stix river that divides the world of death and life. In this common sense, which actually rather marks their very connection than the separation, the border is emphasized as an area that exists and thereby is given an importance of its kind.

Katsura Rikyu tobbishi stepping activity therefore is assumed as a prelude of the *tatami* occurred tea ceremony that takes one from the outer city world to the inner room through the natural world. They both, *tibiishi* lane and tea house are mutually dependently staged without any strong border to the garden nature that develops along the Imperial pathway. The *tobiishi* surface that is not stepped on each of the stone units [not persistent neither prescribed surface since the feet position varies] represents a kind of '*shirasu'* area among the nature- the ground and the human feet.

Figure 37 :

[upper image] one of the sub-pathways at the Imperial pathway in *Katsura Rikyu* that leads toward the tea house unit;

One can notice how stepping stones vary in their attributes application.

They are applied with different values according to the garden environment physical forms positions and most importantly tea house orientation, position of an entrance and veranda;

Nonetheless, stepping pattern develops in 2 additional streams that lead left and right from tea house entrance with absolute care about the most dominant middle direction;

Tobiishi units resemble absolute wilderness in their disposition even though they fulfill an absolutely artificial design intention. However, their naturalness is preserved in their attributes and their measures in their prior to design selection. That makes those natural measures to result in artificial usage of anartificial environment;

Similarly, tea house *engawa* marked area determines the spatial and stepping thickness that divides the inner tea room and outer garden complex. It is marked with the increasing size of the stepping stones and therefore slower and more careful stepping. After shoes taking off stepping pause one enters the room through the *nijiriguchi* entrance. While committing an evident effort to enter with bowing posture one does not see anything from the environment. Field of view direction goes down to the ground and one is finally conscious about the new entered space when the body becomes vertical again within the tea room enclosure. Hence, the whole stepping activity is a kind of staged performance one has to commit in order to pass from the world of garden to the world of tea ceremony. It is an active introduction from the natural world of *Shinto,* world of *kami* gods to the world of *chanoyu*, where humans are blessed to commit tea rites and contemplate about the world of gods in front of *tokonoma.*

The level of carefulness as such is necessary to be undertaken and acquired if one wants to omit any kind of ceremonial mistake without being completely focused. Therefore, *tobiishi* pathway visually and physically created distance determines the depth of the tea ceremony visual and real physical spatial envelope that actually develops from the main garden Imperial gate. The matter of the time measured continuum needed to enter, step through and finally start accomplishing a tea ceremony, hereby becomes the matter of '*shirasu'* thickness applied in *Katsura Rikyu tobiishi* pathway.

The pathway directed human walking becomes the first tea ceremony accompanying program to be accomplished in this garden natural environment. It continues with the shoes taking off at the *engawa* belonging stone items. The last one ends in *nijiriguchi* directed step. This step, one foot stone positioned, makes a human successively with its both feet stepped onto the *tatami* units. This stepping position immediately proceeds to the kneeling and *tatami* seat body act. It marks the moment for the host to enter and start and dominantly initiate further tea ceremony in front of the according *tokonoma* scenery hanged at the screen.

Nonetheless, one has to pass through the lane and experience a constant change from visual to physical distances between one and tea rooms before stepping through the tea room entrance. Visual distance hereby means that one visually notices the tea room but it is not clear how one can reach by stepping this final lane target. There are other formal elements in the garden that appear as set of physical and visual obstacles. On the other side, physical distance means that one can visually notice tea house and also *tobiishi* pathway that leads towards the house. Hereby becomes clear the physical relationship between the visitor's stepping body and static tea pavilions. Consequently, field of view appearance of the garden elements along the *tobiishi* pathway in time becomes more oriented toward and filled with the tea pavilion as the real physical distance to that pavilion is becoming smaller. Therefore, dominance of the visual distance shifts to the physical distance since there becomes no obstacle in between the visitor and the tea house. Finally, dominant visual focus becomes in pavilions and accordingly tea houses' interior after passing through *nijiriguchi*.

Figure 38-41 : Shokin-tei building change from visual to physical distance from the stepping visitors :

1 Lower two images – Visual distance in relation to Shokin-tei
2 Upper two images – Physical distance in relation to Shokin-tei

Sudden field of view content change in the ceremony environment consists of formal elements. Real visual experience of natural formal elements turns into the imaginary field of view filling its content in potential of seasonal *tokonoma* graphics. It requests a reasonable effort to take part within the ceremony and to comprehend this visual and psychological shift and finally be capable of contemplating in front of the screen with its clear mind and purified thoughts. It becomes clear why a visitor has to pass the garden visual and physical declination and enter in requested state of body and mind. Hence the visual experience of the matter gradually purifies one's ordinary life thoughts and images and passes into the possible visual experience of the spirit that becomes potent during the tea rite. Thus the whole pathway walk is formally oriented in very realistic physical and visual manner, which leads toward visual and psychological experiences of a tea service and *tokonoma* 'poetic impulse' [Okakura, 1960, p.74]. Therefore each *Katsura Rikyu* tea house becomes separate and specific physical and visual zenith. Thence, each of them represents separate sections of the continuous garden stepping stone pathway while constituting an overall garden rule of how one has to be prepared and what kind of physical and visual treatment has to experience in order to be blessed to join *chanoyu*. The stone stepping activity becomes a physical and ceremonial act of pasing through the natural world of unknown with absolute feeling of humbleness [animistic *Jomon* sense], which physically and ceremonially develops in calmness and serenity of hosts and guests.

However, even if tea rooms' enclosures have been taken away, *Katsura Rikyu* complex would hadn't lost that primordial ceremonial continuity in horizontal, natural ground- earth developing through the primordial living environment. That means that the main ceremonial act of the human becomes thought human constant touch with the ground elements [stones and *tatami]* and according physical and visual activity one conducts with them. As an innate instance, the primordial tea room consisted merely of a portion of the ordinary drawing room [initial *tokonoma]* partitioned off by screens for the purpose of the tea gathering. 'The portion partitioned off was called the *Kekai* [enclosure]' [Okakura, 1960, p.76.]. This name was applied to those tea rooms which are built into a house and were not independent constructions. Even though *Katsura Rikyu* formally represents an environment formed of the natural elements, it is undoubtedly an artificially envisioned form, a sort of 'house'. Leadingly, primordial term *kekai* can be used to name the *Katsura* belonging tea rooms.

Consequently, the whole *Katsura Rikyu* formal complex and specifically the *tobiishi* pathway are many *kekai* 'rooms' that are visually, physically and functionally dependently connected.

Figure 42 : horizontal continuity in stepping floor of *Katsura Rikyu* complex : *tobiishi* stepping units become bigger as one approaches to *engawa* and continues stepping over *tatami* units disposed in tea room

3.3 Statement of the research problem development and its development : essential and incidental parts proportion of the garden physical forms

‘Because deprivation of a meaning or the value is completely really impossible, at least I would like to continue delaying or suspending the arrival meaning or value.
I would like to build the world that can be integrated by neither a summary nor the language.
I would like to induce an idea in the metaphysical, induce feeling in the physical,
but come and go through both sides continuously.
I would like to build that what is simply it.’
[Ido Kenji]

3.3.1 Essential and incidental physical parts proportion influence on the garden visual experience

Katsura Rikyu garden tea rooms’ enclosures material follows the garden formal elements’ overall natural material character. Nonetheless, their material state of naturalness is different. However, garden formal elements other than tea rooms are consisted of living natural beings [greenery], naturally active masses [landscape, stones] and others [landscape earth composite] that host various metabolic processes and places of the greeneries’ plantations. O contrary, tea rooms’ shelters are composed of dead natural material that is artificially processed, composed and finally assembled. Exemptions are the tea houses’ roofs that are made of reed branches layers. They become inhabited in time with increasing amounts of moss greeneries that constantly spreads over the roof edges and thatches and even enter into the roof thickness. These organisms even more emphasize the worn off character [*wabi-sabi*] that tea houses wooden, earth and paper material acquire and attain in centuries of their existences. Therefore the garden tea rooms may be observed as ‘unimpressive’ [Okakura, 1960, p.77] in their appearance while carrying that outlook of decomposing, dyeing and fading in its clarity. Those materials applied visual suggestion is named as ‘refined poverty’ [Okakura, 1960, p.77], since these processes are noble ones. They rely on perfectly structured structures, details and material relationships that in centuries can hold on the weathering influences and still carry visually noticeable esthetics that originally imagined and applied. Yet this formal definition is the result of profound artistic forethought. It follows the same visual experience of naturalness and constant growth and maturity that occurs along the whole garden circular lane and is evident at the following natural formal elements in forms of greenery, stones and landscape earth whereas their naturally ordered growth and maturities are also artificially predicted to happen.
Tea rooms’ material suffers from atmospheric interaction with different environmental conditions [sunlight, humidity, rain etc..], which makes their inner masses and surface formal borders to change in their material attributes. Nonetheless, these physical changes of decay are absolutely envisioned by

Figure 43, 44 : Tea room windows bamboo fence and reed made moss and bitumen covered roof suffer from naturally caused decay in forms of material and color change and moss growth;

These changes do not harm artificially imagined intangible logic that is visually experienced with tea rooms as one of the garden belonging physical forms;

Natural changes that occur pursue that subtle incidental change in quality of the physical forms that make preserve the level of their natural origin even though they make an artifact;

designers' tastes in their formal and according visual expressions. Firstly, chemical processes that result in such a material changes are precisely predicted and applied as an equally important design decision that take part in field of view image that is succinctly cognitively processed. Secondary, design intention of this physical changeability intentionally becomes their inevitably colliding material maturity that occurs in formal elements along the stepping pathway. Therefore, one is exposed to different formal elements along the pathway and inside of the tea house that share same material intention and changes that occur in time. Even though those physical changes appear of course differently as a cerebral image the emotions and moods they carry are identical. They also follow not only inner, material attached changes but same seasonal changes which induce their and their environments formal and visual changes.

Nevertheless these modifications are predicted and included in an overall essential garden visual impression, there have to expectedly occur minor, incidental changes in garden formal elements material quality of the same origin that are not crucial nor can harm dominant esthetic logic that has to be firstly visually perceived. The essential formal logic that constitutes dominant visual impression of the formal elements along *tobiishi* pathway and in inner tea room is not diminished or negated with these incidental formal appearances. Thus, designers' intention included changeability to be expressed in predictable and minor unpredictable visual manner. What was intentionally defined by these designers was this changing incidental form underlying concept that occurs at surficial and edges' physical boundaries of the garden formal elements whether they are completely or partially natural. Their minor character has to be physically taken care in order not to prevail [the greenery crowns and leaves cutting maintenance, tea room elements occasional reconstruction and maintenance] or it is given in such a material definition that is constant and irresistible to any environmentally caused and aging changes [*tobiishi* stone units, tree trunk growth direction, landscape]. In spite of this, even if the *Katsura Rikyu* complex would remain out from any human directed maintenance, in that case slightly decreasing essential formal logic would have not been importantly lowered.

Nonetheless, if the level of the incidental formal changes [greenery growth, tea room material decay, formal disposition of the stones, landscape erosion etc.] would have been extensively higher ration among essential and incidental forms would change in favor of the incidental portion. The essential form would have lost its dominance and permanence and today it would be hard to clearly decipher its complete formal and according visual and cerebral logic. Therefore certain ration level has to be maintained in order to preserve the formal logic and according physical attributes that can be visually understood, analyzed and presented in well understandable manner. Thence, this ratio can be understood as artificially envisioned value in manipulation of natural formal elements and those of natural origin that from the garden complex.

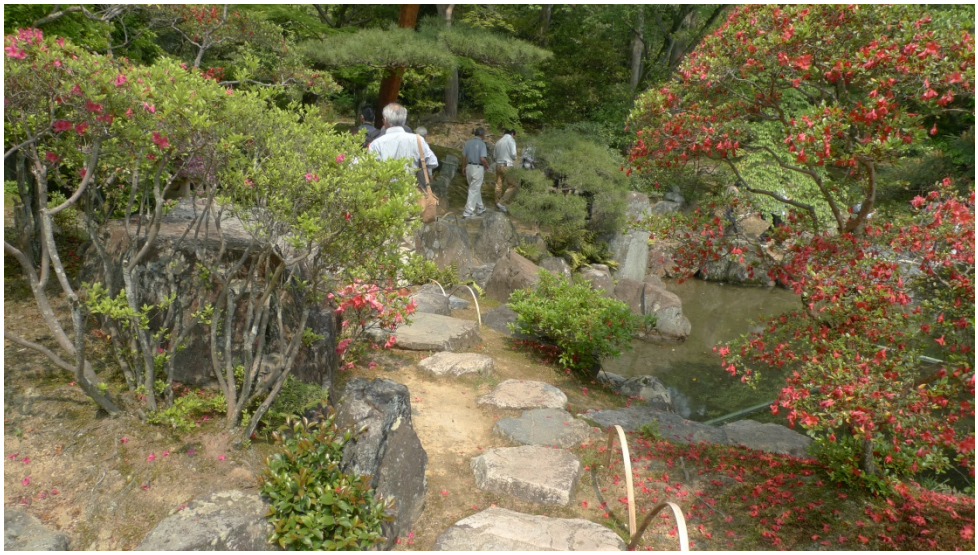


Figure 45-47 : natural formal elements [mainly greeneries] are positioned and oriented along *tobiishi* pathway in order to visually impress in certain manner that will provoke intended cognitive conclusion that lead to the understating of the garden intangible logic;
they are disposed with their natural shapes but with selected and must to be gardened essential physical part and minor incidental physical forms;
they engage in visual and physical overlapping with other garden formal elements;

3.3.2 Garden physical forms physical and visual dependency as an object of visual experience along *tobiishi* pathway

Artificiality, in context of *Katsura* garden, prevails in human envisioned garden formal elements that do not unintentionally change in time or their occasional unintentional change does not endanger garden formal logic. Oppositely, the natural hereby prevails in human manipulated natural garden formal elements whose changes are controlled and directed in order to enhance garden formal logic. That makes the garden formal elements to be consisted of both of these formal attributes. First group attaches to *shokin tei* villas, tea houses, lanterns, garden fences, ponds etc. Second group attaches to the elements that spread along the imperial pathway sides in forms of greeneries, landscape earth, rocks, stepping and other kinds of stones. Overall conclusion is that both of these groups possess both artificial and natural attributes. For example, garden greeneries' trunk and crown branching and growth are natural formal attributes. Nonetheless, these growths' directions and pattern of their spreads or the crown boundary size and shape change are artificially manipulated formal quantities. One hereby visually notices completely natural formal attributes reflected in final natural formal element. All of the garden formal elements, except lanterns, fences and some of the bridges, belong to this group. Nevertheless, tea houses are completely artificially assembled formal elements using natural formal elements [wood, stone, reed etc]. Overall, visual experience of these various kinds of formal elements finally develop in continuous field of view impression that forms in each of *tobiishi* stepping points. Consequently these successive visual images are followed with emotional and cognitive comprehensions that are supposed to happen according to the garden designers' final intention.

Thus, relationship logic of artificially formed and environmentally given formal elements that are artificially disposed is oriented toward their formal and consequent visual logic they have to impress with in their common visual representations. Their physical and visual relationship relies on a single formal logic of each of the formal elements formed according to both artificial and natural attributes applied in a single form. Physical relationship results in both physical and visual relationship of two or several garden formal elements. They are engaged in real physical relations of overlapping, touching and merging while following gardener'. These relations are inevitably visually noticed. Visual relationship results in imaginary relation of physical overlapping since two or more garden formal elements are in front of each other in field of view angle. These elements are not engaged in real physical relation where they physically correlate. Nonetheless, visual impression consists only of their visual correlation visually noticed as an overlapping relation. Each of these formal elements essential logic with their entire natural either artificial origin is intended to be visually perceived. Since field *tobiishi* formed field of view consists of many of garden formal elements their essential formal logic is always engaged in either visual or physical relationships.

Therefore there can be a relationship among the inserted greenery, landscape earth or a tea house as a human given formal elements and the landscape and greenery as environmentally given formal elements. Accordingly, there can be a formal relationship among two inserted greenery formal elements as human positioned formal elements. Thence, the visual experience of the *Katsura Rikyu* garden is the experience of the formal relationship among various formal elements where the level of their naturalness becomes unimportant. Each of those elements are intended to visually transfer an objective, 'colorless' visual impression that is going to result in certain cognitive, essential representation. Nonetheless, as previously explained this notion of essential develops along with certain extent of the incidental formal difference. This minor formal logic is intentionally envisioned and formally staged toward the garden *tobiishi* pathway field. It blends a singular, independent visual image of each of the elements and bonds the relationships they engage. These relations become the object of visual observation and make their artificial and natural character less important as long as their visually impress with garden designers' intention. That is where incidental parts extend the visual or physical relations that are visually uniquely perceived in stone stepping points.

Thus the whole formal logic and meaning of the formal existence of the garden exists only if it is visually perceived from the stepping stones field of view points along the garden *tobiishi* pathway. They keep their *in vivo* visual character that can be equally ever present lived, researched, determined or observed. They become holders of an intangible cultural asset of how *Katsura Rikyu* esthetic logic is presented in forms of garden formal elements formal logics. The esthetic logic is brought up as an immaterial idea, then mathematically based in forms of future relationships and formally defined and accordingly materialized in order to be visually noticed from the lane stepping points.

3.3.3 Incidental parts quantity influence on cognitive understanding of visual experiences

It is crucial how the formal elements of the *Katsura Rikyu* garden orient themselves toward the human visual capacity. The incidental parts quantity enhances these elements' relations and makes them more obvious. They do not minimize their appropriate essential quantities that actually form field of view and its following cognitive understanding. Therefore garden formal elements essential formal singularity is not visually obvious. The garden formal elements form a visual continuum that develops in field of view capacity. Each garden formal element keeps its singular essential formal logic which is physically present but not visually perceivable. Nonetheless, the visual experience of their singular essential formal logic is not singular. In field of view it becomes visually of physically overlapped and determined by the other formal elements' essential formal logic incidental quantities. Moreover, that is why the incidental formal quantity, that determines this kind of visual experience, is important as a part of an overall formal logic of each of the garden formal elements. Moreover, its ratio toward the

essential formal logic has to be kept at the certain level in favor of the essential formal quantity in order not to prevail and absolutely diminishes essential physical forms quantities dominances that actually engage in these relations. This ratio is implemented through *in vivo* garden design and construction process. It was calibrated and confirmed with certain mathematical, geometrical proportions and tools. Finally, after the envisioned garden formal logic is constructed as it is envisioned in forms of these relations it was visually confirmed if it works properly. That certain visual ratio of the essential and incidental formal quantity makes singular essential quantities visually not perceivable as a unique physical quality. It makes possible to be perceived – visible, only the visually calibrated relations among each of the garden formal elements' essential formal qualities. If this ratio was not calibrated in predicted and necessary manner, the overall garden logic would lose its formal logic that would have to be visually noticed. O contrary if the incidental formal quantity would have become lower then envisioned the essential formal logic of each garden formal element had been visually perceivable, but the *Katsura Rikyu* garden overall formal logic had not been visually perceivable in form of continuous field of view.

Each of the garden formal elements possesses its singular formal definition and according visual meaning. Each of their singular formal logic with their essential formal logic is defined according to the other garden formal elements logics that have to engage with. Incidental formal quantity enhances the garden formal elements formal and visual dependence on the other garden elements. Their physical forms borders become more visually and or physically overlapped. However, each of the elements is not visually perceived and therefore cognitively understood without relating to other elements. Nonetheless incidental parts of these physical elements are major constituent in these relations one does not neither visually nor cognitively notice these minor physical parts. They remain entirely blended in those garden formal elements' physical and visual overlapping. Thereby they visually put forward essential parts that relate. Field of view instantaneous attention and consequent focus concentrates about these major physical parts. As soon as one steps on the other stepping stone unit, there establishes another field of view with identically formed field of view cone focus. Finally, entire field of view results in cognitive understanding of all of these field of view segments while assembling final visitor impression.

Figure 48-60: selection of the greenery formal elements results in diagrams that confirm that singular greeneries inevitably enter in visual and physical overlapping relation to the others;

it results in continuously connected essential physical parts firmly enhanced in their relation with belonging incidental physical parts;

3.3.4 Inevitable imperfection in representation of intangible cognitive experiences according to visual experiences of tangible physical forms

The garden formal elements are physically envisioned and constructed to visually express the intangible formal logic in their material assemblage and their relation toward the other garden formal elements. Consequently, their intangible formal logic is cognitively understood while observing their physical appearances dependencies. This kind of a design attitude results in artificially oriented and coordinated natural formal element which cannot be visually defined without existence of a human which observes them from certain point of the view [in this case garden *tobiishi* stones coordinates]. If there was no field of view directed translation of their intangible formal logic, they would possess only their physical [construction] logic presenting not more than itself. That means that the materialized garden element would possess only the idea about his formal logic and his formal, material occupation of a certain volume within the garden space which does not have any sensorial contractions. They would not volatilize the space in forms of contractions and expansions in relation to the garden visitor who understand their existence. This kind of understanding is translated in the garden visitors' body behavior, visual attention and cerebral processes they therefore provoke.

Here we can notice two kinds of *Katsura Rikyu* garden elements existences in garden designated space. There can be the garden formal elements' mere being there and standing there as two forms of their existences. Their mere being there equals to their designers' envisioned, intangible formal logic. Being as a term does not carry a physical logic that translates its content into visual and further cognitive content. It can be only described in words and numbers what kind of positions, orientations and mutual correlation garden formal elements have to acquire in order to intentionally relate to visitors. Finally, visitors are coordinated and oriented with stepping stones' *tobiishi* pattern in order to understand previously explained intangible formal logic that has to be physically express before they can be understood. Their standing there equals to the intangible formal logic expressed in forms of physical formal logics of garden natural formal elements. Even the word standing is an actual visual description of 'being there' 'standing there'.

These two terms of the garden formal elements existences are applicable and existing only in lack of formal and physical surplus. Generally, the formal surplus can become as a personal design initiation that did not exist in form of vanity of Japanese designers, better to say taste givers. This kind of formal vanity that can come out as an unreasonable designer decision is excluded from the *Katsura Rikyu* designer envisioning and subsequent formal logic inclusion in both standing and mere being. The creational vanity removes the physical logic from the formal logic. There were no other physical forms surpluses that would convey other intangible formal logics then the intentioned ones.

The intangible, essential physical logic of *Katsura Rikyu* garden elements almost absolutely matches their physical logic. Nonetheless, physical logic is still removed from the state of perfectly expressing

the formal logic. The technological advancement and according implementation makes this formal to physical transfer difference smaller in contemporary constructions of design ideas of any kinds. The technological advancement of the craftsmanship makes the physical logic closer to the formal logic [formal idea, concept of an artifact]. In *Katsura Rikyu* garden, the level of the designers' vanity is very low or absolutely not existent, while the level of the craftsmanship precision is the highest it could have been in *Tokugawa* period. That makes *Katsura Rikyu* formal elements visual representation and physical logic deductive understanding not removed far away from the artificially envisioned intangible logic.

This topic is similarly, but inductively discussed in Plato's Book X of his oeuvre The Republic. In Book X Plato writes of Socrates' metaphor of the three 'beds'. First 'bed' exists as an idea established by God himself [the Platonic early Christian ideal] and it is equal to the formal logic, basically intangible idea. Second, physical 'bed' becomes made by the carpenter as an imitation of God's idea. It is equal to the physical logic that garden elements are constructed with the most closely according to the basic intangible logic. The third 'bed' is made by the artist in imitation of the carpenter's. It equals to visitors' form of cognitive understanding after visually observing formal elements along the pathway. That makes their physically envisioned logic the closest possible to the idea of the God himself [Book X: noted above].

Human presence and its nervous system, field of view attributes are also included in the garden physical logic. That means that the human body parameters [body height, walking lane stepping points, human nervous system logic, and human field of view parameters: angle, focal length etc] are thoroughly taken into the garden elements physical logic account. Consequently, human visually perceives the garden elements and its nervous system creates a visual representation according to the nervous system tissues logic. Since the physical logic of the garden elements is constructed properly according to the proper formal logic, this image becomes a form of the human nervous system visual recognition of the garden intangible logic integrated in physical form. It finally appears in a form of cerebral activity which results in a clear comprehensive representation. Therefore, garden formal elements intangible logics have to pass several forms of sensorial to cognitive representation in order to be represented in form of cognitive but measurable scientific data. Hence, each of these transformations of the content carries certain delta value of mistake. That is a direct limitation of the research process which nonetheless certain differences keeps its truthfulness. These incidental loss of meaning do not omit one to be completely engaged with designers' esthetic taste he tended to pass to visitors. However, garden physical forms attributes data keep their values change as a mistake which reflects proportionally onto each of the garden formal elements in forms of previously discussed incidental parts. Therefore, these parts keep proportions in their relations among each of the garden physical form. In final research conclusions in these elements' simultaneous comparisons their relations, that are visually recognized, remain proportional to the ideal relation in small delta value.

3.4 *Katsura Rikyu* garden as an artificially created wilderness

3.4.1 Incidental parts as a trait of wilderness

If there had not been staged human presence along the *Katsura Rikyu tobiishi* lane, it would have not been possible to acquire the staged visual experience of the garden formal continuum. That initiates the question where would have been oriented the garden stepping lane physical forms and what would have been their functional purpose, if there hadn't been any visitor.

There wouldn't have been a human to visually perceive [dominant sense to perceive *Katsura Rikyu*] its physical logic and to accordingly conduct its functional [tea ceremony] purpose. That means that the garden essential formal quantity, related to the shape geometry of the garden formal elements, losses its physical logic and functional purpose if there had not been a human. Nevertheless, their incidental formal quantity physical logic does not lose its physical logic and functional purpose if there had not been a human.

The incidental physical logic [greenery crowns' border, greenery branching, stone items irregular stepping border, tea room wall decay and other materials dying etc…] even though it is intentionally predicted to unavoidably exist with its formal, physical and visual logic, keeps its physical independence. Its physical property develops in its own logic that is not absolutely determined and predicted as an according visual perceiving image. They become after the natural processes that are physically integrated as a part of the constructing logic of the garden formal elements.

These incidental physical quantities' attributes do not have independent incidental intangible logic that is artificially predicted and applied. They rather enhance and support the essential, intangible formal logic. This is where the constructive physical logic of the garden formal elements does not become absolutely determined by the according intangible logic. That intangible logic relates to specifically the essential physical quantity of the garden formal elements. The incidental physical quantity develops its physical logic and visual appearance independently.

The design process of the incidental physical quantity hereby becomes reversed. Nonetheless, the incidental physical quantity physically comes out from the essential physical quantity which is absolutely artificially envisioned. The only what is predicted on these incidental capacities is indeed how they actually emphasize the garden elements integrative visual impression and turn them into continuous field of view.

3.4.2 Inconsistency of the garden physical forms' visual experience

Desired ratio among the essential and incidental physical quantities has to be physically maintained [greenery crowns' trimming, grass cutting, tea house repairing, *tobiishi* stone units sand and grass outlines maintenance] in order to acquire wanted stepping activity manipulation and following visual experience. Physical logic of the garden formal elements essential and incidental formal quantity relates to the geometry, speculative shape – namely physical form, not the construction it is sustained from. The incidental formal capacity of the essential intangible logic of the *Katsura Rikyu* formal continuum comes out not from the physical form capacity. It comes from the construction logic held by the essential physical form, since it does not have a root in the essential intangible logic of the garden formal elements. Since it does not have the root in the essential intangible logic of the garden formal elements, their incidental intangible logic is having an independent physical logic development. Its physical form is however kept in the exact framework in order not to prevail visual balance it actually enhances in favor of the essential part.

The incidental formal surplus of the garden formal elements possesses absolute intangible logic independence that comes out from the garden formal elements essential formal quantity construction logic. That opens a secondary compartment of the garden formal elements intangible logic that is envisioned by the garden designers' but comes out from natural attributes of the garden elements. Hereby intangible logic does not relate anymore solely to the physical form of the garden formal elements, but to their equally envisioned construction logic. Construction logic refers to the ones toward which the garden formal elements are consisted and materialized. The garden formal elements incidental physical quantity is a physical [material] consequence of their construction logic with the following visual appearance. Their incidental physical quantity thereby becomes the controlled physical form [shape] surplus of the according incidental construction logic that comes out from garden formal elements essential construction logic.

The construction logic of the *Katsura Rikyu* formal elements is envisioned on how it is going to geometrically [physical form] shape the garden elements essential and incidental physical logic, in order to sustain the primarily envisioned intangible logic. The garden predicted formal continuum physical and visual logic thus has been accomplished through the garden formal continuum construction logic. Nonetheless, the construction logic is not solely and physically completely determined to maintain the garden formal element physical form and visual appearance, perceived from the *tobiishi* lane. It maintains the essential and incidental garden formal elements physical form and intended visual images, which have to be perceived in certain manner from the garden pathway stepping stones points. The garden formal elements construction logic does not possess the essential to incidental physical quantity division. Their construction logic physically builds and fills up the physical form [shape] of each of the garden formal elements accordingly to their intangible logic requirements.

Figure 61, 62 : *ikidori* –always different / always alive : method applied in visual experience of Ryoanji temple in Kyoto that brings always different visual impression of the wall surface in the temple garden, but results in always identical cognitive understanding of this method that is applied;

an artifact remains in constant colliding reaction toward natural environment while pursuing artificially though up construction and esthetic logic

Since the garden formal elements are living natural elements [greenery, landscape earth, stone units' outlines to the ground and sand etc] and natural elements with certain metabolic processes [*tobiishi* stones, landscape, tea houses materials decays] their construction logic does not establish stable garden physical and visual form. They change with seasonal alterations [greenery, landscape, steeping stones outlines] or with the atmospheric conditions confluence [tea room construction material, landscape, stepping stones]. Nonetheless, their instability does not interfere or diminish the garden elements intangible logic, neither the garden formal elements physical forms they populate.

Hereby the garden formal elements gain their construction logic physical independence in how they grow and change their physical and visual appearances. This changeability is obviously their given construction property which becomes consciously integrated into the garden complex. Human visual experience and navigation along the stepping stones pathway thereby does not change. Nonetheless, the quality and content of field of view changes along the environment and climate. That is how different qualitative visual and emotional and other senses experiences actually result with same cognitive impressions. Thereby instability of field of view quality in the matter of its content base even more firm the continuity of the cerebral impression they charge in time of *tobiishi* stepping activity.

3.4.3 Not a wilderness, yet not entirely artificial either

The garden greenery and other formal elements changes' growth direction is monitored and maintained. They growing rate is controlled and cut so that it does not endanger physical form logic in relation of essential and incidental, un cut part that can never be perfectly trimmed. The character of their leaves' [greenery is taken into account solely in this chapter] seasonal changes in color and following decay determined the greenery disposition along the garden. It is done according to the level of the transparency they introduce after these changes occur. Overall, they do not diminish the greenery physical form essential logic with higher transparency. Further, along with making the visually observed formal element firm in their physical outline stability, *tobiishi* stone units are kept physically clean in order to make clear for one where is the stone unit stepping outline from where those elements are observed from.

The tea rooms' construction system and materials are also kept in proper condition [restoration, reconstruction, refurbishing], which can stand the sudden and devastating environmental changes and catastrophes. Certain level of these changes are envisioned and thus allowed in order to create the garden formal elements incidental physical quantity [already discussed]. These changes come out from the essential physical quantity framework, but they do not harm the intangible logic of the garden formal elements themselves. In the properly established ratio of these physical quantities [certain extent of the physical form irregularity] the essential physical quantity even more assuredly

Figure 63, 64 : bamboo fence of *Katsura Rikyu* detached palace near the Imperial gate where the Imperial Pathway starts : positioned in front of bamboo wood this fence is an example of *shakkei* method – captured alive;

bamboo trunks are bended over the fence structure and grow in its given frame of being a natural fence though, since bamboo has a characteristic to grow even when it is bended or broken;

transmits the basic intangible logic while deleting the singular visual appearance of each of the garden formal element [already discussed]. One can therefore notice changes in these materials without losing its basic and most crucial impression of the garden. Therefore, the garden formal elements are independent in their construction logic, as long as that logic brings about their envisioned physical form and visual appearance. Obviously, their construction logic independence with its changeability is manipulated and brought to the changes that do not harm *Katsura Rikyu* basic intangible logic that has to be repeatedly understood and passed from generation to their successors. Thence, besides the tea room and orthogonally cut stepping stones, the garden intangible logic is physically assembled out of the completely natural elements. They are kept in the state exactly as they are found or they grow in the wilderness. It means that the garden completely artificially envisioned intangible logic is expressed using the natural elements and beings. Hence, *Katsura Rikyu* garden even though it grows to its own laws 'is not a wilderness, yet not entirely artificial either' [Alexander, 1977, p.802].

Natural processes 'come into the being' [Alexander, 1977. 802] of each of the garden formal element while keeping their condition and not degrading their artificial content they have to visually represent. Nonetheless, to keep these processes not to exceed an exact physical framework they need to be looked after. The gardener must to constantly to commit or eradicate the processes of seeding, weeds, the spread of roots, the growth of greenery, the grasses and mosses growth between and around the *tobiishi* stones. However, they are constantly left to grow enough to leave the impression of wilderness. Instantly, they are maintained enough to keep the impeccability needed for one to be engaged with the garden formal elements visual experience as it is predicted. Therefore the garden formal elements in time come close 'to the way they occur in nature' [Alexander, 1977. P.803], but never become entirely independent in their changes. They become intermingled and all the edges: soft greenery branching ones, solid stepping stone edges, landscape surfaces, tea rooms wooden and mortar edges, incidental surplus that is assertively tolerated, 'become a part of natural growth' [Alexander, 1977. P.803]. Thus, the garden formal elements construction logics constantly differ, grow and develop in time within the constant physical form outline they need to pursue. Thus the qualitative visual appearance of the garden formal elements construction logic becomes constantly different, but quantitative remains constant. In spite of this construction visual instability, their physical form visual appearance remains constant. Similarly to *bonsai* physical logic, one experience same physical form outline, but their changes in space and time within those boundaries are visible. Thereby, an intangible content is kept cognitively constant within visually inconsistent quality of the garden belonging physical forms. Thence, the *Katsura Rikyu* garden becomes a symbiosis where an absolutely artificially envisioned intangible logic becomes materialized and presented while using absolutely natural physical elements.

Concerning the same research topic, during four out from the five times of visiting the *Katsura Rikyu* garden, there were four surveys undertaken with the same interest. The questionnaire was handed in to each of visitors immediately after the garden tour. There was a single inquiry concerning their visual

impression: ‘Do You visually experience the *Katsura Rikyu* garden as an artificial, manmade garden environment, or as a naturally grown garden environment?’. The dominant reply with an 83% rate was the encircled ‘naturally grown garden environment’.
Therefore, even though the visitor is conscious that he is guided and walked along the manmade *tobiishi* stepping stones coordinated environment, the garden dominates in its natural appearance and coherence it resembles.

3.5 Representation of intangible design method in physical forms of Katsura Rikyu

3.5.1 Tendency of both intangible, artificial design method to become natural design method

‘What about someone who believes in beautiful things but doesn’t believe in the beautiful itself and isn’t able to follow anyone who could lead him to the knowledge of it? Don’t you think he is living in a dream rather than a wakened state? Isn’t this dreaming: whether asleep or awake, to think that a likeness is not a likeness but rather the thing itself that it is like?’
[Plato, *The Republic*: Book X]

The garden formal continuum intangible logic would have not accomplished its physical, visual and functional logic, if there had not been human walking along the *tobiishi* lane. The tea ceremony final act inside of the tea room pavilions would have not been also able to be done due to the absence of the guest itself. Consequently, designers’ envisioned elements construction logic, which builds their physical and functional logic, is materialized concerning this fact.
Nonetheless, while inserting natural elements and natural processes, which define the construction logic, made the garden formal continuum to possess certain physical meaning without the according human presence. There the intangible logic would have become the equal to the intangible, natural logic which builds the construction of the garden elements. Namely ‘standing there’ would have been equal to ‘being there’. Garden formal elements would have not existed visually and functionally but solely physically, in a logic of how they are build according to natural patterns [branching, leafing, moss coverage, stone outlines moss and grass fusion, tea houses surfaces more prominent decay etc.] .
The formal framework which is assigned to the garden formal elements construction logic, actually made this constructive construction logic to automatically maintain the physical and according functional logic of the garden formal elements. Its natural and not primarily human oriented constructive logic, works within the physical framework that follows the *Katsura Rikyu* complex basic intangible logic. Its naturally controlled processes of the growth and seasonal changes are not humanly dominated. In spite this fact, with initially careful garden formal elements construction

logical branching selection, their positioning and maintenance absolutely accomplishes their desired physical logics.

It makes the human visual perception and the tea ceremony functional purpose, not mandatory needed to make the garden formal elements continuum meaningful and rightful to exist in its physical form within *Katsura Rikyu* boundaries. That means that the garden formal elements intangible logic physical outcome would have become the only capacity of existence on its own.

If their construction logic was materialized out from the processed, static material physical elements to accomplish certain physical form, they would have lost their physical form meaning and rightfulness to exist in this world. In case of *Katsura Rikyu*, it would have existed only as 'being there'. 'Standing there' could have not been accomplished anymore since there had not been a field of view to visually determine its 'being there' [intangible logic] through 'standing there' [physical logic].

3.5.2 Visual comprehension of Katsura Rikyu design method

The overall visual continuum of the garden formal elements physical continuum exists as a continuous perceiving of the physical relationships among the garden formal elements physical forms. It is not possible to imagine or visually present the physical form logic and understand their intangible logic in those relations as clear scientific data. These visual and cognitive images have to be further translated. Hereby, field of view has to be continuously developed and made in firm ground for analysis.

Stepping activity committed along the pathway is governed with *tobiishi* stone units and thus humans visually experience the physical forms of the garden elements that follow and refer to them along the path. That means that the whole body motion, visual perception and according brain processing of the visually collected data actually create an understandable impression of the garden intangible logic. In order to strive into the garden intangible logic there have to be analyzed the data of the physical forms physical relations that are visually collected. This is how the intangible logic of the relationships of such kind can be deciphered and presented in form of the visual images. Their graphic presentation carries the intangible logic clear and obvious to be represented in forms of numbers and proportions in those relations.

Since the stepping walk is governed with the stepping stones garden lane and visually manipulated with the garden formal continuum intangible logic integrated in garden physical forms. The visitor unconsciously perceives and follows that intangible esthetics through those physical forms. However, its body carrying mind perceives the intangible logic in the manner it has to conduct its physical motion through the garden complex and what kind of relationships it notices.

Thus, the garden designers' decided to establish unstable and never singular visual image of the garden formal continuum as the constant visual experience of the garden elements relations, Instability of the singularity of *Katsura* physical forms makes the garden formal elements in the closest physical form not to physically exist in an artificial realm as set of objects positioned next to each other. Since they are engaged in mutual relations they lost their uniqueness. That makes field of view ever potent set of visually recreated images. Each of them is not final but leads from the previous to the next one. The elements become of the lowest physical form, which is the closest status of the physical form in order to pass the intangible logic. Each of those elements cannot represent itself uniquely but rather thought physical forms of neighboring garden formal elements. That instability leads toward visual images that entitle those relations that carry the intangible logics of the *Katsura* physical forms. Thus, if those relations are noticed and entirely build field of view, the according cognitive understanding of those relations will retroactively reveal the 17th century imagined intangible logic. This becomes the main postulate of the garden formal elements formal continuum of how an esthetic value, the *Enshu* taste of its kind is preserved in these processes of translations of its content. The first postulate of this taste is that obviously everything has to be introduced in relationships if it's the object of design and construction. The second postulate is subjective and unique to the case of the garden and that is how the first one is applied in unique *Katsura Rikyu* plot. It is envisioned to construct the garden complex with lowest physical forms quantity in terms of their visual strength in being divided.

The designers' succeeded to make the garden physical form to be perceived neither as a solid artificial form, nor with certain material surplus. The physical form of the garden formal elements is brought to the point of its physical form, which is about to physically blend in terms of natural physical form. Additionally, its physical quantity is reduced to the minimum of the visual resemblance. Therefore, *Katsura Rikyu* becomes a physical form which is in the constant state of the physical existing and not existing in an artificial realm of bottom-top field of view experience. Hence, the artificially envisioned intangible logic is the only belonging logic that makes the *Katsura Rikyu* garden formal continuum to differ from the natural environment.

That makes the impossible visual perceiving of the garden formal elements intangible logic to be in the closest status to become possible. It seems as the conscious walk along the *tobiishi* pathway, where human consciously visually perceives the garden physical forms and construction forms, but subconsciously follows and comprehends the garden intangible logic.

3.6 Von Goethe's '*Urpflanze*':
natural formal logic preserved within *the garden* artificial design method

3.6.1 Explanation of '*Urpflanze*'

'Once one has seen it, however, one must conclude that it is the cause of all that is correct and beautiful in anything, that it produces both light and its source in the visible realm, and that in the intelligible realm it controls and provides truth and understanding, so that anyone who is to act sensibly in private or public must see it.' [Plato, *The Republic*: Book X]

According to professor Sanford Kwinter, while J.W.Goethe was collecting the research material for his book on 'The Metamorphosis of Plants', he used to take walks through the woodlands. He was visually looking for the origin of their patterns and shapes. He tried to understand where it comes what gives the natural formal elements their according intangible logic. He wondered how to visually notice and understand this logic, which drives the plants' physical form and their construction logic. Goethe named this logic he was looking for as '*urpflanze*' [*ur* – prefix for the origin, *pflanze* - plant]. Therefore, the '*urpflanze*' is the immaterial, invisible form of growing plants from which they evolve from into physical form of certain greenery. For an instance, a plant leaf is located on a branch as per certain physical form and construction logic, with certain direction and position logic. Since there are many other leaves at the same plant there is no stable physical form and construction logic which can be attached to the singular leaf and its belonging plant. Rather, the leaf is a formal expression, physical form whose construction logic is established in such a manner that it can follow the plant intangible logic. That means that the visual logic of the plant itself is not given *per se*, but rather adapts to those invisible forces he was searching for, which are based on certain correlative postulates. The intangible logic postulates represents itself in plants' construction logics that rely on cell metabolism [plant seed dna]. Therefore, the plant final physical form is a mere physical form representation of the living organism adaption toward the environmental conditions and other living and static natural formal elements within the given natural environment according to dna potential it holds. This natural intangible logic that governs within dna, mere physical form adaptation process of the natural formal elements within the woods, that was observed and classified by J.W. Goethe, was named using the word *chreod*[1].

[1] Chreod: Chreod is a term established by the 20th century biologist Conrad Hal Waddington. It combines the Greek word for determined and the word for pathway. This word describes all possible pathways of the natural physical form growing decisions, within what Christopher Alexander has called the 'configuration space' [The Nature of Order]. That space contains all possible outcomes and points that can evolve in the growth of an organism. However,

3.6.2 Spatial potential in time during which garden formal elements are visually experienced

The intangible logic [chreod] of the *Katsura Rikyu* garden formal elements becomes cognitively revealed the garden formal elements physical forms are visually experienced. Hence, garden designers' were looking for the closest state of the physical form [shape] and construction logic [construction structure] of the garden elements that will make them visually understandable not in what they are in their real physical realm, but to extrovert their intangible logic through their visual understanding. Their intangible logics integrate the meaning of each of the other intangible logics within themselves in their physical forms inevitable relations. Therefore, they cannot be observed through a mere static observation, but rather visually developed in time of the required stepping activity. Only in this certain amount of time, while being led over the stepping stones pathway, one can observe and therefore comprehend these physical forms' relationships from the intended stepping coordinates.

Each of the garden formal elements physical forms' attributes that describes them singularly actually determine their adjacent garden formal element they are. Since all of the garden formal elements are related to each other in an instant present time without past or future they never leave that dependent status. Thus they cannot be grasped singularly if we aim to understand their physical form and constructive logic. That makes the garden overall intangible logic finally comprehensive only if we collide all of the garden formal elements physical forms relations, at all of the moments, in an appropriate manner using the most prospective physical form attributes in the moments of the committed steps. The number of these moments and their positions [position of the time] is

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not all of these possible physical outcomes would be applicable to establish proper natural physical forms. Therefore, only the rightful physical form pathway must be followed, to physically achieve meaningful formal logic within the given environmental conditions. This formal element physical form and construction assemblage pathway logic – namely Chreod, is apparently followed automatically within the natural formal elements according to the multiple set of chreods contained in the dna of the natural formal elements seeds; According to Christopher Alexander, since the conscious design decisions cannot always solely subtract the formal logic chreods, it can lead to the mixed results [according to social, economy, politics and other influencing design factors]. Therefore, he proposes certain design manners as certain design paths, which if accordingly use will bring to the best physical form results within the built environment.

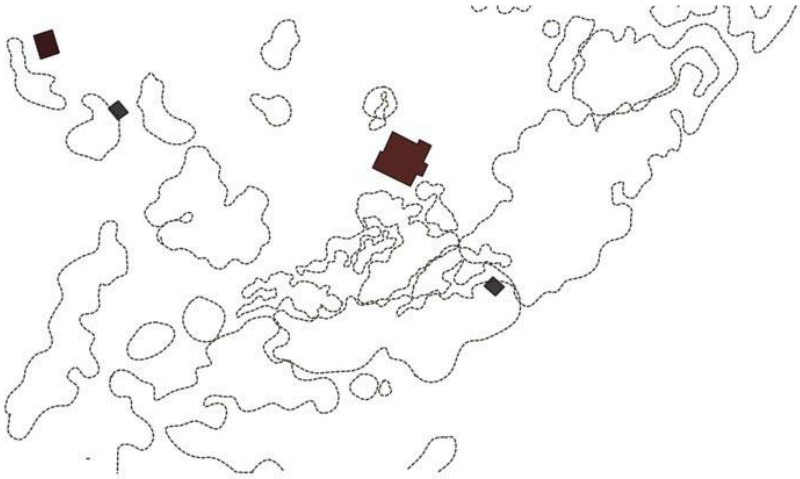
Hence, within his book The Nature of Order he puts forward the chapter on the fundamental Process, formal logic preserving transformations and fifteen fundamental pathways – chreods. These fifteen chreods are underlined as physically forming pathways within the environmental configuration space. Those are Levels of scale, Strong center, Boundaries, Alternating repetition, Positive space, Good shape, Local symmetries, Deep interlock and ambiguity, Contrast Gradients, Roughness, Echoes, The Void, Simplicity and Inner Calm, Not-separateness.

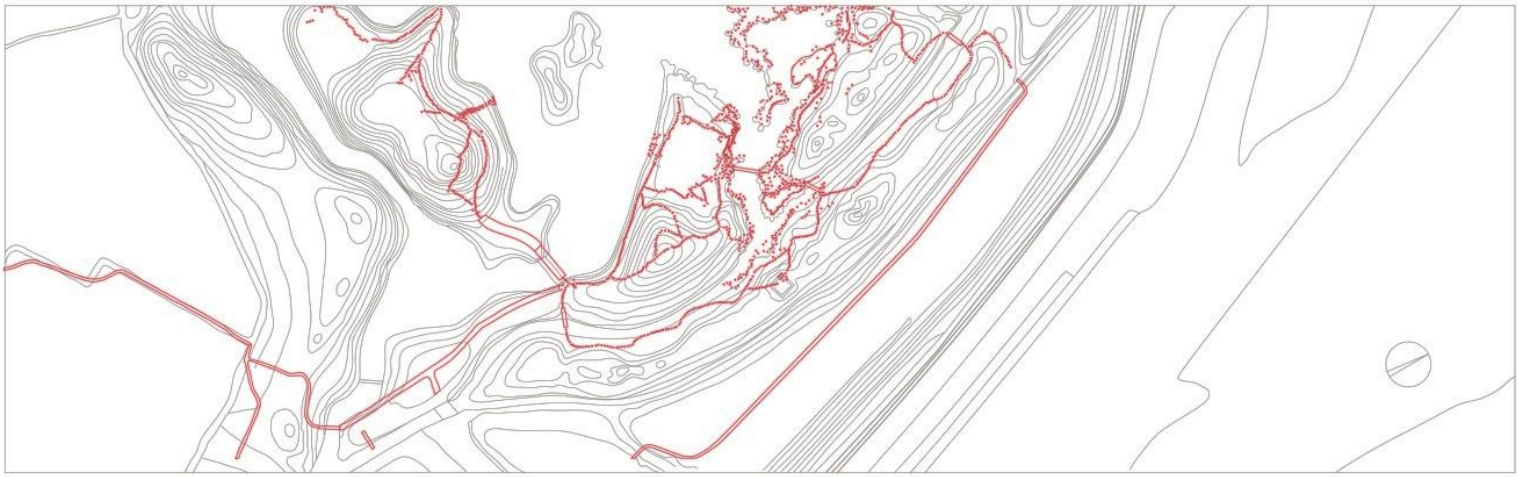
approximated to the number of human steps and their following *tobiishi* stone units' coordinates distances. In each of these stepping and human motion demarcation points, each of the garden formal elements acquires different visually noticed physical form, since it acquires different physical form relationship toward the other garden formal elements.

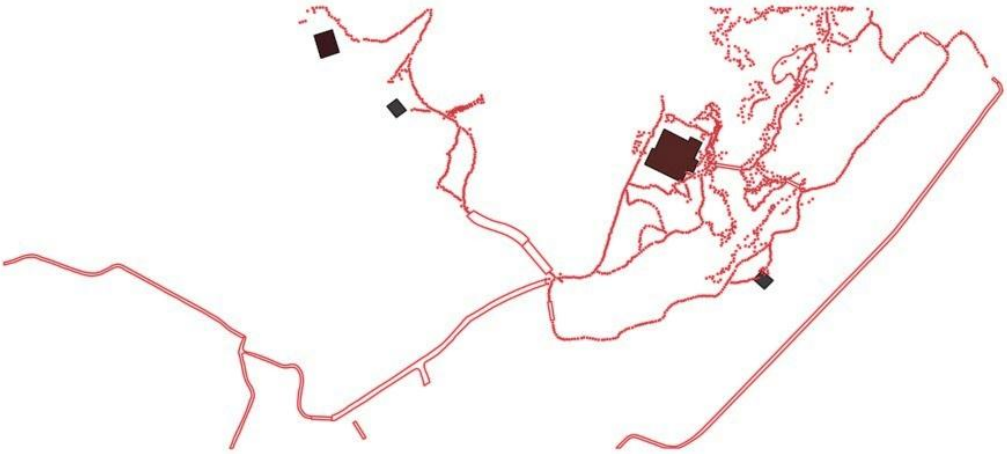
Thence, Kwinter points out that we can talk about these intangible logics, namely Chreods, as of being a physical form skeleton that we cannot visualize as a single image, but only explain as a comprehension of the garden formal continuum that happens in certain amount of stepping time [in case of *Katsura Rikyu*]. The garden formal continuum exists in present time. Present time hereby means that in certain span of stepping coordinates in order to simultaneously present all of the visually noticed garden elements relations as a single impression, one cannot count what relation occurs before and after. Thereby before, after and now become equal concerning final cognitive impression and conclusion after one passes through the *tobiishi* lane. When all of these data are collided in a continuous timeline, then the garden formal elements singular physical forms can be observed instantly in this comparison. Therefore, the *tobiishi* pathway as the matter of the stepping stones walking line becomes the present time continuous set of stepping coordinates, along which all of the physical forms are actually visualized with certain design intention to the other ones. Here the time is not measured in time units but rather in number of stepping points and their coordinates where those relationships happen. Hereby, *Katsura Rikyu tobiishi* directed and measured Chreods become through unavoidable and stepping lane directed observations of physical forms. These forms instantaneous relations as an overall intangible logic of the garden thereby becomes in a span of time. This span results in a continuous field of view.

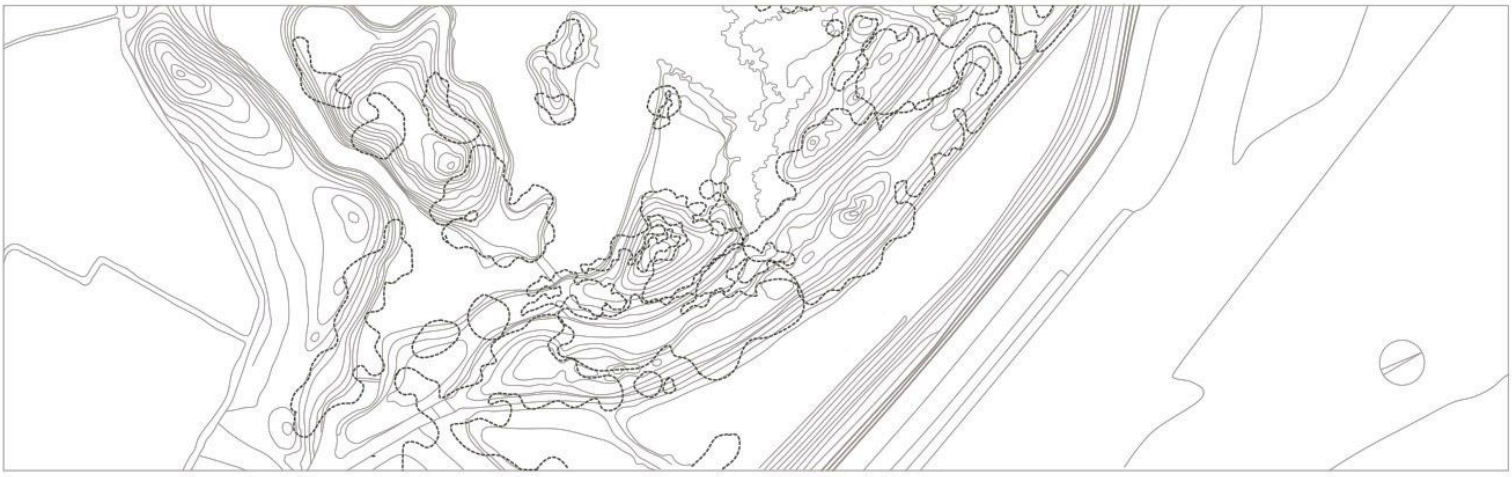
Only in these continuities where time as an inseparable unit result in possible understanding and presentation of cognitive understanding garden intangible that actually represents *Katsura Rikyu* intangible logic. They don't exist as a set of singular physical forms, but rather as continuous physical form, represented as a network of singular garden formal elements physical forms relationships. These singular formal elements are going to be named primary physical forms at this point of discussion and further research. The secondary physical forms name physical parts of the primary garden formal elements physical forms, which are engaged in establishing the primary ones' relationships. They are actually those physical parts that are engaged in visual and physical overlapping that occurs among the garden elements. If we observe, collect and translate in meanings of those relations those secondary physical forms in forms of numbers, geometries in proportion data concerned, thereby we will comprehend the *Katsura Rikyu* garden chreod intangible logic.

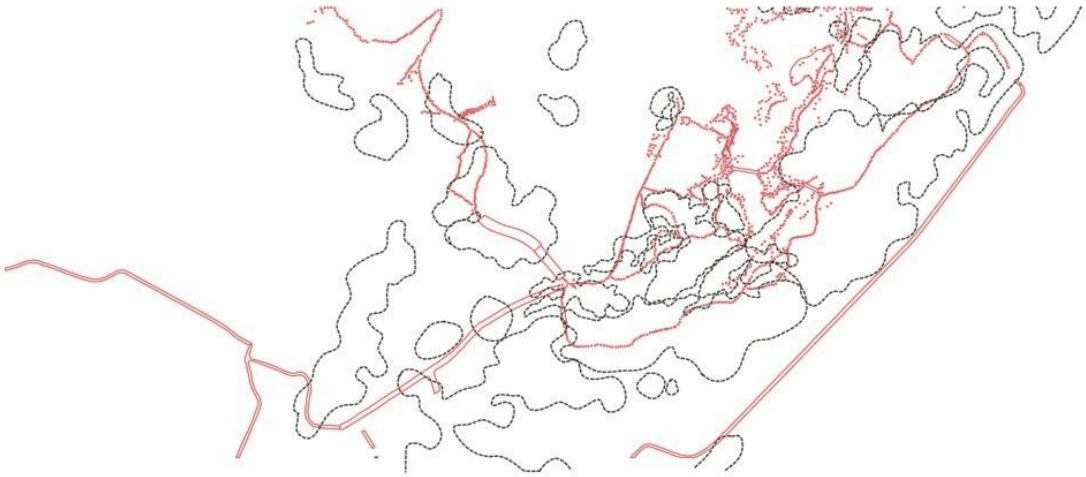
However, it instantaneously exists in field of view collection of all of those observing moments of all of these secondary physical forms' relations attached to the primary physical forms. The present time [names total amount of time that covers complete field of view completion along *tobiishi* lane] becomes a certain amount of time during which these secondary forms visual experiences become











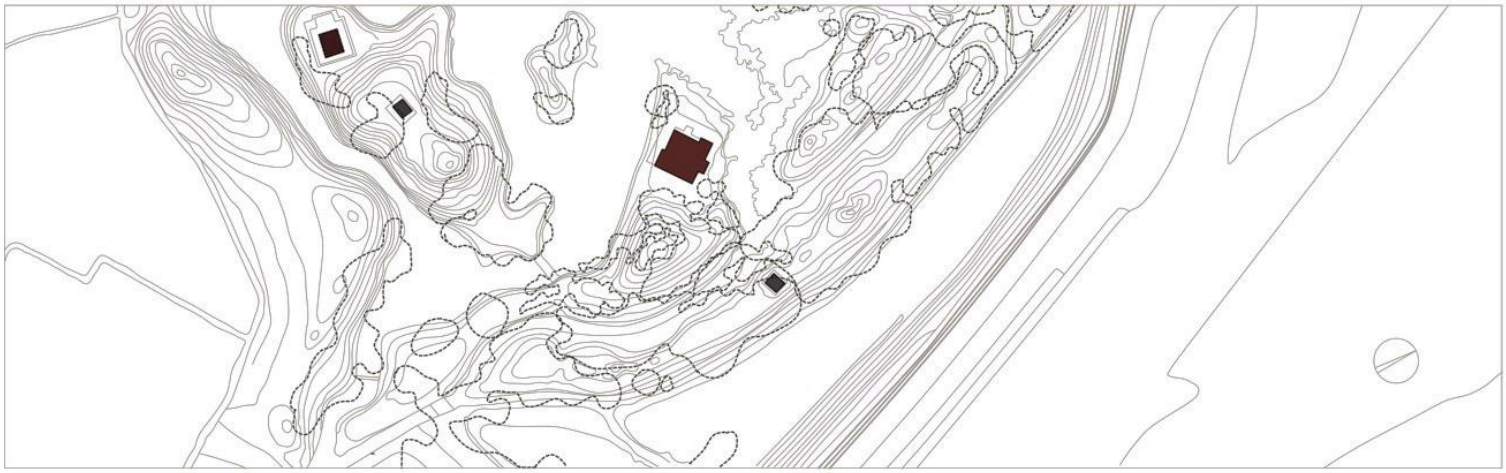


Figure 65-70 : Various possible garden formal elements mutual juxtapositions at the half a garden region around main Shokin-tei building and Imperial gate entrance portion :

Juxtaposition of the formal elements at the garden segment [in order] :
tea houses and greeneries,
stepping pattern and landscape,
tea houses and stepping pattern,
greeneries and landscape,
greeneries and stepping pattern,
greeneries and tea houses and stepping pattern;

Present time hereby means that in certain span of stepping coordinates in order to simultaneously present all of the visually noticed garden elements relations as a single impression, one cannot count what relation occurs before and after;
when all of these data are collided in a continuous timeline, then the garden formal elements singular physical forms can be observed instantly in this comparison;
therefore, the *tobiishi* pathway as the matter of the stepping stones walking line becomes the present time continuous set of stepping coordinates, along which all of the physical forms are actually visualized with certain design intention to the other ones;
hereby, *Katsura Rikyu tobiishi* directed and measured Chreods become through unavoidable and stepping lane directed observations of physical forms;
these forms instantaneous relations as an overall intangible logic of the garden thereby becomes in a span of time that results in a continuous field of view;

visually experienced as a single cognitive impression and comprehension that can be exempted. Thus their instantaneous present time, in which all of the secondary physical forms instantaneously exist in those relations, becomes a continuous physical form of the garden formal elements visual experience in continuous field of view. Thereby time period needed to step though *Katsura Rikyu* complex gains spatial dimension of duration since it is measured in *tobiishi* stones coordinates, but not in objective time measure. Equally, secondary physical forms simultaneously acquire time dimension since they are changed in what they mean in their measures. They become measured not in points of space but in units of time.

It can be equally pronounced that ‘being here’ becomes ‘standing there’ and vice versa. However, old Greek language expression for the chreod as being, existence of certain physical form is *einai*. Nonetheless this mere word to word translation that today we mainly use in the invocative meaning, but *einai* as a term carries out more profound meaning related toward intangible logic - *being*. What, then, do we mean when instead of *einai* we say *being*, and instead of *being*, *einai* ? The *einai*, however, means: to be present [*anwesen*; this verb form, in place of the idiomatic *anwesend sein* - Heidegger's neology]. Therefore, it can be expressed as a physical form presence of the present time intangible form. Thus the ‘time’ points to perceiving unconcealedness, the mere intangible logic of *being*. It is the time as an instantaneous present where all of the garden formal elements are accomplishing their physical forms relationship within their physical form essential quantities in forms of secondary physical forms. They occupy a constant physical form existence in an indefinite time measure without going into past or future physical form status neither any kind of change. These relations become tangible form of intangible esthetic truth that are artificially established or manipulated. Therefore, they exist in an eternal present timeline of the *tobiishi* lane. Same logic is maybe coincidently consisted in human body logic applied in stepping activity. Every previous step is linked and conditioned with every next step to be committed. These both steps exist in same time period and connect past and future into long present moment since one is always stepped with one foot while other foot remains in air. That another foot freezes and marks that long time in between that is neither past nor it is going to happen into something else.

Finally, secondary physical forms can only be deciphered if they are observed with and in the overwhelming present time. Nonetheless, they are visually experienced in certain amount of walking measured time. Hence, they can be physically comprehended when we observe this walking time passing visual experience, as a physical form continuum. Therefore the walking measured time has to be merged into single period of time as continuous time, where all of the garden formal elements establish all of their intended physical forms relations at the same moment.

This analysis obviously cannot be undertaken as a single visual experience, but rather as an instantaneous comparison of all of these separate visual analysis of each of the garden secondary physical forms. Only after their physical forms comparison is accomplished, the garden complete *einai* [intangible logic] is possible to be presented.

Hence, *Katsura Rikyu* formal elements are analyzed in their instantaneous physical form changes at certain pathway sections [time is measured with spatial, stepping points] and accordingly understood how they coordinate and harmonize their physical form changes among themselves.

3.6.3 *Chre-hodos* based implications onto the research methodology

Expectedly one cannot neither physically to overwhelm nor visually to perceive complete garden *tobiishi* directed formal continuum in a single moment or a single view. If one can summarize its field of view memory as a continuous set of images then it would become possible to develop this experience as a single entity. This kind of field of view record in forms of stepping motion images [each step attached to one image] thus can be represented and finally analyzed. Succinctly, secondary physical forms can be extracted from these images, analyzed and further represented in forms of graphs and diagrams. Thus, they become translated in these diagrams in order to clarify and establish firm cognitive understanding of what was basically visually perceived as a representable and reliable scientific data. These measures represent the secondary physical form as a physical form which may be described using certain numbers which describe their physical form attributes. If we collide all of these secondary physical forms within the circular garden lane, we may comparatively comprehend their mutual dependencies, which happen at stepping coordinates. Thereby, they simultaneously visually and comprehensively represent the final garden formal elements continuous intangible logic-chreods, namely design *credo* of the *Katsura Rikyu* garden complex. Overall, *Tobiishi* stepping units become points of comparison of all of the garden formal elements in their secondary physical forms if they implicate in that stepping point of view.

Human visual perception is after all depending on the human body motion character, which directs the field of view position along the pathway lane along with its height and direction. Since the human body keeps its constant upright and straight form, the dominant parameter which determines the field of view becomes the stepping stones pathway coordinated lane. The direction and position of the field of view accommodates according to the stepping activity of the human body. Each *tobiishi* stone unit represents the garden circular lane point coordinate where the secondary physical relationship single part can be visually perceived and recorded in field of view held with those attributes. That means that previously explained time with spatial dimension may be divided into the periods of the single stepping activities conducted by visitor. Each of these single stepping activities lasts for certain time period. Controversially, even though we can summarize all of the conducted steps and thus measure the total walking duration, this does not represent the duration of the chreod present time in which it exists. That time sum would represent a time needed to human body to experience the secondary physical forms' continuum and to collect their visually attached images. Consequently, connection of all of these secondary physical form parts can represent total garden secondary form continuum. It

exists instantaneously in that long present time not measured in seconds but in garden formal elements relation that are engaged in comparison in order to strive into intangible logic of the garden.
This intangible logic is given *per se* and becomes a consequence of the continuous visual experience memory of the human walking along the pathway. It does not define itself as a solid intangible logic but rather as a set of the multiple physical form relationships that happen always and do not change in time neither according to season or climate changes. They become the closest representation of the mere formless garden formal continuum intangible logic that are ordered to be understood if one step through the pathway.

3.6.3.1 Closest physical representation of intangible *chre-hodos*

The garden natural elements sustain their construction logic in their metabolism processes and physical growth. Their growth is controlled in such a manner that it does not exceed the amount of the allowed growth of the incidental physical form quantity and according ratio toward essential parts quantity. It means that the natural construction logic of the garden formal elements is accommodated and literally learnt how to maintain the envisioned garden formal elements essential physical form and its incidental surplus that reveals secondary physical forms. Equally to the technique of *bonsai,* the *tobiishi* lane visually considering garden landscape elements [greenery, earth, stepping stones] are kept in always present, not changeable status of the physical form [shape] ever since the *Katsura Rikyu* is firstly constructed. Hence, that makes the formal elements material forms to be in the closest state of material to the immaterial intangible logic according to which they are firstly imagined and implemented in detached villa. The secondary physical form of the garden formal continuum is equally envisioned to be a physical form which the garden formal elements have to conform and to support its outline in everyday gardening and cultivations. These actions undertaken can be said to cultivate certain visual impression the garden elements need to impress with in order to preserve the visual and following cognitive understanding.
The garden formal elements' construction logic is thus manipulated in overall shape, growing direction [greenery], branching structure [greenery] and material composure [earth, stepping stones]. The gardener needs to solely cut and heals the garden greenery formal elements, to clean the *tobiishi* stone units in order to maintain their essential quantity and incidental quantity. Translated to the context of *bonsai,* the garden formal elements thus developed its vectors of growth –namely chreod in order to naturally sustain and self-maintain the mere intangible logic of the garden formal continuum. Therefore, the visual and cognitive impressions they have to impress with are the *bonsai* rules the *tobiishi* aligned formal elements have to conform with.

3.6.3.2 Artificial intangible design method subordination to natural intangible design method

The process of the mere gardening becomes a process which constitutes and maintains a constant overlapping of the humanly envisioned *Katsura Rikyu* garden intangible logic and naturally determined and directed construction logic that occurs in time. Hereby, they overlap into the single primary and according secondary physical form logic [chreod] of the *Katsura Rikyu* garden formal elements continuum. That establishes a natural process of the garden formal elements continuum construction logic *to be taught* of how to maintain an appropriate, an envisioned garden formal element primary physical form with the garden formal element secondary physical form, without any further human influence. The intangible logic [chreod] becomes sustained and manifested in the logic of the secondary physical form structured with that self-taught construction logic. The manifestation of the intangible logic into the construction logic actually results into the primary secondary form that interacts with the visitor. That makes the natural living pattern of the construction logic to be the chreod visual form giving logic.Postulates of these natural construction structures are decided and positioned within the garden and consequently taught to eternally follow the intangible logic aim that results in certain primary physical form. This makes the garden formal elements primary physical forms to be just mere physical forms expressions of the inner construction logics and their patterns.

Therefore standing there cannot be defined anymore but rather being there uniquely gains its physical form. Even though it is primarily determined as an immaterial envisioning idea of the garden designers it becomes the logic to which the construction logic is taught to obey. If the *Katsura Rikyu* garden had been leftover to grow in wild, it would have excessively exceeded the ratio of essential and incidental physical form quantities in favor of essential.

That means that the garden would have lost its secondary physical form and the incidental physical form quantity would have dominated. That would preserve the construction logic intention to present intangible logic, but it would not be capable of being perceived anymore. In that case, visual would be hidden and turn standing there in being there. Finally, that would make being there to acquire physical form that is taught how to grow in standing there.

The garden itself would have eventually gradually turned into the wilderness and made its formal continuum to merge into the wild natural environment. Hence, this expresses how the human envisioned design in Japan is sensitive and physically considerate toward the given environment. Therefore, the envisioned design is intended to link its intangible logic and physical form logic to the intangible logic and physical form logic of the manipulated natural environment. The tea ceremony function and its physically staged garden complex are gradually merged into the given environment. The walking human does not directly enter the tea pavilion while being within the absolutely artificial city environment. It has to physically pass and visually experience the physical form gradient that is positioned in front of him. The garden pathway lane with its following formal and physical form logic presents an act of the artificially envisioned design that is subordinated to its natural construction

logic and its natural environment and *vice versa*. This subordination is not an underestimating relation among the natural and artificial physical parts in garden elements, but rather it makes them to coexist with mutual enhancement.

3.6.4 Field of view composition : from the Imperial gate to *tokonoma*

Katsura Rikyu garden formal continuum logic establishes a staged artificial environment whose direct and visual background is the natural formal continuum. Thereby the tea ceremony itself becomes an act of the tea service as a sort of human activity which functionally and physically is oriented toward the outer environment more than just the mere pavilion interior. The act of visual experience of the pathway developing and its final tea ceremony host and guest proceeding make a continuous act of a tea service. The pavilion *tatami* ordered sense of the host and guest relation and according rite proceeding that is undertaken, undoubtedly embraces the stepping that starts at the main garden gate. Tea ceremony itself consists of the real and imaginary part of its proceeding. The visual experience, which happens before the final step from the *tobiishi* to the *tatami* stepping pattern, with the following strict human body motions, and the act of the tea tasting, become the inseparable visual, emotional and ceremonial part of the complete *cha-no-yu*. Obviously, the visual experience that happens along the garden pathway is determined as an equally important part of the mere tea ceremony, while the ceremony is not enclosed solely to the tea room pavilion. This continuity is assured with continuous *tobiishi* and *tatami.* These two stepping patterns firm tea ceremony physical and functional continuity of the whole *Katsura Rikyu* garden formal continuum.

The question arises in what would be the tea ceremony purpose if the *tobiishi* lane existed in the material world even without the human stepping and visual perception activities, while keeping its being there in construction logic? The imaginary part of the tea ceremony consists of the host and guest imaging and recalling their physical presence in various imaginary natural environments different that the mere garden. Hereby we can notice a deep spiritual meaning of the ceremony where these presences of various spaces are evoked with *tokonoma* graphic. There is a natural landscape they imagine whose spirit is recalled and invited to enter the tea ceremony room with certain ceremonial acts. The lattices are positioned over the tea serving set and over the pot of water. The character of this act unambiguously invites certain type of the imaginary landscape, an animistic spirit to enter the room and becomes the part of their garden physical form logic and part of their previously inherited visual experience. That makes pavilions and the Imperial pathway to become a physical form that invites animistic spirit to enter and indeed infill the pathway and room pavilion.

Tokonoma sceneries present an imaginary natural physical form and collide with the outer, garden environment season. It shows a sample of the construction logic, a natural branching pattern of the

Figure 71 : Shokin-tei tea room *tokonoma* alcove :
Final field of view caption that develops starting from the garden Imperial gate;

garden greenery formal element, which reminds at the dominant outer season in the moment of the tea ceremony practice. Thus, the *tokonoma* screen holds a meaning of the physical form of an animistic sanctuary that is dedicated to the nature and *kami* spirit that dwells in the screen. Physical form that is depicted actually presents the sample of the natural forms that does not possess attribute of standing there Even though it represents a physical form of the screen it rather represents a spirit that is captured with a visual image, being there of an expression of the natural construction pattern that forms the presented greenery.

The screen imaginary representation holds a visual depiction of the seasonal atmosphere that is present outside of the mere tea ceremony pavilion. Therefore, the climax of the whole human stepping stone walk and the accordingly continuous visual experience, the tea ceremony *tatami* disposition and an according host and guest proceeding is consisted into the imaginary .visual impression. The garden formal elements intangible logic, physical form logic, construction logic and visual logic finally dissolve their succession and continuity in front of the *tokonoma* screen.

The screen represents final dependence of the intangible logic and physical form which was previously attached to the *tobiishi* garden pathway. The garden intangible logic, physical form logic and visual logic are envisioned and finally constructed in order to achieve a reasonable and continuous relation toward the natural environment.

3.6.5 *Tobiishi* pathway: *la cohabitation de l'homme et l'esprit de kami*

Tobiishi pathway represents a physical from which blends into the environment in such a manner that its physical form logic and possible visual logic become inseparable from other natural formal elements, mutual environment they create. Thus, their physical form relation toward that kind of environment is alive and constantly gardened as previously explained.

The garden pathway may be observed as a physical form paradigm of Japanese design culture that is very sensitive to the various types of the environments it belongs. It varies from the mere physical to the immaterial sociological, ecological, economical etc. forms of the artificially and naturally concerned environments. It carries a meaning that is based far back in *Jomon* period in its relation toward the environment related instantaneous reaction of an ordinary human searching for its survival form, primitive design issue.

Therefore, ever since, each human life act that occurs within nature is considered carefully in an animistic based sense of understanding of that very nature. Animism bases in the consideration that every natural item is to be inhabited with a *kami* deity. That became a base of any of the human artificial act of a design and construction logic has to relate to the gods, intangible logics, which dwells those formal elements that act relates.

Thereby, the garden formal element intangible logic and its construction were preceded and followed with certain religious rites and ceremonies which were directed to the spirits that dwell garden formal elements and construction site. However, *Katsura Rikyu* formal elements physical logics are deemed to be an act of human usurpation of the animistic natural environment inhabited with various deities. Therefore, *tobiishi* pathway became a physical form that witnesses about the possible human physical presence within the divine garden environment. Its specific usurpation of this sacred site is marked with exactly *tobiishi* stepping stones whereas walking out of these coordinates is not blessed. Otherwise, once cannot neither visually neither physically establish meaningful, rightful and blessed relation with surrounding formal elements. The pathway is measured and scaled with its coordinate dimensions and stepping stones sizes and distances in order to accommodate a possible human body physical and visual activity. These dimensions, positions and distances of the stepping stones integrate dimensions and attributes of human body and filed of view it carries. Therefore, one can say that the garden environment and *kami* deities that already dwell the stone units establish respectful and rightful relation to that possible stepping human presence. Overall, the secondary physical form logic becomes a physical form where both, human beings and *kami* spirits coexist in their intangible and tangible mutual representations.

4.0 Theoretical framework implications onto the research methodology

4.1 *Tobiishi* visual experience as an instance to be measured to understand relationship between natural and artificial physical forms

‘Welcome to thee,
O sword of eternity!
Through Buddha
And through Dharuma alike
Thou hast cleft thy way.’
[Okakura, 1960, p.160]

According to *Shinto* belief, god spirits come to be determined while pervading every aspect of human life. They are assumed to be dwelling every natural formal element. Every natural formal element, living and independent or artificially changed, was assumed to be possibly inhabited with certain *kami* spirit. In the same manner every ordinary human life activity, like building the house, defining the land boundary, as well as designing and constructing the garden complex, proceeds with certain manners and rites concerned with possible presence of *kami* that have to be followed. This kind of religious belief did not come out from the mere observation of the natural elements and events that could not be comprehended or controlled and therefore they were proclaimed as high spirits. The Japanese animistic attitude toward the act of an artificial creation originates in ordinary human experience that comes from direct interaction with those formal elements. That experience turns into the religion not solely after the visual experience, but rather physical and tactile contact with the

natural environment. Japanese common people were, and still are very sensitive and careful with their words when they enter into an either verbal or physical interaction with a human or an environment. Before they pronounce a word toward the other person or commit an act of a design in a form of the construction entity, they tend to wait and comprehend extensively the other subject. These experiential observations become to be postulates of how to behave according to the already known subject or when not to commit any behavior if the subject is still unknown. That makes each word and act they commit to be absolutely meaningful, applicable and respectful to that other entity. To commit certain act of a design idea as an intangible logic and to integrate it into the clear physical form logic, given environment is therefore highly considered. Only when one gets in enough amount of knowledge of these environmental physical forms there can be created artificial physical form that are consequently knowable of creating secondary physical forms with them.

These experiential acts were performed while firstly followed with certain rituals according to the character of the possible physical interaction and *kami* they engage with. Finally, the act of the physical interaction, which results in a physical form, is blessed to be accomplished since both intangible and future tangible relation become established. These comprehensive experiences of the environmental formal elements were determined as the basis of intangible logic – chreod, which is going to be integrated according to these experiences' based relations. The whole secondary physical form as an act of construction represents actually mere relations.

These experiences were and still are cherished as the most sustainable cultural heritage that makes the society capable of renewable projects after many disasters that occur in Japan. Those are passed from generation to generation as a survival method of the highest importance to the newly born members of a society that might face the same environmental formal elements. Those intangible logics need to be taken into the consideration when committing an act of a design that affects their carrying formal elements. Therefore, the construction methods that for example keep the earthquake resisting constructions were kept as the books of carpenters. They wrote down the texts and made drawings of how to assemble wooden joints in order to sustain possible earthquakes or *tsunami* waves as prevailing damaging natural formal elements. The Japanese could understand how to fight back these severe or more benign natural formal elements and to notice them in practical or written postulates.

As an instance, during an ordinary tree cutting performance for the sake of the *Shinto* temple rebuilding, there are five prays that are conducted from the act of the preparation to the act of the mere cutting activity. Therefore, the name, the pray and the rite that has to be directed toward each of the natural formal element, originate in the experiential comprehension of themselves. This comprehension comes out after the first, an instantaneous physical interaction with these natural formal elements. A direct interaction of such a kind brings out the most exact understanding of the natural formal elements and what kind of artificial physical form logic may be attached to them.

Figure 72 : *shimanawa* roped off rectangular space within Ise shrine complex :
it represents a sacred space which is possible to be dwelled with *kami* deities;
since necessary prays and rites are conducted and the place is blessed, it is possible that in the near future here is going to appear new building or a sacred artifact;

Consequently, there becomes the whole system of the *kami* deities and their subordinations that have to be followed. Since within *Katsura Rikyu* garden happens to be a direct usurpation of the natural floor area and the greenery formal elements, certain deity has been touched upon that has been taken into account. The *kami* that protects a particular natural locality is called *chinju no kami* or *aramitama*. Therefore, the ceremony that is performed in order to calm the possible presence of that local deity, namely, is known as a *jichinsai* [land pacifying ceremony]. It is performed before construction and land measuring human activities. *Kami* which was prayed for start of the work and its significance was named *chonahajime* [*choshisai*].

Very often these consecrated areas that are intended to be constructed or simply they hold an area of a *kami*, are roped off in a rectangular square. This kind of rectangular void was called *shiro.* This term different meanings are also the adjective- white, or a white color. [*shiro[i]*]. It became a determinant of the nothingness in its signification that represents the possible space for god's presence. That makes the garden *tobiishi* pathway to be the active space where human and *kami* god spirits meet. Whiteness makes many colors to be projected in its region.

Hereby color means the presence of intangible gods and consequent intangible logic of two sides relations that find their consolidation in the whiteness. Hereby we can notice a reason for an intention of the garden designers to establish an artificial physical form that keeps its logic according to its inner construction logic even without the active human presence. That makes the physical form logic of the garden formal elements intangible logic to be present in a form of visually independent physical forms. If there had been no human within the garden, *tobiishi* pathway would turn into the wilderness and follow its natural construction logic, its inner, *kami* that resides in the growth vectors. That means that the *kami* spirit of the *tobiishi* pathway is capable of turning into its previous state while overcoming the human envisioned ratio in garden intangible logic physical essential and incidental physical forms quantities.

Nonetheless, if the garden *tobiishi* pathway is properly gardened, then its physical form logic continuum becomes a physical form where human and *kami* coexist. Concerning this point, Masao Hayakawa suggested that the common Japanese word for garden, *niwa*, which firstly appeared in Japanese literature in the Nihon Shoki was used in order to refer to the place purified for the worship of gods with subtle presence of human. When this place becomes intruded with a human presence, it establishes an intermediate field among these two. That resulting precinct, or *kekkai*, becomes a mediating zone of nature sanctified by human. It becomes in between a piece of an absolute wilderness occupied by the god spirits – *kami-s* and the domesticated world of human hereby in forms of stepping stone units and tea rooms. These two terms – *niwa* and *kekkai* are considered to be one of the ingenious sources in order to comprehend the development of the Japanese garden construction, physical form and visual logic, according to these words' development in their meanings.

Figure 73-84 : *tobiishi* units solely mark the possible presence of a human in natural space of the garden sacred environment : stepping stones attributes and distance are pursued according to human body and feet proportions

4.1.1 *Tobiishi* path origin in *Zennism* as an instance for measuring its design method

Katsura Rikyu tobiishi pathway becomes the physical forms continuum that is envisioned, selected and positioned by a human, but inhabited by *kami* spirits since it possesses the natural construction logic. It grows in its own naturally ordered physical form construction physical form, which establishes the garden formal elements primary physical forms. These are aligned along Imperial pathway that with its intangible logic resembles the logic of *torii* gates passage arrays of the *Shinto* shrine complex. Before the main shrine building and its sacred *torii* gate there is a usual array of several gates positioned at certain sections of the main shire approaching pathway, which is either in in form of straight or broken line. The pathway and the whole garden complex physical form are accommodated according to the given environment landscape and therefore the pathway line goes in almost circular lane. Nonetheless, it consists of mainly almost straight portions of the stepping sub-pathways attached to each of the stepping pause at the tea houses. Hereby, the sacredness of the shrine and tea room is in their possible presence of *kami* deity. This presence is praised while human engages or commits rite and prays for the spirit to come and dwell the emptiness. Hence, *honden* and *tokonoma* are both those spatial alcoves that remain without human presence and where gods' spirit is prayed to appear. Accordingly, there can be drawn a parallel in the *tobiishi* stepping stones' points and *torri* gates. Each step and its according stone unit or an end of the sub-pathway lane resemble to *tori* gates. Those arrays mark the coordinates of possible presences through which should be filled with visitors and *kami*. Each *torii* is positioned and oriented toward the pathway direction and its geometry changes according the landscape physical form changes. Same occurrence is attached to *tobiishi* units that absolutely follow the terrain with their horizontal orientation that leads to *nijiriguchi* entrance. *Torii* gate is usually marked with two creatures [usually lions: namely *shishi*] with their one mouth closed and another one open. They are positioned across each other and turned with their front faces toward each other. The sounds they intend to mark with the mouths open-shut relates to Ah [open mouth] and Un [closed mouth]. 'Ah' is the first sound in the Japanese letter system and 'N' [pronounced 'un'] is the last. These two sounds, mouth positions represent the beginning and end, birth and death - the opposite ends of all spiritual and physical forms outcomes. It is also commonly said that the open mouth scares off demon spirits and that the closed mouth invites and keeps the presence of the good spirits. The common verbal communication among two Japanese consists of one person talking and another person, while carefully listening, repeatedly pronounces the exactly same sounds of 'un' and 'ah'. If these sounds are pronounced and heard, it means that another person, a listener, understands the speaker [un] who makes him to think, or that its talk will evoke a certain emotion [ah]. That makes their conversation to be mutual even though only one person actively orally pronounces the content. Their conversation becomes very effective with less word spoken and more proper and important content exchanged in time.

Figure 85, 86 : *shishi* Ah and Un lions positioned at Shinto shrine entrance [or Buddhist sects that originate in Shinto or have an entrance arranged according to Shinto postulates] : usually they are set together with *tori* gate in order to mark the passage void where *kami* deity is going to enter to the shrine inner are of *honden*;

The intangible void among two lions – *shishi*, marks the final shrine *torii* that will appear in front of the approaching human. The *torii* and *shishi* formal elements therefore establish a meaningful physical form continuum which carries a physical form logic and immaterial form logic. They mark not only the approaching pathway for a human being, but rather the pathway void through which the god spirit, *kami*, is possible to pass and enter the shrine building.

Shrine visitors approach its sanctuary building to witness and pray to that possible chance that the *kami* spirit will appear. If the deity enters the shrine building, it will possibly listen and accomplish their praying or merely accept their solemn request of thanksgiving. However, the whole *Shinto* shrine complex represents the materially marked space of the possible *kami* pathway approach and according presence within the shrine building. The shrine public hall of worship is called *haiden* [拝殿]. Its hall of offering is called *heiden* [幣殿]. This is where the *Shinto* worship elements related to the goddess of *Amateratsu* are enshrined. The innermost and the most sacred shrine hall is called *honden* [本殿]. This is the part of the shrine building where the possibly present *kami* deity is enshrined. It is entered only by the highest ranked priest and worshippers on very special occasions or *Shinto* celebration ceremonies. Usually this hall is not penetrated and it is kept absolutely enclosed. Here it can be noticed an equal appearance of the pathway within an artificially envisioned and created sacred complex. It repeatedly carries its dual embodiment in a single physical form. It becomes instantaneously created to enable human walking approach and possible *kami* penetration toward the hall of *honden.* There can be noticed even the same climax from the *Katsura Rikyu* pathway to tea room pavilion and from the *Shinto* shrine pathway to main shrine building. The only difference is that the human has to stop its walking approach in front of the hall of worship [*haiden*]. Occasionally, human can visually perceive the glimpses of the hall of offering [*heiden*], but it can never see or enter *honden*, the hall of the *kami* enshrinement.

Dualism of the pathway characteristic for a usual *Shinto* shrine complex and *Katsura Rikyu* does not have its coincidentally same intangible logic. *Shinto* as a religion has influenced *Taoism* and *Buddhism* that entered Japan starting from 6th and along the 7th and 8th century. Therefore the *Shinto* belief and various *Buddhist* sects made an ordinary Japanese life consisting of and being influenced in details from all of these religious points of view. However, the tea room and the tea ceremony related simplicity, purism and functional disposition partially remind at and result from the functional and physical form logic of the Zen monasteries, which were under the emulation of the *Shinto* belief. Zen monasteries differ from the other Buddhist sects ‘in as much as it is meant only to be a dwelling place for the monks’ [Okakura, 1960.p.79]. Obviously hereby is repeatedly a discussion about the sacred space and ordinary monks’ human space which is congregated into a single unit of the Zen monastery.

Figure 87, 88 : presence of sacred spirits is marked with *tori* gates at the Ise complex and shrine entrances

Figure 89 : *Fushimi-Inari* array of *tori* gates that continuously mark the *kami* passage void that almost coincides with the stepping proportion

Its main chapel is not solely dedicated to a monk or the usual pilgrimage worship, but also student's room where they gather and stay for a discussion and according practice of meditation. Here one can notice a similar hint of the host and guest tea ceremony gathering within sacred environment. The Zen monastery room has central alcove integrated in which, behind the altar, 'is a statue of Bodhi Dhama, the founder of the sect, or of Sakyamuni attended by Kaphiapa and Ananda, the two earliest Zen patriarchs' [Okakura, 1960.p.80]. At this altar, flowers and incense are offered up in an honor and reminiscence of the great contributions which these wise men made to Zen. This altar with its physical form and offerings in forms of flower clearly resembles at the tea room *tokonoma* alcove. Additionally, there was a ritual instituted by the Zen monks of successive drinking tea out of a specially arranged and prepared bowl in front of the image of Bodhi Dhama. Again, the act of the tea tasting was brought up along with the students' gathering proceeding, but at the same time the honor of the mere tasting and drinking has its imaginary background. Therefore, this ceremony laid the foundations of the common Japanese tea-ceremony with its functional and altar oriented ceremonial disposition. Obviously, the Zen chapel was the prototype predecessor of the *Tokonoma* screen —the place of honor in a Japanese tea room where seasonal screen positioned paintings and flowers are placed for the enlightenment and mind purification of the present guests. Thence, since all of the tea masters that also dictated the dominant esthetic taste [not style] tended to find the best spatial and functional disposition of how to introduce Zennism and its formal and informal actualities into an ordinary human life [that was the case with *Kobori Enshiu* which was one of the *Katsura Rikyu* dominant designers of its physical form and functional form logic]. They linked a mere sacred worshipping room of the non-existence [*Shinto* honden hall of *Kami* enshrinement] to also exist as a room for human body-mind enlightenment and meditation.

The Zen monks and students also used the *roji, the* pathway from *machiya* to the chapel [later tea room] as the first significant stage of the self-illumination of the human that he has to bodily and mentally experienced before entering the chapel room. It also 'produces a fresh sensation conducive to the full enjoyment of aestheticism in the tea-room itself. The one who has trodden this garden path cannot fail to remember how his spirit, as he walked in the twilight of evergreens over the regular irregularities of the stepping stones, beneath which lay dried pine needles, and passed beside the moss-covered granite lanterns, became uplifted above ordinary thoughts'. [Okakura, 1960.p.82]

The nature of the sensations to be acquired in stepping over the *roji* differs with different tea-masters. *Sen Rikiu*, for an instance, aimed at the state of human walking along the *tobiishi* lane to be alone in solitary isolation. On the contrary, Kobori *Enshiu* dominantly aimed to ensure a perfect sound wise peaceful environment for the tea ceremony garden wanderer. He visually connected him not only to the scope of the garden formal elements, but rather the vast natural environment. Hereby the *Katsura* moonlight platform finds its place at the final pathway destination in a form of the main *Shokintei* building.

Figure 90, 91 : white cloth hidden honden area at main Ise shrine and [lower image] hidden honden area of small Shinto shrine in Tokyo

Figure 92 : *Katsura Rikyu* tea room *tokonoma* alcove that originates in Shinto shrine *honden* space and according Buddhist temple space for monks gathering and common reading and prays

He even dedicated the set of verses onto this topic: 'A cluster of summer trees, A bit of the sea, A pale evening moon.' [Okakura, 1960.p.84]. Obviously the Zen monastery pathway and the chapel tea room kept the *Shinto* shrine dual embodiment oriented toward both god spirits and human being.

4.2 Measurable instances of pathway intangible sacredness

The garden formal elements, visually perceivable along the pathway, are physically formed with the living and mere natural elements which are assumed to be enshrined with various *Shinto kami* spirits. The greenery physical forms and *tobiishi* stone items were used within the garden how they were found in the natural environment. For an instance, the stepping and landscape stones were used in positions toward the ground as how they were found naturally positioned. Their naturally ordered physical form position and the orientation were kept. Nonetheless, the garden formal elements were setup in new positions and horizontal orientations toward the horizon. Thus, the formal elements established new physical forms relationship they become to be engaged and eternally gardened. That is how their natural physical form and their construction logic are assembled within new physical form and visual relationships with the other garden and given environment formal elements. Therefore the *kami* spirit that inhabits each of these elements is not disturbed in forms of their naturally found attributes, even though the formal elements are used to establish human envisioned *Katsura Rikyu* garden intangible logic.

Before the greenery and stone items, or the wooden material are prepared and cut for the sake of tea pavilions constructions, various *Shinto* rituals and prays are performed in order to praise *kami* spirit to allow and bless these artificial acts of force. However, *Shinto* teaches that every natural living or material element contains a spiritual essence which are collectively called *yaoyorozu no kami* [八百万の神]. It literally means eight million or myriad of *kami*. That means that each possible act of human influence toward the natural formal elements touches upon certain spirit that has to be praised in order to acquire bless. If the pray is conducted and bless is surpassed the act may proceed. That is how it is acquired a bless for the successful coexistence of a human being and *kami* spirit within the garden formal elements.

Nonetheless, the *Katsura Rikyu* complex initially was intended only for the visits of the Japanese Imperial family members. Before the end of the Second World War and the event of Japanese official surrender, nobody has ever heard a voice of their Emperor since Imperial family of Japan was assumed to be a descendant of the supreme *kami*, to be god spirit itself. The garden *tobiishi* pathway and the tea ceremony as such were envisioned and design for a visit of the mere *kami* spirit in the shape of the Imperial family members and their Emperor. Hereby the Imperial family held a duality of the human body and god spirit in one shape. The Emperor himself was an embodiment where again

Figure 93, 94, 95 : *tobiishi* units interaction with ground environment where their outlines naturally blend;

Figure 96 : *tobiishi* stone units outline interactions with tea house outlines and pebble made approaching ground :
It seems as if they have been kept in the ground since the house construction;

human being and *kami* spirit are met and attached to the same physical form [human body] within the garden formal continuum. That means that the stepping stones pathway is envisioned and design for the *kami* spirit itself, which can step over the stones and visually perceive the physical forms of the garden formal elements.

The garden pathway itself is inhabited with *kami* spirit of the land that was usurped with the pathway assembling and setting in certain given environment volume and surface. The *kami* of the pathway character, the supreme spirit which comes out from the pathway intangible logic and according physical form logic meet the *Amateratsu kami* spirit in the form of human being, namely Emperor himself. However, the supreme *kami* spirit, the Sun Goddess *Amaterasu*, sent her grandson *Ninigi-no-Mikoto* to the Earth to pacify Japan. Emperor himself was considered as a divine descendant of *Amateratsu* through *Ninigi-no-Mikoto*, confirming his legacy as a highest ruler of country of Japan. He was named *tenno*, which literally means sovereign from heaven. Therefore the Emperor human body can be assumed as another standing there [being human] and being there [being *kami*] merged into one formal and physical form logic. However, the garden pathway was intended for the *tobiishi* passage of the *Amateratsu* descendant himself.

4.2.1 *Kekkai* as one of the methods applied in *tobiishi* construction

The direct connection to the pathway ground of firstly intended to walk along the lane, sacred Emperor human body, is achieved in an orchestrated *tobiishi* stepping stones items manipulated manner. They further manipulate human body dimensions and field of view character determined transition through the landscape of gods to the entrance of tea room pavilions. Therefore, their units present natural and artificial attributes as well as presence of *kami* and stepping human in their physical forms.

Hence, visitors' intrusion in the garden pathway is marked with stone pattern disposal. They are envisioned to be the only physical form that suffers from the physical contact among the human body and the pathway earth inhabited with sacred spirit. The stone pattern possesses different amounts of dualities in its natural to artificial manipulated physical form in gradient classification of [*shin*, *gyo*, *so*]. While being closer to the tea room pavilions the physical form of these stepping items becomes more artificial. While walking through the natural pathway environment the stepping stones keep their natural physical form. Distances from the artificially constructed tea houses thereby are proportional to the quantity of natural shape in stepping stones. In both cases *tobiishi* pattern units and mutual distances dimensions are instantly arranged according to the walking body dimensions. Nonetheless, in time the pattern becomes physical form that is increasingly encircled with the grass and shrubs and becomes merged into the natural environment. This is how the stepping stones incidental physical form quantity lowers impression that those units are artificially inserted in garden ground. Hence, they

are gardened and taken care so carefully that they do not become absolutely detached from the human body stepping activity that they are indeed primarily intended for.

The *tobiishi* stones pattern along the pathway is assembled using the natural position and [mainly] the natural shape of the stone items. The garden designers were walking through the wilderness and they chose those stone items which being naturally settled as such actually are matching the criteria of the human envisioned idea of how the human would step along the garden pathway. Each human stepping point was intended for a certain physical form of the future stepping stone. If the natural stone item was matching the envisioned physical form for the given point, it was taken and brought from the nature into the garden complex and finally integrated into the pathway physical form logic. This is how the pathway stepping physical form intangible logic was brought up into the garden world and finely constructed with naturally ordered construction logic of the naturally found stone items.

The pathway physical form thus originates and belongs to both – gods in the mean of their preserved presence within the stone items and humans in the mean of their walking presence that occurs along the stepping stones pattern. Thereby the human idea of the intangible logic is physically formed using the very natural stone items. These items were selected according to a human recognition if they can support the intangible logic if positioned in certain point of the garden pathway pattern. Thus, the stones are not [dominantly: except *so* pattern] physically formed or envisioned according to the intangible logic brought up by a human. Their intangible logic is a consequence of the biological and chemical processes that occur in nature out of human force reach. Therefore their physical form and construction logic are absolutely adapted and determined in accordance with the natural environment.

The garden designers merely decided which of those stone items found in nature can be used in their own shape and orientation to accomplish the pattern setup as the garden future *tobiishi* imperial pathway. However, their *kami*- spirit of their being is praised and appropriately preserved before units are taken from the nature and inserted. That is how the natural attributes of stones found in nature in how they look like are used to achieve artificially envisioned intangible logic along the Imperial pathway. Nonetheless, these attributes and their physical forms become in stones' relation to their natural environments in forms of their natural secondary forms. Therefore, there natural capability to engage with belonging environment is the visual impression they resemble with. Finally, their natural intangible secondary logic becomes artificially manipulated intangible logic. Thus, when one measures and determines the garden pathway intangible logic, stepping stones natural attributes, as a consequence of the natural intangible logic, become objects of visual, physical and cognitive analysis.

Consequently the garden pathway intangible logic and pattern construction are envisioned by the garden designers, while its physical form and construction logic are created as a consequence of certain natural conditions. The pathway becomes finally constructed and introduced into the garden space while keeping its belonging to the world of natural spirits – *kami* and functional disposition that should manipulate the human walking activity and following field of view. This is how the *kekkai* as the method of creation is variously established within *Katsura Rikyu.*

Figure 97 : *Tofuku-ji* moss garden where perfectly cut stone units are in constant tension for prevalence in visual and physical dominances : greenery forms and moss masses are meticulously gardened and kept in their wilderness, while stone units do not lose their square outlines

4.2.2 Natural stone units made to be artificially applied *tobiishi* stone units

The introduction of *kekkai and shakkei* into the *katsura Rikyu* garden complex means the visual and physical form marriage of the two– human and god into the garden formal elements dependencies. The intangible logic envisioned by human is consisted of how the garden formal elements physical forms will be assembled and gardened in order to maintain that intangible logic along with the belonging constant ratio of the essential and incidental physical forms quantities. The initial intangible logic of the garden formal elements physical forms becomes through their natural construction logic which is kept while assembling them according to the human envisioned intangible logic. These two logics are synchronized in a single intangible logic which is visually perceived *per se.* Hence, since the garden physical forms logic is constructed in relation to the field of view, the *tobiishi* stepping stones pattern becomes crucial in setting the field of view position and direction.

The stepping stones pattern does not exist solely in each stepping stones point. The walking activity also does not work as a set of separate steps, but as a set of steps that are committed continuously and uniquely along the stone items lane. Equally to the garden intangible logic formal continuum, which has to be perceived in multiple arrays of the field of view continuous snaps, the human body walking has to be accomplished in a continuously manipulated manner. The walking activity is undoubtedly determined with the stepping stone pattern that absolutely characterizes the field of view that is represented through a set of the instantly assembled visual experiences.

Consequently, stepping stones' walking becomes determined with their pattern parameters [size, distance, symmetry, horizontal orientation, height etc.]. Accordingly committed steps become mutually dependent and relying in their parameters. In order to visually perceive or establish continuous physical form logic of the garden formal continuum, these steps are determined to be committed with certain meaning in relation to the previous and future step. That meaning comes out from the secondary, relational physical form among the garden formal elements physical forms logic and the garden stepping stones physical forms logic. However, the stepping stones stepping pattern is assembled in order to determine the exact position and direction of the field of view that notices garden physical forms exactly staged in certain relations.

Consequently, the garden formal elements become perceived as it was envisioned by the garden designers and understood with their intangible logic.

Since the garden formal elements secondary physical forms are perceived as a continuous visual impression, the walking steps have to be committed proportionally continuously. The same is achieved with the very exact stepping stones pattern where all of the stone units are positioned dependently while preceding and following each other. Every step is committed before the next one to partially influence and condition the next step that has to be committed with its own physical form logic. These secondary form logics of the stepping stones units and the following walking steps that occur within the *Katsura Rikyu* garden formal continuum follow the garden formal elements

secondary physical forms logics. To follow hereby means that they are assembled to make one manipulated to visually experience garden physical forms as it is imagined. Their mutual influences and coexistence occur instantaneously. If the pathway aligned physical forms are compared in exact time moments and accordingly exact stepping coordinates, there are comparative secondary physical forms measure in stepping stones units that suffer from proportionally identical change. This comparison expresses how these secondary physical forms and stepping stone pattern physical forms change according to each other in time.

Lastly, one could ask how the stone items can be measured as a continuous physical form since there is a physical void among each of them. Nonetheless, the stepping stones physical forms logics are mutually interdependent. That means that there is a continuous change in stone items parameters since they are connected with the stepping motion. That makes them to physically depend on each other and refer to more or less identical human feet. Their secondary physical form intangible logic does not depends on their physical connectedness. Nevertheless, their fulfillment in forms of visual experience of the garden does not accomplish if there is no stepping activity that occurs over them.

4.3 Measuring *Katsura Rikyu* intangible design method

4.3.1 *Ikidori* as a measurable form of spatial and temporal orientations within *Katsura Rikyu*

‘Have you heard the Taoist tale of the Taming of the Harp? Once in the hoary ages in the Ravine of Lunginen stood a *Kiri* tree, a veritable king of the forest. It reared its head to talk to the stars; its roots struck deep into the earth, mingling their bronzed coils with those of the silver dragon that slept beneath. And it came to pass that a mighty wizard made of this tree a wondrous harp, whose stubborn spirit should be tamed but by the greatest of musicians. For long the instrument was treasured by the Emperor of China, but all in vain were the efforts of those who in turn tried to draw melody from its strings. In response to their utmost strivings there came from the harp but harsh notes of disdain, ill-according with the songs they fain would sing. The harp refused to recognize a master.’ [Okakura, 1960. pp. 103-104]

The garden designers envisioned and accomplished the primary physical forms [shapes] selection, positions, horizontal orientations and the gardening manner of the garden formal elements [greenery, landscape[earth], stones, tea room pavilions] in order to preserve their physical forms. However, their physical forms were selected as they were found within natural environment. Their natural construction physical forms [branches, leaves, stone mass, earth mass, tea houses wooden elements and wall earth masses] related capability of changeability and adaptation toward the seasonal and atmospheric changes were kept as their natural attributes after the formal elements were integrated into the garden formal continuum.

Figure 98 : *himorogi* tree held at the top of the ceremony sacred construction at the festival streets in Kyoto : greenery physical form is represented as two-in-one: the 'truth of beings and the highest being' [Heidegger, 1945, pp. 10-12];
it celebrates *kekkai* method of always being different in its appearance and *ikidori* method of captured alive, where visual impression on natural form is always different in its appearance but one always identically understands its changeable 'truth of being' as a constant cognitive impression of 'the highest being'

That means that their natural intangible logic, *kami* being, is preserved and it exists along with the human envisioned intangible logic attached to these natural formal elements. The changeability of the construction logic of these elements keeps the visual impression of their material qualities constantly different in its quality [not quantity]. Since the environment and seasonal conditions are constantly instable, these material qualities [what they are consisted of] are in the constant process of their material physical forms adaptations. These adaptations include the changes of quantities in their constructions [branching development, growth and falling off, leafing, grassing, humidity appearance at the earth wall, earth erosion] and internal movement, while they react upon the environment changing conditions [sunlight, temperature, humidity, rain etc] and according seasonal changes. Hereby the visual impression of the garden formal elements physical form materiality constantly changes without harming or intruding their mere physicals form and their essential and incidental quantities ratio. That makes the physical form materiality not possible to be defined with a unique, certain status since objectively it suffers micro changes that happen faster than the human field of view frame rate. Their change is actually constant and thus characterizes the physical form materiality in always present time as being always present change in its natural attributes. This kind of changeability actually preserves and enhances the garden artificial intention to create within severe and damaging natural conditions. However, to each of these environmental and seasonal changes Japanese dedicated ceremonies that are held to celebrate different nature spirits, *kami*, which inhabit those natural conditions. Thereby, during the *Shinto matsuri* celebrations along the streets, the people carry a unique pine tree sample. It means that they celebrate the changing materiality, a meaning of all of the things; the always present becoming which is manifested in a form of the spring and summer full bloom period of the natural formal elements and conditions. This is, as Gunter Nitschke suggested 'a means of temporal orientation' [Nute, 2004, p.62] that happens along the garden pathway. They celebrate an overall intangible being that does not prevail in its ever changing physical forms visual impression, but in their following always identical cognitive understanding.

That means that the garden formal continuum along the pathway contains an intentionally involved sacredness. It periodically marks the passage of the time through its always constant cognitive impression. Its change does not exist in time but rather overwhelms the seasonal change as a constant quality of the garden formal elements that does not affect intelligible conclusions. This conforms to the 'Eliades notion of an eternal sacred time being recreated through a periodical renewal of the sacred space' [Nute, 2004, p.62]. Hence the garden formal elements physical forms are constant in their objective and visual appearance while their constructive construction logic becomes always rejuvenated in their constant being to not being alike. They constant is the change of the material physical form which is marking the passing time without harming overall garden formal elements intangible logic they evoke. This garden formal elements intangible logic can be explained using indigenous Japanese word for captured alive – *ikidori*. It suggests that in the active visual experience of the garden formal elements their material physical forms always become different.

Figure 99, 100 : *ikidori* method of ‘captured alive’ in always identical field of view frame from the exact stepping point in *Katsura Rikyu* garden :

it appears different in different seasons in its quality, but it quantity remains constant and impress with identical cognitive understanding;

4.3.2 Measurable attributes of Katsura Rikyu physical forms

Hereby one can be reminded of a story of the honorable Kobori Enshiu. Once, he was complimented by his disciples on the admirable taste he had displayed and practiced in the form of art and tea ceremony. They said: 'Each piece is such that no one could help admiring. It shows that you had better taste than had Rikiu, for his collection could only be appreciated by one beholder in a thousand.' Sorrowfully Enshiu replied: 'This only proves how commonplace I am. The great Rikiu dared to love only those objects which personally appealed to him, whereas I unconsciously cater to the taste of the majority.' [Okakura, 1960, pp.114-116]. Hence, Kobori Enshiu taste applied in*Katsura Rikyu* garden brought up the garden formal elements material physical forms to be left over as they are found and develop in nature. He did not involve any of his design taste vanity as a part of the garden formal elements. Therefore their true physical form logic can be discovered and therefore comprehended only by 'one who mentally completes the incomplete' [Okakura, 1960, p.95] and that is to engage in the garden tour and step through the garden complex. Nonetheless their material physical forms, the garden formal primary elements physical forms are always equally visually perceived. O contrary, while practicing the tea ceremony within the garden pavilions, it is left for each guest and his imagination to complete its personal image and motifs in front of *tokonoma* where he wants to be.

There was no complete vanity of the natural geometries or the subordination of the whole garden formal continuum toward the human body, while the continuum becomes constantly at the edge to become wilderness or artificially gardened. The garden holds both of these subordinations and suffers from constant stress in its identity. However, an unnatural intangible logic symmetry and designers 'self-regard is apt to become monotonous' [Okakura, 1960, p.95]. The garden physical forms remained out of any human influence of how it will execute its intangible logic. Thence, the garden formal elements are primarily referred to their beingness while that beingness entirely supports human presence. The term of existence, beingness of beings [the ousia of the on [old Greek], die Seiendheit des Seienden [German], refers to the term of chreods, or being in time which does not elapse or last in time measure. Beingness is an actual physical form of the garden formal elements construction logic. It is about how the overall physical form [shape] – being which establishes the formal elements visual logic and analysis, is maintained in their physical forms. Hence, as how it is stated in Heidegger [1945] there is a twofold manner of the garden formal elements being and beingness developing. Primary intangible logic refers to the totality of the beings determined with the human field of view [ou katholou koinon] and how does it conduct its standing there. Material intangible logic refers the totality of the beings as such in the sense of the highest and therefore divine being [on katholon, akrotaton, theiou] and how does it conduct its being there and with which kind of physical forms [material physical forms]. Thereby formal elements beings are represented as two-in-one: the 'truth of beings and the highest being' [Heidegger, 1945, pp. 10-12] in one physical form.

The material, physical form of the garden natural formal elements connects the Greek metaphysics [meta ta fisaka: what is that truth of being there that maintains standing there of a formal element] and theology of Christianity in the form of the Epistle of Paul the Apostle to the Corinthians: 'ouhi emoranen o theos tin sopsian tou kosmou; Has not God let the wisdom of this world become foolishness?' [I Cor. 1:20]. This wisdom is kept with its rightfulness in their construction logic that relates and comes from the highest being of how the plant grows and 'what is the source of their growing forces' [J.W. Goethe]. Therefore, the material physical forms beingness comes to be in a view while promoting the primary physical form which holds the truth of bengs. Therefore, the Epistle of Paul hereby perfectly reveals an intention of Kobori Enshiu That is to establish *Katsura Rikyu* garden formal elements to be perceived in a form of the garden formal elements primary physical form. The beingness comes to be in a view in a form of a being: 'truth of beings' comes to be in a view of 'the highest being' [Heidegger, 1945, pp. 10-12] Nonetheless, as previously noticed this phenomenon has to be gardened in order to preserve the human envisioned garden intangible logic whose physical form visual experience is supported with natural construction logic.

Gardening process keeps the natural formal elements intangible logic to be an actually ordered, not strictly defined the garden designers. Hence, the garden designers undertook only the acts of how to redirect the beingness, the chreod growing vector, of the naturally found formal elements to assemble and automatically establish and maintain the artificially envisioned intangible logic of the *Katsura Rikyu* garden. Here it can be referred the end of the upper quoted Taoist tale of the Taming of the Harp. After a while the harp made from the wood was finally succeeded to be played by certain man named Peiwoh. At the end of the tale he replied:' Sir, others have failed [to play the harp] because they sang but out of themselves. I left the harp to choose its theme, and knew not truly whether the harp had been Peiwoh or the Peiwoh had been the harp.' [Okakura, 1960, p.104]

It seems as a spontaneous wilderness walk, but the whole garden pathway determines the final practice of the tea ceremony act of a tea tasting that whose preparation starts at the pathway Imperial gate. At the other end tea room possesses an importance as final development point and spiritual zenith of *tobiishi*. Therefore, one becomes capable of accomplishing the prime objective of the Zen influenced form of a tea ceremony developed by masters such as *Sen Rikyu*: one time, one meeting - *ichi go ichi e*. The whole process has to be known for the hose that has to be immersed and take the whole ceremony process to the successful ending point. The Imperial family members were assumed to be capable and culturally belonging to the perfect accomplishment of the tea service as the highest degree of the cultural act. Since they were assumed to be the descendants from the god *kami* spirits themselves, they were assumed to be not only the embodiment of the god perfection, but rather their whole life is regarded with sacred instances, as well as their living spaces.

Figure 101 :

Sample of the greenery construction physical form that builds primary physical shape of the garden greenery elements;

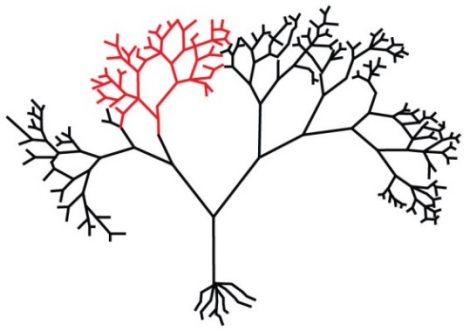
1

An actual greenery physical form consists from many branching, formless samples that are grown and assembled into meaningful physical forms outlines that is visually perceived along the pathway;

2

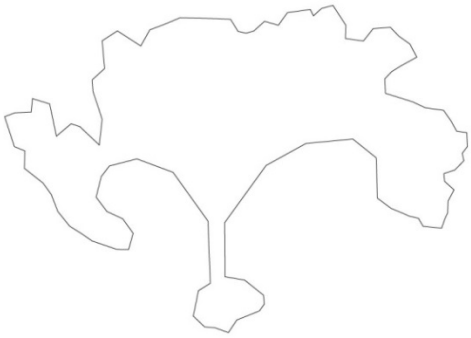
The beingness comes to be in a view in a form of a being: ‘truth of beings’ comes to be in a view of ‘the highest being’ [Heidegger, 1945, pp. 10-12]

3



Nonetheless, as previously noticed this phenomenon has to be gardened in order to preserve the human envisioned garden intangible logic whose physical form visual experience is assembled with natural construction logic

4



4.4 Disintegration of *Katsura Rikyu* in plans :
natural and artificial physical forms engaged in depending relationships

Katsura Rikyu formal elements representations and their physical forms attributes simultaneous distributions

Figure 1: Katsura Rikyu formal elements continuum

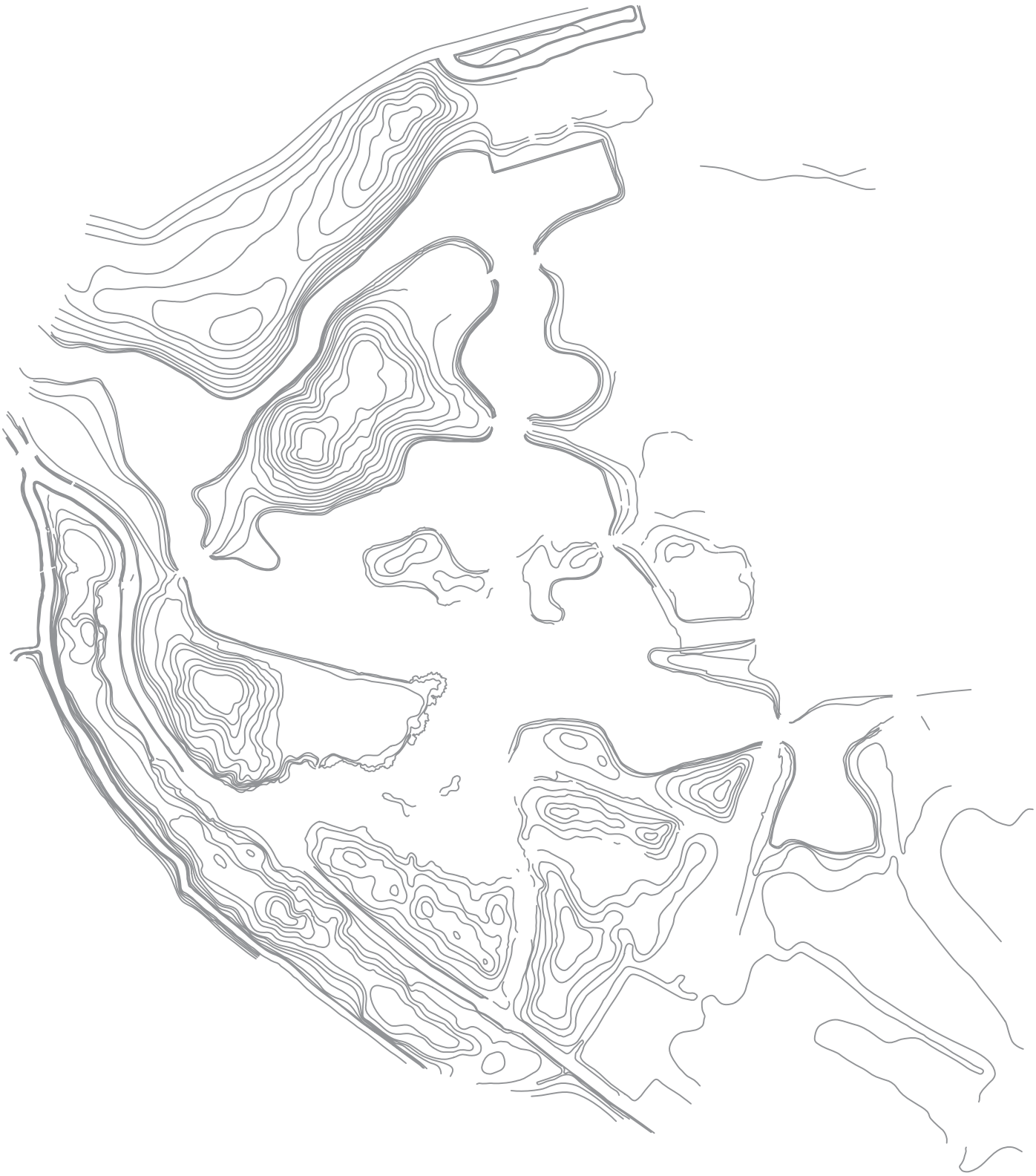


Figure 2: Katsura Rikyu formal element - landscape earth

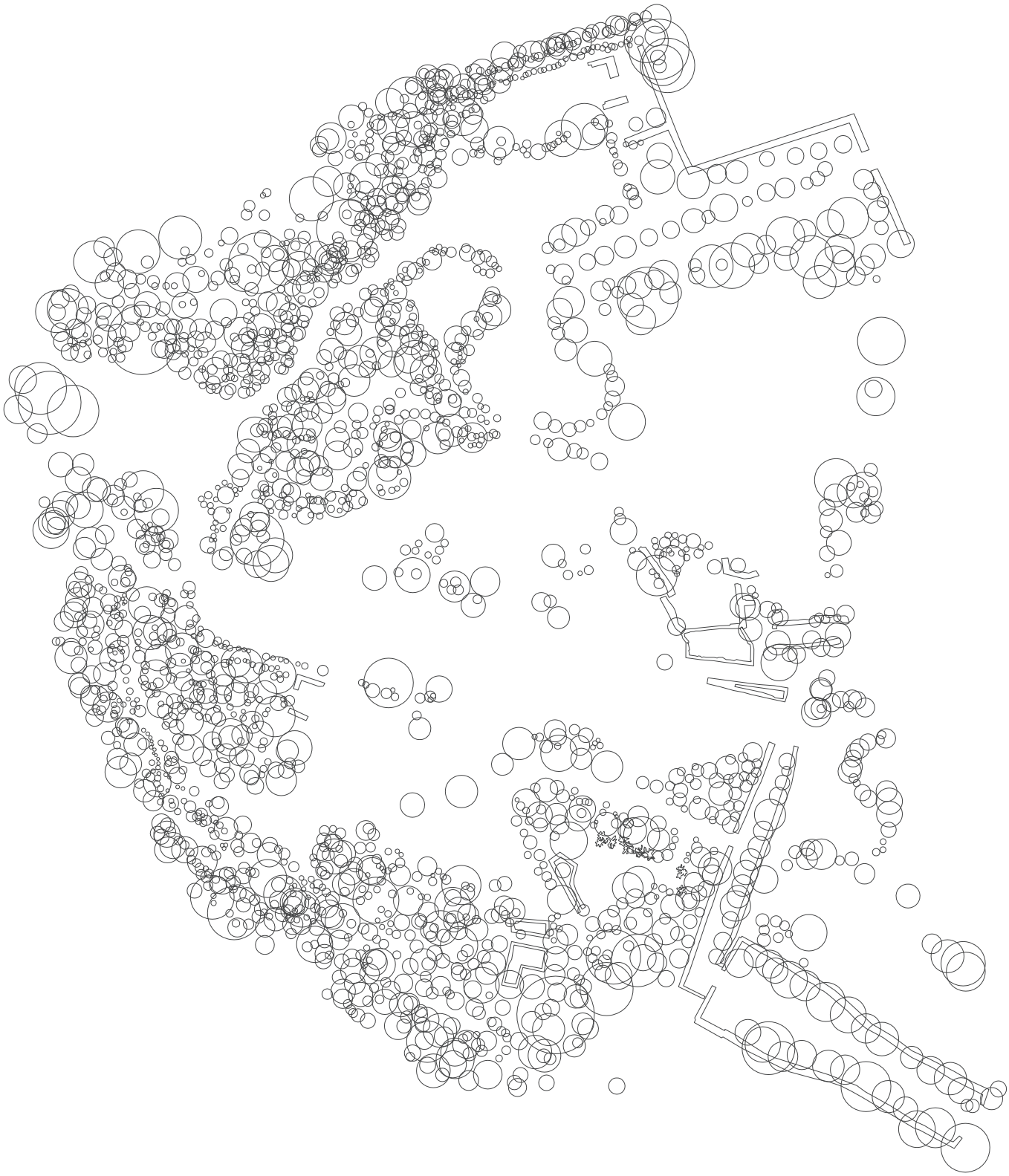


Figure 3: Katsura Rikyu formal element - greenery

Figure 4: Katsura Rikyu formal element - tobiishi stone pattern

Figure 5: Katsura Rikyu formal element - shokin tei . shoin

Figure 6: Katsura Rikyu formal element - lanterns

Figure 7: Katsura Rikyu horizontal stepping continuity - from tobiishi to tatami units

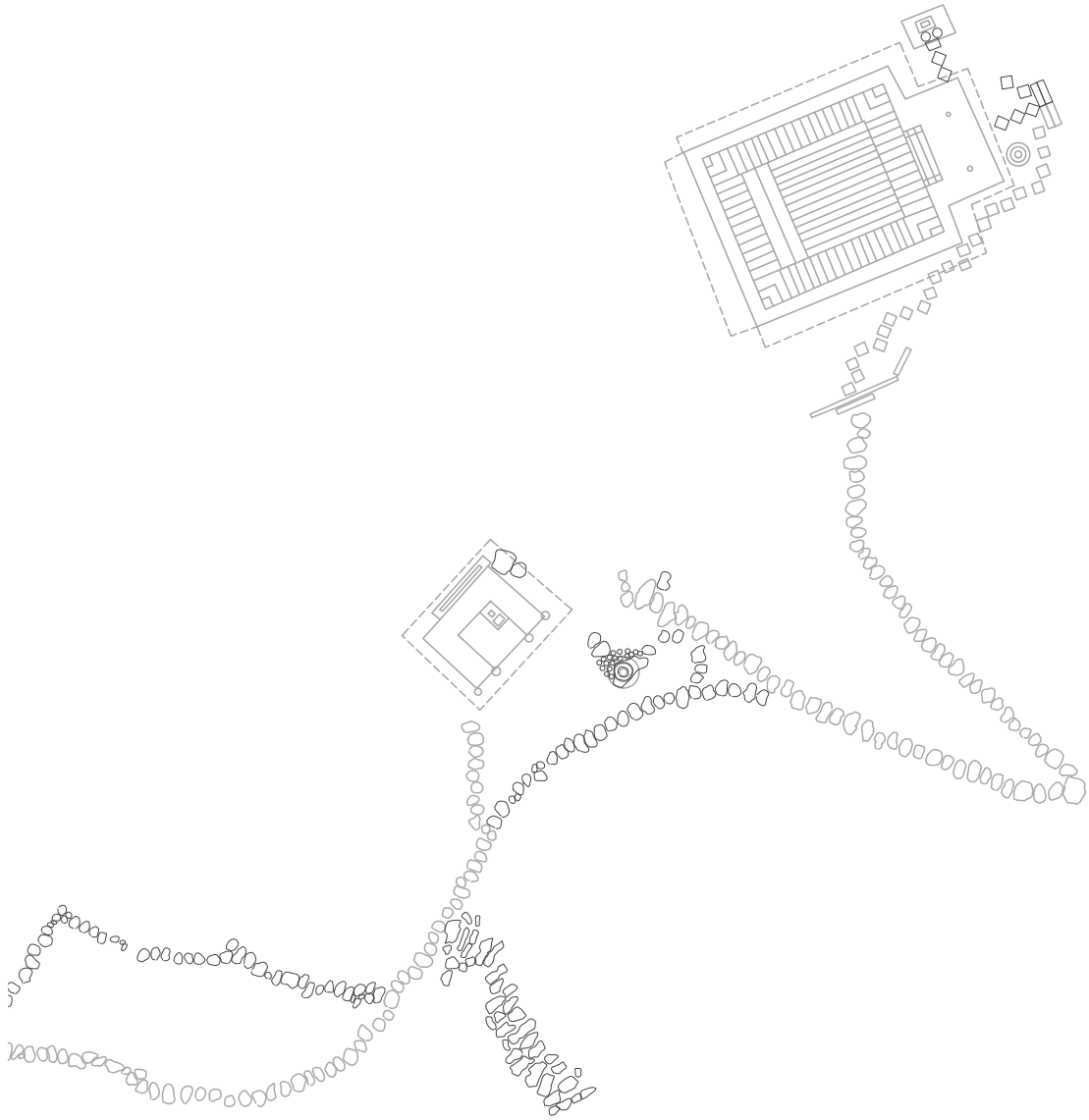


Figure 8: Katsura Rikyu formal element - tobiishi stone units: shin gyo so

Figure 9: Katsura Rikyu density of the greenery physical forms trunks coordinates

Figure 10: Katsura Rikyu greenery formal elements radii distribution

Figure 11: Katsura Rikyu simultenous distribution of tobiishi stone items and greenery coordinates

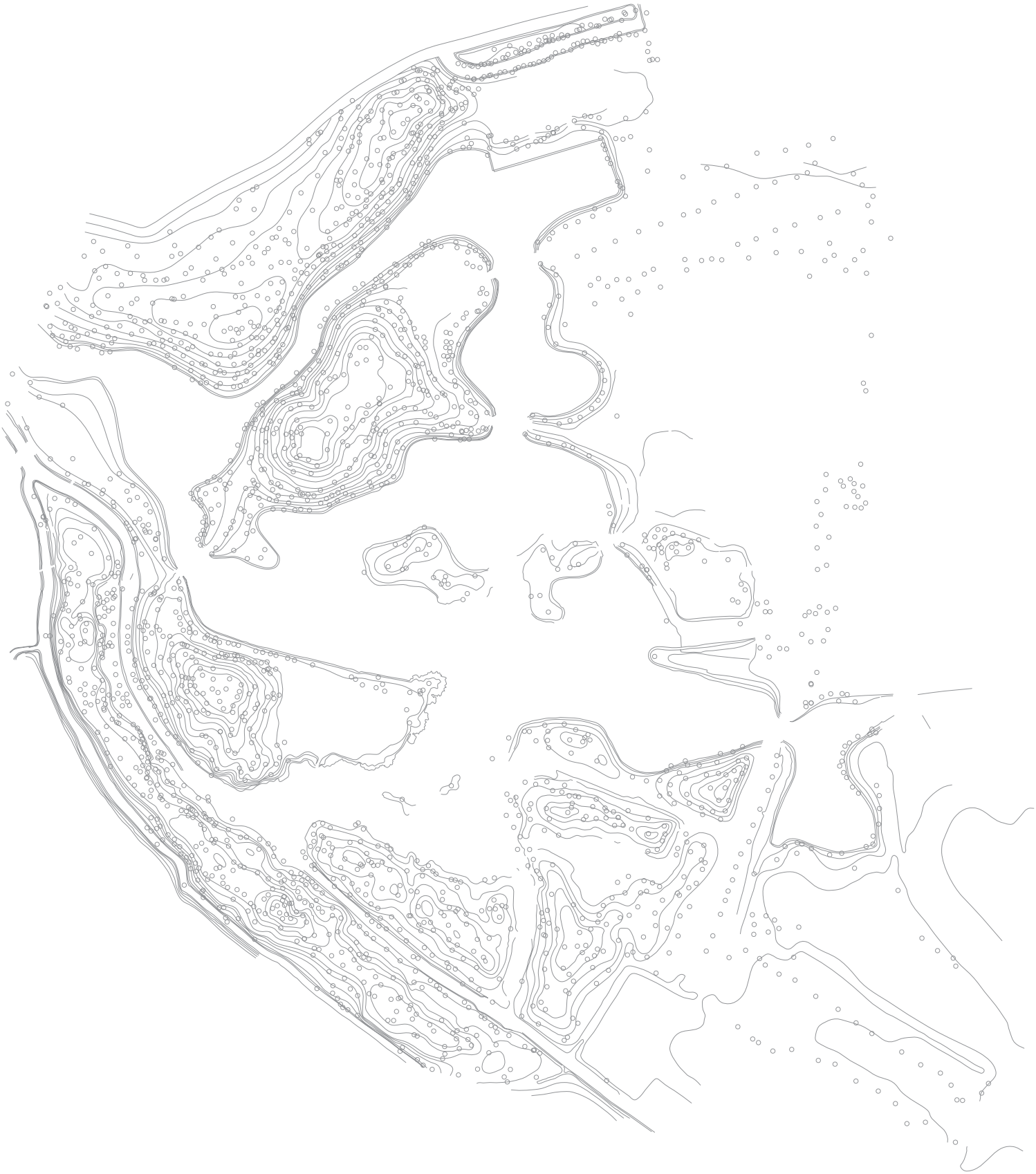


Figure 12: Katsura Rikyu simultenous distribution of teh landscape isolines and greenery coordinates

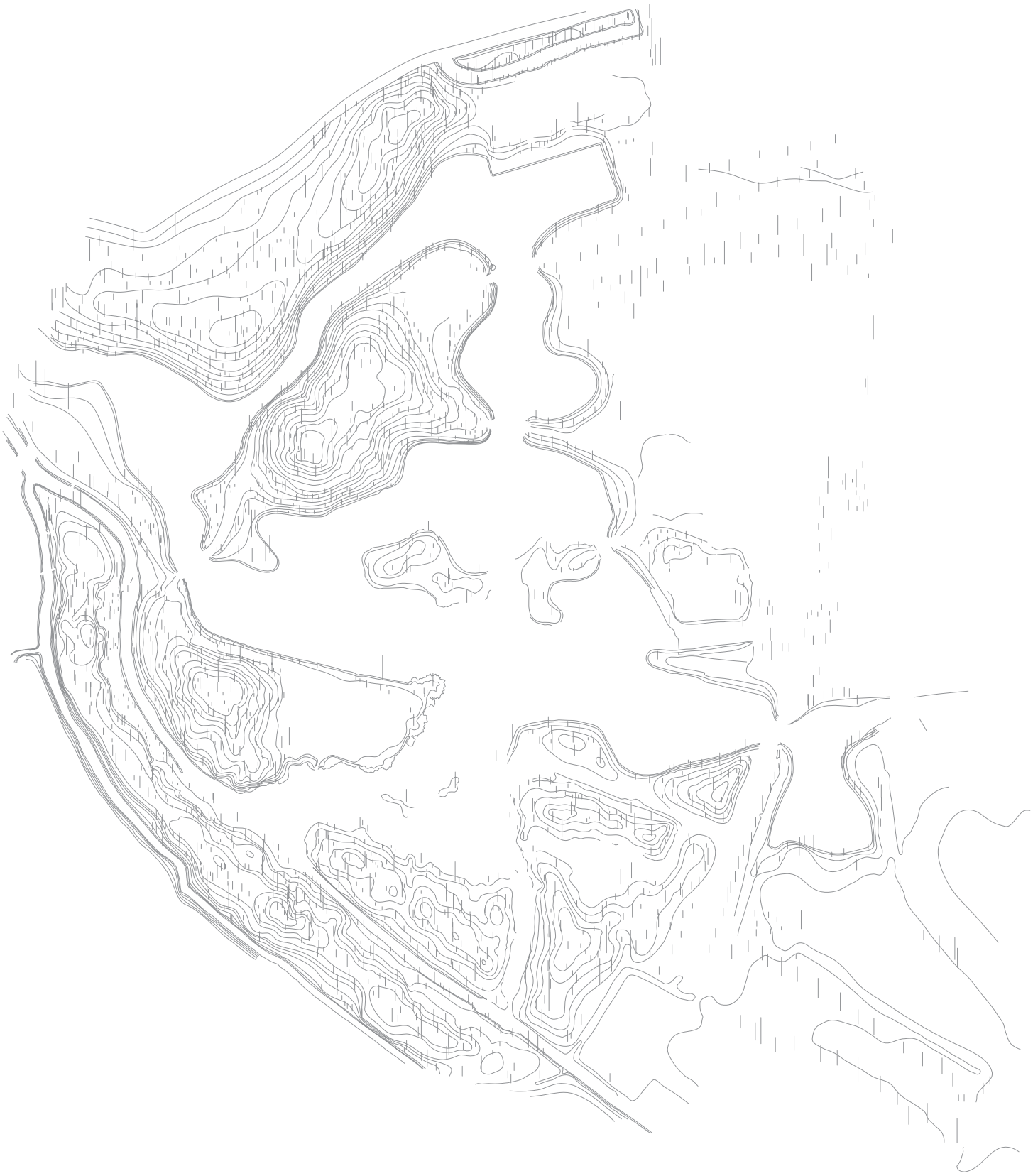


Figure 13: Katsura Rikyu simultenous distribution of the landscape isolines and greenery radii

5.0 Methodology of analysis on the garden formal elements visual experience obtained in *tobiishi* pattern

5.1 Introduction to research methodology

5.1.1Katsura Rikyu physical forms' qualitative attributes with quantitative values

Figure 102 : Fushimi Inari Taisha, head shrine of Inari in the bottom of Inari mountain: *tori* pillars red to grey artificial color succession toward tree trunk pillar natural tones;
Obvious sample of a color mimesis among artificial and natural formal elements that form directed void for *kami* deity passing presence;

Natural formal element in a form of the tree trunk is artificially manipulated with its natural position toward which is assembled artificial array of *torii* gates;
O contrary, artificial gates' pillars are adapted, along with their belonging shrine complex, to the landscape terrain and natural environment [greenery, rocks etc] in order to construct Fushimi Inari Taisha [characteristic for Shinto shrines];
Visual experience of natural formal elements within the shrine is brought closer to the experience of artificially positioned pillar elements, whilst artificially created pillars are visually brought closer to the state of being naturally created. In this manner, visual experience of this Shinto shrine is lowered in its artificial origin and brought closer to the visual experience one gains in natural environment and vice versa;
This artificially allowed and gardened tendency is gradual and obvious in textures and color decay along with moss appearance. Thence, these natural processes, basically artificially applied, lower both visual and more substantial artificial material quality;

Same method is applied in Katsura Rikyu garden in its visual experience. Same coherence is achieved in physical and visual mutual mimesis among natural [greenery, landscape, *tobiishi* pattern etc] and artificial [tea houses, *tobiishi* pattern, lanterns etc] formal elements installed within the garden stage; this mimesis becomes part of visual experience one gains from exact *tobiishi* stepping coordinates;

Figure 103 : Ise shrine *Naiku* inner shrine : quantitative change in wooden material different kinds of raw in moss covered, moss semi-covered and plain surfaces;
the change occurs in decreasing physical and visual distances in relation to the shrine main building made in plain wood;

Different kinds of furbishing, amount of moss coverage and shape of the wooden materials carry different *odeurs* of natural and artificial attributes as one visually and physically approaches the *Naiku* shrine *honden* envelope;

Figure 104 : One of the final stepping portion of Katsura Rikyu *tobiishi* pathway in front of tea house units at the end of the lane : natural greenery formal elements are artificially positioned and partially gardened in their shapes' incidental outlines, whilst tea house is constructed with material that is partially kept in its natural state of shape and surface finishing;

Therefore, one visually experiences this garden scenery as a naturally originated complex even though the whole field of view is artificially imagined and accordingly staged in a construction;

5.1.1.1 Measurable attributes research potential on immeasurable cognitive representation

Pourquoi y a-t-il plutot quelque chose que rien? [Leibniz, 1740]

Pourquoi le monde est-il ainsi et pas autrement?
Car le rien et autrement sont plus simple et plus facile que quelque chose[Leibniz, 2004, p.233]

The garden formal elements physical forms are in states of constant changes in their natural adaptations. Therefore, their construction logic that governs those changes determines and builds the outlines of the garden formal elements actual shapes. These various garden outlines are further divided in their essential and incidental parts [explained in previous chapters]. They are the basic condition of an artificially imagined manipulation of human field of view development. Hence, the construction formal logic of the formal elements is consisted of many material physical forms [leaves, branches, stone minerals, earth substrate etc], which are naturally organized into certain shapes and their outlines. The shape hereby refers to the boundaries, outlines of how the construction logics' patterns are assembled. These assembling processes [branching, crystallization, leafing, grasses spread etc] end in natural determination or artificial gardening whereby they establish certain outlines, boundaries. Thence, the shape of the garden formal elements, their being, visually noticed in field of view, becomes an outline of how their intangible beingness [responsible to the highest being – natural patterns' logics] is spread in tangible environment.

Thence, *himorogi* sacredness in *Shinto* rituals celebrates the pine tree beingness. Its branching sample is brought through the streets along with following ceremonial rites. The origin of the natural form, *Baraka*[I], becomes to be celebrated as an intangible logic expressed through the closest approximation in natural tangible elements. The branching sample does not represent the whole tree, different for every branching behavior found in nature. It represents the branching as the closest tangible sample to an intangible Baraka. It does represent a single formal element, but rather as a tangible manifestation of Baraka behavior that finally forms natural formal elements' shapes inserted in the garden. Thereby, most of the natural formal elements applied in Katsura Rikyu garden are kept in their natural states. That assures the highest level of natural construction [Baraka] to be preserved within basically artificial environment. Nonetheless, they kept the same branching behavior independence, whose Baraka is obviously artificially applied in order to fulfill artificially imagined Baraka of the garden that has to be visually experienced along the stepping pathway.

[I] 'Baraka.. is the continuity of spiritual presence and revelation that begins with God and flows through that and those closest to God.' [Nasr, 1999]. It flows directly from God in tangible forms that are worth of carrying baraka. In this Sufi essay this tangible form carrying that very intangible meaning coming from God represents intangible Baraka in its tangible proximity that can be visually perceived and ritually celebrated.

Figure 105,106,107 :
[up to down]
Kyoto *Gyon Matsuri* summer festival:
himorogi tree sample as a mean to celebrate *kami* spirit as a signifier of a supreme being, toward which each greenery formal element is responsible in its intangible construction logic;

Ise shrine demarcation of sacred tree trunks :
their intangible logic and untouchable distance toward visitors of the inner *Naiku* shrine complex is marked with laced bamboo stripes;

Katsura Rikyu garden :
Iwakura stone unit positioned on top of *tobiishi* stone unit is used to mark the stepping portion at the Imperial Pathway that is not allowed to be entered by the ordinary visitors;
Both of stone units are inserted with their naturally found shape whilst only *tobiishi* unit is oriented according to the stepping direction;
the stepping unit is chosen to be marked as the most important at this part of the stepping lane due to the change of stepping direction in its coordinate;

Iwakura unit tied with *nawa* rope hereby signifies the presence of sacred *kami* deity [Baraka] within each of the unit, toward which each stepping stone is responsible with its intangible construction logic and according shape;
however, *kami* spirit signifies natural forces that built *tobiishi* unit in its naturally found shape;

This duality in physical representation of an intangible idea or representation of gods that develops in relation to natural formal elements has always been present in Japanese society. Various celebrations in forms of *himorogi* and *iwakura* [marked with *shimenawa- shime* is a strip of white paper, while *nawa* a rope made of rice straw or hemp] actually represent the celebration of supreme *omikami* present in these natural formal elements. They are carried through town streets to be experienced not in what they visually represent, but what is the intangible meaning of their beingness obtained in their natural environment.

Similar connotation can be applied to *Katsura Rikyu* formal elements arrays along *tobiishi* pathway. They intentionally staged along the lane not to be visually experienced in their obvious, singular tangible form, but rather in their visual and physical interactions with other garden formal elements. These relationships belong solely to field of view captions acquired in *tobiishi* stepping coordinates. Thereby, they can be classified as intangible since they firmly exist only in the field of view development and finally result in cognitive images and graphs presented in research design. Thence, within Ise inner Naiku shrine one can notice various *tamagushi* white paper wrapped branches attached to *tori* and shrines' pillars and pilasters as well to greenery trunks. They indicate the presence of divine *kami* spirits in these natural formal elements. Their tangible shapes coexist in natural environment along with other formal elements, similar to the Imperial pathway natural environment positioned along the stepping lane deep sides. Various natural forces and these other formal elements mutually correlate in also both physical and visual manners. Therefore, their final shapes become as results of these various forces' influences. Hence, their shape becomes in these formal elements branching developments according to these forces. Shape of the branching in greenery formal elements for example thereby follows the shape of intangible forces, which finally results in natural formal elements outlines. However, this inner beingness characteristic for each natural physical form and becomes in influences from the environment and interactions with other physical forms, is assumed as intangible. These forces are called *ke* and believed to permeate any palpable formal element. Sacred forces are further applied in shrines constructions with wooden construction material and celebrated as central post of the *kami* enshrinements. Thus, Ise shrine complex is built out from cryptomeria and evergreen *sakaki* trees. Both, Naiku inner shrine and outer Geku shrine are composed of fences, gates, storehouses, attendant shrines and main sanctuaries that are rebuilt in *sengu* ceremonies. Therefore, each of these artificial formal elements is built using woods preserved in their sacredness. This sacredness is kept with different stages of preserved, raw naturalness [from moss covered surfaces to the perfectly smooth but with natural color kept finishing] that characterizes each of the shrine houses. These intangible *ke* forces are marked with tangible *oi-ya* small huts that enshrine *shin-no-mihashira* [the august column of the heart, sacred central post] wooden poles. They are 10cm diameter posts, 2m long that are kept at both of *kodenchi* [shrine construction lots] and never revealed in their visual appearance. Their tangible, visual absence symbolizes, emphasizes the intangible presence of Amateratsu Omikami divine spirits *ke* that dwells vast natural environment.

Figure 108, 109 : Ise shrine inner Naiku shrine complex *tamgushi* sample of baraka [chreod]:
Tamagushi, used by Shinto priests at ceremonies: a sprig of Cleyera orchnacca with attached white paper strips called *shide* anchored to one of the inner shrine *tori* gates [left image] and to the wooden pilaster belonging to one of the shrines' buildings *haiden* envelopes; it indicates possible presence of *kami* spirits where white demarks intangible beingness of those tangible objects;

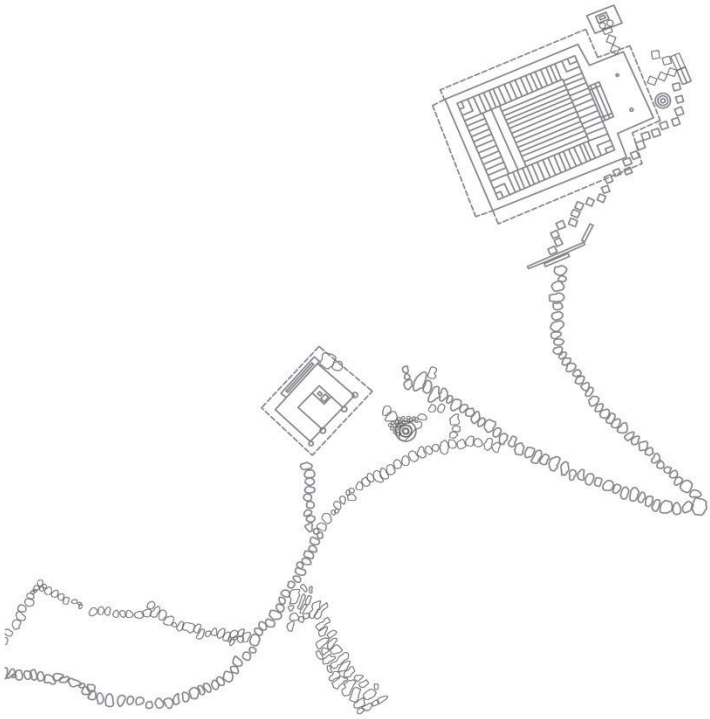
Figure 110,111 : Naiku shrine entrance [left image] and next *sengu* lot with *shin-no-mihashira* sacred pole :
[left image] : Naiku shrine secondary entrance covered with white clothing: ordinary visitors make their pilgrimage final pray and clapping motion in front of the entrance gate; this distance and final emptiness of pilgrimage visual experience emphasizes presence of supreme *kami* in shrine haiden and honden areas that develop behind the clothing screen along the sacred parcel;
[right image] : *kodenchi* empty lot where previous shrine stood and where the next one is going to be constructed : *oi-ya* wooden hut that enshrines *shin-no-mihashira*- sacred wooden pole that demarks constant intangible presence of sacred spirits even though the tangible shrine once stood there is deconstructed;
sacred wood remains unseen since the new shrine is constructed around its *oi-ya* before its covering shrine is removed; it represents an ancient form of celebrating sacred presence of gods in this rather primitive sample of tangible form of Baraka, but supreme intangible form of primary forms of shrines;

Figure 112-119 : *Katsura Rikyu* garden caption samples recorded from certain *tobiishi* stepping positions whereas *tobiishi* determined field of view is composed from various garden natural formal elements [majorly greenery] :
even though these natural physical forms exist and can be extracted as singular formal elements, they cannot be singularly extracted from field of view compositions;
hereby their visual and physical independence is not what develop perceptions they evoke : their ‘standing there’ is not what is visually perceived, but rather their ‘being there’ substitutions in forms of various visual and physical interactions with other greeneries;
singular greenery formal element is visually affected with formal elements mixture outlines that develop in these interactions and their mutual overlapping occurrences;
those intangible interactive forces [ke], which directed growth of greeneries’ branching and determined their final outlines, become matters of visual experiences in their tangible representations where essential and minor incidental parts mutually overlap; hence intangible permeates tangible, becomes visually perceived and finally cognitively though out;

Similarly, the garden formal elements absence in their independent visual and physical presence is changed in visual experience of how they are composed in interaction with other formal elements. This kind of visual and physical substitution from 'standing there' in 'being there' [literally applied in *shin-no-mihashira*] preserves and therefore preserves the form taken by Japanese places of worship in very ancient times; the *shin-no-mihashira* would thus be the survival of a symbolism from a very primitive symbolism to the present day.' [Tange, Kawazoe, 1965, p.167].

These primitive celebrations of Baraka are completed in various smaller *shimenawa* roped off *iwakura* rocks and bigger rocks at the sea lines, which are regarded as subsidiary deities enshrinements' of Ise Shrine. The highest celebration and pray occurs in front of main shrine gate covered with white clothing. Hereby the absence of physical presence of sacred entity is substituted with imaginary scene in human minds and prayers and hand clapping in order to evoke *kami* presence and good fortune blessings. Honden area, inner part of the main shrine thereby remains not allowed to be entered while distanced with heiden hall of offerings, approached through haiden worship hall. Again, hereby occurs visual substitution even in honden area that does not enshrines any statue as practiced in Buddhism. It houses Amateratsu Omikami sacred mirror, sword and jewel in which *kami* is believed to resides. Identical experiences are offered in tea room *tokonoma* screen where visual substitution occurs. Usually intangible 'being there' [relation of certain natural element and its branching behavior] becomes visually recognizable tangible form substitution of tangible 'standing there'. Mutual interactions of greeneries are always present along with other *ke* forces within the environment. In *Katsura Rikyu* garden they are integrated along with the natural formal elements even though they are artificially positioned. They are integrated with their prehistory of forces they were influenced from and engaged in new visual and physical relations within new environment. Therefore, their inevitable continuity in interactions develops in forms of tangible presences of intangible forces that form their branching shapes and final form outlines. Thence, these always present tangible forms of forces become what is visually perceived and successively cognitively thought out and understood.

Therefore, all of the garden formal elements are collided in mutually visually and physically coexisting environment. They are assembled and positioned with mutual admittance of each of their singular forming forces behavior [greenery branching, stones' crystallization, landscape erosion and outlines etc]. That means they are inserted and further developed with their construction logic along with other formal elements. That made their *ke* forces to be additionally developed according to the new garden environment disposition. Shinto shrines are similarly developed with their spatial disposition and orientation according to the landscape they belong. Approached through array of *tori* gates, pathways and stairs they always differ while adapting to the landscape outlines. That makes their religious and therefore esthetical meaning of the shrine overall architectural disposition to be constant in its content, but always different in its visual experience. Nevertheless, an overall cognitive conclusion about these always different architectural artifacts is that they are collided with their natural environment as if they have grown together with these natural formal elements.



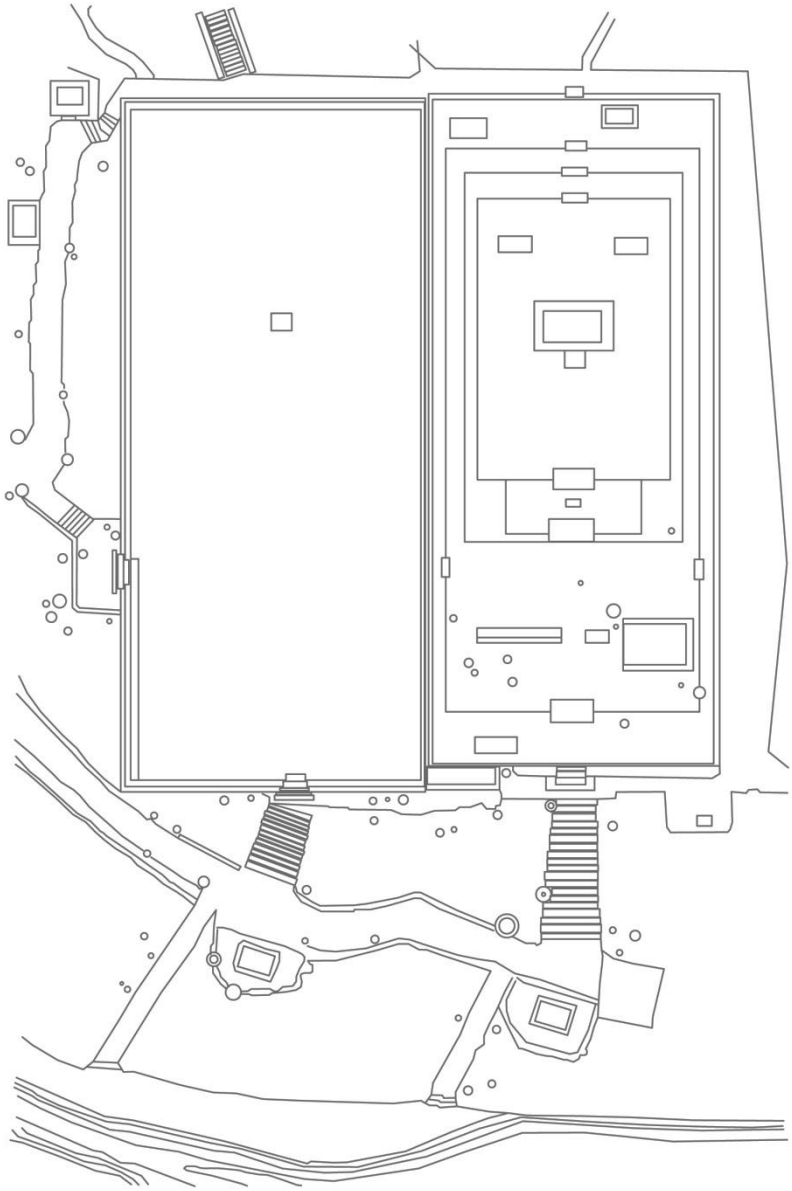


Figure 120, 121 :

Grand *Ise* inner *Naiku* shrine [lower drawing] actual and reconstruction lots [one with constructed shrine; another lot prepared for next *sengu* ceremony along with *shin-no-mihashira* item];

In spite of that being so, shrine is always rebuilt in constant manner and form at two exactly equal sacred parcels, their *torii* arrays pathway and stairs upholds are different for these two sacred lands; they adapt to the landscape disposition, which differs for the front and back approaches to the present and future shrine;

Visual experience of these two shrines becomes different in their final field of development since their main approaching portions are completely different; thence, they convey completely different cognitive impressions one obtains in approaching to the main shrine entrance[s];

Katsura Rikyu circular outline of the Imperial *tobiishi* pathway is composed from sub-pathway portions [upper drawing] whereas each leads from and toward tea house and possibly new tea ceremony to be practiced : their stepping stones, *tobiishi* lanes are disposed along the garden terrain unique dispositions and therefore they become different for each tea ceremony house;
thus, field of view development is different for each of the sub-pathways and following tea rooms that finally result in constant tea ceremony spatial and functional rules that are practiced;

In these two drawings one can witness tea room origin in Buddhist monks meditating and gathering room, which further has the origin in Shinto shrines spatial disposition and logic relevant to the given environment of construction;

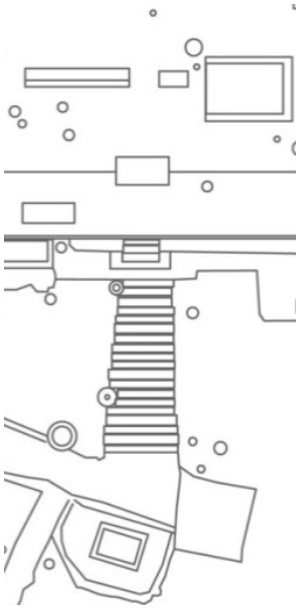


Figure 122a,b : Shinto shrine entrance portion that is visually and almost physically reached after passing through the passage arrays of the approaching gates and stairs : one can notice offering hall with goods served in order to accompany rites of prays in order to evoke possible presence of *kami* spirit;

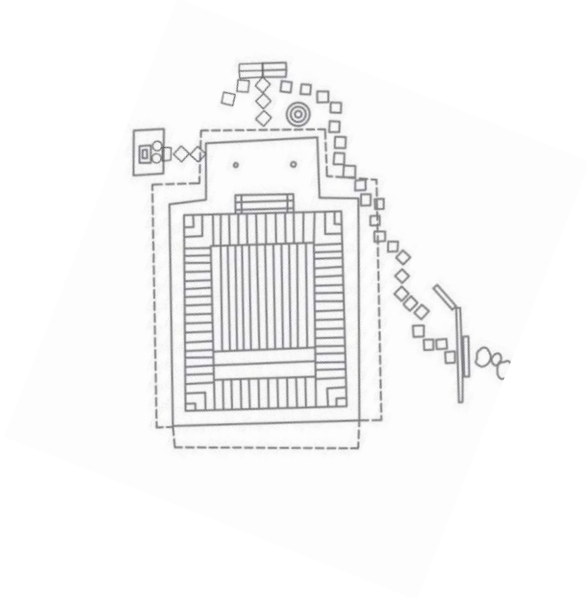


Figure 123a,b : Tea room entrance area visually enriched with an immediate experience of distant *tokonoma* area whereas one is going to soon accomplish final part of tea ceremony rites : similarly to the hall of offerings imaginary background of invisible presence of *kami* deities, one can imagine various environments of possible presences within which tea ceremony is practiced;
thereby cognitive judgments on the screen representation carries out various environments it evokes;

In this visual and physical interplay among natural and artificial, *Katsura Rikyu* garden designers manipulated with branching and other kinds of natural construction logics' behaviors in their naturally found outlines towards an artificially envisioned landscape. This landscape is predicted to be viewed from *tobiishi* ordered garden pathway units. Therefore, they assembled the *tobiishi* pathway as a sort of an enclosure concentrated around the human stepping body. This enclosure visually and physically [primary physical forms] takes the human from the point of the garden gate to the point of the tea house and further *tatami* position of the guest. This spatial transition is thus assembled using the tangible natural formal elements in order to convey intangible, artificial *cha-no-yu* esthetics.

The assembling method of using the living, natural material preserves primitive beginnings of craftsmanship in Japan. Craftsmanship further keeps the sacredness of creation of artificial forms with resources in forms of natural formal elements. Natural resources are artificially used and further applied as how they were found. These artifacts were firstly embodied in sort of a hut, an enclosure as Gottfried Semper discussed thoroughly. The enclosure, an envelope – *yoshizu*, represents a tangible representation of an intangible human need to tangibly protect its body and enclose mere survival in interactions with natural environment.

An enclosure, *yoshizu*, is determined 'as a blind or screen made from plaited reeds, used to form an enclosure.' [Nakagawa, 2006, p.63] Hence, one of the earliest primitive[II] enclosures [textile, reed, leather, fur etc] that is introduced in Japan indigenous as an architectural element is known as *sudare* [meaning: hanging mat]. It consists of slender plant stems laced together with thin rope with the leftover spaces between. They can also be made out of finely split bamboo strips laced together with strings in a delicate manner. Thus, they are all made from natural formal elements whereas their natural characteristics are adapted to human needs. Hence, a reed [*Phragmites Communis* specie] that grows widely throughout Japan mainland is the most common material. There is also another specifically primitive screen type known as *misu.* It is carried by the substructure of whittling bamboo strips laced with strings covered with *kabeshiro* - silk drapes hangings.

Hereby, a human enclosure was created while logic of the living or fallen natural material that should have been firstly comprehended and then applied into the artificially envisioned physical form. Therefore the primary constructed artifact, an enclosure came out from the natural formal elements assembling technique that relies on the pattern[I], a constructive logic of the natural material. The skill of how to achieve the firm assembling pattern preserves the group of key construction elements. They can be deciphered as a consequent reasoning of Japanese *Jomon* peasants or nomads to assemble stem

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[II] Primitive pattern screen is produced without any technological devices. It comes through manual production reasoning and usage of a natural material. The understanding of the natural material gives out the logic of the artificially envisioned natural material pattern assembling

[bar] elements into a pattern. It was done without any prior imagined esthetical need to achieve certain linear predisposition that would be a mere result out of vanity. O contrary, they literally translated experiences about these naturally found resources into representational matters of the patterns – knots[III]. These matters in form of a hut solely satisfied needs for protection, survival and storage.

Gottfried Semper in his oeuvre 'Style' argumentatively promoted this primitive hut house [Semper, 2004] followed with its fourth element named as fence. He proposed knot as a result of an understanding interaction with an environment as the oldest tectonic form. It formed an ancient house envelope made of a cloth hung of over the supporting structure. The knot technique inevitably was the most optimum skill to control the primitive material resource [branches, bushes, stems, roping items]. It was represented as a direct translation of a natural material behavior experienced bya primitive human into thoughtful pattern behavior. Hence, the character of a resource material found in nature was integrated into later pattern character through the knot as a mediator. This is how the primitive resource material attributes were translated into the optimum geometrical representation.

Lastly, this is how the behavior of the material taken from *satoyama* [natural environment next to the human settlement], with its optimum translation into human envisioned construction logic, became the visual filter in between the human body and the environment, namely an enclosure.

Thus an enclosure is built according to an instantaneous human intention to use his surrounding resources material. It is a hut enclosure created in order to protect, to disclose a human. Furthermore, these awareness inevitably includes both both, human survival need for an enclosure and enclosure as an inescapable part of a human visual environment. Finally, they obtained a contemplative note whereas tea house for example integrates these primordial manners of a survival construction and visual environment toward contemplative, intangible relation to environments it belongs.

As a matter of fact, one can observe the garden imperial pathway greenery formed enclosure consisted of natural formal elements whose natural branching knots form certain visual and contemplative environment one passes on the stepping way to tea houses. Nonetheless, greenery enclosure also assures natural wrapping that protects from the overexposing to the sunlight or rainy weather during the rather long stepping walk along the pathway.

Similarly, tea houses equally integrate all of the survival, physical and contemplative kind of a hut that accomplish almost instantaneously and undoubtedly dependently. *Tokonoma* screen [contemplative item], tea house light paper wrapped open horizontal plan [visual and physical continuity to the environment] and deep *engawa* eaves are all depending and crucial in order to cover all of the tangible and intangible aspects of a tea ceremony. However, the whole *Katsura Rikyu* complex is an intangible and tangible wrapping around *tobiishi* directed human body that visually and physically, along with assured comfort, artificially stages various natural formal elements.

[III] Knot is assumed as a skill of bridging two different materials whereby a pattern is produced in their processes of connecting and overlapping. It becomes their geometrically spontaneous response;

Figure 124 : *Kaktsura Rikyu* garden enclosure fence constructed similarly to *misu* technique :
strengthening stripes are horizontal wooden bats nailed to vertical wooden pillars : natural resource is kept in its natural state whose characteristics are manipulated in order artificially enclose garden area;

Figure1 125 : *Katsura Rikyu* sub-pathway approach to one of the main pathway ending tea houses : human passage from the outer to the inner garden spaces is followed with various semi-closed enclosures whose wrappings are assembled using natural construction logics [branching knots] or using natural material to be assembled with human reasoned knots that rely on those materials physical characteristics;

Figure 126 : *Katsura Rikyu* north-eastern entrance area is followed with artificial bamboo fence, which actually still grows : living bamboo is bended over the wooden fence frame whereas its material characteristics and future growth are both included in order to artificially assemble garden fence around sacred bamboo wood;

5.1.1.2 Measurable attributes research potential on immeasurable visual experience

Shinto based animism developed in proper relations to be established toward natural formal elements that human interacts with that are inhabited with sacred spirits. It progressively rose through *Jomon* and early *Yayoi* periods and accordingly developed from primitive, tangible to more contemplative, intangible forms of those interactions. Within impervious, but an always transitional, devastating state of a land and climate, Japanese peasants constantly adapted to newly established environments that replaced devastated ones. They had no desire of an aesthetic agenda besides to strive for the mere survival forms of creation that inevitably interacted with these new natural formal elements.

Hence, they cherish harvesting of resource material in proper manner in order to maintain those environments to exist in their own manner while satisfying their own needs. That made them to be indebted for food and building material given through blessings of *kami* spirits that inhabits those materials. This kind of peasant agri-cultural impasse is a result of a spontaneous animistic attitude of how to understand a nature through an impulsive response to an experience of the same in order to accomplish survival comfort. This agri-culture became to be the ground to further and contemporary Japanese 'high-tech pagan culture' [Emir Kusturica, Happy television interview : Christmas eve].

Accordingly, design and construction were released from craftsman [architect did not exist as a profession until 19th century in a form known today] vanity. This kind of attitude brought out design austerity [noble poverty[IV]] within Japanese society, acute in any style. Therefore, to create an artificial environment has been assumed as a set of skills of how to keep the natural material elements still recognizable in their attributes even though they are applied in an artificial formal element. Being recognized by a human as a common place as Kobori Enshiu noted in Okakura[1960], natural formal logic keeps itself existing in the beingness of the artificially envisioned garden formal logic whereas it maintains artificially imagined formal logic. Therefore, *Katsura Rikyu* garden formal logic is dual in its nature where beingness of the natural formal logic is used to physically formed express the formal logic envisioned by a human. It visually and objectively existing the material world out of the world of ideas. Hereby echoes Martin Heidegger's oeuvre where he stated: '.. the building rests on the rocky ground. [It] in its standing there, first it gives to things their look and to men their outlook on themselves.' [Heidegger, 1937, p.42-43]. The garden pathway thus may be considered as a sacred *torii* array of the sacred Shinto pilgrimage route toward tea ceremony occurrence. In its human envisioned formal logic, which disposes the natural formal elements along its direction and the gardening process of the natural material physical form growth, it echoes the natural formal elements

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[IV] The resource material is assembled in a form of an enclosure or other creation without any creational vanity or a style : that makes its functional useful esthetic to be dominant over visual tangible esthetic; that made those creations to be always contemporary, without any style, but always in fashion, because fashion is always in [Wim Wenders : Notebook on Cities and Fashion [movie intro];

continuum. The parallel definition of these two formal logics makes their final formal logic coherence decisive in conveying their separate formal logics. Its truth of standing there, which depends on human intellectual and visual perception capability, and its truth of being there, which depends on natural construction logic. Thence, the old-Greek [pre-Socratic period] word used for the meaningful logic- truth was *aletheia* [unhiddenes/forgottenness]. It considers direct transformation of field of view belonging physical form representation into a cognitive, cerebral image. Hence, intangible natural logic conveys artificial intangible logic, attached to physical forms along the pathway, into cerebral images and according cognitive comprehensions.

5.1.2 Design method base: Juxtaposition between human body and *tobiishi* pattern

‘Up to now, time has been suppressed by an excess of matter. By stripping away matter, we can restore time. Enabling matter to articulate time, we can excite the flow of time. To do so, we must criticize matter but at the same time believe in the potential that is surely sealed into it. The result will be the emergence of something that is not so much architecture as landscape.’ [Kuma, 2008, p.68]

Apparently, the main design concern of the garden formal continuum logic and according methodology of its visual analysis was how to introduce the attributes of human bodies’ motion into the garden formal elements physical forms logic. The introduction of human motion introduces the parameter of time into the garden primary physical forms along the garden pathway. Thence, the physical forms become to be comprehended and visually experienced in time sequences of the human walking motion across the stepping stones units. Simultaneously, there are several layers in forms of wood, bush land, shrub greeneries and landscape hillsides which are set up in an array of physical forms starting from the garden pathway lane. They can be visually noticed and perceived as a garden formal logic noticeable from each *tobiishi* point. They become physically and visually contrasted and overlapped with their physical forms. Thereby, human comprehends the following progression of the visual forms of the garden physical forms, since its body is ordered to move forward or to stop. This conscious manipulation of human body happens after human intellectually, while it does walk, process the cerebral images of the garden formal elements visual logic into the nervous system brought up decision. Finally it determines further body motion and field of view behavior.

The pathway oriented garden formal continuum is of an overall circular outline. Nonetheless, it is partitioned into several tens of the straight walking segments. Each of them separately or in several groups of few is staged into garden formal elements sub-continuums. Each of these sub-continuums is arranged in order to bring the human body motion motivated to be accomplished from certain point along the pathway to the point of tea room pavilion *nijiriguchi* entrance. The visual progressions of each of these sub-segments formal elements physical forms are arranged in several physical from and

visual array layers. Their visually perceivable physical form logic is envisioned in order to induce a human into a multiple senses of distances in relation toward the tea room and *shokin tei* pavilions until the walking human finally reaches and physically passes through the *nijiriguchi* entrance. Gradually, walking human comprehends its visual and physical distances in relation to the tea room and *shokin tei* pavilions from every stepping stones point along the *tobiishi* pathway. These distances accordingly mutually rely and change in order to gradually introduce visitors physically and visually from the landscape into tea ceremony aspects of the garden environment.

Garden formal elements, which visually relate to the pathway, make walking human either not capable to visually perceive the tea room [zero distance], to visually perceive but not to comprehend their physical distance [visual distance] and to visually perceive and to comprehend their physical distance [visual and physical distance]. These various visual logics of the garden formal elements establish logics of the human physical and mental introduction into the tea ceremony while passing these *tobiishi* pathway distances stepping thicknesses. These steps that occur at certain distances behave like approaching envelopes of the tea room pavilion.

The importance of the scale and pattern parameters of the stepping stones units is of the crucial importance. These attributes are determining the character of the human walk – its position, direction, speed, rhythm, break positions etc. Furthermore, the garden *tobiishi* units are sole mediators of the human body and the pathway line. Therefore their physical forms related attributes exactly condition envisioned physical forms visual and physical superposition of other garden formal elements. Hence, these stepping units' physical forms changes occur in order to accommodate a human body walking motion and other garden formal elements physical forms changes into a proper relationship. Thus, every human step has an appropriate change that reflects in garden formal elements physical forms attributes changes and their superposition.

Therefore, while walking along these certain stepping points and visually perceiving the garden formal elements [greenery, landscape, tea houses] arrays, one can comprehend either its visual or physical distances toward the tea room pavilions that are determined according to the garden formal elements physical forms changes. Obviously, an intentional introduction of the very simple but well scaled stepping pattern composes a visual harmony in between a human and the garden formal elements physically detached but visually juxtaposed entities.

5.2 Method of a cognitive understanding

5.2.1 Cognitive comprehension of visual experience and plan analysis in Rolandic area cerebral processes

‘We have a vision of buildings taking their form continuously through a smooth step-by-step process in which each step preserves the structure of what was there before.’ [Alexander, 2003, vol. 3 p. 678]

The formal elements physical form can perceptively affect a human body through various senses it possesses [tactile, hearing, visual, physiological etc]. Visual perception is a dominant and prevailing experience of the *Katsura Rikyu* garden formal elements physically arranged along the pathway thus they can accordingly belong to the field of view. They become to be inevitably visually perceived if one walks across the stepping pattern. Thereby, they unavoidably affect the human body nervous system and cerebral activities. They evoke following human body cognitive impressions and physical reaction upon them. Hereby we face a threefold problem of matter [garden physical forms], walking human consciousness and their intentionally unavoidable relation. The visual impression of the garden formal elements produces a continuous array of the experiential images which enter the cerebral brain tissues through the visual nerves and enter the cognitive brain tissues which evoke an intellectual activity. This activity can be purely comprehensive impression or it can evoke certain body behavior as an according reaction. Each of these cognitive impressions and body reaction can be different from one human to another. They can differ in relation to each person previous life experience and an instantaneous reaction at the first site upon the physical forms which determines the further visual impressions, cognitive impressions and body behavior. Thus, as Toyo Ito once pronounced that if there are one hundred different people, there will be one hundred different impressions about his architecture oeuvre. However, there must be established a difference among the objective visual and cognitive truth of certain physical forms which represents the scientific knowledge and the ordinary, highly speculative visual and cognitive truth of certain physical forms which represents a pure knowledge.

From monera to the higher vertebrates, the living matter is ‘already irritable and contractile’ [Bergson, 2004, p.17] and answers to the external perception by mechanical, physical and chemical reactions. Exactly the last chemical, physiological reaction distinguishes the organism classes in their reactive capacity triggered by outer affections. The rudiment organisms’ immediate contact with outer influencing [physical form or a physiological] entity produces an immediate contraction upon the stimulation, which can hardly be delayed. These organism reactions are fast enough to almost instantly recognize the pray or a danger and to commit a following contraction of immanent seize or avoidance. The reactive prolongation gets higher as the various [the ambulacra of echinodermata for an instance] perception tools are becoming more complex and involve a trace of a consciousness

before the reaction is committed. ‘In a word, the more immediate the reaction is compelled to be, the more must perception resembles a mere contact’ [Bergson, 2004, p.22]. The more immediate the reaction becomes, the perceptive tools is a simple automatically triggered chemical or mechanical organism logic. There is no other nervous system tissue that processes the tactile data then the mere conditionally settled nervous cells. They measure the outer influence and at certain registered chemical or mechanical values they simply trigger certain actions or chemical processes. The same is obvious with the cephalopod squid ink ejection which is an immediate reaction of its body if they register certain amount of the outer tactile influence.

If one observes higher vertebrates in a form of wolves or lions we can notice another kind of the reactive and perceptive behavior. Wolves have a habit to observe and even run along the young elks. Hereby the elks start to run in s specific manner of how they move their limbs and hold their head. While accomplishing this kind of motion in front of the observing wolves, the elks send a clear message about their perfect health and organism condition. Therefore, the wolves do not attack these younger dancing elks. If these elks are healthy as they announce the wolves cannot run after them and they know it. Nonetheless, if they are suspicious about any of them, the wolves run after and follow the possible elk target pray and observe more carefully the motion that elk conducts in front of them. After few tens of meters the wolves are finally convinced that this elk is also in a perfect health condition and still not assumed as a possible pray. Overall, the wolves are capable of visually perceiving the elks certain motion behavior, moving pattern of their legs and body, which is emitting the message to environment carnivores that they are in a perfect health condition and that they should not be their pray. Wolves rather select old and ill elks which are neither capable of further survival nor they can escape the wolves pack seize run. Therefore, the wolves as higher vertebrates are capable of visually perceiving their behavior pattern [conducted physical forms of their bodies] and bringing up a conscious decision with a suspended reaction of whether they will enter the chase after these elks or give up since they are perfectly healthy. They decision of staying calm is half instinctive because wolves don’t question the vision they get. If they perceive certain body behavior of their pray they simply conclude they should not attack them. Hence, elks and wolves enter the instinctive and direct visual communication whereas none of them is capable of pretending or committing different action that what is the mere organism condition [elks] and perceptive [wolves] truth. If the elks are healthy they will show it instantly and honestly in front of the wolves. If they are ill they will not show the opposite behavior but stay calm and let the wolves attack them if they decide.

They conscious reaction is instinctive but it is not autonomous and cannot result in a different behavior then it becomes logical according to their instinctive chemical and mechanical reaction. Nonetheless, they are not automatic and the visual communication of the emitter [elks] and perceivers [wolves] has to last for certain period of time. The amount of its delay refers to the amount of their instinctive consciousness. If the organism reaction becomes more uncertain it allows more room for suspense and becomes more sensible of the action of that which interests it. In uncertainty time enters

more complex perceptional realm which becomes the subject to more distant chemical and physical reactions.

The complexity of the perception and sensational realm gives the exact measure of the indetermination of the reaction act which is to follow. Therefore, it can be stated that the ‘perception is master of space in the exact measure in which action is master of time’ [Bergson, 2004, p.23]. However, various sensory regions of the brain cortex, which are interposed between the terminal branches of the centripetal fibers and the motor cells of the Rolandic area, allows the stimulation to reach the motor mechanisms of the spinal cord. If the level of consciousness is higher the number and the variations of these motor mechanisms gets equally higher. There has to pass more time before the perception becomes a motor or chemical reaction of an organism. If this time is higher than the reaction of an organism becomes not just the mere motor mechanism expression but a pure knowledge based reaction which becomes a sensorial memory included in the future visual and other kinds of experiences. Thus, there is no perception that is not consisted of memories. ‘With the immediate and present data of our senses we mingle a thousand details out of our past experience. In most cases these memories supplant our actual perceptions, of which we retain only a few hints, thus using them merely as signs that recall to us former images.’ [Bergson, 2004, p.24]. Hence, a pure perception exists only in theory than in fact It should have been possessed and established as a perception image by a being that should have lived in present time and that have given up of every form of memory. Consequently, a vision of matter would have been immediate and instantaneous and finally not impregnated with the previous experience.

5.2.2 Garden physical forms objective existence vs their subjective cognitive comprehension

Human visual experiences may be assumed as a mere consciously conditioned illusion. Therefore, an objective, scientific knowledge about certain matter can come out from the perception that is stripped off of any memory at previous experiences. That kind of knowledge perception ‘consciousness would have if it were supposed to be ripe and full-grown, yet confined to the present and absorbed, to the exclusion of all else, in the task of molding itself upon the external object.. an ideal perception, obtained by the elimination of individual accidents, has no correspondence with reality.. but.. the individual incidents are merely grafted on to this impersonal perception, which is at the very knowledge of things’ [Bergson, 2004, pp.24-25]. Usually, human perception has an according human organism chemical and mechanical reaction which is not a singular, but the set of successive event directed toward the environment. That makes each of the singular reactions upon the singular perceptions to be important for an overall accumulative reaction. If each of the personal memory and sensorial specific experience is included into the consciousness of those accumulative reactions, it is

clear how they vary in their character and duration. Nonetheless, these reactive responses onto the objective perceptions, which are uniquely registered with the uniquely established vertebrates' nervous system, do not affect the sole being and objective image of the matter. 'It appears that life is inherent in space itself, and in which soul, or spirit, is an inevitable part of matter, which shows through, as the curtain rends, in which not only people, but buildings, flowering bushes, even window sills, have their own life and spirit too, as a real thing, which goes far beyond the mechanical world and is part of the nature of their existence' [Alexander, vol. 4, pp. 343-344]. The question is if the matter may exist without being perceived and present without being represented. 'The distance between these two terms, presence and representation, seems to measure the interval between matter itself and our conscious perception of matter' [Bergson, 2004, p.27]. The presence itself touches upon many other entities and environmental segments to which it belongs to. There is less in the mere subjective representation of the presence.

Within the garden formal elements it is not possible to suppress the physical forms out from what follows it and what precedes it. That what makes that matter not to be possible to be experienced as a singular matter, as a present image of its physical form. Nonetheless, the represented, not the objective image of a presence constitutes the *Katsura Rikyu* garden formal continuum, which exist as a continuously represented field of view. It becomes out from the present images which inevitably relate to each other and consist part of otherness in their own singular represented image [secondary physical form]. Therefore the perception of this kind is given 'the totality of images of the material world, with the totality of their internal elements' [Bergson, 2004, p.30]. According to this subject Alexander writes: 'The essence of life in any system lies in the adaptive response of each new development in the system to the previously existing state. It cannot be achieved by a mechanical framework, by any mechanical system, nor by any stereotyped or stylistic response. Rather, it comes about only when the response of each act of building has been fresh, authentic, and autonomous, called into being by previous and present circumstance, shaped only be a detailed and living overall response to the whole' [vol. 3, p. 22]. Consequently, their totality becomes omitted in a human representation of matter. Human has no interest for its needs in parts of the totality and total perception depending on their previous memory and cognitive experience. Here becomes a difference of degree among being and being consciously perceived. Human representation of the matter becomes the measure of our possible mindful and physical reaction upon the perception of the matter being totality. Thus, human cognitive image and possible body reaction become distorted representations, imaginations of the matter being realities. Each point of these realities 'gathers and transmits the influences of all the points on the material universe, whereas our consciousness only attains to certain parts and to certain aspects of those parts.' [Bergson, 2004, p.31]. Nonetheless, the representation belonging to the level of human or any other vertebrates' consciousness reflects the matter of their spirit. Since human and other perceptive beings are just one of the matter totalities, the representations that include their consciousness, their spirit, reflect upon the matter being in a different manner. Since

the matter becomes in relation toward the other matters their being becomes extended into the spirit of a human mechanical and chemical reactions.

5.2.3 From emotional to intelligible understanding of the garden physical forms: which one is right?

Katsura Rikyu designers intended to diminish a level of a human consciousness and personal reaction upon the garden formal elements physical forms [matter]. They did not delude the capacity of the human consciousness and spirit. They prevented the development of the conscious, intellectual mechanical response to the garden formal elements physical forms continuum, visually perceivable from *tobiishi* points. Their intention is that the walking human visually perceives, cognitively proceeds and physically reacts upon the garden primary physical forms according to the formal logic of each of these physical forms [matter]. This is conducted before cognitive data are further processed in brain cores into further intellectual conclusions. Nonetheless, even though 'the Ideal of truth is fully recognized as the goal of all intellectual activity, it is still a merely formal idea. In other words, Truth itself is a formal idea from the outside, and one to which our intellectual activity ought to conform. The intelligible realm is the lining of the real self conscious self, and it must include the ground for objective knowledge, feeling, and the willed goal-setting of a fully reflective and self-conscious self' [Nishida, 1997, p.41]. Thus the objectively intelligible perception is hard to be achieved in practice. The memory is inseparable from perception. 'It imports the past into the present, contracts into a single intuition many moments of duration, and thus by twofold operation compels us, *de facto*, to perceive matter in ourselves, whereas we, *de jure*, perceive matter within matter' [Bergson, 2004, p.80]. Consequently, the garden designers did not solely envision the garden physical forms [matter] formal logics which are visually perceived and self represented in the solely human established conscious representation [self conscious self] of their [matter] being.

Since the garden pathway is a walking lane directed toward the garden tea room pavilions, the main human body reaction upon the garden formal elements disposition would be concerned about the stepping character [position, direction, speed, acceleration, walking breaks]and the field of view character [position, direction, height]. Human would freely visually perceive the garden formal continuum without any external suppression and therefore adapt its walking character and visual perception according to its self conscious self. Thus the reaction toward the environment would result in the stepping reactions which would be committed according to many different self conscious cognitive operations. Consequently, designers' envisioned formal logic of the garden primary physical forms continuum would not be visually perceived and reacted upon in order to comprehend the physical forms reality formal logic. Those experiences and cognately determined reaction would be impregnated with the memory specific for each human being. Their memory 'past survives under two

distinct forms: first, in motor mechanisms; secondly, in independent recollections' [Bergson, 2004, p.87]. The action upon the garden physical forms would utilize each human past experience in the automatic setting in motion of a body mechanism differently adapted to different circumstances. Additionally, the memory recollection of the fully grown human apply themselves into the present matter representations 'which are best able to enter into the present situation' [Bergson, 2004, p.87]. Hence, cerebral perception data, which contains the nervous system perceived and collected present images of the garden physical forms [matter], are positioned in their further processing and brain tissues disposition between consciousness [with memory recollections] and matter formal logic. Therefore garden designers' intention was not to only envision the garden formal elements [matter] primary physical forms being, but also how to manipulate with the human consciousness that produces their representation. However, children do not possess a great quantity of the memory recollections. Hence, their reaction toward the matter, physical forms, is instantaneous whereas their cognitive representations are equal to the present images of the same matter. There is no vanity in their cerebral activities since their Rolandic core does not have any cognitive and mechanic reaction prehistory. Therefore, designers envisioned the *tobiishi* stepping pattern and thus suppressed the human mechanical reaction upon the cognitive processes of its consciousness. Human walking motion is absolutely prescribed with an additional perception involvement within the garden formal continuum in form of the *tobiishi* stone items. They are positioned in accordance with the garden primary physical forms [matter] present image [formal logic] which can only be visually perceived from those stepping points following the garden designers' idea. Human visually notices additional garden physical forms and follow the designers' instruction that one has to walk across these stone items when it enters the garden pathway. Thus, they envisioned the human mechanical [stepping, walking reaction] reactions upon the garden formal elements in advance, as if they would be if there was no memory that changes a human consciousness. Since they are envisioned in advance, it means that they occur instantaneously with the visual perception of the garden formal elements.

Overall, the designers' final intention was to coordinate the visual perception with the according stepping stone and field of view. Their detailed intention was to coordinate which of the garden formal elements physical forms will be visually perceived and from which position and direction and height in each point along the garden *tobiishi* pathway. Finally, the garden matter and its physical forms representations [mechanical reactions-walking activities] are artificially envisioned and coordinated. Since the consciousness enacted mechanical reactions [mechanical reactions-walking activities] become additionally designed, there is no room for the memory recollections anticipation within the consciousness. Since the Rolandic area and consciousness become released from these memory recollections, a visually collected and nervous system cells distributed data about the garden physical form, can be objectively processed in the cognitive areas of the brain. These cerebral activities therefore consciously produce a cognitive data which are prescribed to the garden physical forms. These forms of representation images, which become data, are equal to the mere present

images of the garden physical forms. The pure perception becomes intelligible perception. It cognitively concluded data about the garden formal elements continuum formal logic can be used in scientific means. In this case, the perceptional, cerebral and cognitive capacity of the human body was manipulated in order to make the visual logics of the garden physical forms to be comprehended in their representation. Even the human memory recollection was not dismissed or anyhow blocked. Its counterpart within the consciousness impart of the cerebral activity cannot be neither psychologically nor physiologically deduced. Nonetheless, since their possible mechanical reactions, as cognitive knowledge representations of the garden physical forms, are instantaneously suppressed with the *tobiishi* directed stepping mechanical reactions, their objective cognitive capacity is manipulated in order to produce intelligible representation data. Hereby the emotional capacity of the human consciousness supports the intellectual capacity of the cognitive processes.

Nishida Kitaro claimed that the consciousness emotional capacity of the memory recollections is wrongly claimed to omit the intellectual, objective knowledge of matter: ‘It is common idea that feeling differs from knowledge, and that its content is less clear. To this I reply that the affective feeling of sensitive artist is not necessarily less clear to him than the special knowledge of a scientist. The alleged unclarity feeling means nothing more than that it cannot be expressed in conceptual knowledge. It is not that consciousness in feeling is unclear, but rather that feeling is more subtle and delicate form of consciousness than conceptual knowledge.. we become free as we embrace and transcend the intellect on the feeling level’ [1997, pp. 39-41].

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5.3 Manner of research method application

5.3.1 Disintegration of the garden physical forms in plans and field of view captions as a method toward their cognitive reintegration

The garden designers selected certain garden already existing natural formal elements and decided their position and visual distance from the walking human according to the density of their physical forms and according densities. Their values have to maintain not only the overall outline of the formal element primary physical form, but also to maintain the visual integrity of the primary physical form. However, from different set of visual distances the garden natural formal element can lose its visual compactness and become visually disassembled into assemblage physical forms pieces which would visually prevail. Consequently they would visually be perceived as the part of the primary physical forms of the other garden formal elements. The *Katsura Rikyu* garden designers were very careful of selecting the natural formal elements [related dominantly to the garden greenery] which keep their physical form integrity but still do not appear as visually independent physical forms.

Their secondary physical forms thus become capable to be noticed in their essential physical forms quantities' both, measure of their physical form physical and visual juxtaposition with other garden natural formal elements. Hence, in selecting and designing the natural formal elements determined with the construction physical forms apertures, it has to be mentioned the example of the famous art work named *Iris Screens* by Ogata Korin. These screens illustrate the ninth episode of the *Ise Monogatari* art work succession. The spread of the represented irises pattern through the set of six connected screens is the only mean used to organize them into coherent visual experience. Even though the screens are actually separated, the iris pattern sizes and densities overwhelm their belonging screens dividing slots visual dominance, thus creating virtual continuity of their painted surfaces. Therefore the intervention of the well selected pattern sizes becomes as well one of the *Katsura Rikyu* garden decisive points of the visual experience designs. It establishes the meaningful visual relationship between the garden formal elements, their physically and visually adjacent environment [borrowed scenery] and a human bodies' motion which carries field of view position and direction. Finally, what becomes visually experienced appears as a direct consequence of the exact proportion among the size of the garden formal elements construction physical forms dimensions and garden formal elements visual and physical [specific for each sub-segment of the *tobiishi* lane] distance to the walking human body. Only if these desired proportion values are succeeded than formal elements physical forms' essential and incidental objective ratios are going to be perceived and cognitively comprehended.

The natural formal elements that are visually perceived [greenery – trees, bushes, shrubs, grass, landscape relief, tea room pavilions etc] are arranged in physically and visually artificially envisioned

Figure 127a,b : The garden greenery formal elements physical forms are to be in the constant visual logic of “a fiction and a sickness” [Kuma, 2000, p.58] where their visual singularity is not possible. They become to be perceptively dependent on the environmentally succinct otherness, whereas they grow with separate but mutually influential natural construction logics. Overall they grow in specific visual directedness in order to introduce other formal elements [tea house at this image];

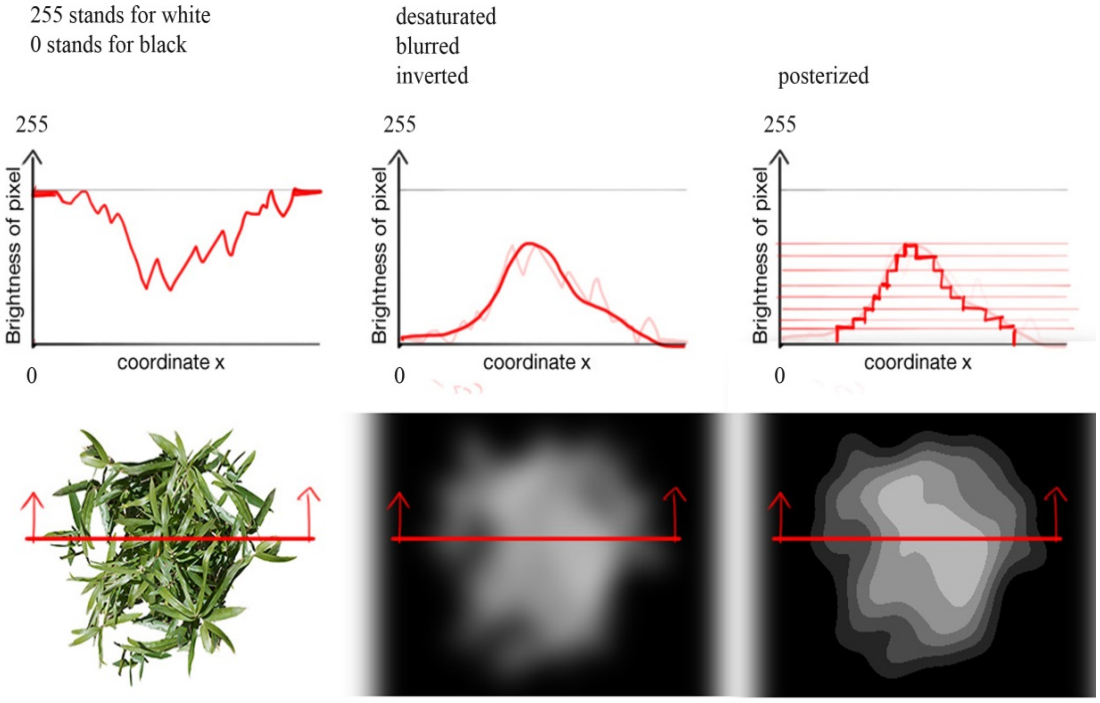


Figure 128 : ‘the visible particles and the wholeness... are decisively dissociated and there is no way of their bridging” [Kuma, 2000, p.58]. Hereby the particles refer to the construction physical forms, which through the primary physical form incidentally exceeding essential outline physically and visually correlate with the other garden formal elements construction physical forms.
Field of view developed images in each of the stepping points is disassociated to the level of greenery representation and further black and white contrasted image : it becomes further desaturated, blurred and inverted into levels of grey among black and white and finally leveled to clear arrays of greys among black and white : finally one can clearly devise the essential and incidental formal parts and how they articulate garden formal elements overlapping in field of view development;
these developments rely to other garden formal elements in/visibilities and final cognitive experiences;

arrays which consist of few field the view visual plans. They are physically and visually succeeding each other in front and a side of the *tobiishi* walking human. Being physically and visually juxtaposed and overlapped garden formal elements enter the field of view vision angle or staying outside of it according to the distance to the human body and the assemblage physical forms dimensions. Hence, none of these formal elements can be independently perceived as they always instantly belong to the same field of view along with the other garden formal elements. However, this physical and visual juxtaposition that constantly develops as the human walking forwards at the stepping stones lane. The formal elements physical forms are artificially envisioned to be in the constant visual logic of "a fiction and a sickness" [Kuma, 2000, p.58] where their visual singularity is not possible. Contrarily, they become to be perceptively dependent on the environmentally succinct otherness.

However, while *standing there* within the garden complex, they include both – *standing* of the singular physical form and *there* which relates to the other garden formal elements physical forms. Inductively it can be stated that: 'What [*tode*] of a thing is rendered to what it is this somewhat [*tode ti*]; and the being what it is of anything is what is knowable and not the thing itself.' [Carter, 1997, p.21] Therefore none of the garden formal elements cannot be neither seen nor cerebrally experienced without the belonging environment as its visually constituting element. The last written means that 'the visible particles and the wholeness... are decisively dissociated and there is no way of their bridging" [Kuma, 2000, p.58]. Hereby the particles refer to the construction physical forms, which through the primary physical form incidentally exceeding essential outline physically and visually correlate with the other garden formal elements construction physical forms. That means that each of the singular formal elements as *kekkai* serves equally as a physical and visual boundary and link to the other garden formal elements.

The visual and physical logic of each of the garden *kekkai* formal element develops around the stepping stones units' attributes development that determines human body behavior and visual observation. The singular physical and visual dominances of the formal elements are lowered[V], whereas their impact of visually connecting different layers of their visual successions becomes put forward. What make these phenomena possible to occur are the dimensions of the construction material physical forms, which physically and visually [different at different distances to the human body] disintegrate the primary physical form at certain field of view distances. Therefore, the level of their disintegration, which depends on the visual distance to the human body, conveys their interdependent physical forms relation toward the other garden formal elements.

[V] Hereby the adjective lowest references to the garden formal element material physical forms dimensions, which makes the visual perception of the primary physical form neither to quantitatively disappear from the field of view, nor to be disassociated from the other garden formal elements primary physical forms and thus independently visually perceived;

Nevertheless, the material physical forms visually lowest[VI] level of their dimensions makes their singular and other formal elements to be perceived. Their dimensions' ratio has to be maintained is not maintained literally through the most possible resizing of their measures. They are rather decided upon the human eye physiology in order to acquire visual equilibrium among the garden formal elements while they are visually observed from *tobiishi* stepping points.

5.3.2 *Tobiishi* points of juxtaposition among human visual representations and architectural drawings of the garden formal elements

The garden material physical forms are selected and positioned according to how they are commonly visually experienced and not how they actually are in their objective material physical forms existence. Hence, designers aim was to manipulate our brain cerebral image and final cognitive comprehension of the garden formal continuum. Thence, the *tobiishi* stone units' physical forms attributes [size, direction symmetry, orientation, height etc] are crucial in conveying the formal elements into the cognitive image and final attributes about the primary physical forms of the garden formal elements. They undoubtedly position [coordinate] and direct the field of view and determine the whole character of the human walking activity [direction, speed, points for a walking pause etc]. Physical and visual distances among the human body and garden formal elements occur in their logic exactly according to the succession order among the stepping stone units. Hereby the garden formal elements physical forms continuum becomes ordered by the character of the continuity of the stepping stone units.

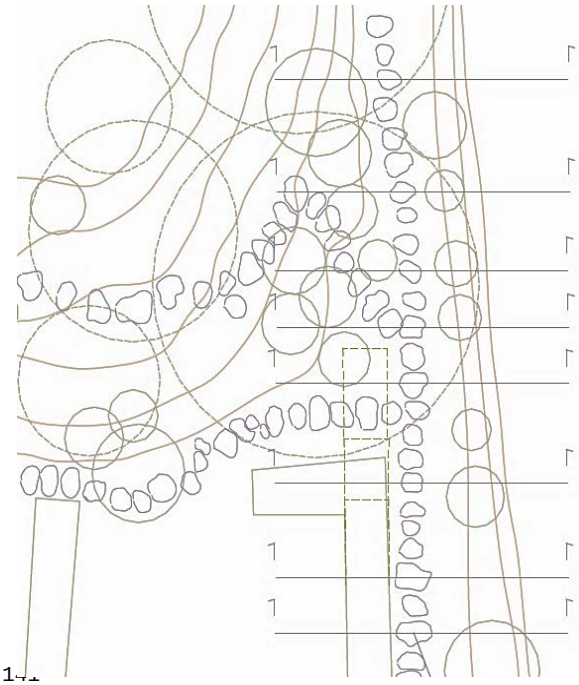
The walking, stepping activity across the *tobiishi* stepping pattern is a continuous act of walking that occurs always from one stepping point to the second one. Human body is always in that transition of its body position. That makes two stepping stone points always determining the starting physical position and the visual experience of the first stone unit to be changed into the successive one attached to the second stepping stone unit. The visual experience of the garden formal continuum shifts from one into the another continuous visual experience according to the garden formal elements attributes measures change that characterizes the first stepping point into the new ones carried by the second stepping point. The differences among these attributes are proportional to the successive visual experience change among field of view successive captions. Therefore, there is a continuous proportional relation among the stepping stones physical forms and garden formal elements primary and material physical forms change that is visually or objectively [drawing] measurable from each of the point along the stepping pathway.

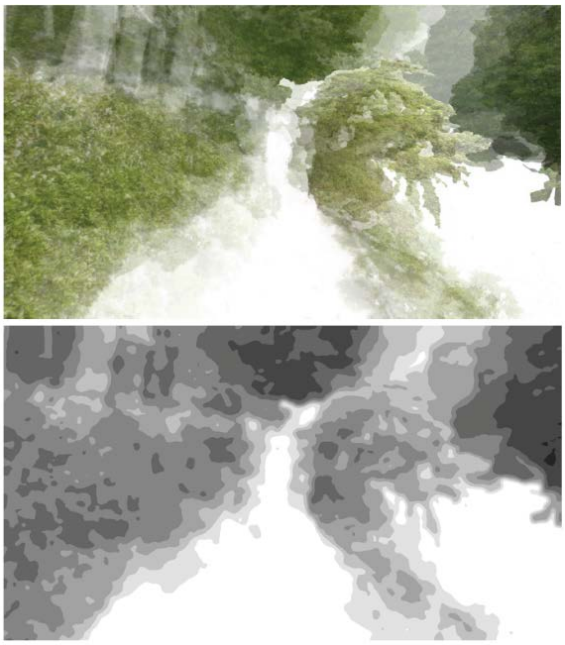
[VI] Ibid

Figure 129-135 : One of the garden sub-pathway captions : Human being measured through the garden instances is always in present time [it does passes but becomes always pregant with constant field of view development] in a form of consciousness of these instances visual successions. The consciousness is related to the awareness of body dimensions and capabilities and the following cerebral activities related to the inner mind and outer body garden formal elements impressions. Therefore, the stepping stones units physical forms are defined in their physical forms logics and pattern in order to manipulate with and predict human body capabilities and consolidate them with the garden formal elements disposition. [photos set from above]

Consequently, the walking motion, visual perceptions, the garden formal elements setting and the stepping stones pattern exist connectedly and interdependently. Therefore, the garden physical forms logics depend on time measured in steps comitted along the pattern. In order for them to visually perform within the garden continuum, they must be visually experienced and cognitively comprehended not as a single physical form, but the physical form continuum that performs in time. It cannot be visually overwhelmed and cognitively completely comprehended if one does not thoroughly pass across the stepping pattern.]left drawing from bellow]. Thus, inversely, their physical form independance and successions become solely cognitively comprehended.

Hence, while committing a walking activity human contracts its memory into the further walking step and following visual experience. As a result, the visual memory contraction becomes develops within the human cerebral tissue as the final aim of the garden designers. Their artificially envisioned physical forms logics determine the character of the human motion, visual perception activity and cereberal activities. Hereby a human body and mind are gradually prepared and introduced into the finally accomplished tea ceremony act ;





The point of measure can be any of the human body position: from the exact stone stepping points to the walking transition points between two stone units. Nonetheless the field of view development in successive steps that are committed, first step visual image belongs to both first and second stepping coordinates as long as one keeps its last food still stepped onto the previous *tobiishi* unit. In that moment one keeps its feet stepped onto both of the neighboring *tobiishi* units. That phenomenon provides field of view immanent captions to be successively changed in relation to each other and both in relation to human body.

That is how both, human body that holds field of view and garden formal elements with their attributes changes in their visual experiences' values dependently develop.

The stepping stones disposition hereby becomes a physical form measure of the temporal orientationThat makes a walking as a time describable activity [speed, rhythm, velocity, pause etc] to be determined by the spatial, material formal elements and to determine the visual experience and according cognitive experience of the garden formal elements continuum.

The measures that describe the human walking activity come out from the human body walking extremities and cognitive brain operations that follow the visual experiences. Consequently, the stepping stones items and ground setting parameters are selected and determined according to the human body measures. Since the garden formal elements physical forms are selected and positioned following the setting logic of the stepping pattern, indirectly it means that the garden formal elements physical forms selection and position are determined according to the human body measures and field of view physiology. Additionally, human field of view collected images become to be cerebrally processed according to the human nervous system in order to give them a cognitive meaning.

Each step of the human body initiates another cognitive comprehension that is a continuous image and attributes collection of the previously produced one. Nonetheless, a human body is manipulated with the stepping stones items. It does not commit any of the walking steps with its own random or specific decision, but rather follows the *tobiishi* stepping coordinates. The garden designers envisioned and materialized the garden formal elements in specific positions and physical forms in order to make them visually perceived as it is intended. That makes the final design target of the garden designers how to design specific cognitive impressions and attributes collections of the garden formal elements physical forms.

Thence, the garden formal elements logics are directly conveyed into human visual and cognitive impressions. Primarily these cognitive impressions determine the understanding of the physical and visual distances among a human body and garden formal elements [primarily distances among a human body and tea room pavilions as the final walking and visual targets and the pathway physical forms zeniths]. Each step committed carries the memory as a cognitive impression of what was the previous cognitive impression and how it becomes linked to the succeeding one. Therefore, the visually and physically juxtaposed garden formal elements physical forms become to be equally juxtaposed with their specific cognitive impressions. These impressions are linked with the same

physical forms and their according visually experienced parts that are shared among their mere visual frames from which their cerebral images originate from. That is how cerebral cores assemble a continuous impression of the continuously juxtaposed garden formal elements. This impression results in continuous cognitive impressions and attributes collection, which can be finally represented *in vivo* as they equally came out from *in vivo* research material collections.

Human being measured through the garden instances is always in present time [it does passes but becomes always pregant with constant field of view development] in a form of consciousness of these instances visual successions. The consciousness is related to the awareness of body dimensions and capabilities and the following cerebral activities related to the inner mind and outer body garden formal elements impressions. Therefore, the stepping stones units physical forms are defined in their physical forms logics and pattern in order to manipulate with and predict human body capabilities and consolidate them with the garden formal elements disposition.

Consequently, the walking motion, visual perceptions, the garden formal elements setting and the stepping stones pattern exist connectedly and interdependently. Therefore, the garden physical forms logics depend on time measured in steps comitted along the pattern. In order for them to visually perform within the garden continuum, they must be visually experienced and cognitively comprehended not as a single physical form, but the physical form continuum that performs in time. It cannot be visually overwhelmed and cognitively completely comprehended if one does not thoroughly pass across the stepping pattern. Thus, inversely, their physical form independance and successions become solely cognitively comprehended.

Hence, while committing a walking activity human contracts its memory into the further walking step and following visual experience. As a result, the visual memory contraction desirably develops within the human cerebral tissue. Their artificially envisioned construction logics determine the character of the human motion, visual perception activity and cereberal activities. Hereby a human body and mind are gradually prepared and introduced into the finally accomplished tea ceremony act. The tea room pavilion thus includes the whole garden formal continuum as a spatial extension that is perceptible and apprehensible with tea room both interior and ceremony.

That being so *Katsura Rikyu* garden formal continuum cannot be entitled and thereofre understood and presented through classical set of plans drawings. It can be represented merely with translation of these drawings and *in vivo* collected material into scientifically comprehnesible one, while trying to strive in cognitive impressions.

Thereby it can be deciphered the *khre-hodos* [the directed route of the physical form development] in each of the stepping points and to represent all of these garden formal elements while comapring and deciphering their attributes graphs and drawings. Immanent human memory representations and objective garden complex drawings thus becomes the sole contraction of the matter itself where the visual and cognitive impression of the previous human step becomes the very present time part of the previous and next step and vice versa.

Therefore, even though the garden formal elements formal logics are followed unconsciously and probably unwillingly, they cannot be completely understood visually, but rather comprehensively in later research outcome.

5.3.3 *In situ* and accompanying research method

The research methodology of the garden stepping pattern and landscape formal elements visual analysis is partially but crucially based on *in situ* research activities. The resource material which is presented in the research design chapter is dominantly collected at the garden site. However, the limitation of the *Katsura Rikyu* visit is the available but limited time and space of the garden complex, which can be visited and recorded in order to enter the research design procedure. Those being so these circumstances were redirected into the approach toward the visual analysis discourse that redeemed substantial but minor *in vivo* method of the research material collections.

Therefore, the research activity was based solely to the available parts of the garden complex where research material could be collected and that is exactly the main garden design oriented discourse: *tobiishi* covered Imperial Pathway.

Therefore, it is assumed that examination of the visually and physically available main *tobiishi* pathway of Katsura Rikyu firmly grounds any conclusion and implication that can be brought up with its according research design material superposition.

The visits of the garden complex are occasionally organized for certain number of people which are in a limited number guided for an about one hour tour followed with the verbal explanations of a guiding person in charge. The stepping activity and garden tour officially starts at the main gate inter-space [research design: zero sub-pathway section].

It is followed by a constant walking activity which finds its standing and sitting breaks along the architectural objects [shokin tei, tea houses, service pavilions etc.] positioned along the Imperial *tobiishi* pathway.

5.4 Selection and explanation of methods applied in measurement of the garden formal elements in plans and field of view captions

The application of the research methodologies was impossible to be conducted using merely graphical material of the garden complex. Katsura Rikyu complex constantly grows and develops with its natural formal elements along with unavoidably imperfect gardening works [covered with the research methodology and hypothesis instances about the incidental parts of the garden formal elements physical forms]. Therefore, the garden plans and section have to be constantly updated in order to be engaged in the present time analysis of the presently collected visual material.

Consequently, the garden set of drawings was retraced and compared with the site collected attributes about the garden formal elements which were available to be observed and examined.
Finally, the plans were updated where any of the garden physical forms suffered any of the major physical form changes which would influence the further visual analysis.
Reflecting present state of the garden formal elements, these plans could be engaged into the research design section which reflects the overall visual analysis of the garden formal continuum.
The research design section implies several methods of the garden formal elements visual and objective physical forms analysis. These researches are conducted in equal graphical manner which finally makes the according results to be collided and compared even though being extracted from different garden formal elements and using different methods.
Garden formal continuum physical forms are separated into several groups as being members of the same drawings collections. Each of the garden formal elements is extracted into their plans representation.
Therefore there are greenery, landscape ground [terrain], stepping pattern groups of separate drawings which depicts their horizontal and section disposition along the garden pathway.
Additional method which is based on the site collected material is concentrated on the direct photographic analysis of the garden formal elements visual progression along the complete pathway stepping lane.
Nonetheless, in order to correctly compare all of the analysis results in the research design section all of the physical forms and visual diagrams analysis are conducted in equal points of the stepping pathway. These stepping stone points were selected according to the importance of their conveying of the garden visual representation.
Therefore, it is made possible a perfect superposition among the mere stepping and observation points, which is directly conducted towards graphical analysis of the physical forms in those *tobiishi* points.

5.4.1 *Katsura Rikyu* greenery : research methods application

Greenery formal elements are analyzed in several sections of their physical forms attributes distribution along the *tobiishi* pathway. Their analysis differs from plan to section observations of these physical forms progression in selected stepping points. Horizontal plans of the extracted garden greenery formal elements graphically and diagrammatically express their tree trunks density distribution at both sides of the stepping lane.
Succinctly, the same density distribution diagram along the pathway is used to express the tree crowns heights reaching points at the equally disposed left and right side of the stepping pathway. Section plans were distributed along the selected stepping points in order to represent several greenery physical forms parameters which are immeasurable at the horizontal plan representation.

Hereby, it is presented the distribution of the tree crowns sectional surfaces amounts along the stepping line at the left and right side.
Hence, another diagrams represents both sides distances progression among the walking axis of the stepping coordinate and the closest outer point of the tree crowns or bush circumferences.

5.4.2 *Katsura Rikyu* landscape : research methods application

Katsura Rikyu landscape isolines are instrumented in order to represent their physical forms progressions along the *tobiishi* pathway in several physical forms parameters. They are analyzed in single sectional plan representations in relation to the already established stepping points as points of their distribution. All of the analysis were conducted and presented at the both left and right side of the stepping pathway.
Firstly it is measured and then represented at the stepping line coordinates how the garden terrain slope angles change in their sizes distribution following the human walking activity. Hence, additionally it is analyzed and represented at which distances from the stepping points' axis these slope angles actually appear. Thirdly, at the same stepping coordinate line it is represented the progression of the garden landscape ground maximum heights at both left and right side.
Overall, a single stepping coordinate diagram represents a distribution of the stepping point's relative height distribution along the marked pathway sections.

5.4.3 *Katsura Rikyu* stepping stones : research methods application

Tobiishi stepping pattern is represented in several of their stone physical forms parameters according to the garden designers' intention of the pathway different parts of a walking activity.
These parameters are: stone item surface, stones items stepping points distances, stone items physical forms distances, stone items density, stone items relative heights, stone items thickness heights and stone items walking directionality.
All of these stepping pattern items related physical forms parameters are measured and represented in a form of their values distribution along the coordinated pathway line. These progressions represent the stepping items as one of the garden formal elements, which distribute their physical attributes nonetheless they are the mere stepping elements. Hence, their physical form distribution develops through stepping touches with feet and according manipulation of the field of view. It directly enhances the designers' intention of how the garden formal elements will be visually experienced from exactly those stepping stone points. Thus, those experience become conditioned not only with values of those stepping coordinates but furthermore with those stepping stones' attributes values.

5.4.4 *Katsura Rikyu* field of view development : comparison and overlay of captions collected in certain *tobiishi* stones

Hereby all of the garden formal elements are photographed in the selected stepping points in order to objectively represent what is the field of the view simulation in its sequential progression that occurs along the garden specific stepping pattern.

Since the greenery elements are of dominant visual presences within these photographs they become the subject of the further procedure. Each of the photography is extracted out of any irrelevant visual surplus which does not determine or interfere with the visual experiences that are captured. Finally, their photographic extractions are collided over each other with the applied transparency.

What becomes a result of this collision is a diagram which clearly expresses dominant visual progressions of the garden formal elements which determines the visual and physical distance discourse of the overall visual experience. The densest portions of the posterized diagrams decipher garden designers' intentions of how one should visually experience dominant physical forms and visual directions of the garden formal continuum. It undoubtedly expressed the visibility progression of directed garden formal elements which occurs along the pathway lane in those specific points where the photographs are made.

Consequently, these visibility progressions are depicted in an equal manner along the coordinated line of the stepping pathway in order to be comparable with the other singular formal elements analysis. Since the initial photographs are not visually obvious in the garden formal elements density progressions they are undertaken to the process of cleaning to in the black and white technique.

This process is conducted in the Processing programming software whereas each of the images are automatically blurred and posterized with same software settings. They are clearly represented in forms of greenery elements physical forms progression along the coordinated pathway line.

Thereby it becomes very clear how certain garden physical forms becomes visually hidden or revealed in different manner, while varying among the set of physical and visual distances of the visual experience property. However, hereby a photographic presentation is represented in graphical form of cognitive comprehension that carries tangible hint and scientific presentation of intangible cognitive imaginations.

6.0 Research methods application

6.1 Research theoretical findings derived from graphical analysis

Each of the selected sub-pathway section represents a group of similar *tobiishi* stepping section with certain formal continuum formal logic. Therefore, the research design section represents case studies which cover all of the possible garden physical forms dependencies. They condition and establish specific and thus unique visual experiences through sets of multiple physical form relationships which visually and physically condition their own visual representations and cognitive comprehension images. Each of the sub-pathway analysis manipulate with equal garden physical forms and their attributes. Nonetheless, their physical and visual representations change and appear as different according to different values applied to their physical forms attributes. According to these attributes values they enter into different physical forms dependencies and mutual physical and visual conditioning and characterization. Different values extrovert absolutely different physical forms and their influence toward the whole garden formal continuum visual experience in that sub-pathway section of the garden.

However, these dependencies can be understood from the final attributes pathway coordinated diagrams, which are collided above each other in order to comprehend the proportion of their physical form and visual appearance dependencies and simultaneous transformations. Nonetheless they are expressed using clear and proportional and therefore comparable values in order to present their y axis values. They can be observed as a mere rhythmic representation of the garden physical forms behavior and visual availability of targeted garden formal elements.

1st sub-pathway : **Zero**

Greenery physical forms at the right side density and heights become lower, while the visibility measure of the approaching pathway section is getting higher. Obviously, as the end of the sub-pathway approaches visual distance gradually changes to physical distance in favor of the awareness of the right side direction of the next walking lane.

Landscape angle of the right side slopes becomes smaller in order to liberate the field of view ability to perceive and comprehend the upcoming walking section. The same occurs within the greenery crowns section surface distribution which after achieving smaller amount keeps a constant set of values.

The right side greenery radii distribution decreases, while left side radii sizes remain constant. Thus, there is no single visual change or attention contrasts at the left side, since one has to be visually

directed to the right side visual content and walking path changes and upcoming right side stepping turn.

Right side slope angle inclines while greenery trunk positions at the right side become more distanced with constant values of the tree crowns sizes. Nonetheless, their trunks density and heights are higher with further progression. Thus, new part of the pathway visually reveals in with walking progression, but it still remains unclear how one can approach to that lane and what its characteristics are with further visual experiences. Visual distance prevails in this section.

Left side slope angle, greenery density and greenery heights remain almost constant in their values while not revealing any kind of field of view property at that side of the path. This kind of progression completely covers the visual impression of the bamboo forest and outer fence and outer street possible glimpses, since that is the closest position of the visitor in relation to the garden boundary. Gradual change in greenery progression density gradually reveals visually distant bamboo forest as the final visual cover of the outer world and the garden bamboo fence. Artificially composed but still natural fence obtains mimicry similar with its branching pattern and colors to the front side bamboo forest. Therefore, even if one notices bamboo fence it will be experienced as visually integral part of the bamboo area.

In order to entirely and even more firm that in the first part of the lane make one to visually denote the existence of any formal property at the left side, the density and distances of the greenery trunks are even higher at the last frame of the field of view.

2nd sub-pathway : **Appearing**

Visibility of the waiting pavilion becomes gradually higher as one advances. Hence, the right side greenery formal elements keep their radii smaller; their distance from the stepping axis becomes smaller too, while their radii size stagnates. That means that they do not intrude the visibility of the pavilion but rather cover the visibility of the lake and borrowed scenery on the pathway right side and gradually reveal the tea house visual obviousness.

The same occurs with the terrain slope angle which becomes higher and with the higher maximum values which on the left side cover the visibility of the entrance portion. The stepping stone units' surface becomes higher in their amounts. It finally culminates in the highest value of the stepping unit surface.

The visibility ratio of the waiting pavilion is highest from this stepping and standing point, which actually makes human to slow its stepping speed and visually observe the tea house that appears. The stepping pattern directionality becomes lower as the visibility value reaches higher ratios. That also makes one to slow down its walking activity.

Left side increment in the size of the greenery radii and its constant tree trunks distances from the stepping axis covers the entrance portion and the Imperial gate visual appearance. This becomes strengthened with the higher slope angle that reaches its peak in value when the size of the tree trunks suddenly decreases in order to reveal the pavilion. Since the slope remains the only visual obstacle along with several bushes it had to reach its highest value of the height. Hereby, the greenery progression that occurs behind the hillside assures the invisibility of the outer world and bamboo wood and fence.

Additionally, left side tree trunks distances from the stepping axis become suddenly higher from this final stepping point along with its tree crowns heights that become extensively higher. That firms the left side invisibility of the garden entrance area.

Since the stepping units' directionality becomes lower with the smaller angles among walking directions, one's field of view with previously described invisibility becomes absolutely occupied with the waiting pavilion.

The lantern positioned at the left side mark the neighboring stepping coordinate where stone units start to increase in their surface amounts ratio. This coordinate actually marks the stepping portion of the lane where develops the gradual visual experience of the waiting pavilion.

Both diagrams of greenery elements field of view density distribution along the zero sub-pathways, which became with overlapping of the separate photo extractions, confirm changes in field of view gradual coverage with greeneries distribution.

3rd sub-pathway : **Increment**

The visibility of the waiting pavilion is almost complete. Nonetheless, it reaches its absolute visibility point at the highest surface amount of the stepping stone unit.

The terrain slopes disappear and the land becomes flat. This decreasing in the terrain slope right side angle value goes with revealing of the right side sub-pathway and its further direction that becomes part of the field of view. Distance from the tree trunks at the right side equally becomes higher in their values that make previous revealing even more obvious.

Stepping stones pattern directionality becomes more steady and calm while their stepping points distances get higher. That makes human stepping activity slower and with the more often standing breaks points from where one can observe the waiting pavilion and decide to continue its stepping activity or make a sitting break and wait at the pavilion.

Left side tree radii become higher in time but suddenly their drop as one reaches final stepping coordinate. That makes final observing point of the pavilion to entirely reveal the house without any visual obstacle at the left side.

Right side greenery formal elements' radii values become higher, their tree trunks density increases as one reaches its final stepping coordinate, those trunks distance become higher in time, while the angle of the slope more or less remains constant though, but with the higher distance of the slope side from the stepping stones axis. These kinds of values tendency reveal the right side direction of the next stepping lane, but perfectly covers the visual appearance of the main Shokin tei house, lake and partial view over the garden scenery. They remain out from the field of view developing at one's right side.

Left side increment in the size of the greenery radii and its constant tree trunks distances from the stepping axis covers the entrance portion and the Imperial gate visual appearance. This becomes strengthened with the higher slope angle that reaches its peak in value when the size of the tree trunks suddenly decreases in order to reveal the pavilion. Since the slope remains the only visual obstacle it had to reach its highest value of the height.

Additionally, left side tree trunks distances from the stepping axis become suddenly higher from this final stepping point along with its tree crowns heights that become extensively higher. That firms the left side invisibility of the garden entrance area.

Since the stepping units' directionality becomes lower with the smaller angles among walking directions, one's field of view with previously described invisibility becomes absolutely occupied with the waiting pavilion.

From the middle point among stepping coordinates, stone units surface ratios become gradually bigger, which relates to the visual coverage of the sitting area within waiting pavilion. A single wood trunk becomes a firm visual obstacle. As one progresses with the stepping activity and finally reaches the *tobiishi* unit with biggest stepping surface coverage, the pavilion reveals with its complete image.

This is the point from where one also entirely perceives another stepping lane that is going to develop.

4th sub-pathway : **Sudden Bridge**

Greenery surfaces values become lower at its both sides along with the stepping stones stepping distances increasing values along with their surfaces amounts. The right side slope angle follows this decreasing tendency within its values. In the third quarter of the pathway lane they reach their values peaks and the stone bridge and following sub-pathway lane are coming almost fully into the field of view at the left side of the field of view. Right side field of view reveals the upcoming stepping lane with its first part and without revealing its further progression that becomes covered with distanced but exactly covering position of the inserted bushes.

Consequently, all of these physical forms parameters reach their lowest values in the succinct stepping points while the stepping stones size becomes higher. Nonetheless their directionality changes, walking activity therefore has to be accomplished carefully and thus the visual experience continuity becomes usurped until the final step committed onto the stone bridge unit which marks the upcoming

sub-pathway walking activity of a different visual and walking distribution. That makes one capable to slow down and take a clear view of the bridge and secondary stepping pattern that can last.
In the last portion of the stepping lane, stepping stones surfaces amount decreases while keeping their directionality straight. That makes one to commit faster steps and continue faster walking activity in direction of the stone bridge.
Diagram of the greenery elements field of view, along with the diagram of the greenery density pixelated distributions represent the greenery distribution that progresses after the bridge crossing. This greenery remains constant with its density, heights and sizes of the tree crowns that completely cover the hillside and another stepping pattern that occurs behind the hillside. With this kind of almost *shakkei* method, garden constructors kept the visitor to be concealed with their visual perception of the bridge, water basin and the right side of the stepping pattern that is going to evolve. This is how it is established the visual dominance and order among the main and side *tobiishi* pattern lanes in which ones have to be firstly visually perceived. That makes one to almost subconsciously decides the most important walking direction and line in order to properly experience the most exquisite part of the garden complex.

5th sub-pathway : **Hidden Pine-tree**

The visual and formal logic of this stepping section is concentrated around the upcoming Shokin-tei tea house and tis stepping lane.
Right side greenery surface amount suddenly decreases to the zero along with its values in appearance, density, distance while the tea house remains almost entirely visually covered with the single pine tree distant unit.
Stepping direction suddenly changes when the right side greenery disappears. Further stepping stones units follow this occurrence with their straight stepping axis and slight increase in their surfaces size. That makes one capable to visually perceive and observe partially revealed Shokin-tei area and finally stop its motion before it follows the another change in the stepping axis that slightly goes to the left side and involves with a new visual pattern.
Left side slope becomes closer as one advance, while its slope angle increases with its values.
Left side greenery surface amount becomes smaller in time with their tree trunks size sudden increment at the middle part of the stepping lane. This point is where the slope angle reaches its peak in size. However, at this point directionality of the stepping axis suddenly changes and turns left. However, that makes left side vision to be completely covered. Shokin-tei approaching pathway, its direction and position remain entirely covered.
At the middle part coordinate sudden left change in the stepping lane direction occurs that follows with the field of view revealing vista. One can notice the upcoming stepping pattern, while the tea

house still remains within the domain of the visual distance. It remains unclear the physical distance relation toward its area. Left side follows this visual tendency with declination in its slope angle values and slope distance inclination that firms the new field of view revealing attribute.

Right side view toward the tea pavilion becomes clearer since the distance and coordinate from the pine tree unit reach their smaller values. Thereby, the pavilion becomes almost completely revealed.

Left side greenery announces decreasing tendency in all of their amounts while that side visual coverage is assured with decreasing but still enough high slope formal elements.

Stepping stones units acquire steady values in their sizes, directionality, orientations and heights, which keeps steady and constant stepping activity. It finally allows firm and stable observation of the revealing Shokin-tei pavilion.

The pine tree hereby becomes the most important garden formal element in visual impression of the tea house. It is an almost central, focus point of the changes in physical attributes of *tobiishi* stepping units. Its field of view dominance and later coming out from the pavilion visual coverage are followed with changes in directionality, sizes and visual availability of the bridge and second sub-pathway. Therefore, its visual dominance give a kind of sacred imagination of this single physical form that resembles at *himorogi* sacredness. Its natural progression and growth keep perfectly but artificially envisioned visual obstacle. It pacifies both world of human and world of gods in a field of view developing at this stepping path.

6th sub-pathway : **Hidden Hillside**

The slope angle at the left side gradually reveals the visual experience of the upcoming stepping sub-pathway. Right side revealing tea house stays at the visual distance reach of the visual perception while its visibility ratio becomes higher with the pine tree gradually disappearing from the field of view. The stepping stones units distances increase along with their units surfaces, while the directionality stand for more straight tendency along with the previous inclinations. That makes one capable to slow down its stepping walking activity and observe almost entirely revealed tea house area and its now completely visible front, entrance area.

Left side greenery follows the tendency of revealing next side of the upcoming pathway and the bridge that takes one to the final tea house entrance portion. Their tree crowns sizes, trunks density and heights suddenly drop with their values. The house still remains solely within reach of visual distance, while physical distance remains incapable to be visually noticed and accordingly experienced.

Hence, the left side slope distance gradually decreases while its slope angle values remains constant. Those two tendencies completely cover the stepping pattern behind the slope formal elements.

What is very characteristic is that the left side hillside becomes more distant as the stepping progresses. That behavior reveals another path and the further vista to the pavilion area. Nonetheless, along with this distance declination, its relative height increases. This is how the secondary pathway behind the hillside is completely out from the field of view.
These opposite progressions also develop a firm obstacle of the last sub-pathway that finally takes one to the bridge and stepping area in the mere front area of *nijiriguchi* entrance.

7th sub-pathway : **Shelter**

The pavilion house and its approaching stone bride unit almost enter into the field of view physical distance comprehension while not absolutely revealing its physical form and final destination of its course in case of the bridge unit.
Right side greenery distances become higher with decrease in their size though. Small bushes aside remain out of the field of view direction toward previously mentioned entities and therefore become unimportant. They do not become visual obstacles in the tea house and bridge almost clear visya from the stepping pattern units.
The left side greenery keeps its high ratio of the surface amount which covers the side sub-pathway which suddenly appears as a part of the visual frame. It is followed with the higher stepping units surface amount which allows one to change its walking course along this stepping lane which goes to the left side into the succinctly positioned woodland.
The highest stepping unit surface mount becomes in the walking moment when the upcoming sub-pathway section becomes suddenly and completely revealed. Thus, one can comprehend its further walking course and its complete physical relation toward the stone bridge while standing there at one of the bigger *tobiishi* units. Consequently the tea house reaches the point of being within the visual and physical distance property of the walking human when one reaches final point of the sub-pathway since one finally understands how to reach the house along with the bridge unit.
Left side greenery distances and sizes in tree trunks gradually increase in their values. Left side slope angle also gradually increases along with its smaller distance tendency to the stepping axis. That makes one in a complete visual coverage from the left side part of the garden and side stepping path. They both remain out from the field of view and therefore marked as unimportant to be visually perceived and cognitively thought out at this point of *tobiishi* pattern coordinates.
However, what becomes interesting is the peak of the tea house belonging to the field of view area that occurs at the midpoint of the stepping lane. From the coordinate it decreases since the field of view angle cannot include its entity anymore. Its visual importance reached its peak in gradual revealing in two pathways developing and garden formal elements supporting tendencies.

Right side greenery develops in two sides covering and revealing certain formal element within field of view frames.

Thus, as one approaches the right side greenery ration is almost equal to zero at every aspect of its attributes. Nonetheless, at the very end of the path is firmly positioned a tree crown that constantly covers the second path visual experience and the entering part in front of the stone bridge.

That enhances designers' intention to almost keep the tea house in further visual distance in relation to visitors. One can actually almost understand what the walking direction is and are to pass in order to reach the pavilion. In spite of this, one still does not entirely recognize the physical connection that is going to take them to the house and what whether they next turn is going to continue to the left side behind the greenery fence or it is going to proceed forward to the right side of the bridge entrance area.

Left side greenery progresses while perfectly covering the side stepping patterns behind the hillsides at the left side. Their height level, density and distance from the walking line remain constant until the middle part of the stepping pattern. This is the coordinate where greenery amount reaches its zero value, *Shokin-tei* entirely reveals and stone stepping units reach increased size of their stepping surfaces. From this stepping point one enters into new kind of greenery progression at the left side. Its height level, density and crown size suddenly experience serious drop. They mark the left side secondary pathways connection that also suddenly becomes revealed.

Hereby greenery steps in field of view progression whereas their density, tree crowns sizes and distances from the stepping line increase. Their values inclination completely visually covers the secondary path that exists behind the greenery along with the intensive hillside and bigger side part of the garden. That makes one to be completely aware of the tea house visual dominance and subordination of the stepping activity and following physical and according visual progression of the environment.

8th sub-pathway : **Revealing**

The second tea house stays out from the field of view. The right side gradually reveals the visual glimpses of the borrowed scenery formal continuum with the lower density of the greenery formal elements. The directionality course of the stepping pattern keeps its curvature which does not allow calm walking but rather constantly staying careful and concentrated onto the stepping activity. The surfaces ratio of the stepping units changes its values in an irregular pattern of their values. that keeps one's visual attention lowered to the level where one does not observe its sides but rather the stepping pattern units. The awareness of the stepping activity becomes extensively higher and one has to be careful with each of the steps in order not to lose the balance and leave its stepping pattern stepping course.

Left side greenery surfaces sizes, their density and distance from the stepping axis gradually increase with their values.
Left side slope angle along with its distance from the stepping axis and relative height follows this increasing tendency.
However, these left side occurrences entirely occupy left side field of view while covering the upcoming pathways section that takes to the next tea house area. One is still not aware of its presence and remains visually occupied with the wilderness that surrounds.
Right side tree trunks density, heights, crowns sizes and their distance from the stepping pattern constantly cover completely revealed view to the right side vista toward the garden lake and view over half of the garden complex. One can enjoy only the glimpses of this kind of view when it can commit due to the demanding *tobiishi* walking lane.
Stepping stones singular height from the ground keeps its steady but rather higher value then usual. It gradually increases with the coordinates. That makes one even more aware of how carefully the steps have to be committed in order not to fall down. The ground becomes not so far low, but enough to cause complete body misbalance in both, visual and walking sense.

9th sub-pathway : **Turn and Reveal**

The stepping stones directionality becomes lower while their surface amounts and thickness heights get higher. That makes one to be careful of its stepping activity but far less than in previous walking lane due to the higher surface ration of the stepping units. Additionally, stepping units height from the ground decreases and make one less aware of the *tobiishi* pattern that has to be followed. Higher values of surfaces make one capable to slow down its walking activity and make more stable and continuous observations of the environment. One’s attention is not anymore completely directed toward each step that is committed as in previous sub-pathway case study.
The left greenery distances from the walking lane get gradually higher while the slope angles get smaller and at the higher distance from the stepping axis. Finally, that makes possible the glimpses of the visual experience of the second tea house to appear in field of view and liberate one’s scrutinized awareness of the visual environment in form of persistent woodland.
At the right side, the visibility of the *shakkei* method applied in garden borrowed scenery becomes selectively revealed. This occasional *shakkei* property of the field of view becomes covered from the midpoint coordinate of the stepping pattern. It occurs since the right side greenery density becomes higher along with the density it occupies. Hence, the tree trunks distances from the walking trail incline and therefore make the visual obstacle from the hillside to the garden overall scenery completely firmed.

Left side hillside slope angle becomes smaller along with its distance from the stepping pattern. That makes one's left side field of view to be aware of the next *tobiishi* lane and possible existence of another visual experience that is behind the hill. It still does not reveal the tea house at the far left side that one is not aware it exists.

Stepping stones' units surface ratio become higher as the end of the lane approaches. That makes one to commit slower and more relaxed steps and to entirely observe the surrounding environment. From those last stone surfaces of higher values and lower instances the upcoming stepping lane can be noticed at the first left turn. It is followed with the slight change in direction its spreads with its own *tobiishi* items. This last portion of the lane is characteristic of longer distances among stone units. That makes the steps to be committed in loner spans and therefore slower then in previous ones. Lastly, it makes one capable and felling like to make a short break and observe around its position before one continues to walk.

10th sub-pathway : **Down the Hill and Reveal**

The right side visually hidden, but physically succeeding sub-pathway follows the greenery surface amount declination along with the sudden stepping pattern directionality change. That change makes one to stop and be visually aware of the neighboring stepping lane and possibly decides whether to change the walking course.

However, the left side greenery surface amount decreases and suddenly reveals the right side stepping pattern connection. From this point of stepping coordinate distanced right side greenery become closer to the visitor with higher density of its tree trunks, increasing tree crowns surface amounts and overall greenery heights. That results in complete coverage of the right side part of the garden scenery. It includes entrance area with waiting pavilion and shokin tei approaching pathways. They remain entirely visually hidden behind those greenery formal elements.

Left side greenery surface ratio becomes higher in order to cover the front upcoming sub-pathway section wit lower bushes and visual experience of the main *shoin* building across the garden lake with higher and denser tree trunks. Additionally, the greenery surface tendency along with the small distance from the walking lane keeps the downhill approach to the left shokin tei out from the field of view.

Finally, at the last stepping unit which becomes of the higher surface ratio, the earth bridge reveals and part of the next, slope pathway in the frontal part of the field of view. These approaching stepping pathways remain in domain of visual distance without being known of physical relationship they hold to the next sub-pathway approaching visitors. Left slope angle becomes slightly higher, especially in last few stepping coordinates, which enhances next pathway visual obstacle.

11th sub-pathway : **Green Fence**

The greenery fence at the left side keeps the main *shoin* building contstantly out from the field of view development. Its surface amount decreases as the stepping progresses. However, at the last stepping coordinate main *shoin* villa building becomes part of the visual experience with the part of its complex house disposition. This visual impression establishes visual distance toward villa.

Hence, one still does not understand what is the spatial, stepping pattern connection, one has to pass in order to directly perceive and enter into the house. The position of the lantern marks the stone unit the one has to step in order to notice distant villa glimpses.

Thence, stepping stones units' surfaces ratio becomes higher along with their zero directionality curvature. That makes one to commit calm steps with the speed that suits normal walking speed. Therefore, one can continuously observe the revealing occurrence of the main *shoin.*

Nonetheless, when the biggest surface ration stone is stepped one has to be careful with its look toward the ground. This event is initiated since that stone units, nearby the lantern, has rather higher relative height to the ground in comparison to the others. After this event, one even more suddenly enjoys the unexpected view of the villa complex through distant woods.

The stone surface amount suddenly becomes high in a moment when the left side greenery fence surface amount reaches zero level according to the presented diagrams. Therefore, walking activity may stop and one can make a stepping break.

The upcoming sub-pathway sections [next three lanes] belongs to the physical distance discourse of the overall visual experience, whilst the fourth remains hidden behind the carefully planted greenery group. That keeps the *shoin* still in the reach of solely visual distance.

Right side greenery sizes of the crowns along with the density of their trunks, their crowns heights from the ground and their distances from the stepping axis experience gradual declination. Ti results in gradual visual revealing of the physical distance to the second upcoming sub-pathway and the right side garden basin.

These values reach their zero value at the same coordinate of the highest surface ration stepping stone where left side vista to the main *shoin* happened. Same occurrence evolved with the right side slope angle that became of a higher value. It enhances the basin and sub-pathway belonging to the field of view with more complete image.During all of these changes in various formal elements parameters, directionality, size, height from the ground and shape of the *tobiishi* units remain almost constant in their values. all the changes were of minor importance and serve more to resemble their natural origin in these artificially staged visual experiences.

12th sub-pathway : **Closed Right , Open Left**

Left side is completely relaxed from sort of formal element except the entirely revealed main *shoin* house. In spite of its almost complete visual experience, one still cannot understand how to finally reach and enter the house. Therefore, it still belongs under visual distance austerity.

Right side greenery distribution gradually reveals the main *shoin* diagonal extension entrance in their attributes values progression along with the stepping pathway portion that takes one to that entrance. Gradually, villa comes out from the reach of solely visual distance to the physical distance in relation to the visitor. However, the right side greenery physical forms distances are getting higher from the main walking line while revealing the secondary main *shoin* buildings, but their surfaces amount become higher in order to cover the visual experience of the lake and the whole next tea house section at the right side of the stepping lane. Thus, even though they open one part of field of view, greeneries close another visual section that is going to become obvious after one reaches entrance portion of the house in front. Nonetheless, one finally notices the entrance of the villa. It changes the relation in distance from the visitor to the house from visual to physical distance of these two entities, the observing and the observed one.

Directionality of the stepping pattern remains constant and allows one to enjoy a constant and steady growing visual experience of the *shoin* complex.

Overall, what becomes important in this stepping section is the superposition of two, revealing and another – hiding occurrence due to the greeneries correlative disposition. Finally they do not relate to one possible visual target but to several of them with an instant visual experience while the walking activity is committed.

6.2 Research graphical findings derived from measurement of the garden physical forms in their attributes and visual experience

Research methodology applied to twelve selected* tobiishi sub-pathways representatives, which assembles overall stepping pathway formal continuum;

*They represent twelve groups of the characteristic garden formal elements developed along *tobiishu* path. They distribute themselves with attributes and visual representations progression that occur along these Imperial Pathway separate sections;

Fig.01: map of the sub-pathway position
within the overall pathway representation

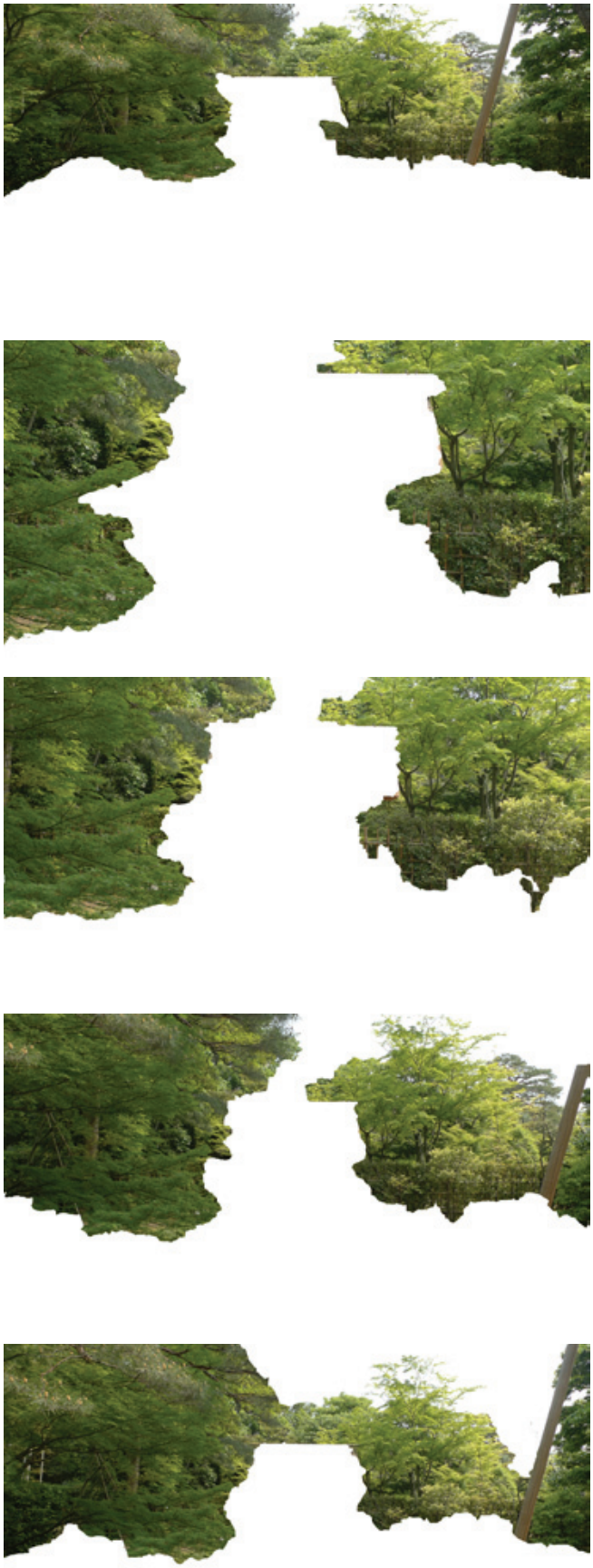
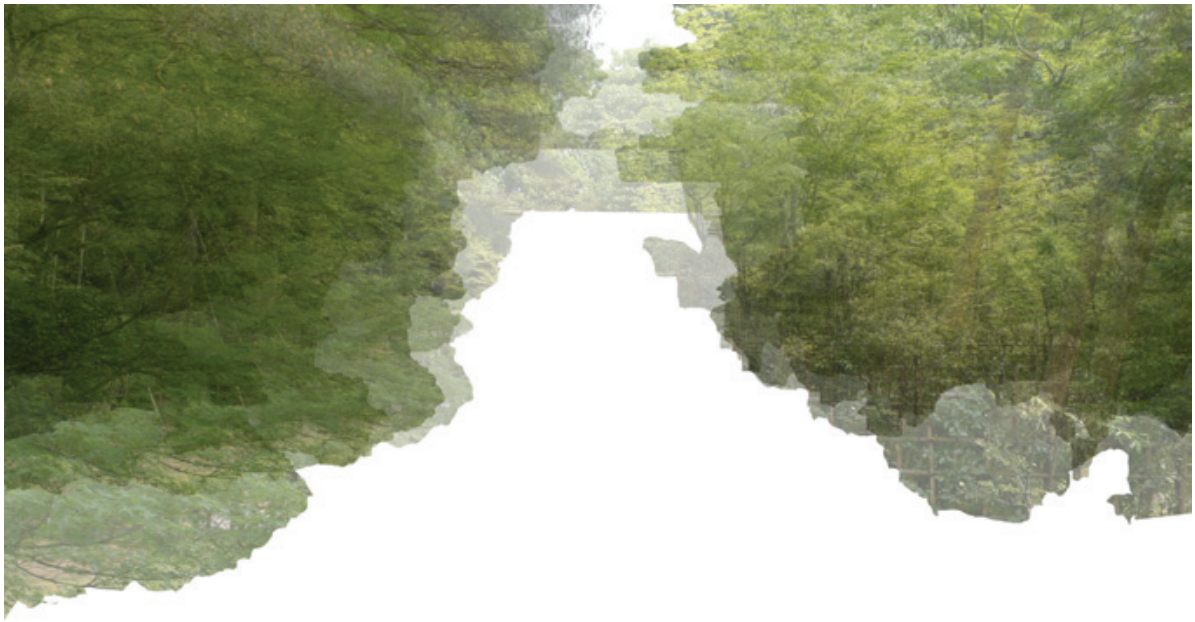


Fig.02: [left section] pathway photos taken at certain stepping points along the 'zero' sub-pathway walking lane

Fig.03: [right section] diagrams which represent the greenery elements extracted from each of the sub-pathway photos taken at certain stepping points



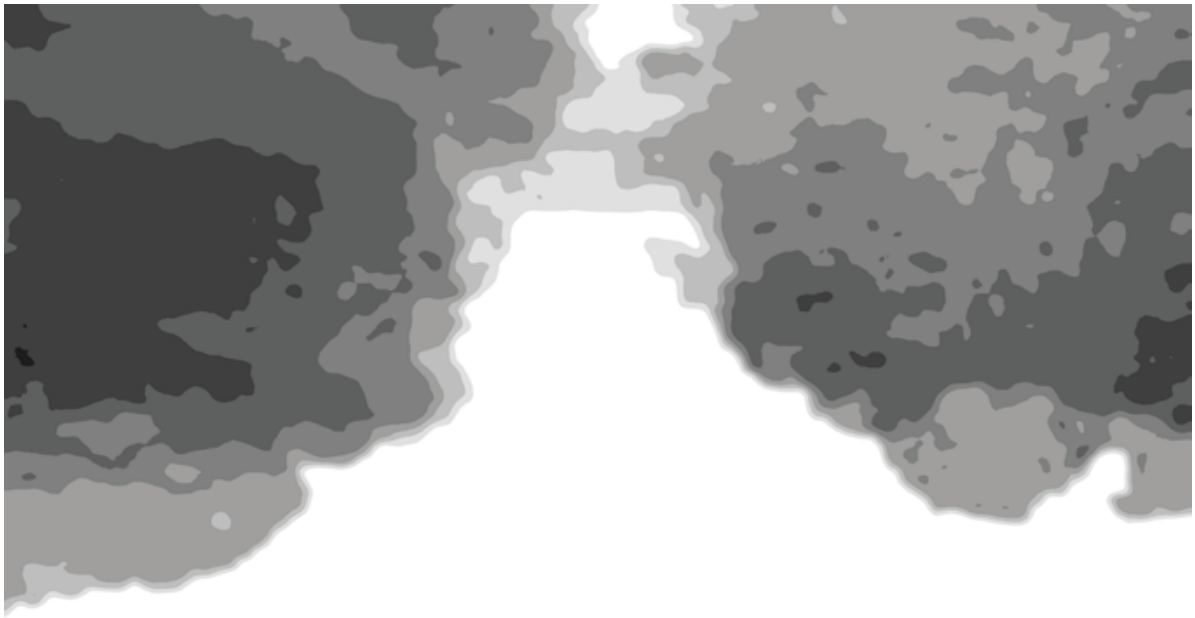
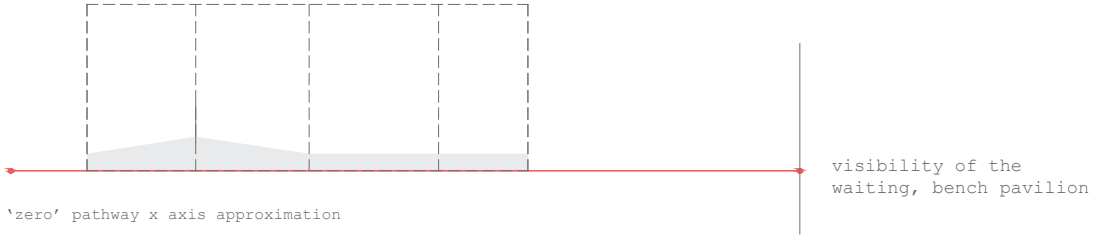
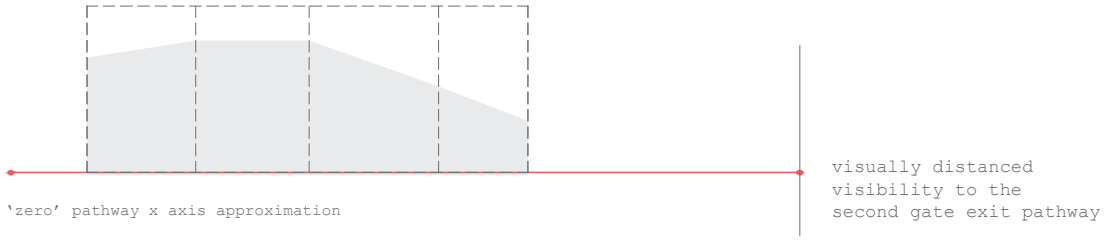
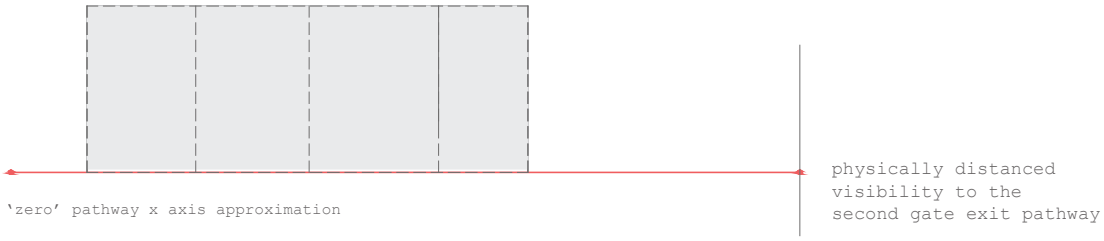


Fig.04: diagram of greenery elements field of view density distribution along the zero subpathway which became with overalapping of the separate photo extractions

Fig.05: diagram of the greenery elements field of view density pixalated distribution simplified acording to the posterization process

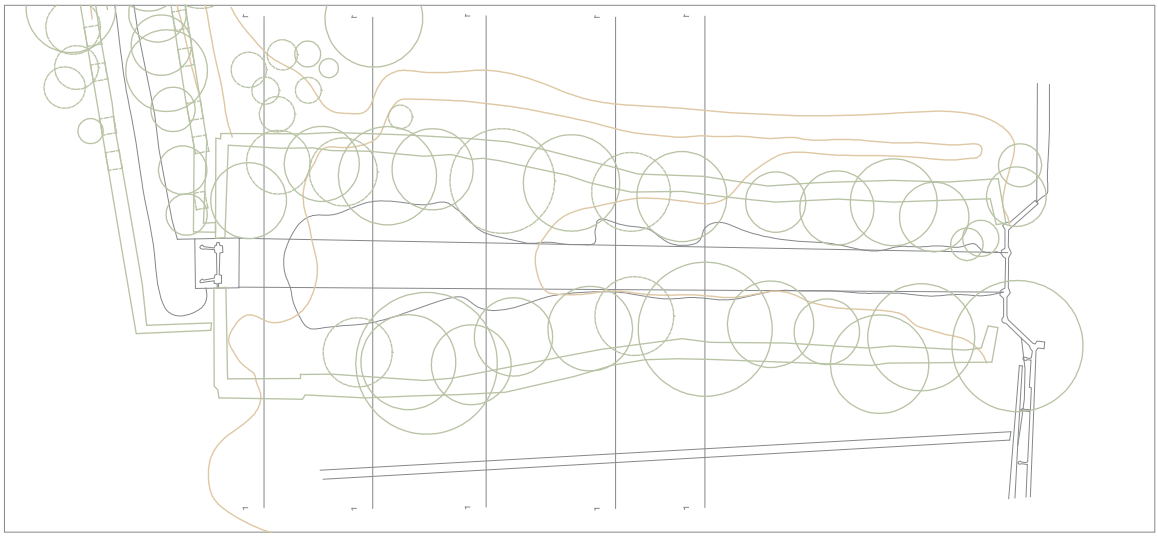






sub-pathway exit

sub-pathway entrance



'zero' sub-pathway plan

Fig.06: overall visibility of certain garden formal elements,
measured during human walking activity along the tobeishi pattern
according to the field of view greenery density progression diagram

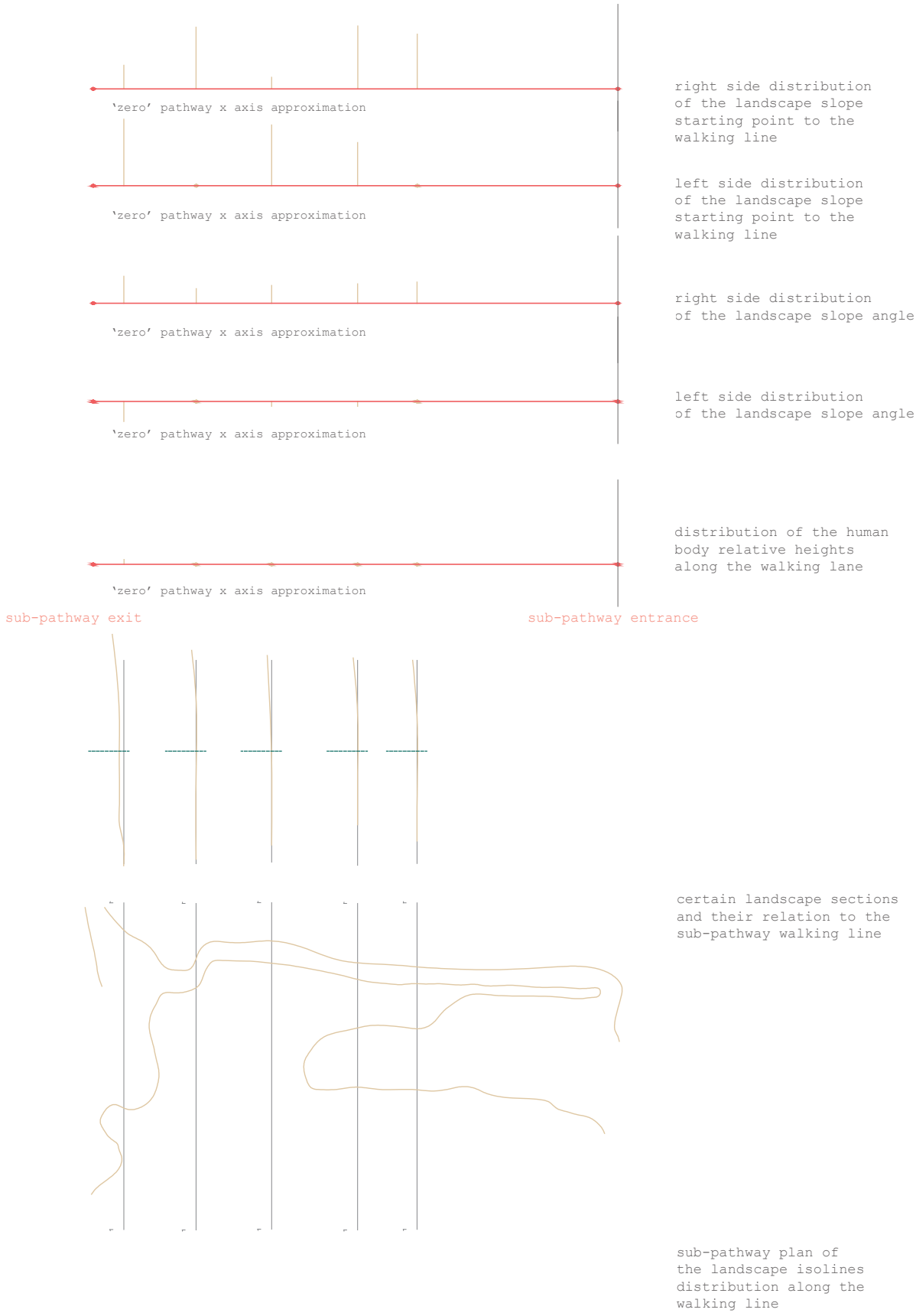
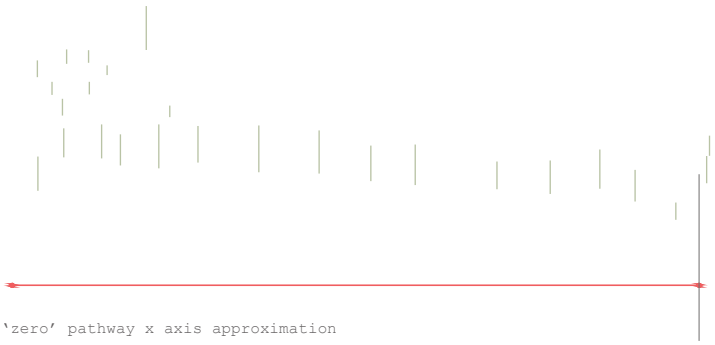
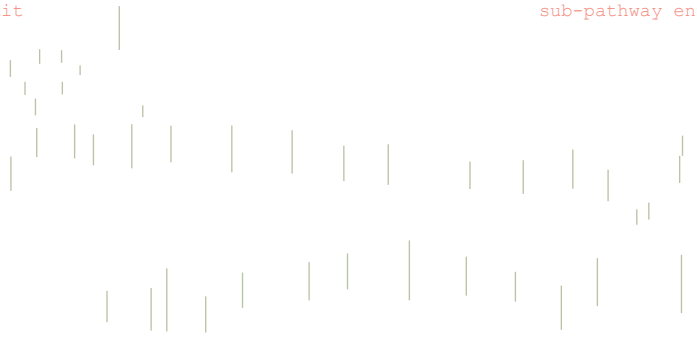


Fig.09: distribution of the landscape formal elements along the walking lane, according to the relative height of the human body position, terrain section angle distribution, the distance from the walking line to the point where the terrain changes its direction

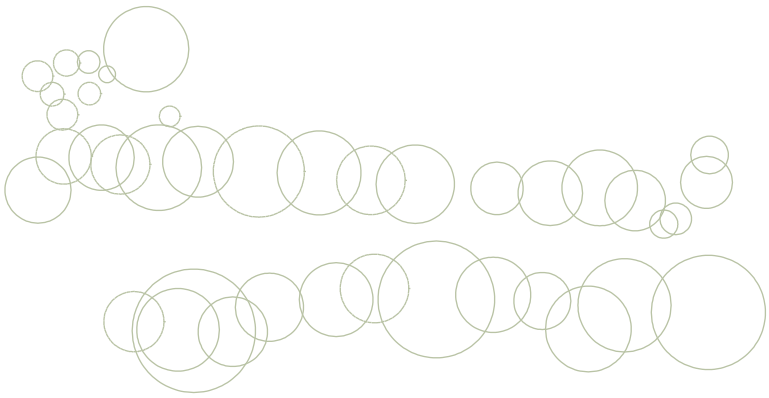


sub-pathway exit

sub-pathway entrance



plan of the greenery
radii distribution along
the 'zero' sub-pathway



plan of the greenery
distribution along the
'zero' sub-pathway

Fig.08: diagram representation of the sub-pathway greenery formal elements radii size distribution along the both sides of the walking lane

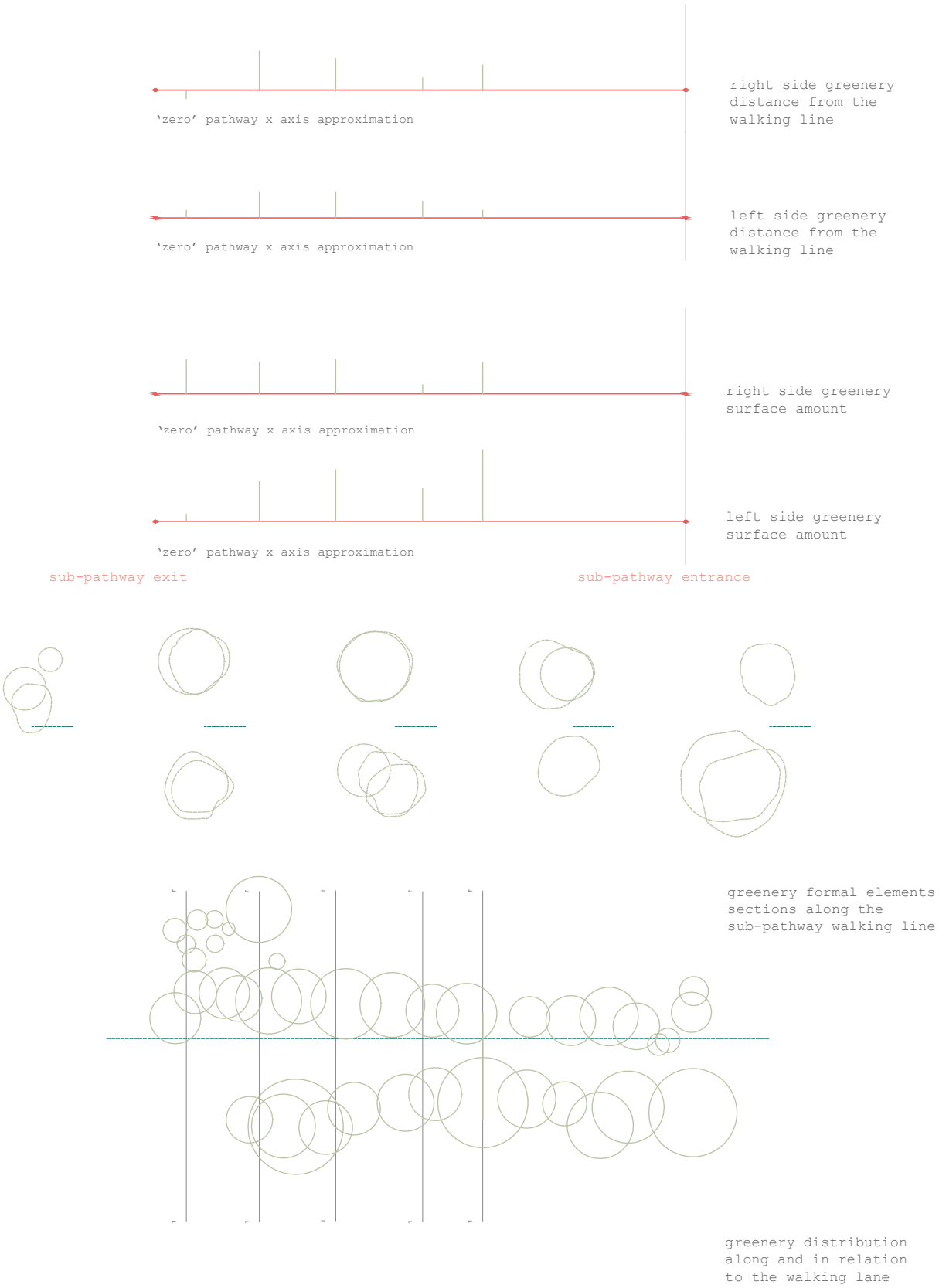


Fig.10: distribution of the greenery formal elements
in their tree crowns sizes [surface amount of the tree crown section]
and direct distances toward the sub-pathway walking lane direction

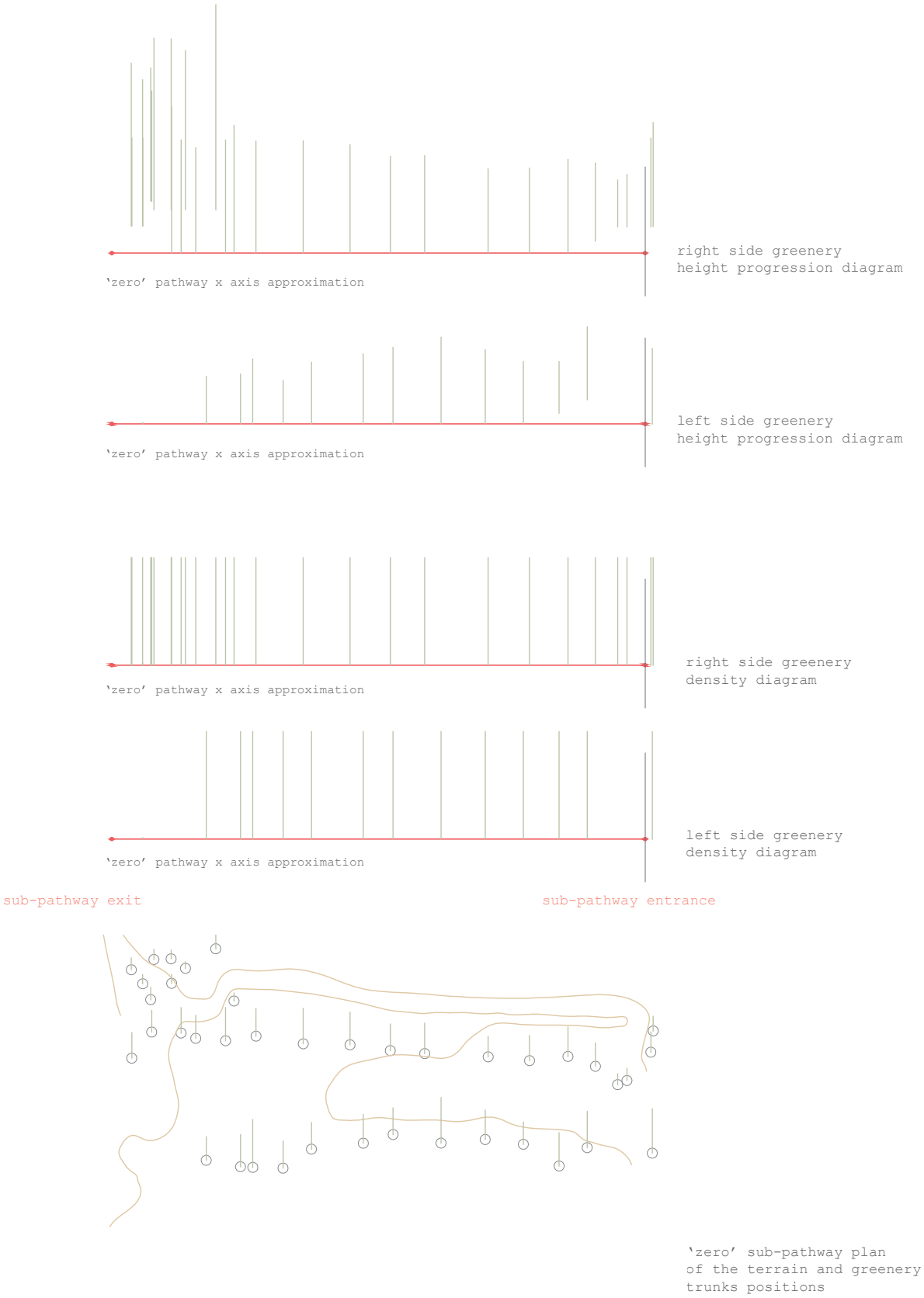


Fig.07: left side and right side sub-pathway
greenery density and height distribution diagram

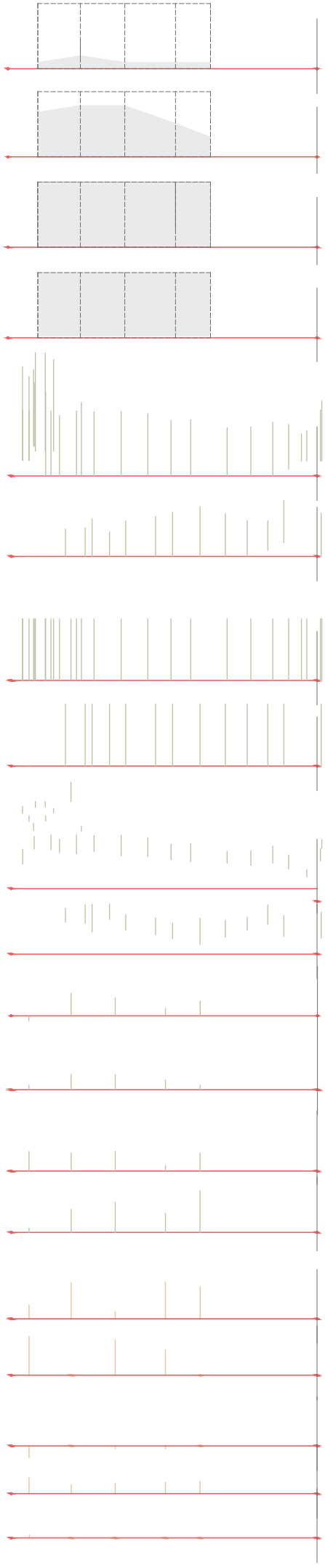


Fig.11: colliding diagram of all of the diagram rhythms
in relation to the distribution of the garden formal elements
in certain parameters along the ‘zero’ sub-pathway walking line

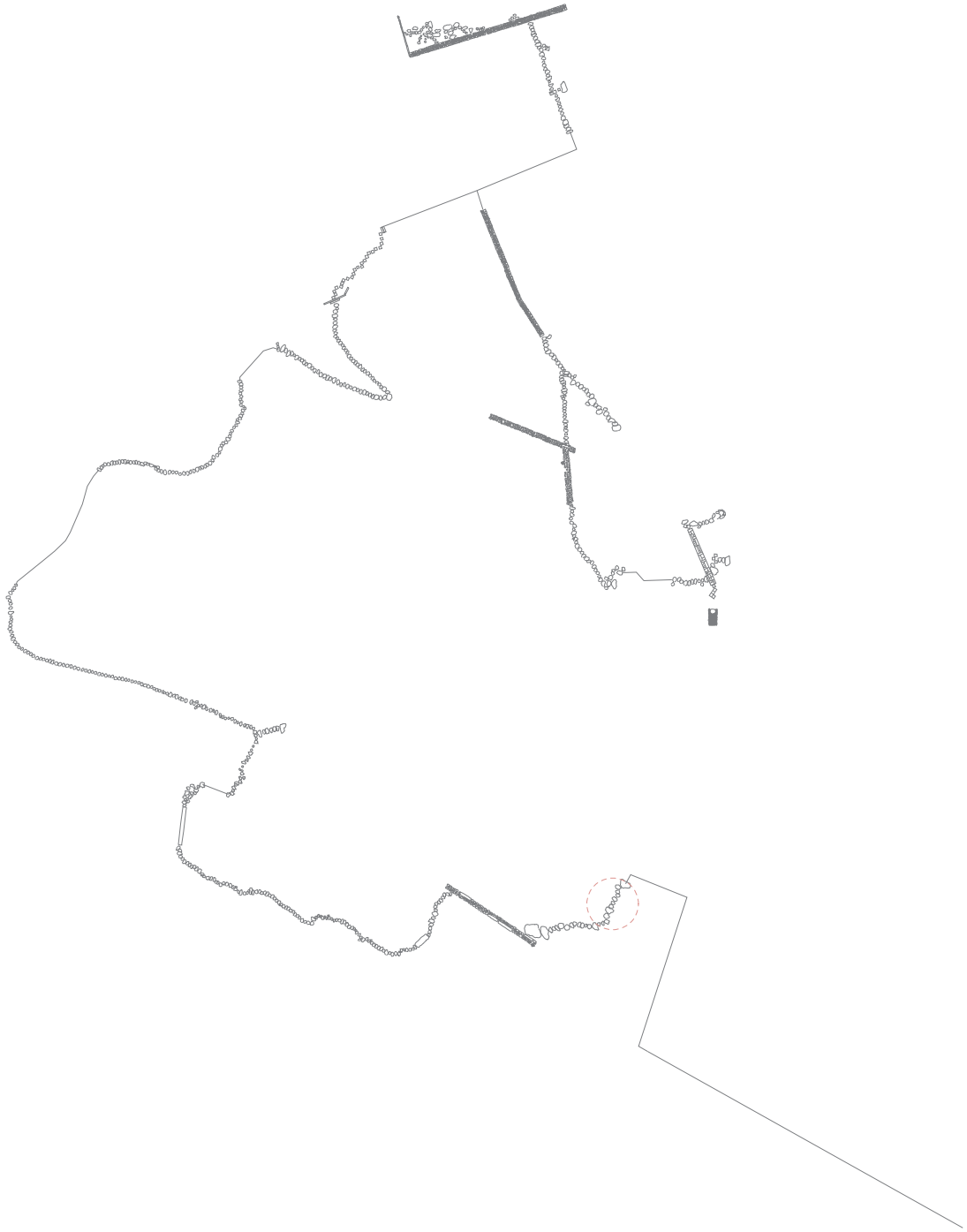


Fig.01: map of the sub-pathway position
within the overall pathway representation

‘ APPEARING ’ sub-pathway













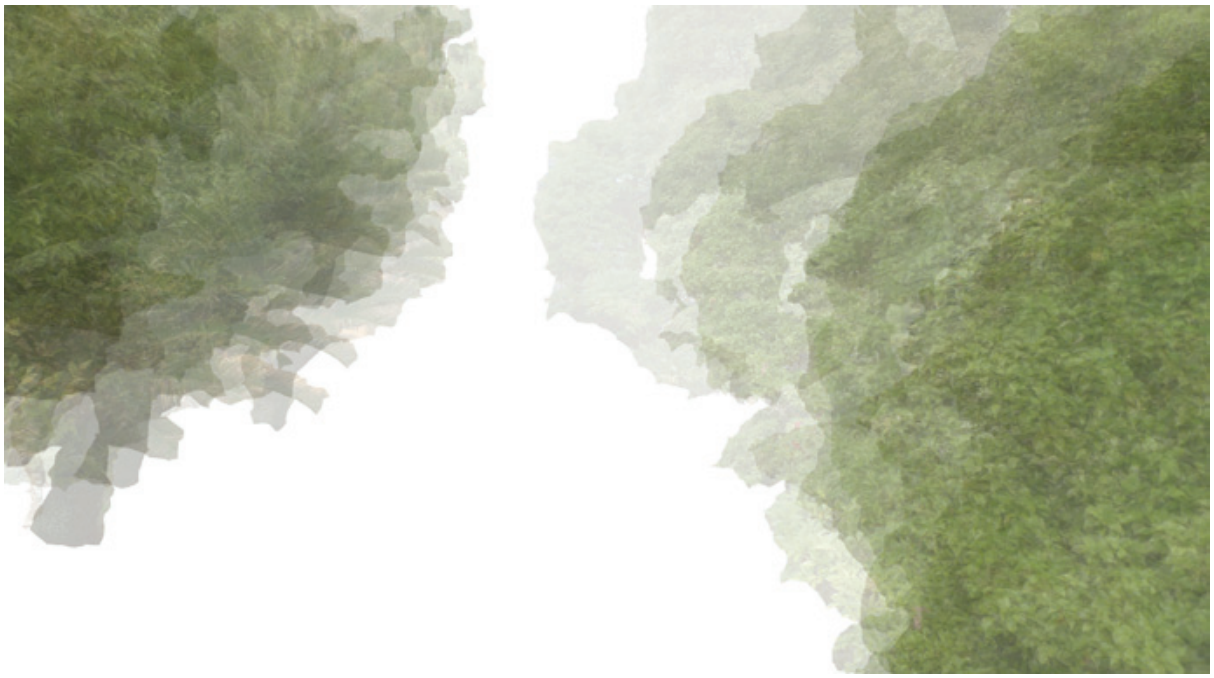



Fig.02 [left page]: [left section] pathway photos taken at certain stepping points along the 'zero' sub-pathway walking lane

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Fig.05: diagram of the greenery elements field of view density pixalated distribution simplified acording to the posterization process

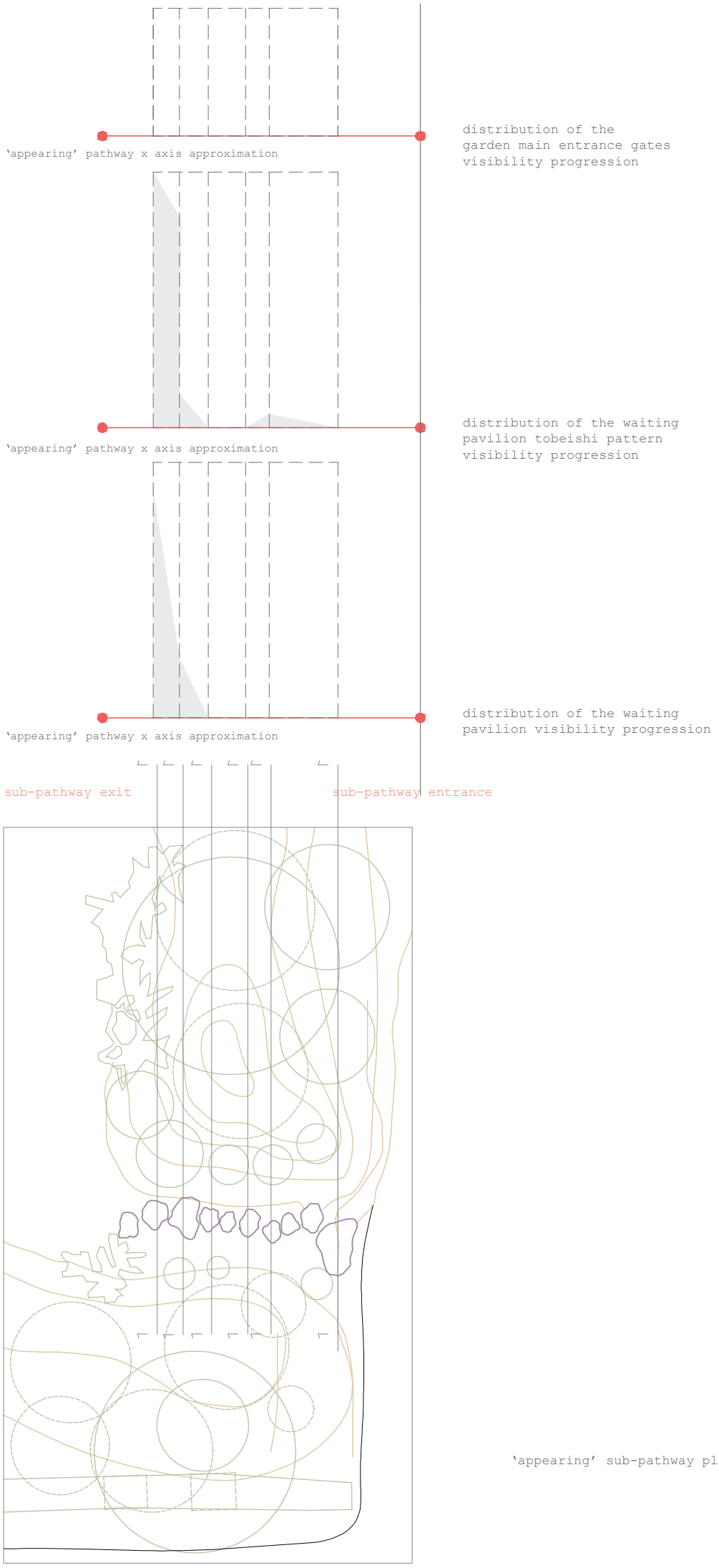


Fig.06: overall visibility of certain garden formal elements, measured during human walking activity along the tobeishi pattern according to the field of view greenery density progression diagram

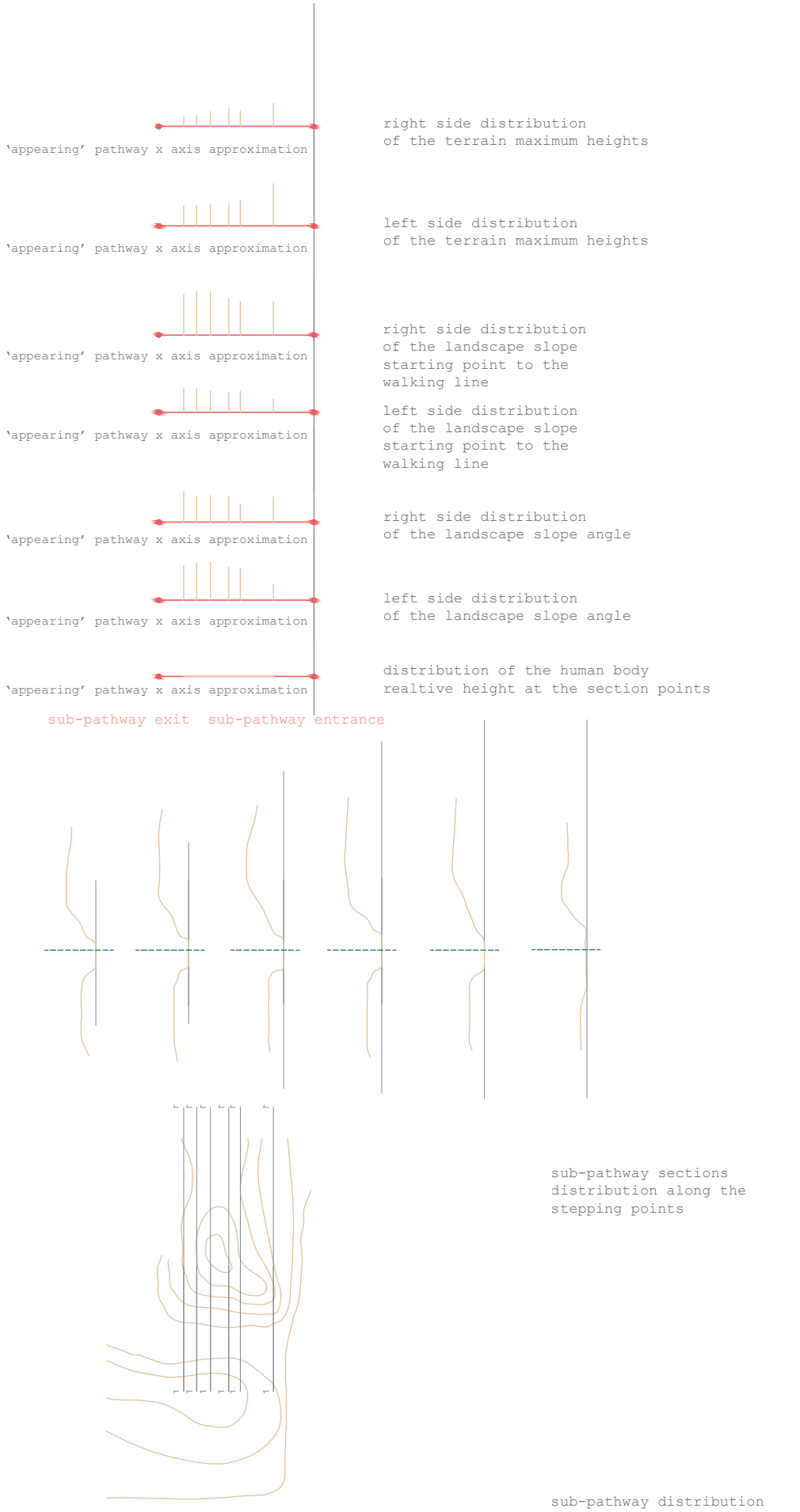
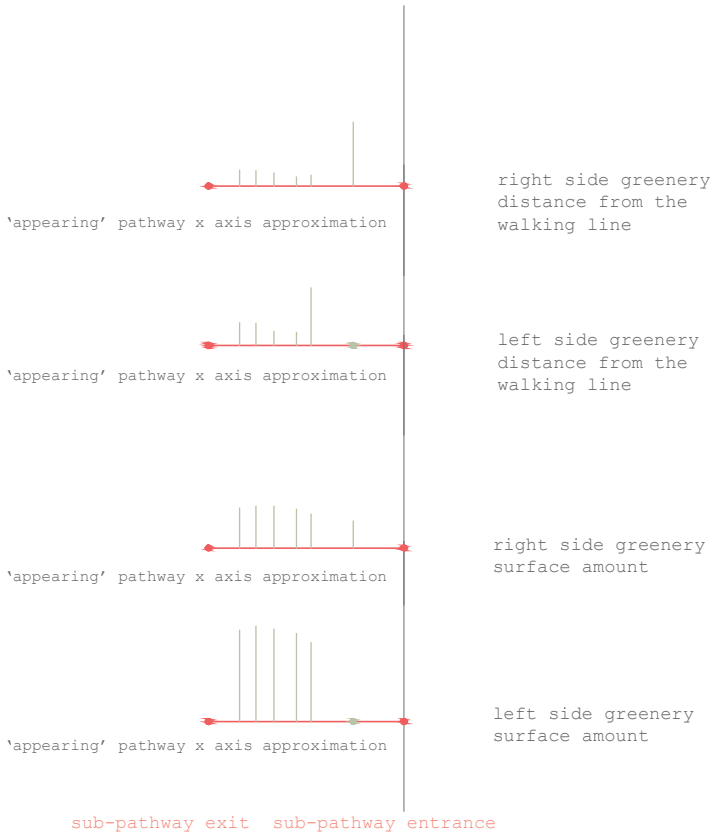
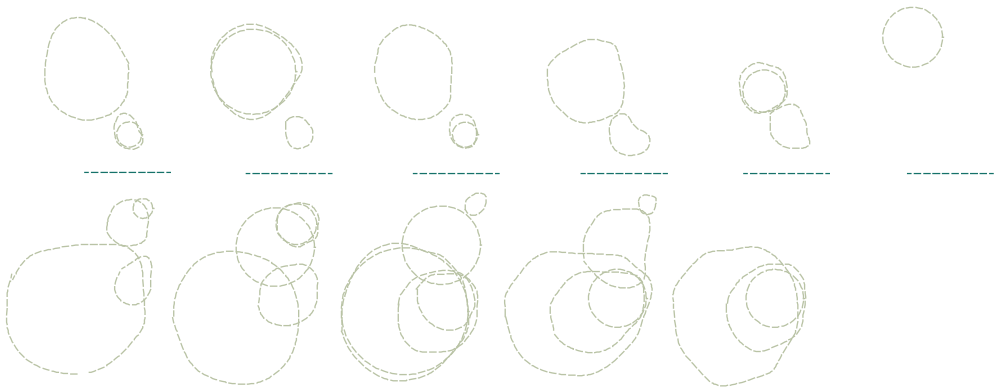
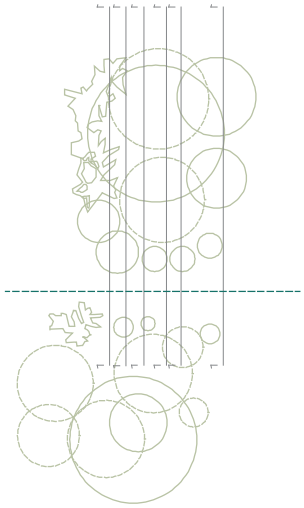


Fig.07: distribution of the landscape formal elements along the walking lane, according to the relative height of the human body position, terrain section angle distribution, the distance from the walking line to the point where the terrain changes its direction







sub-pathway greenery formal elements sections distribution along the stepping points

sub-pathway plan of the greenery formal elements distribution along the tobeishi sub-pathway

Fig.08: distribution of the greenery formal elements along the walking lane, according to the relative height of the human body position, terrain section angle distribution, the distance from the walking line to the point where the terrain changes its direction

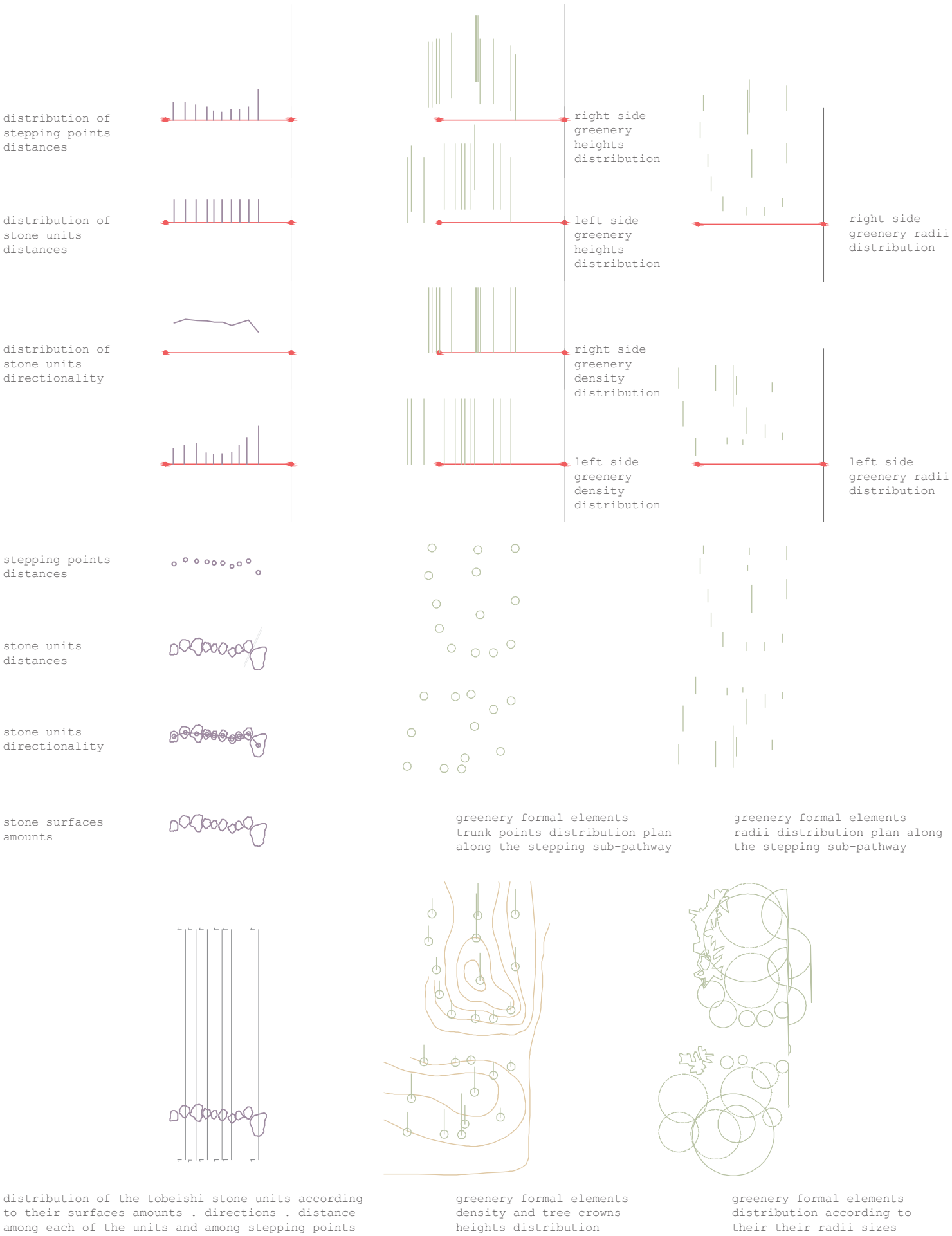
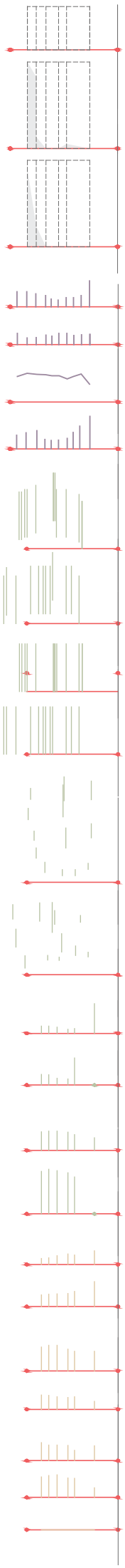


Fig.09: distribution of the [from left to right] stone formal elements and greenery formal elements along the tobeishi sub-pathway according to the certain paramters measured in selected human body stepping points



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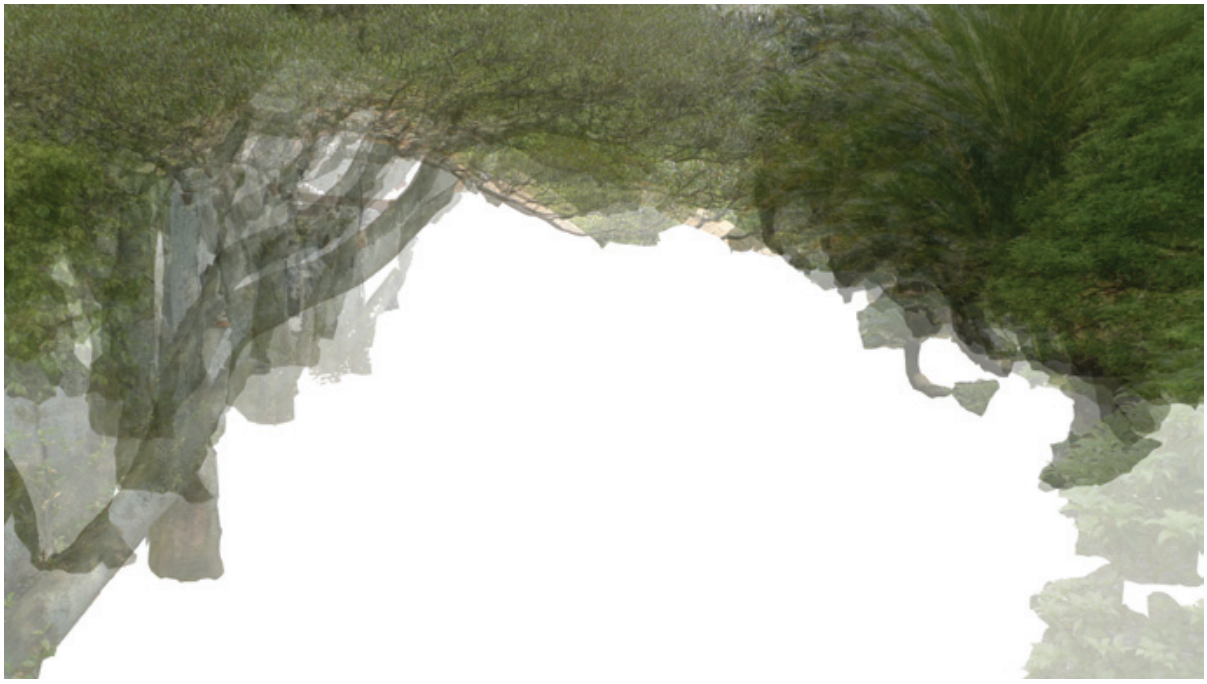

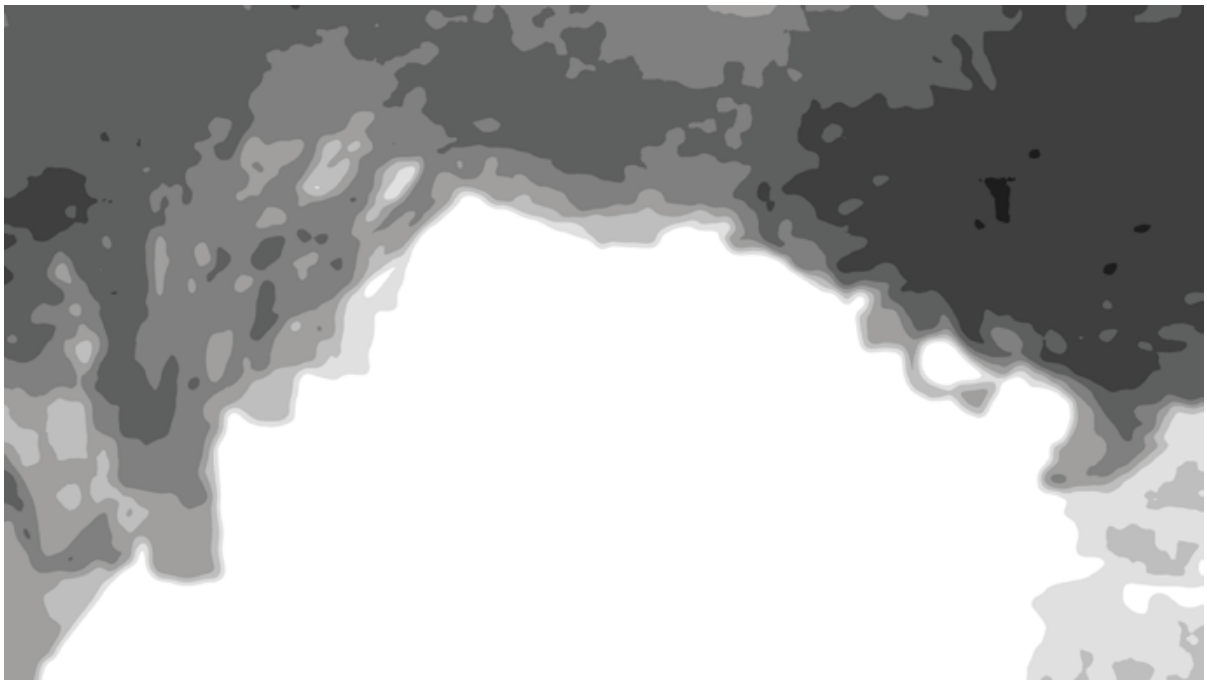

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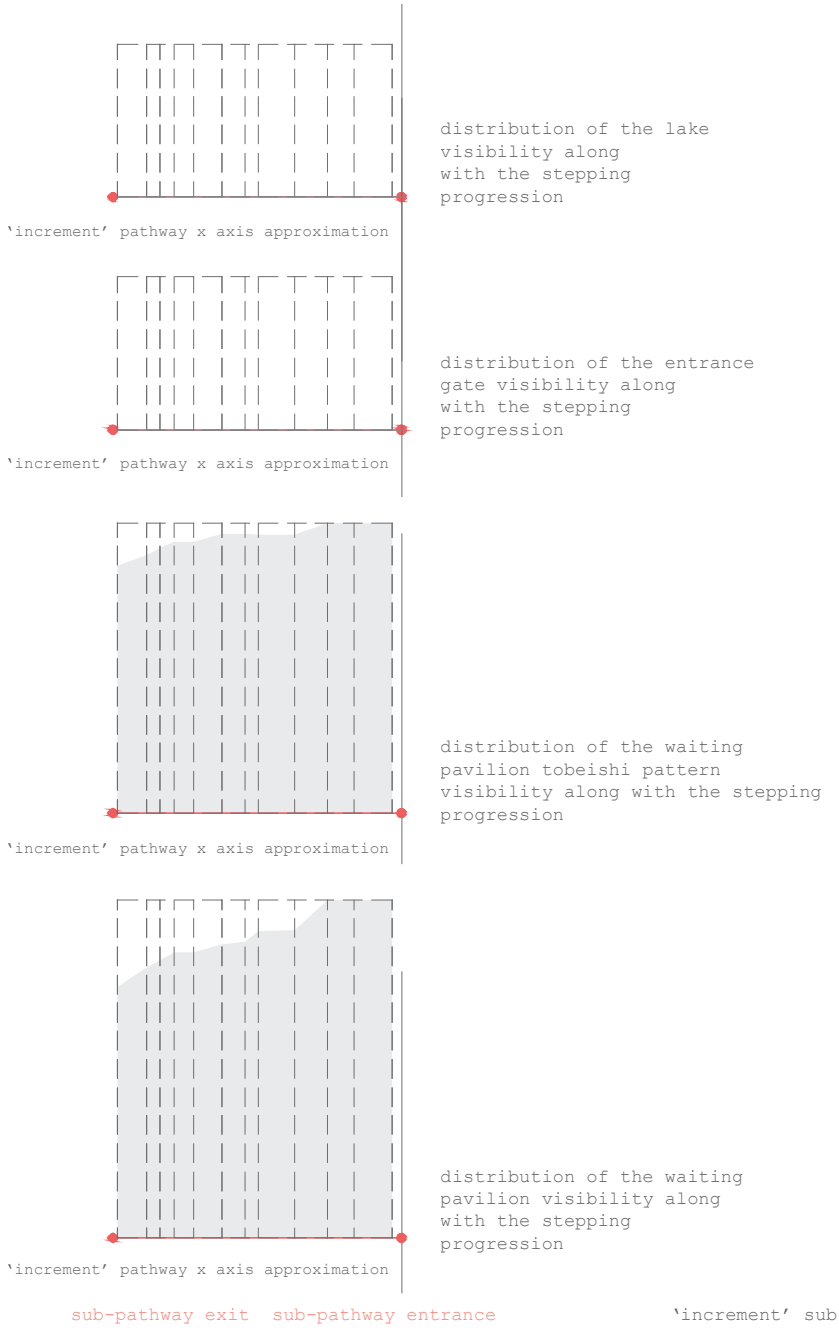

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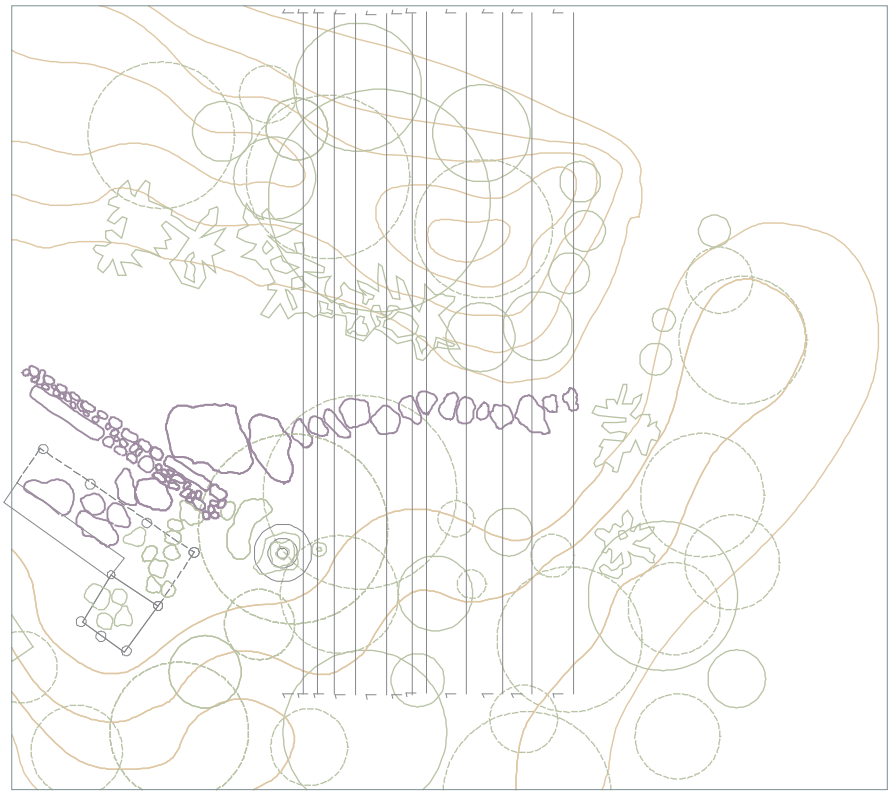
'increment' sub-pathway plan



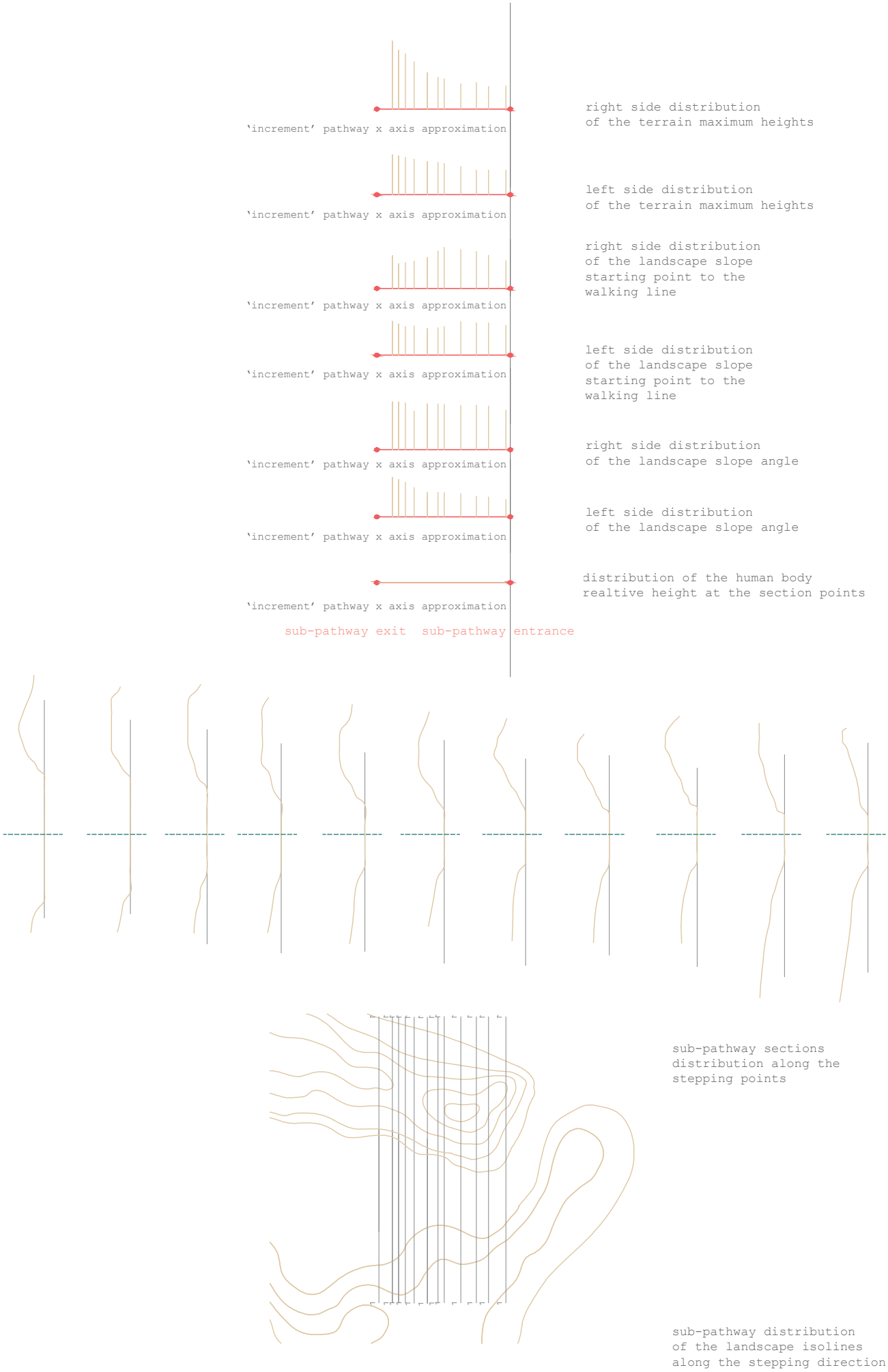
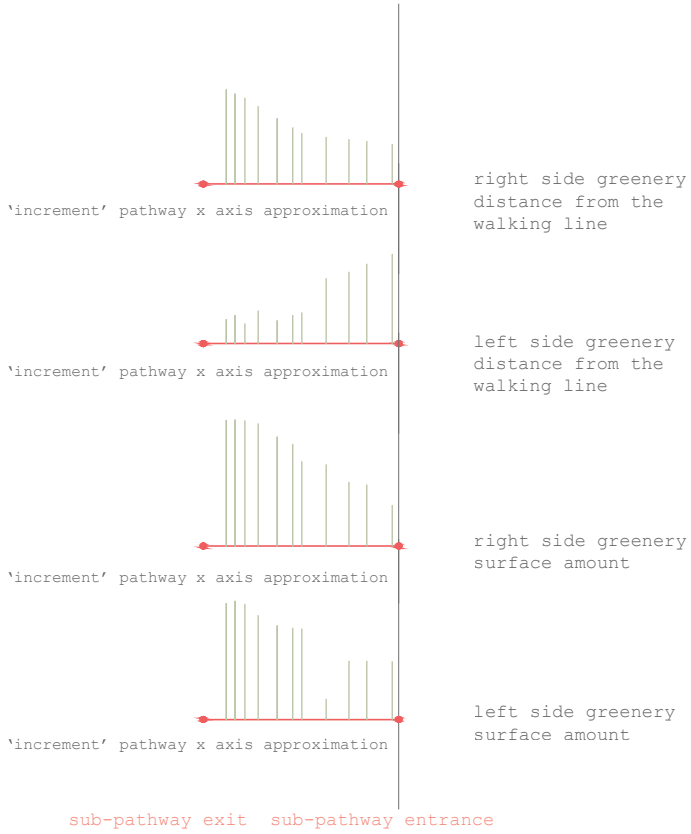
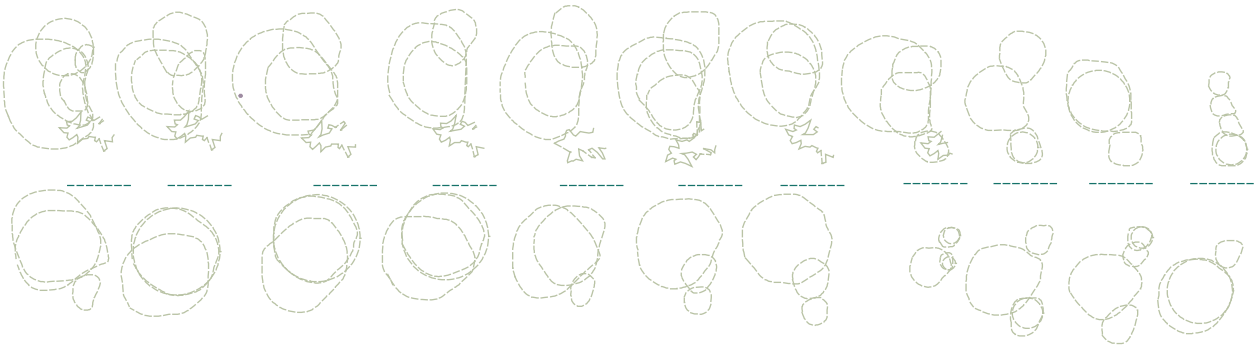
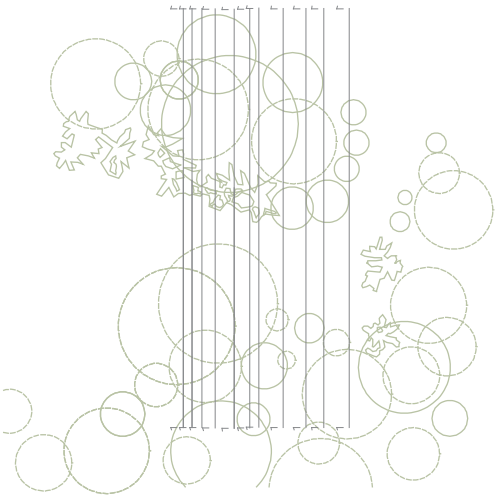


Fig.07: distribution of the landscape formal elements along the walking lane, according to the relative height of the human body position, terrain section angle distribution, the distance from the walking line to the point where the terrain changes its direction







sub-pathway greenery formal elements sections distribution along the stepping points

sub-pathway plan of the greenery formal elements distribution along the tobeishi sub-pathway

Fig.08: distribution of the greenery formal elements along the walking lane, according to the relative height of the human body position, terrain section angle distribution, the distance from the walking line to the point where the terrain changes its direction

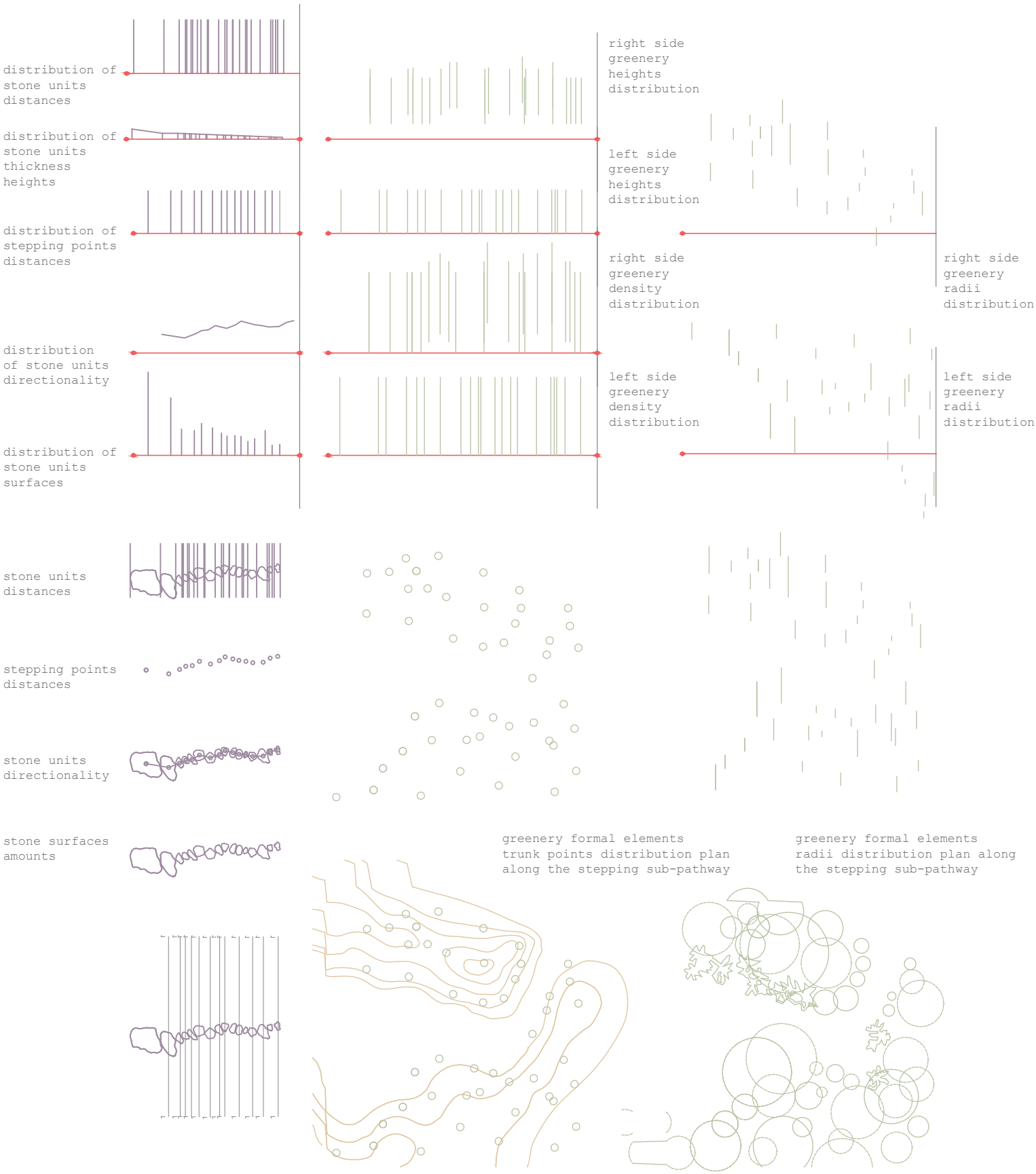


Fig.09: distribution of the [from left to right] stone formal elements and greenery formal elements along the tobeishi sub-pathway according to the certain paramters measured in selected human body stepping points

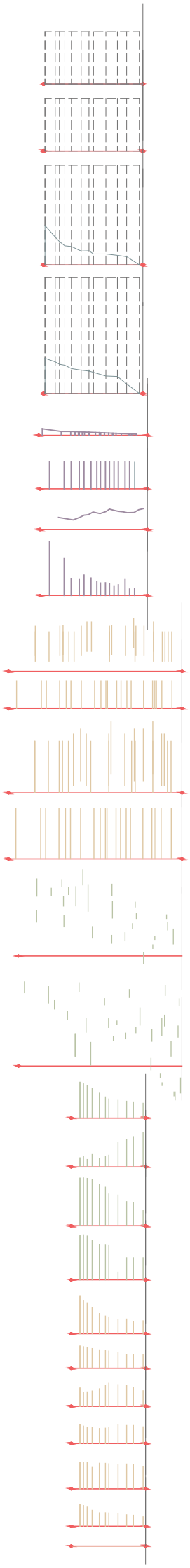


Fig.10: colliding diagram of all of the diagram rhythms
in relation to the distribution of the garden formal elements
in certain parameters along the ‘zero’ sub-pathway walking line

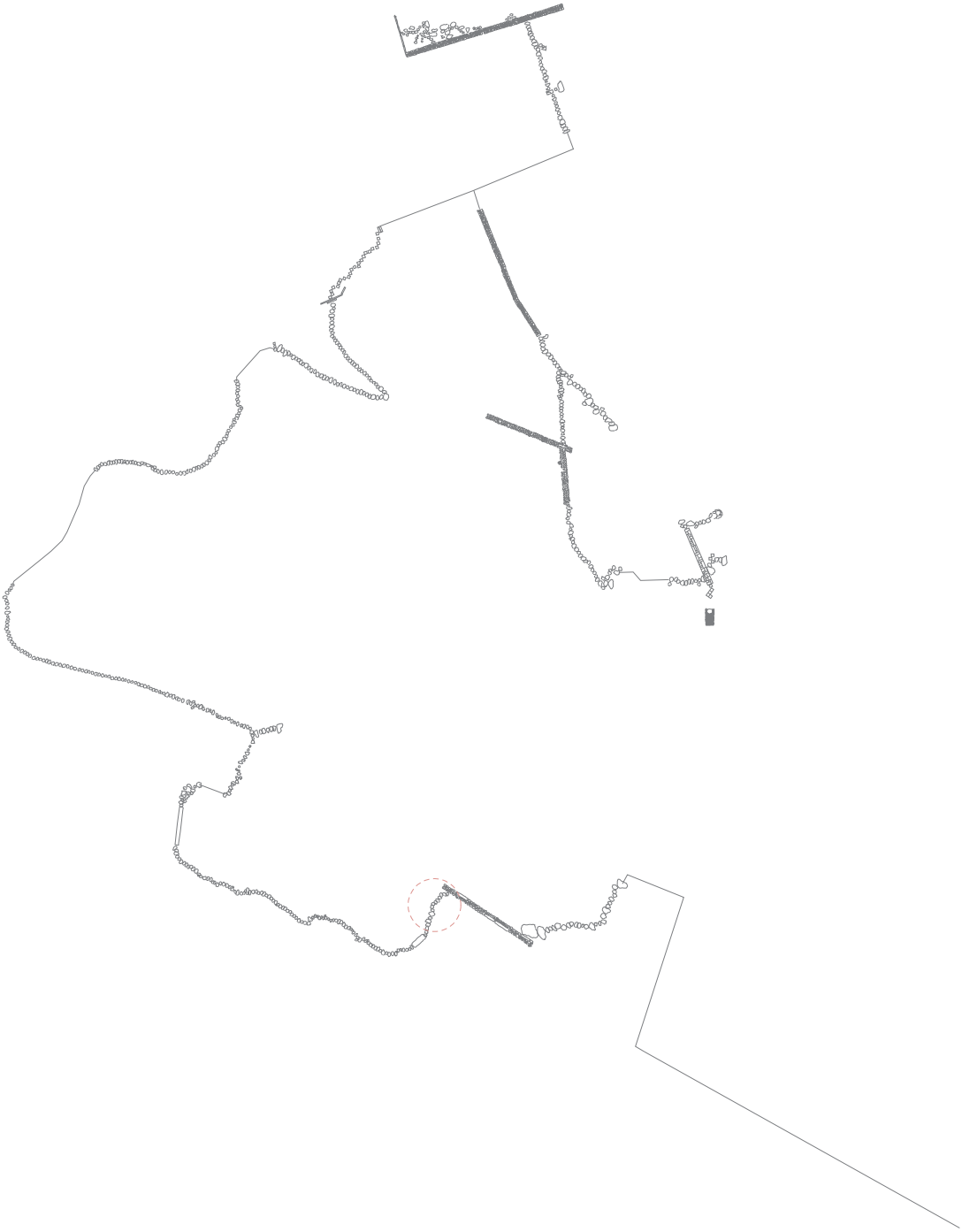
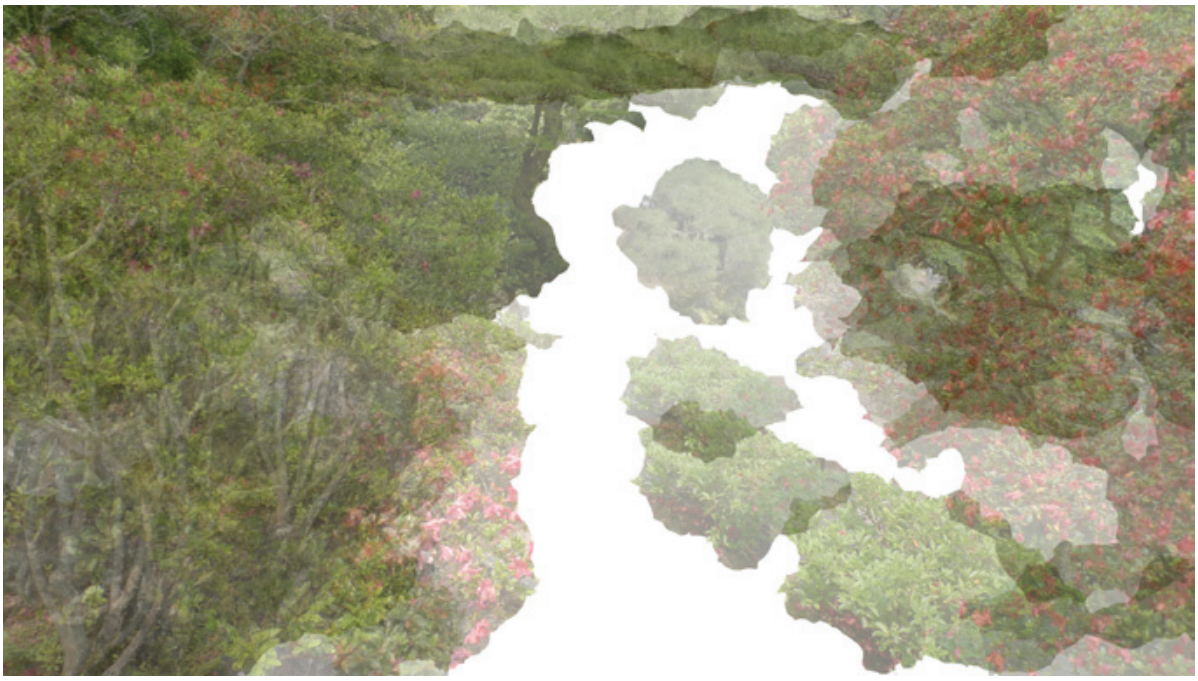
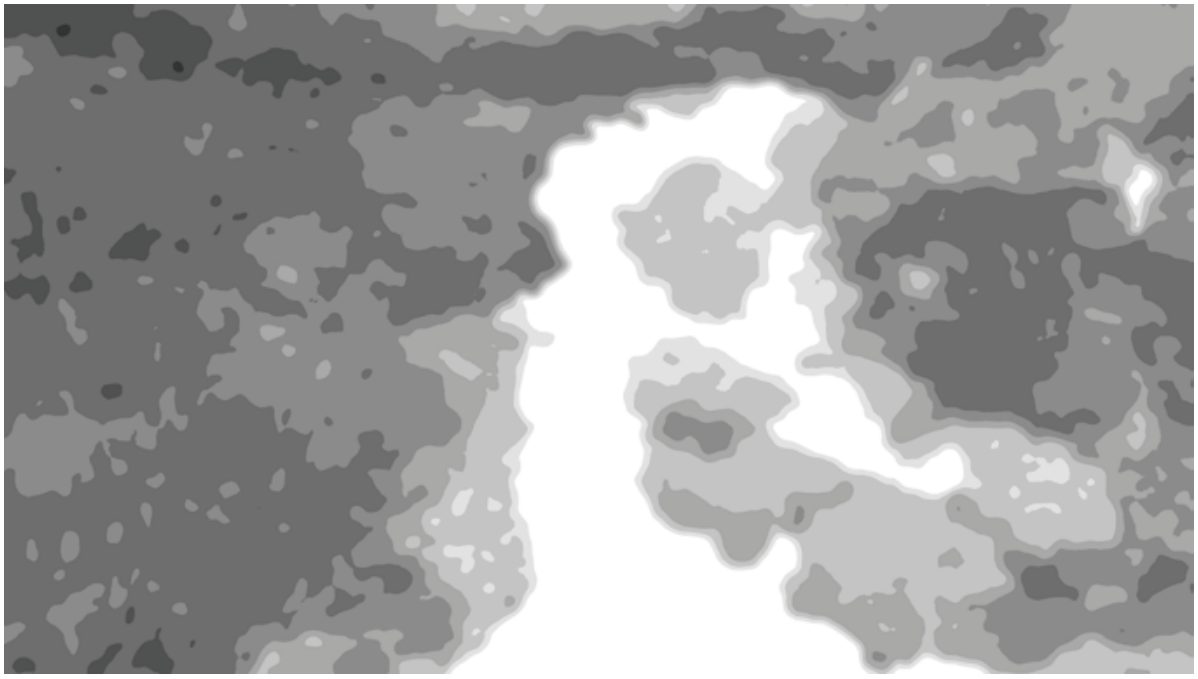


Fig.01: map of the sub-pathway position
within the overall pathway representation

‘ SUDDEN BRIDGE ’ sub-pathway





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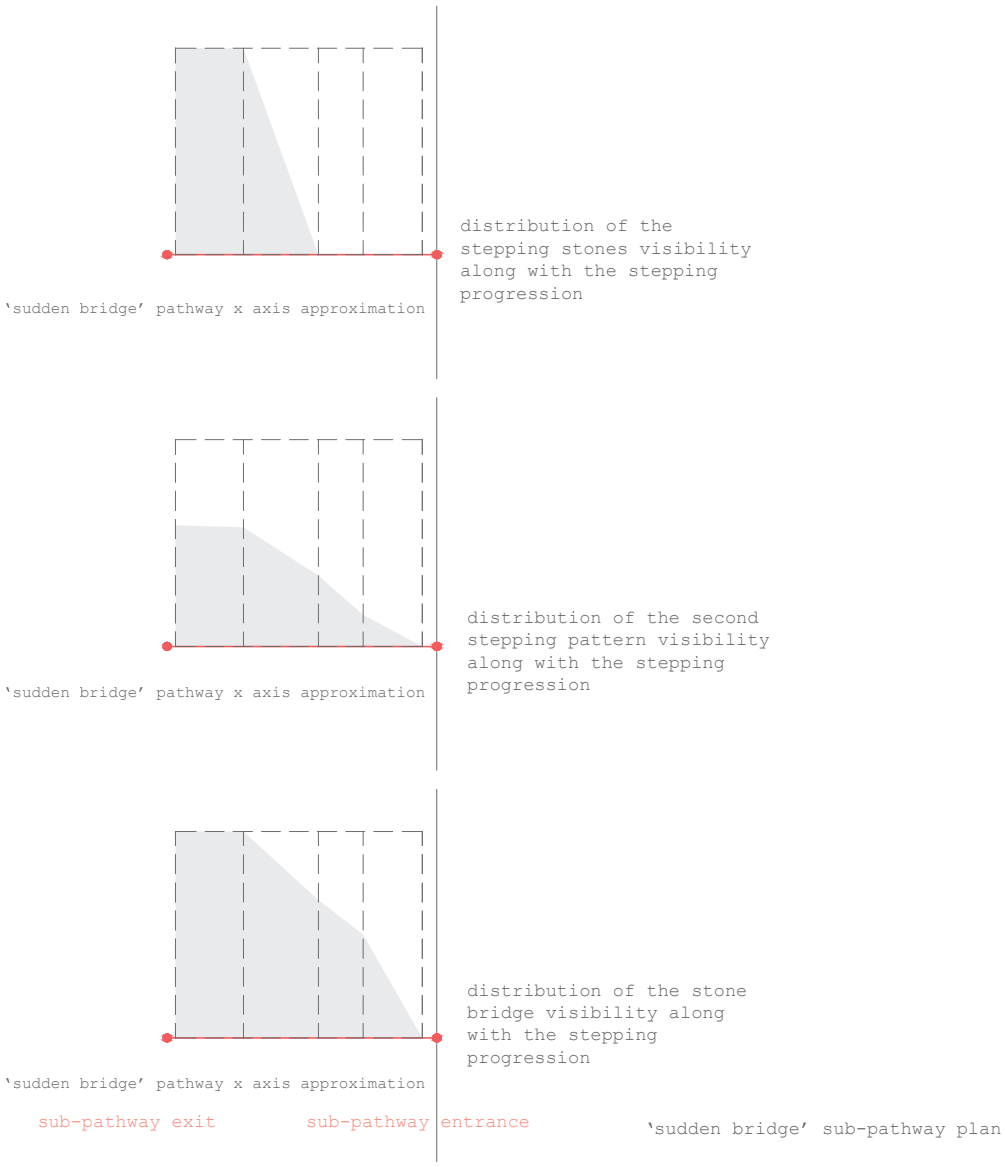
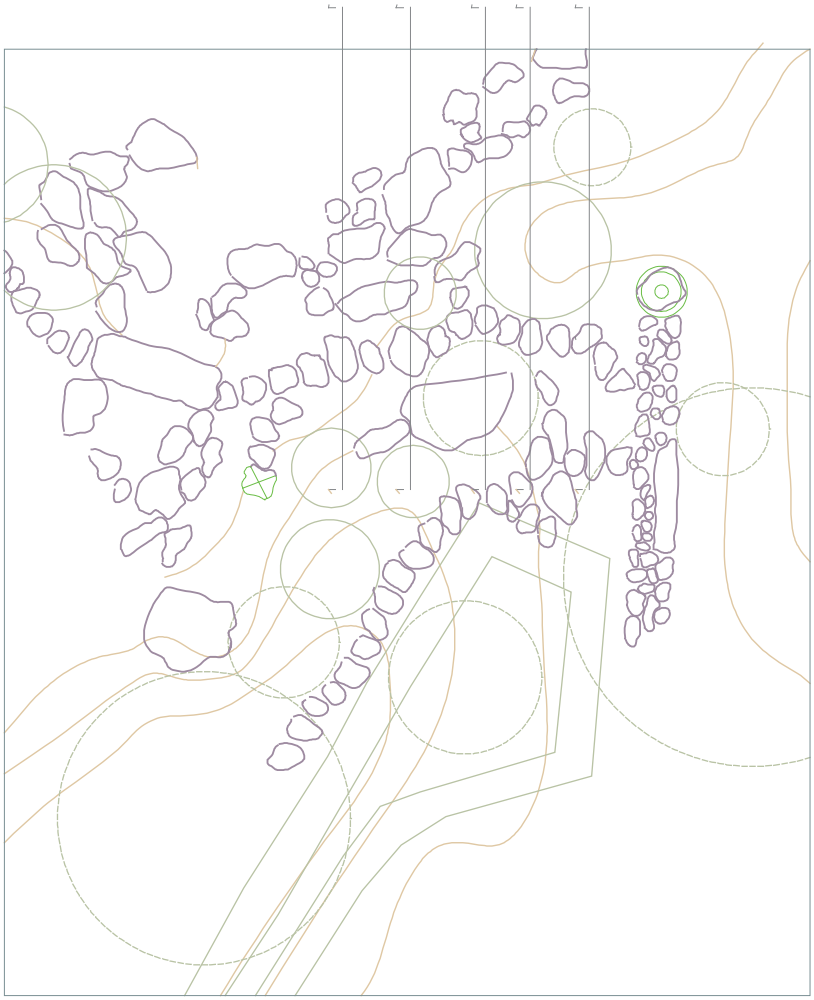


Fig.06: overall visibility of certain garden formal elements, measured during human walking activity along the tobeishi pattern according to the field of view greenery density progression diagram



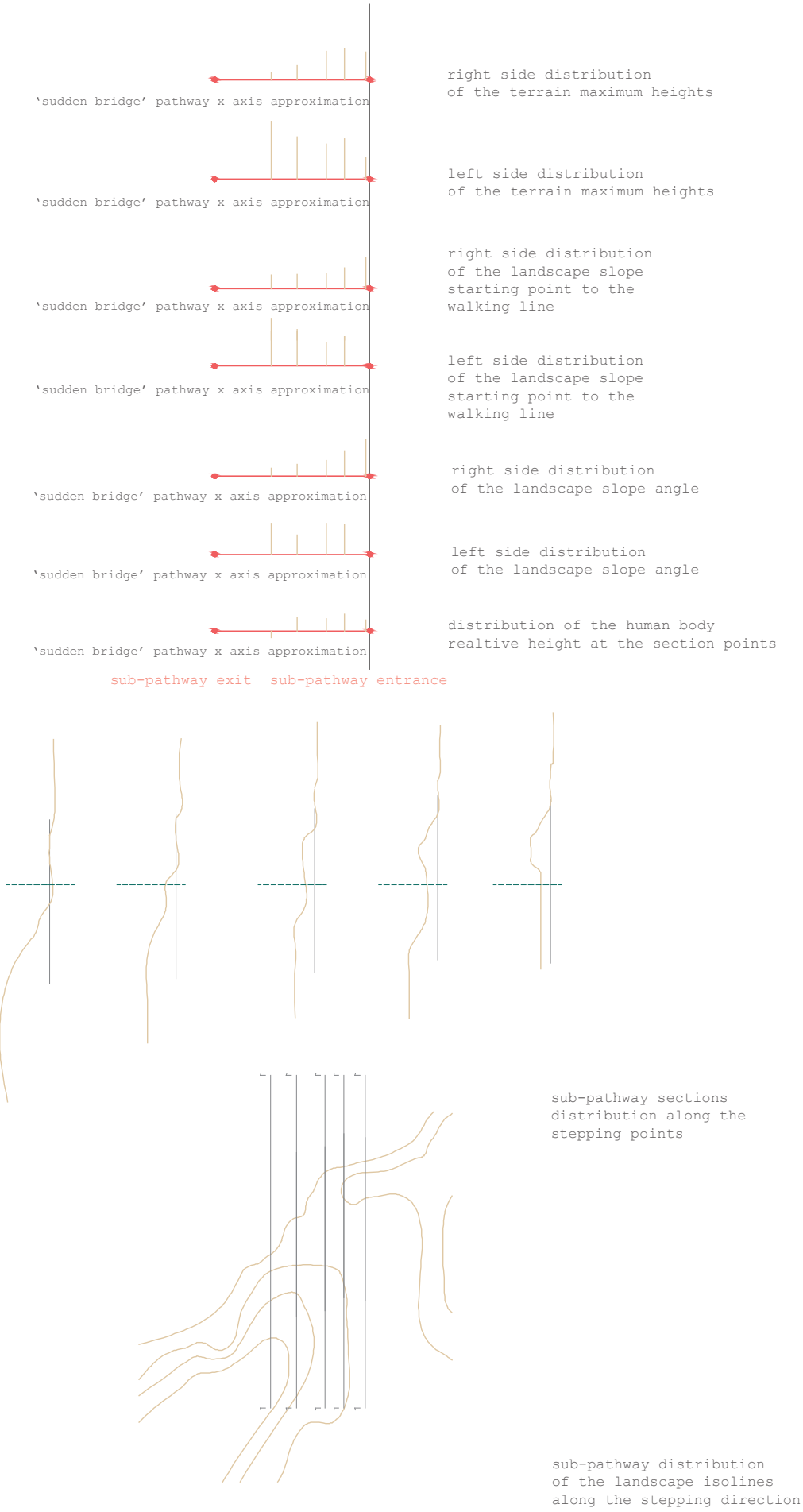
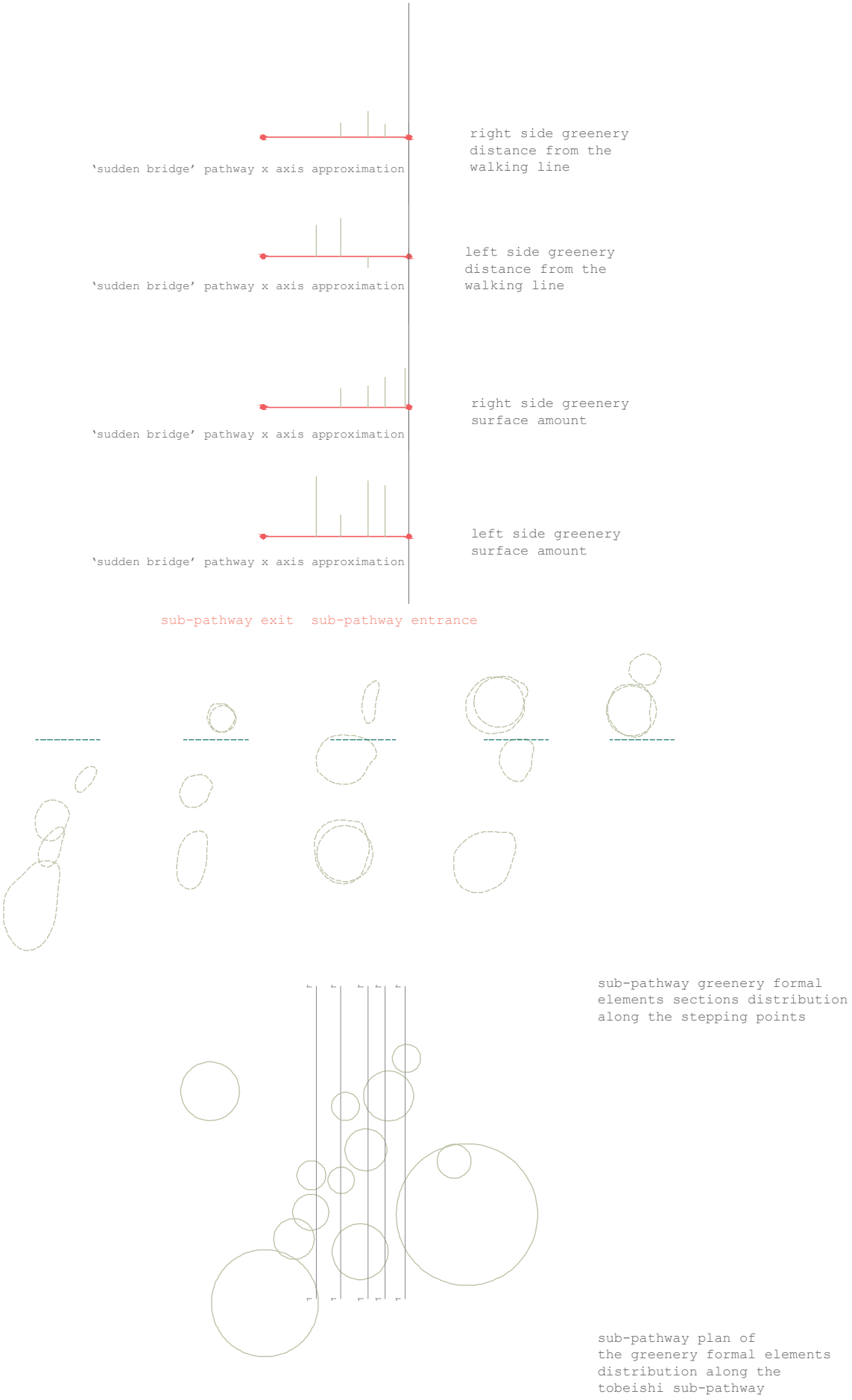


Fig.07: distribution of the landscape formal elements along the walking lane, according to the relative height of the human body position, terrain section angle distribution, the distance from the walking line to the point where the terrain changes its direction



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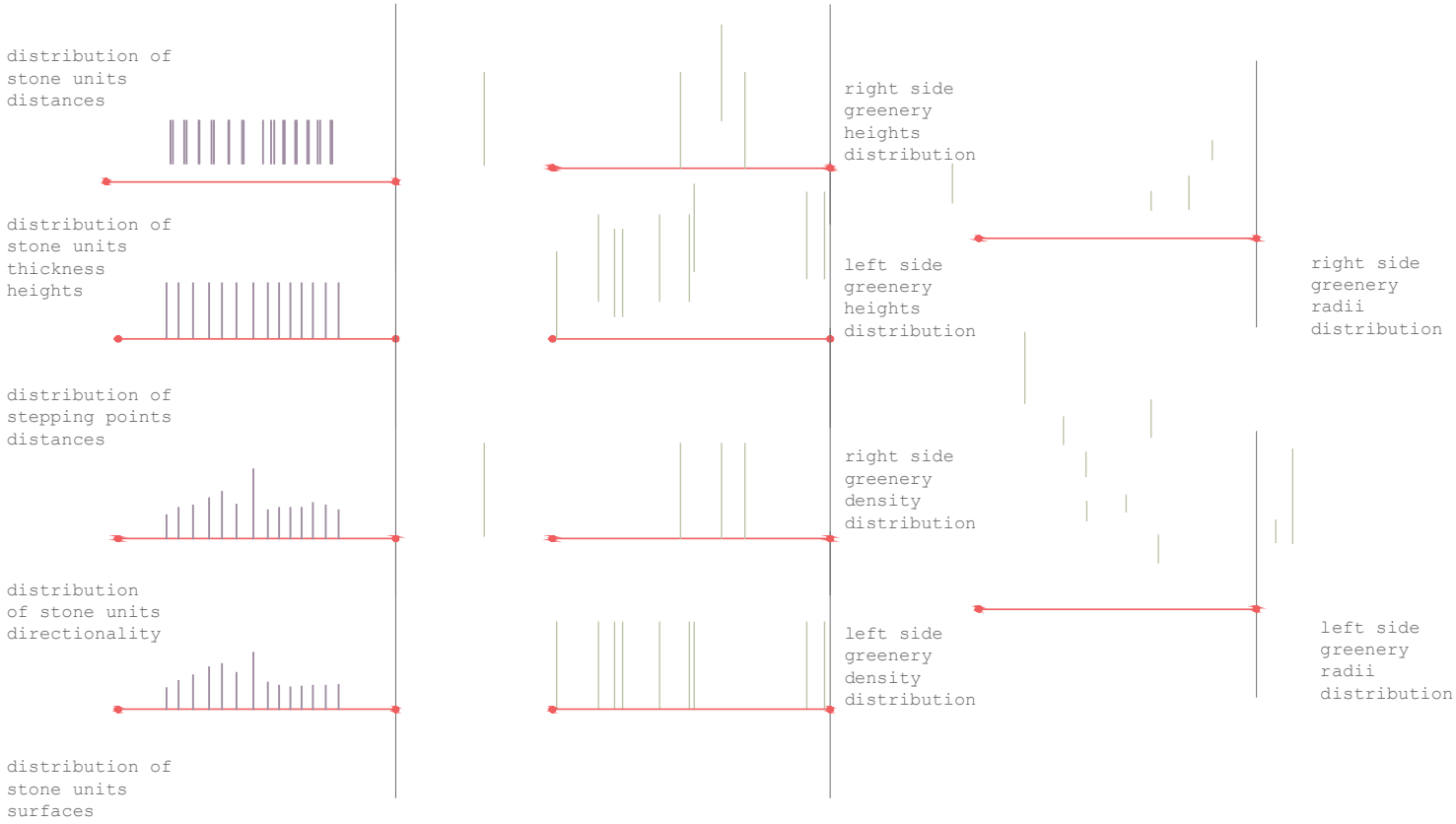

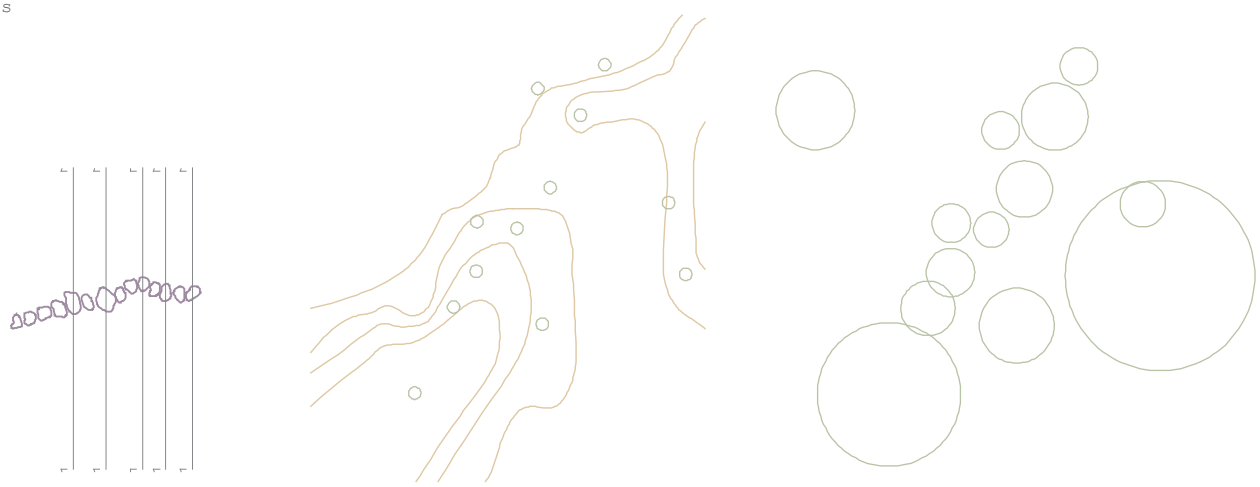

distribution of the tobeishi stone units according to their surfaces amounts . directions . distance among each of the units and among stepping points

greenery formal elements density and tree crowns heights distribution

greenery formal elements distribution according to their their radii sizes

Fig.09: distribution of the [from left to right] stone formal elements and greenery formal elements along the tobeishi sub-pathway according to the certain paramters measured in selected human body stepping points

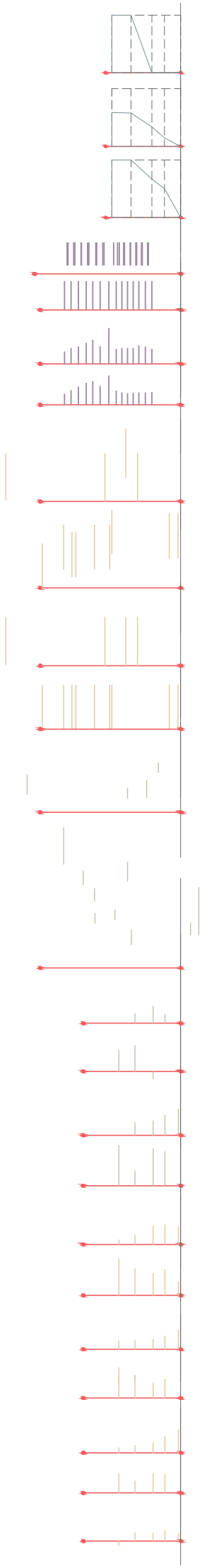

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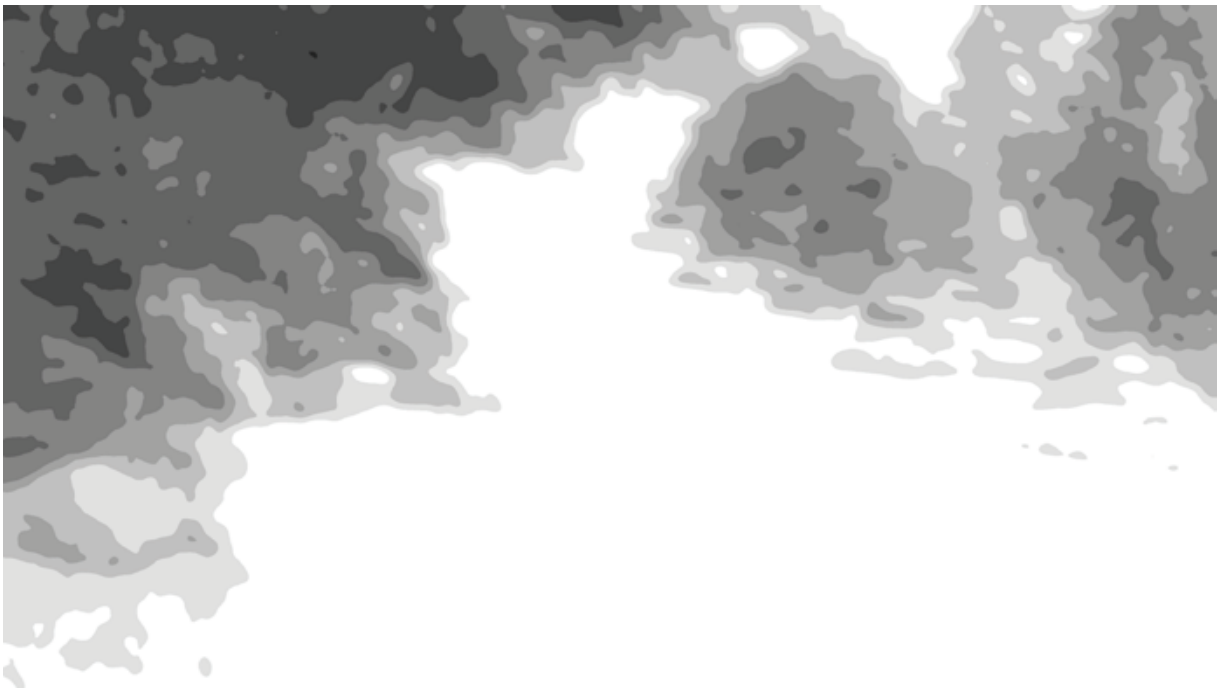
Fig.01: map of the sub-pathway position
within the overall pathway representation









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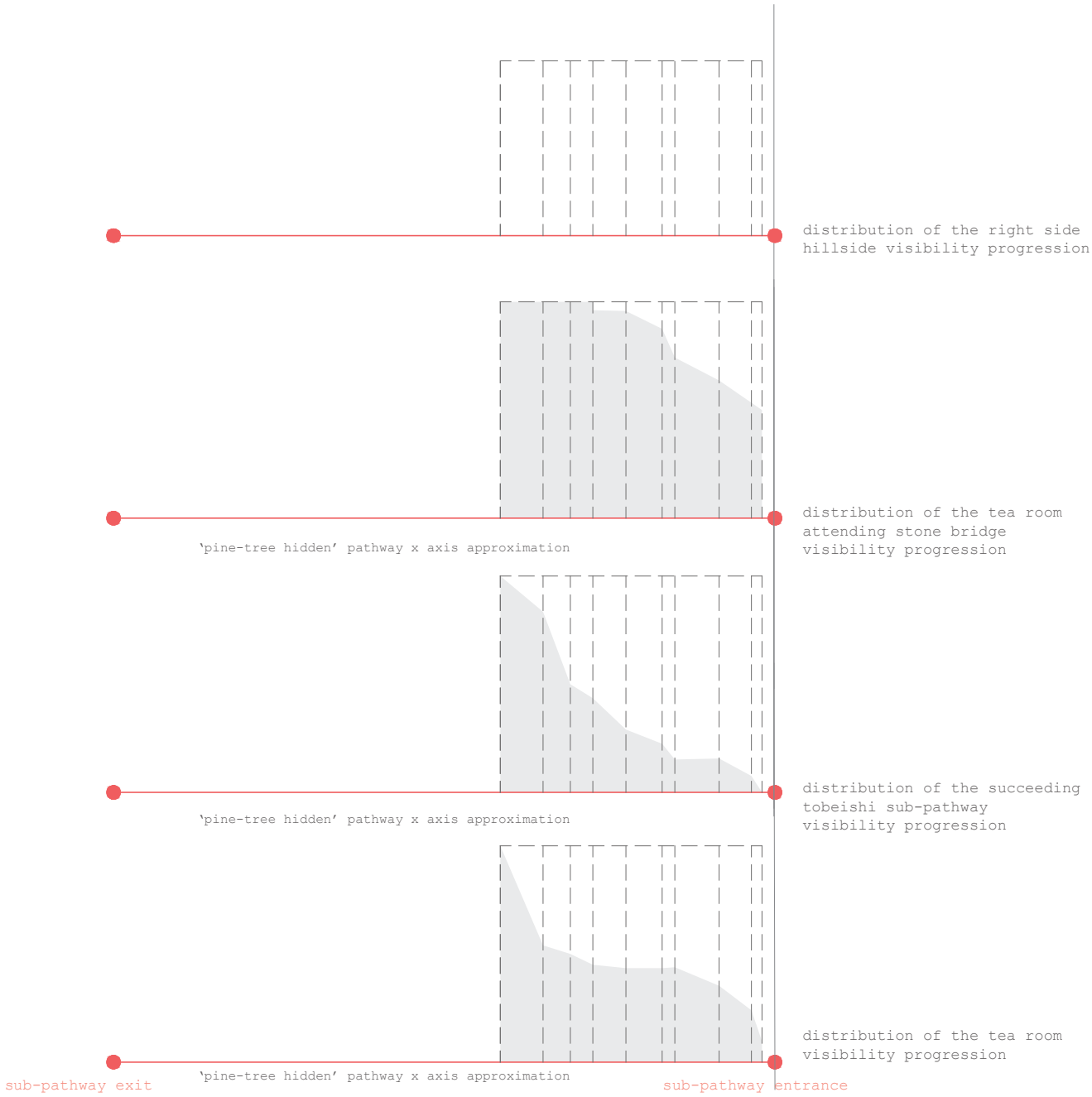
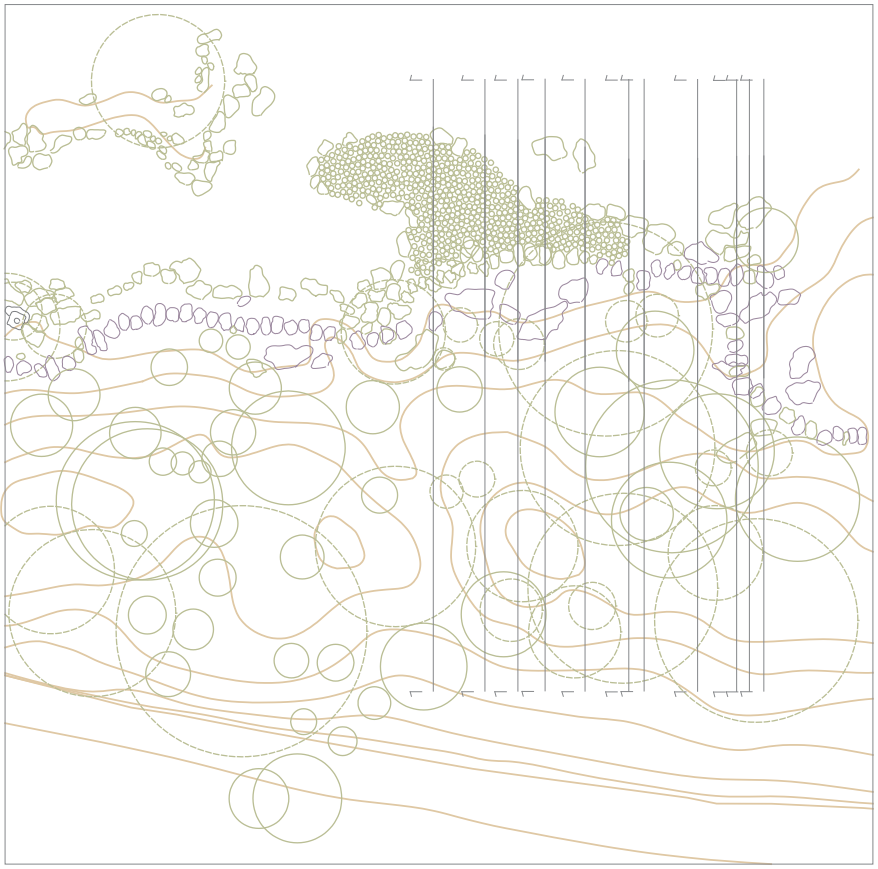
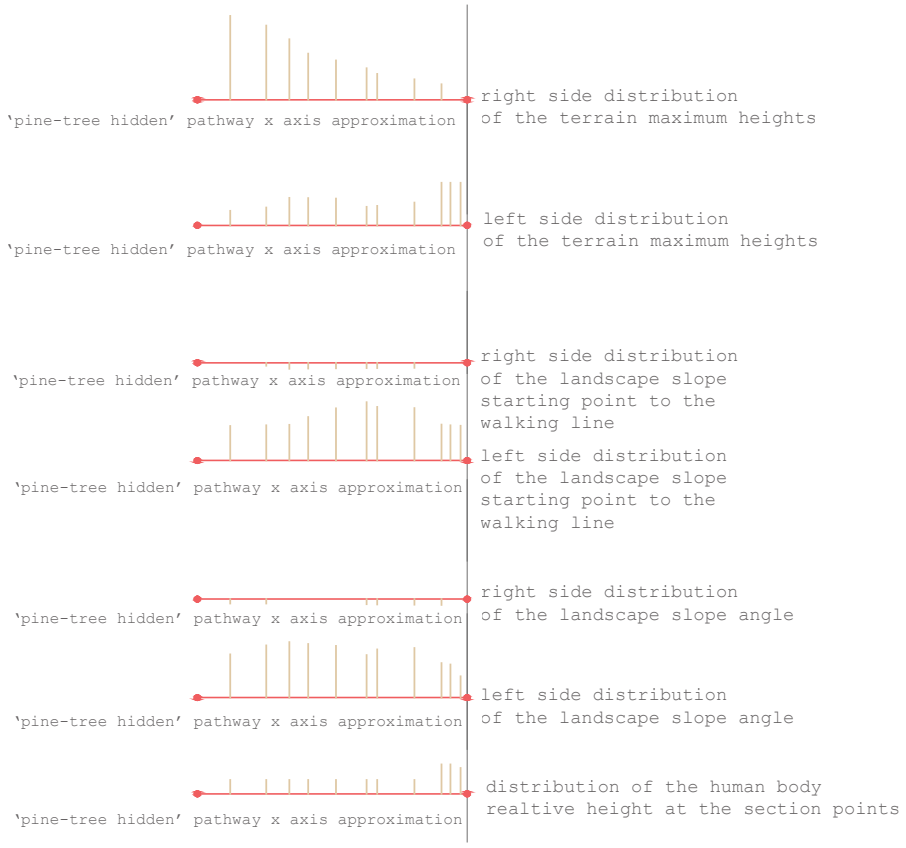
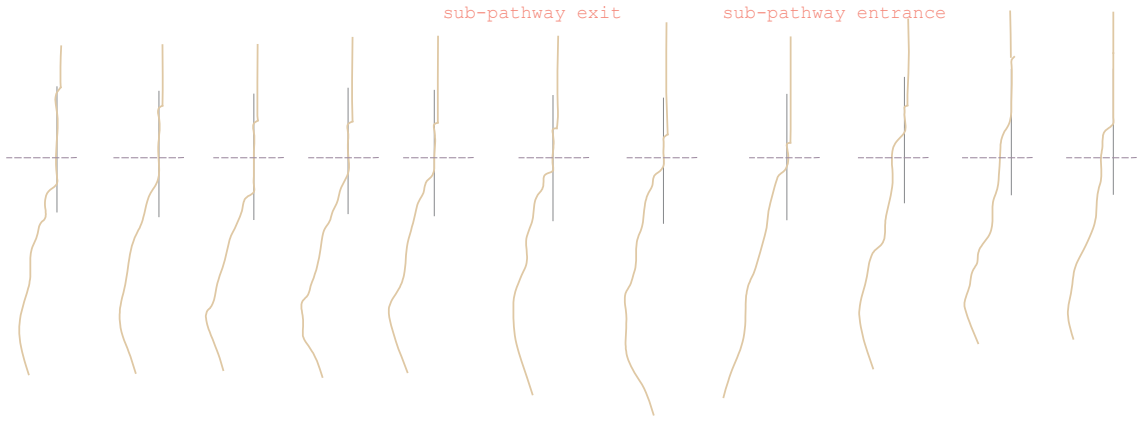




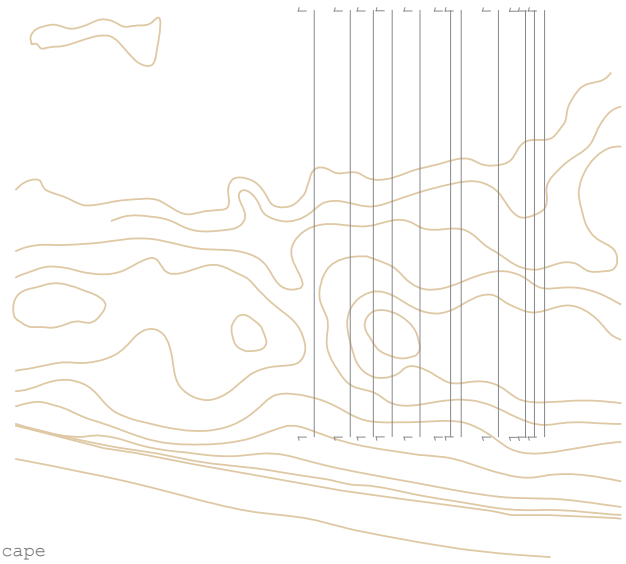
'pine-tree hidden' sub-pathway plan

Fig.06: overall visibility of certain garden formal elements, measured during human walking activity along the tobeishi pattern according to the field of view greenery density progression diagram



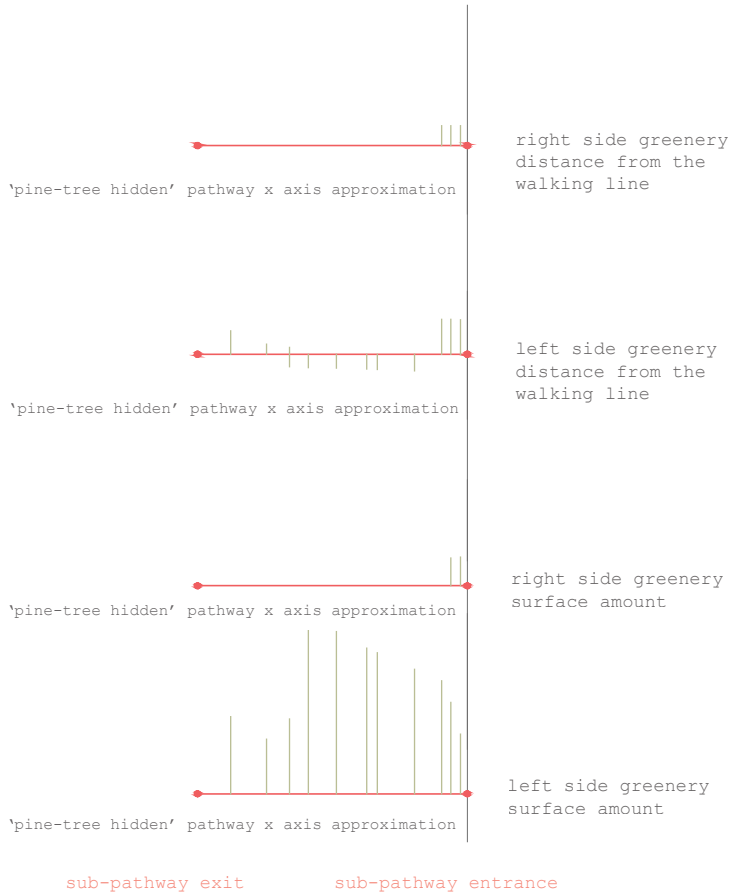


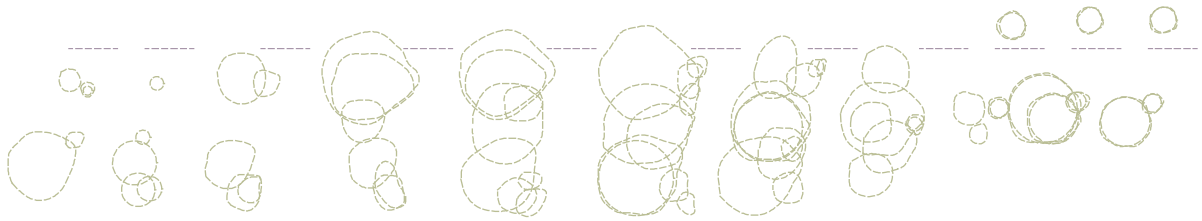
sub-pathway sections distribution along the stepping points



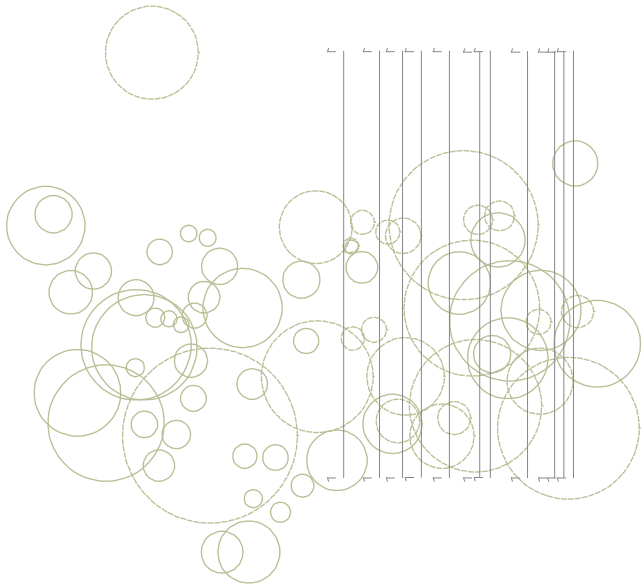
sub-pathway distribution of the landscape isolines along the stepping direction

Fig.07: distribution of the landscape formal elements along thewalking lane, according to the relative height of the human body position, terrain section angle distribution, the distance from the walking line to the point where the terrain changes its direction





sub-pathway greenery formal elements sections distribution along the stepping points



sub-pathway plan of the greenery formal elements distribution along the tobeishi sub-pathway

Fig.08: distribution of the greenery formal elements along the walking lane, according to the relative height of the human body position, terrain section angle distribution, the distance from the walking line to the point where the terrain changes its direction

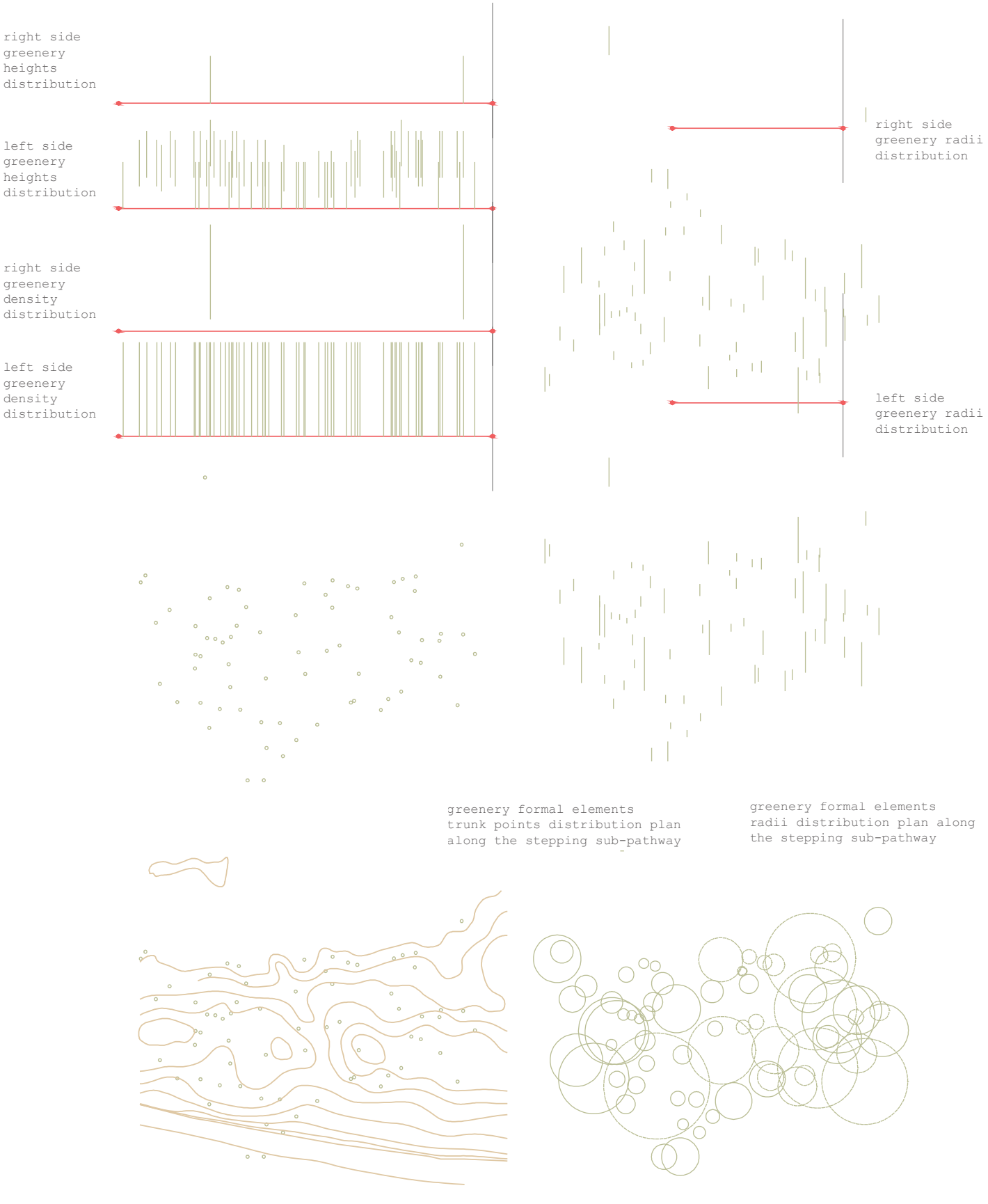


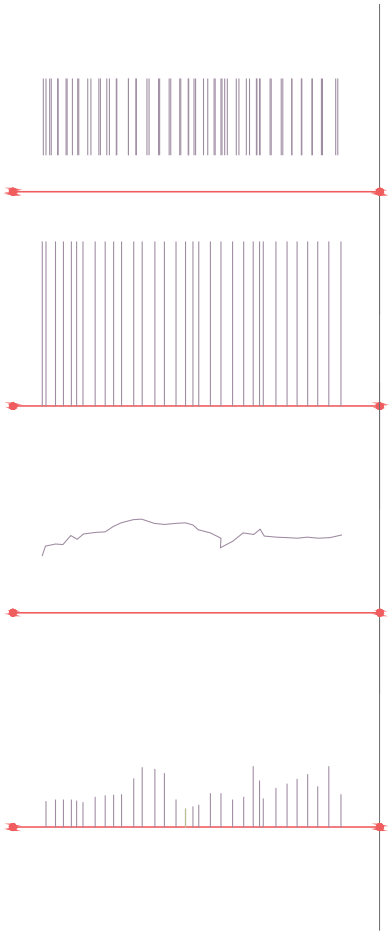
Fig.09: distribution of the [from left to right] greenery formal elements along the tobeishi sub-pathway according to the certain parameters measured in selected human body stepping points

distribution of
stone units
distances

distribution of
stepping points
distances

distribution of
stone units
directionality

distribution of
stone units
surface amounts



stone units
distances

stepping points
distances

stone units
directionality

stone surfaces
amounts

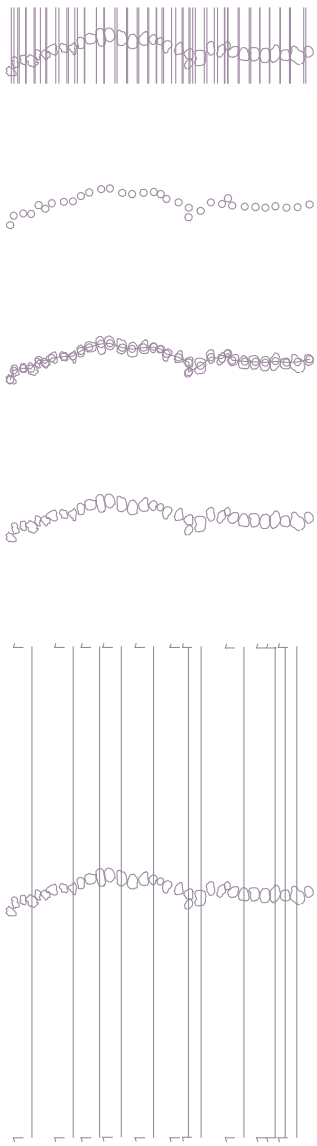


Fig. 10: distribution of the tobeishi stone units according to the relevant parameters which hold a meaning toward the other garden formal elements

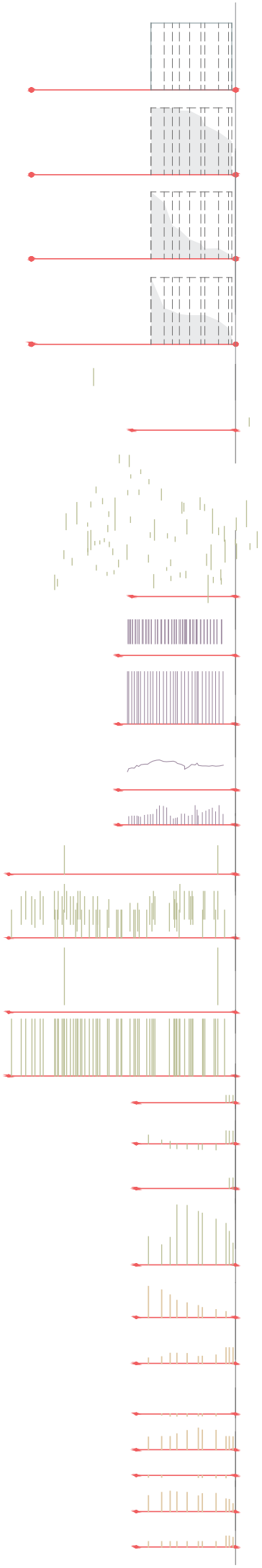


Fig.11: colliding diagram of all of the diagram rhythms
in relation to the distribution of the garden formal elements
in certain parameters along the ‘zero’ sub-pathway walking line

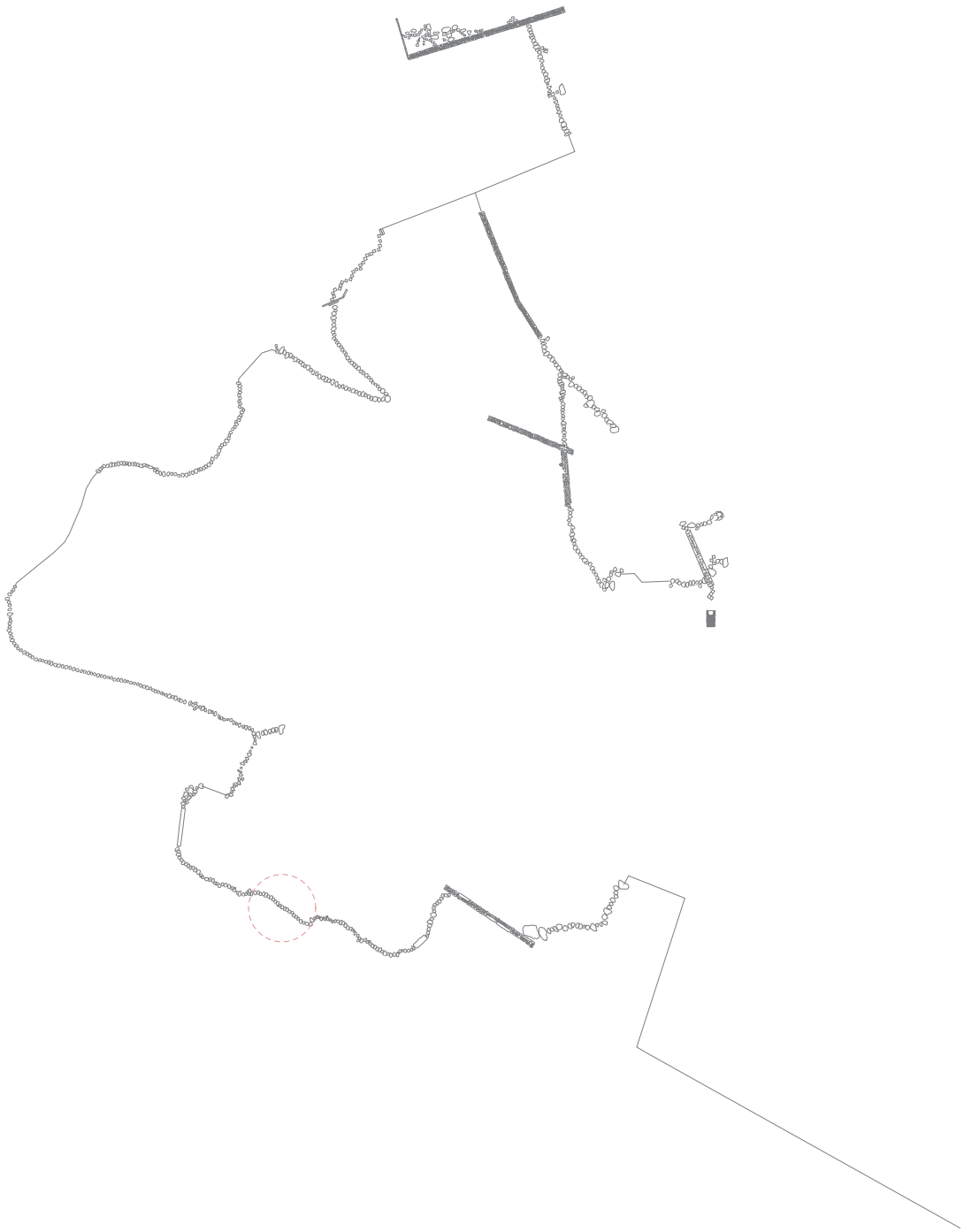


Fig.01: map of the sub-pathway position
within the overall pathway representation

' HILLSIDE HIDDEN sub-pathway '

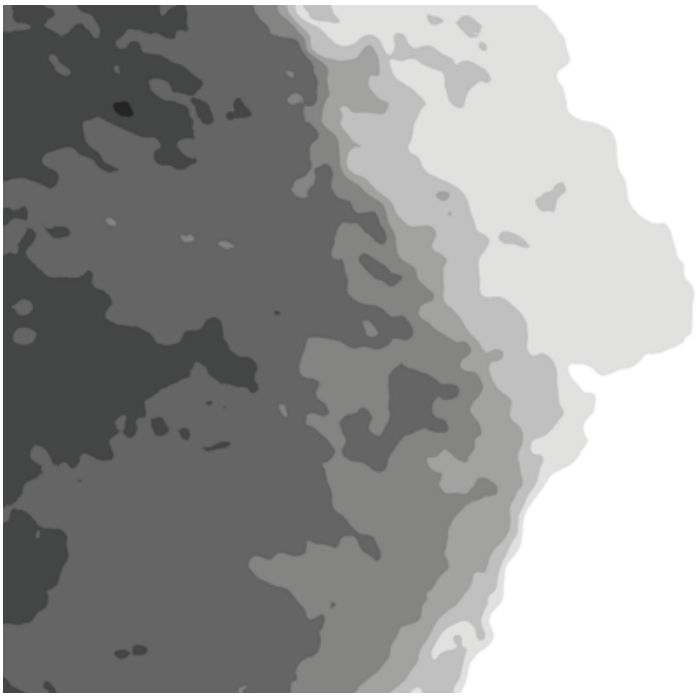












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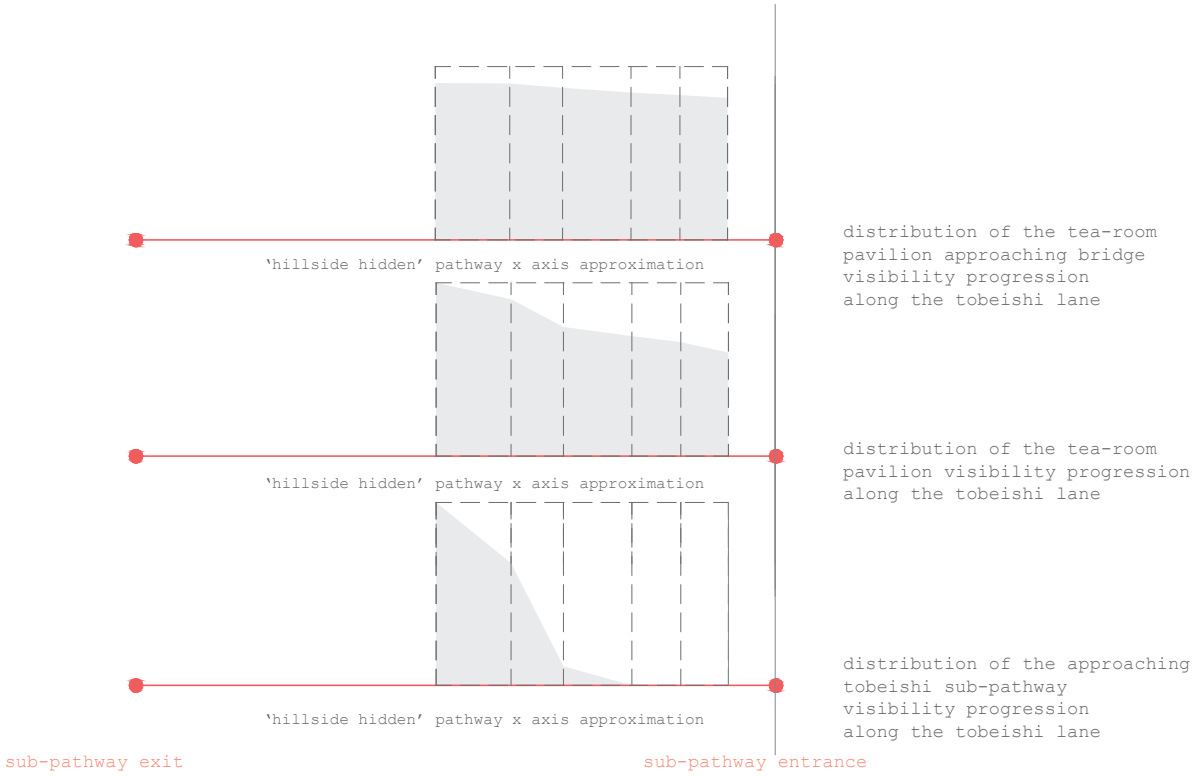
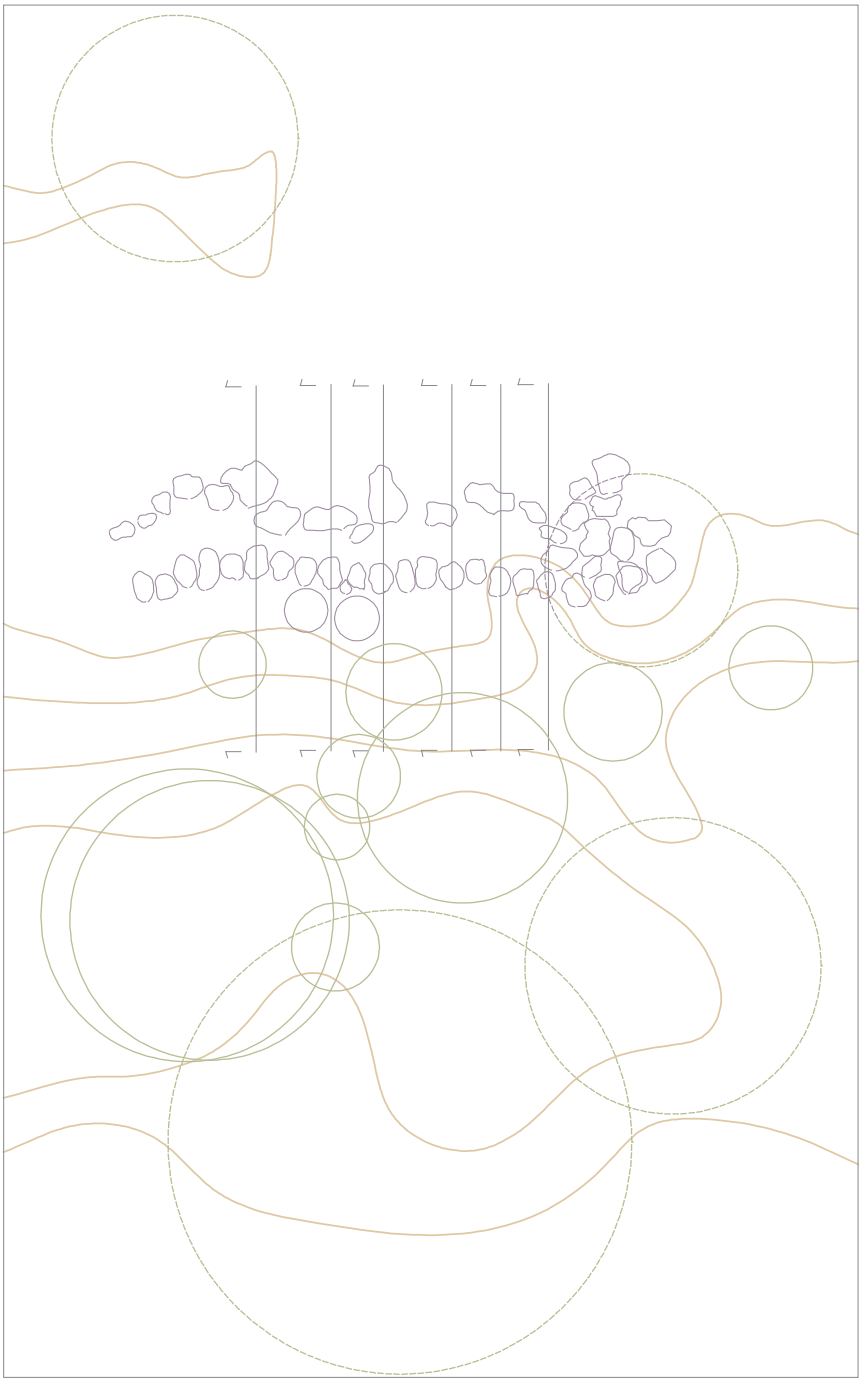
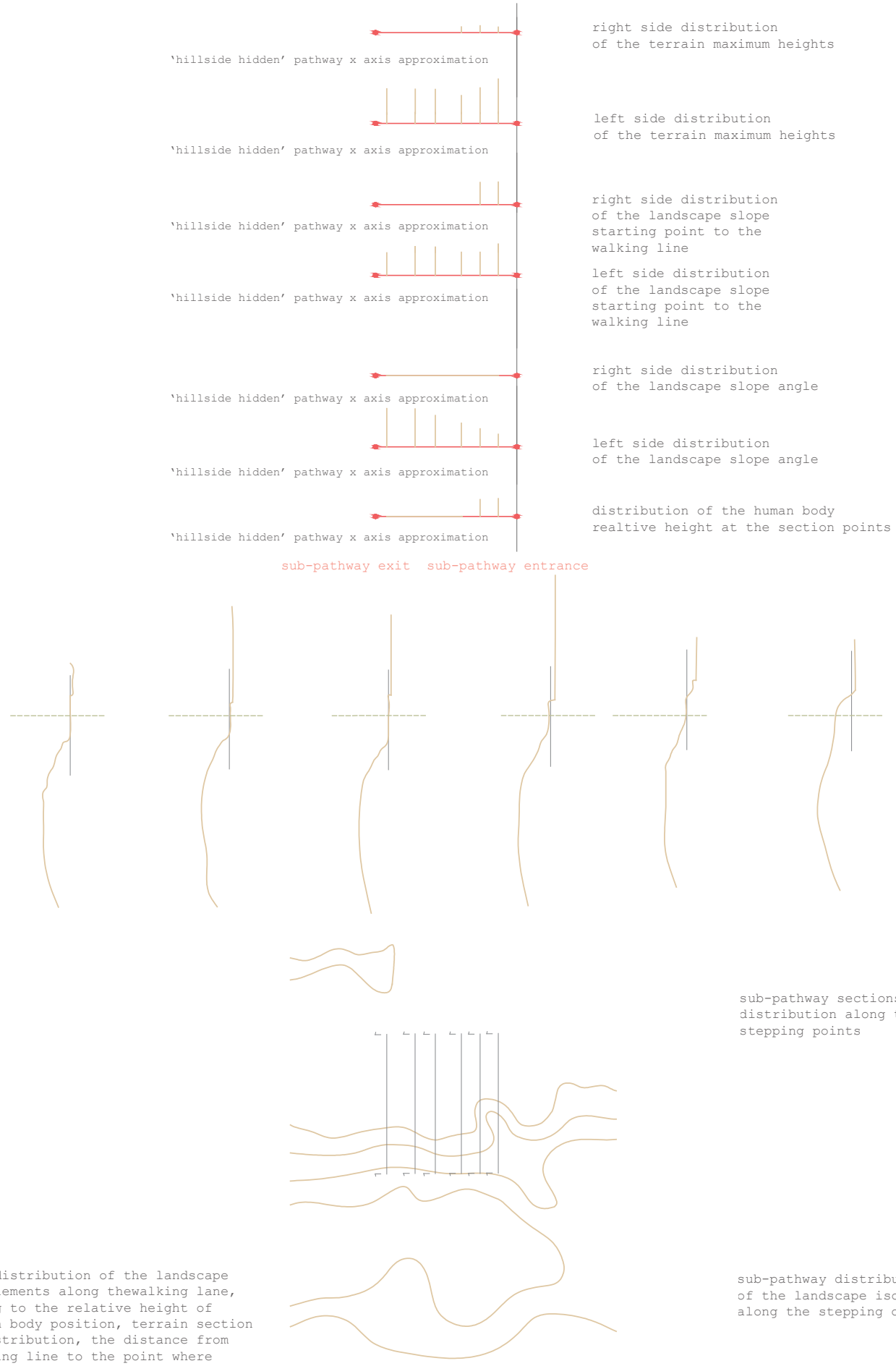




'hillside hidden' sub-pathway plan

Fig.06: overall visibility of certain garden formal elements, measured during human walking activity along the tobeishi pattern according to the field of view greenery density progression diagram



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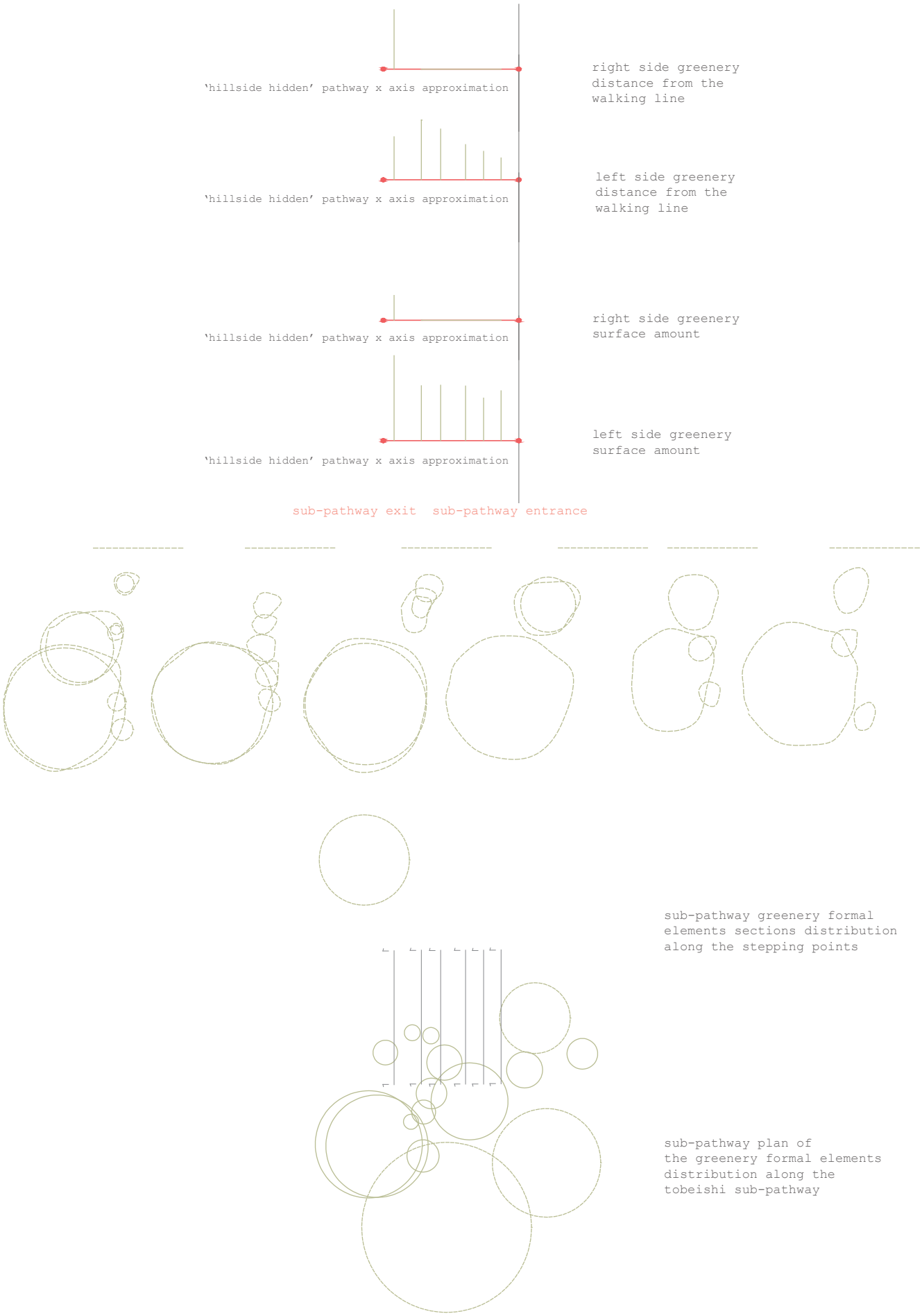

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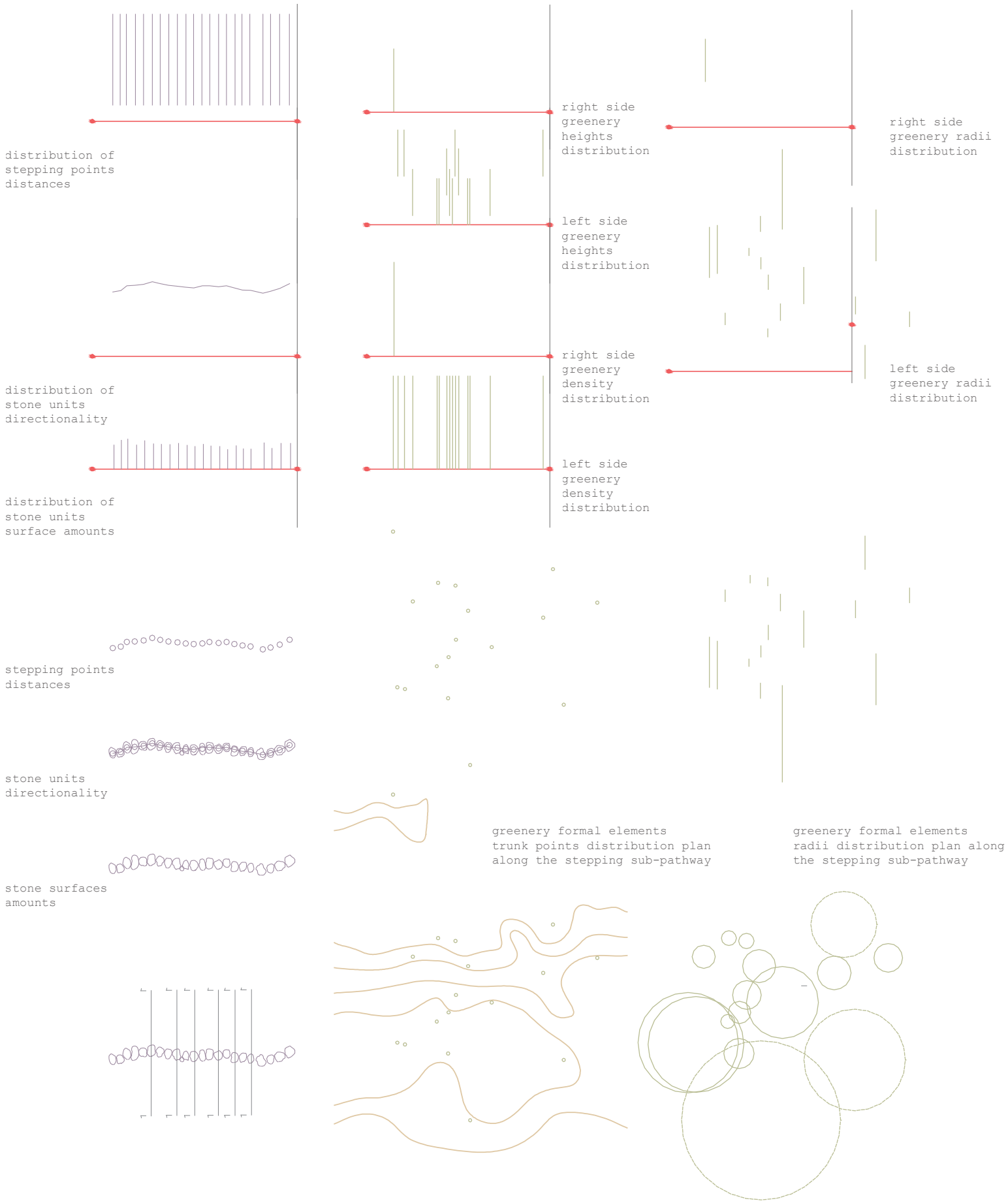

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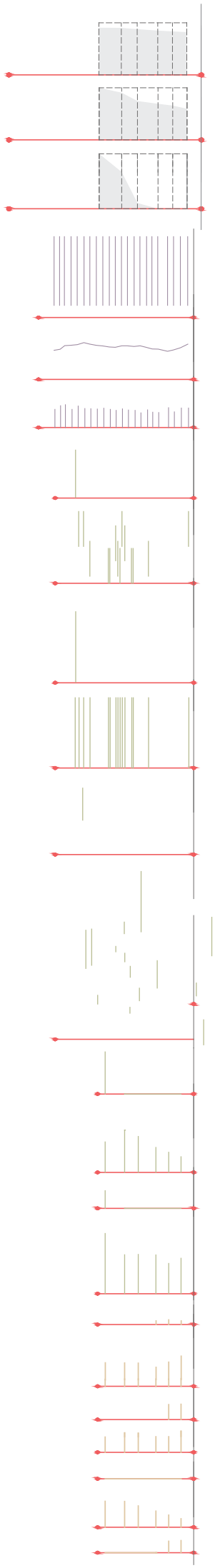

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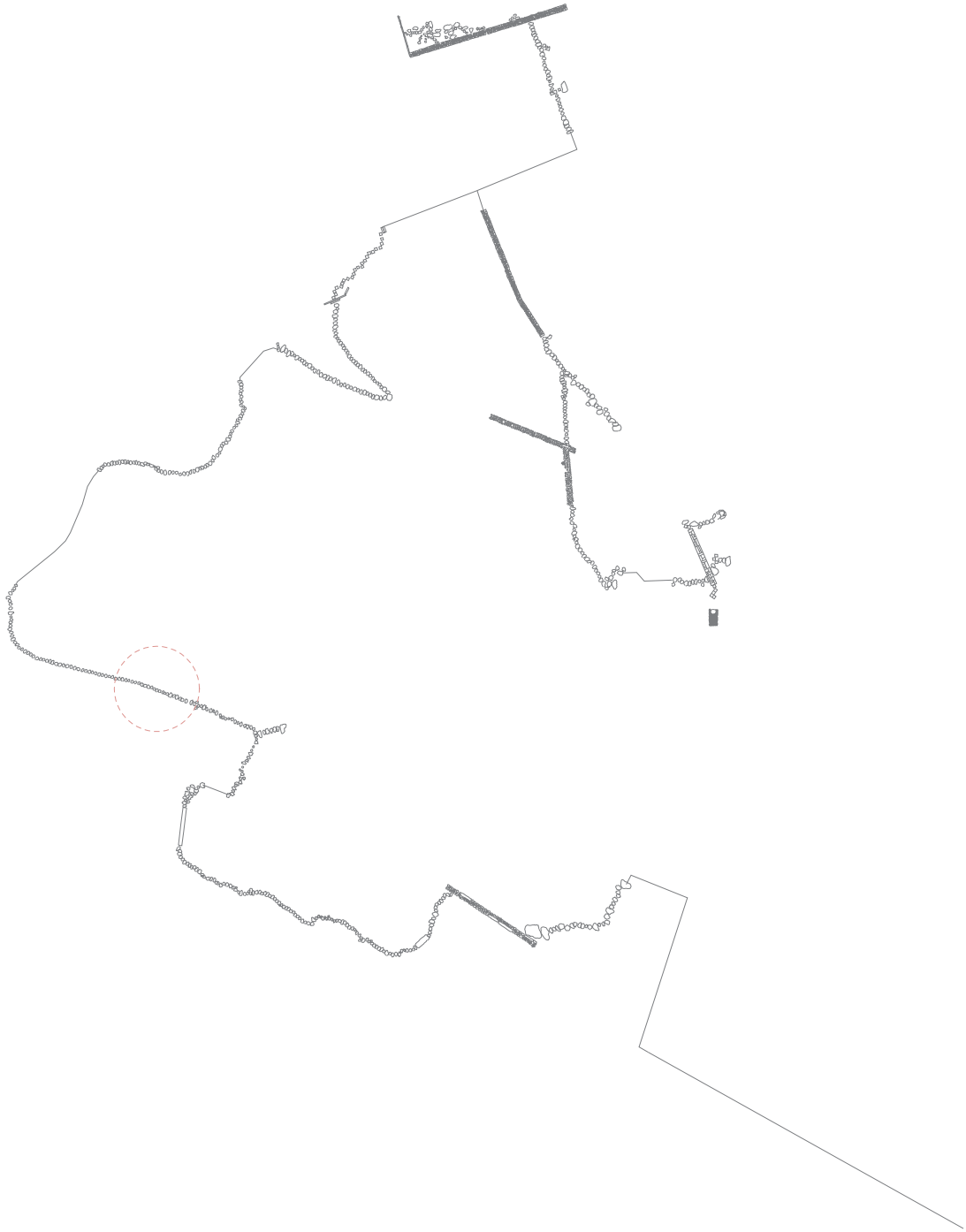
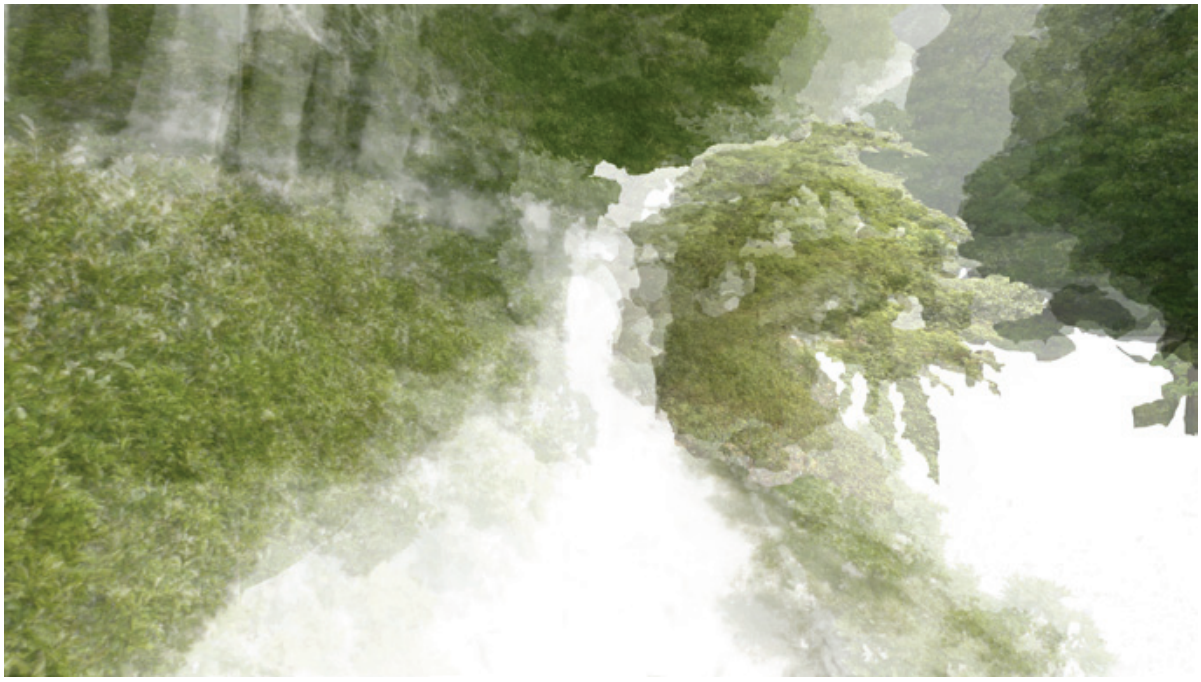
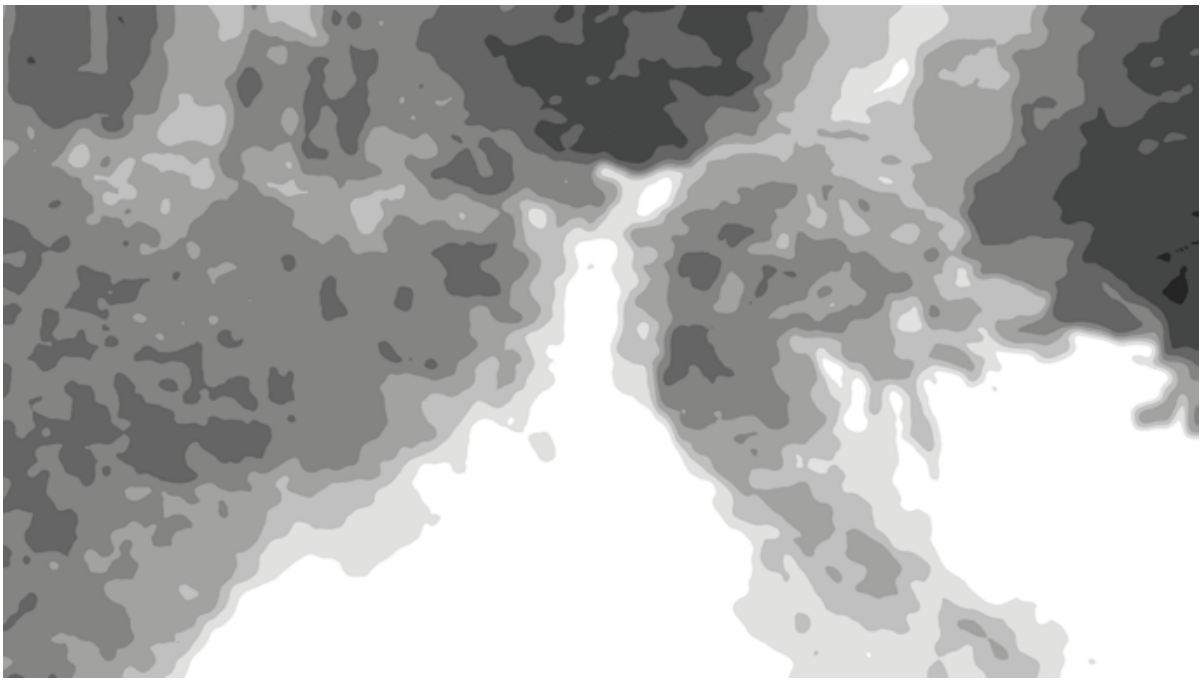


Fig.01: map of the sub-pathway position
within the overall pathway representation

' SHELTER sub-pathway '





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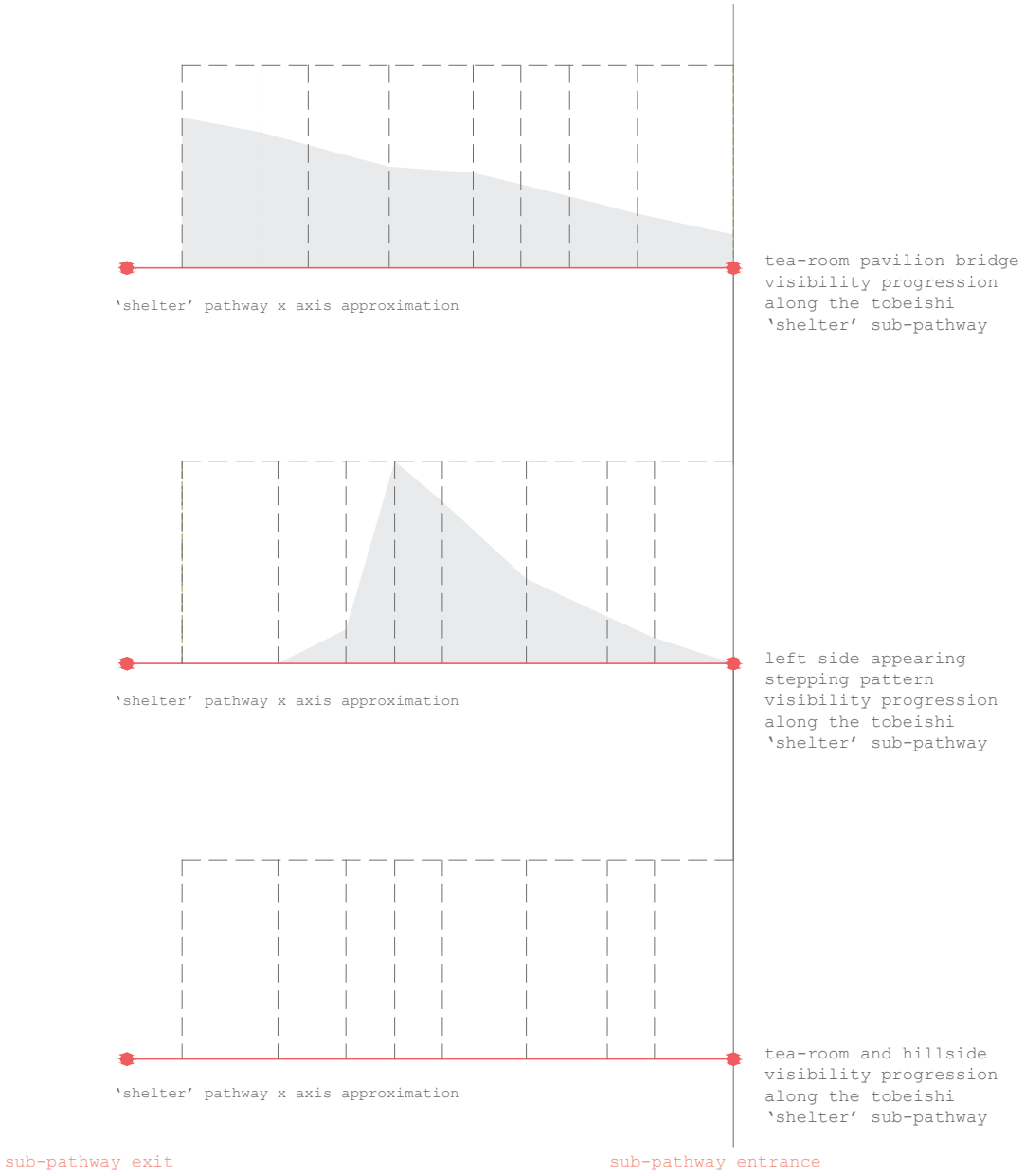

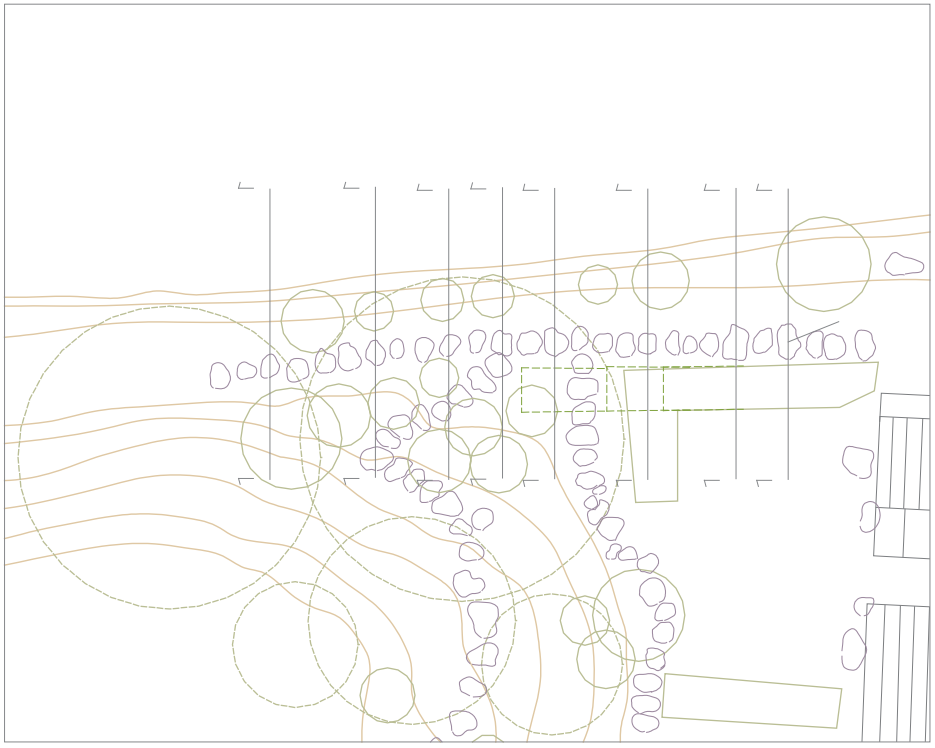

'sheltern' sub-pathway plan

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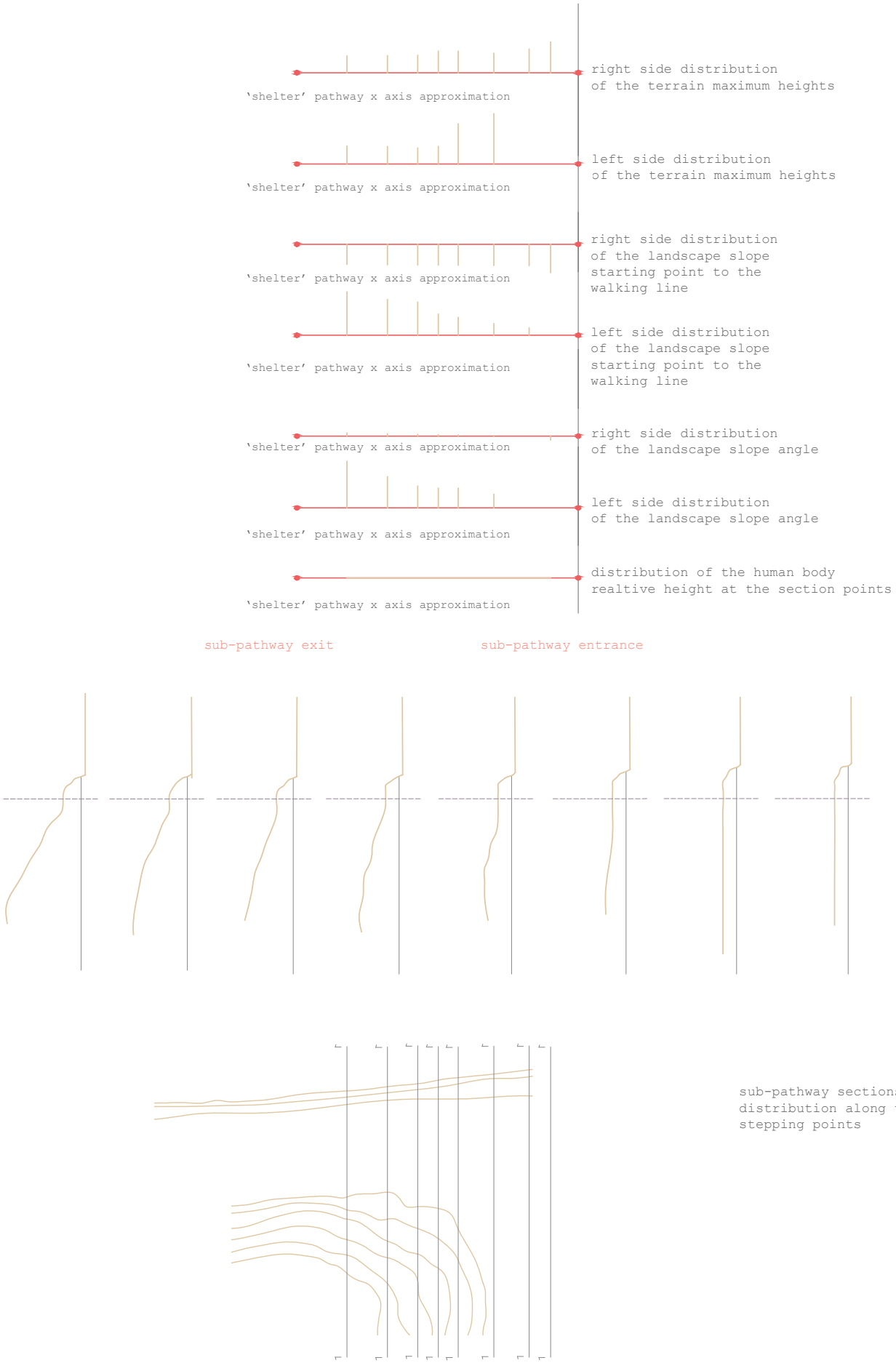

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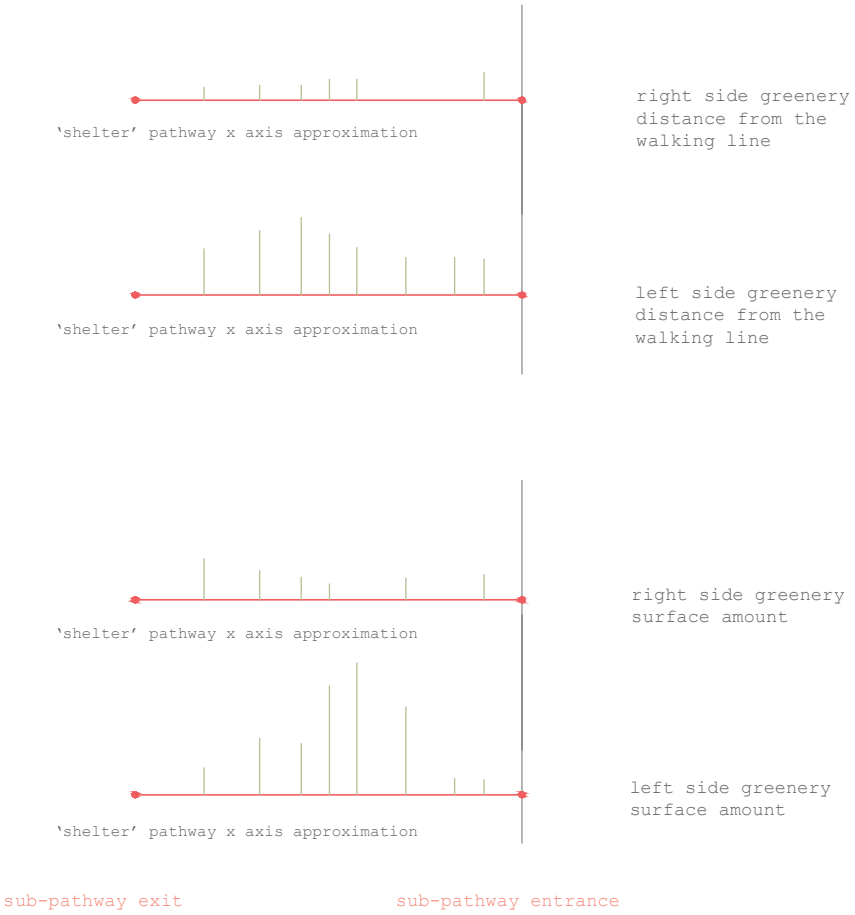

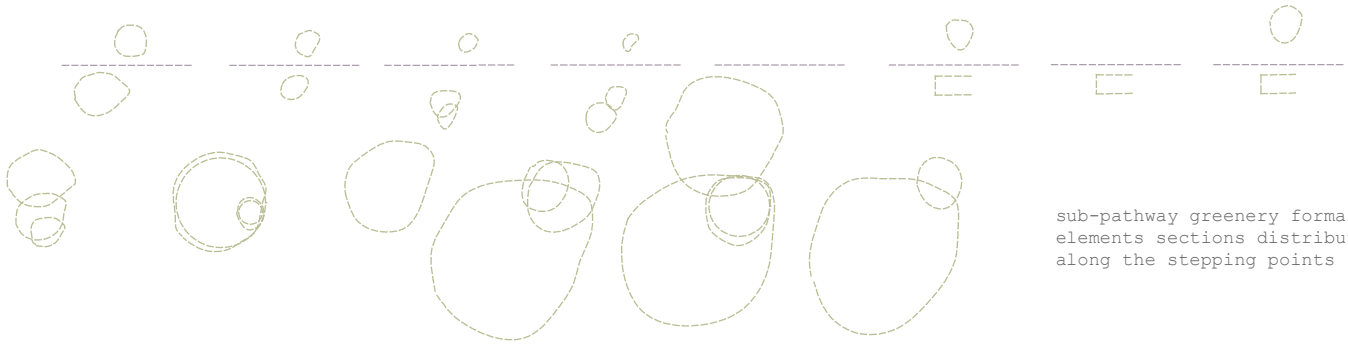

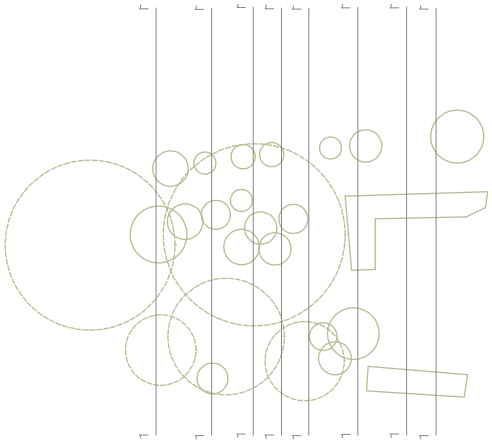

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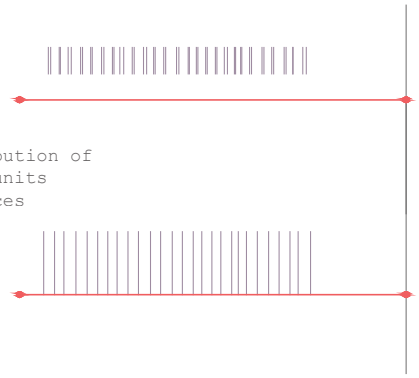
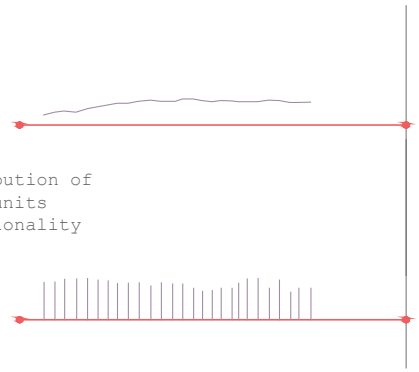
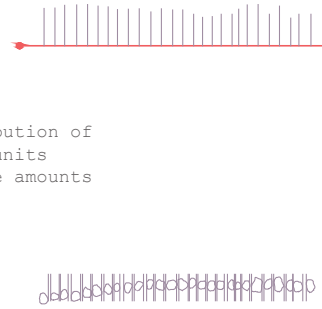


distribution of
stone units
distances

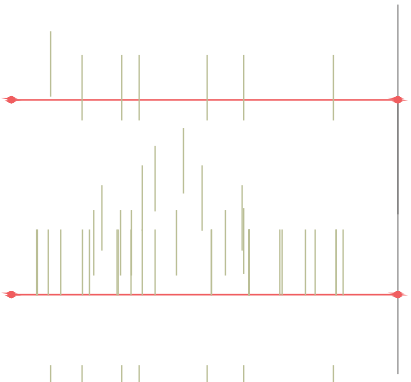
distribution of
stepping points
distances



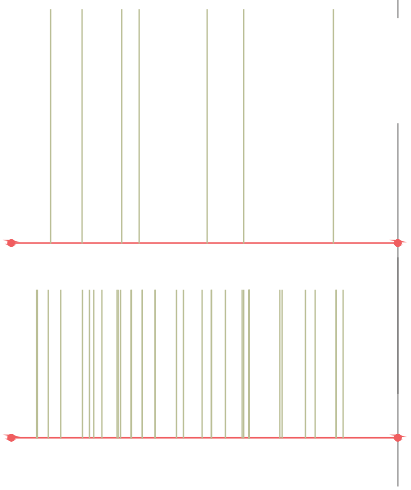
distribution of
stone units
directionality



distribution of
stone units
surface amounts



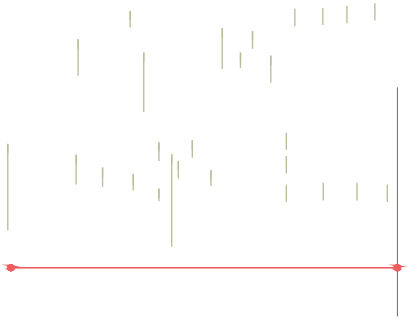
right side
greenery
heights
distribution



left side
greenery
heights
distribution

right side
greenery
density
distribution

right side
greenery radii
distribution



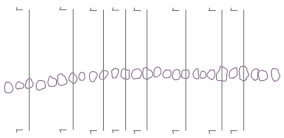
left side
greenery
density
distribution

left side
greenery radii
distribution

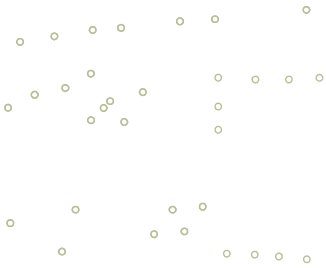
stone units
distances

stone units
directionality

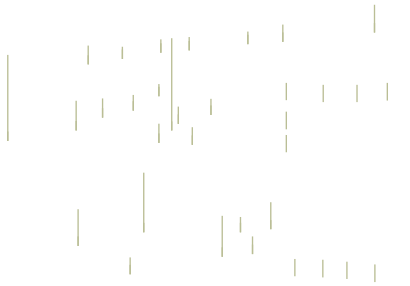
stone surfaces
amounts



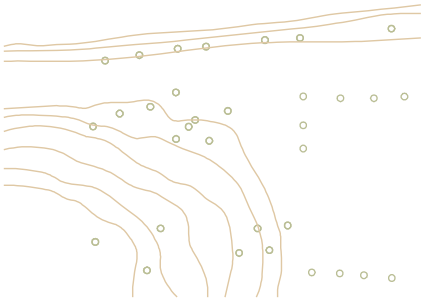
distribution of the tobeishi stone units according
to their surfaces amounts . directions . distance
among each of the units and among stepping points



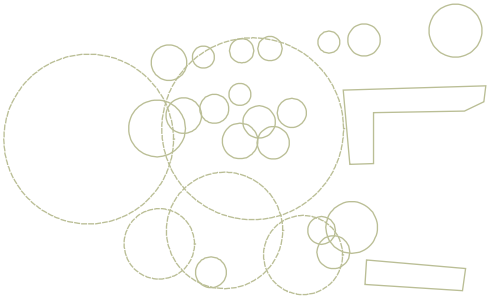
greenery formal elements
trunk points distribution plan
along the stepping sub-pathway



greenery formal elements
radii distribution plan along
the stepping sub-pathway



greenery formal elements
density and tree crowns
heights distribution



greenery formal elements
distribution according to
their their radii sizes

Fig.09: distribution of the [from left to right] stone formal elements
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to the certain paramters measured in selected human body stepping points

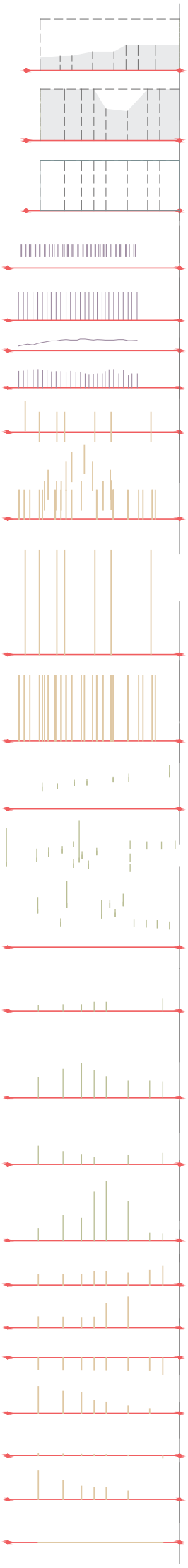

Fig.10: colliding diagram of all of the diagram rhythms
in relation to the distribution of the garden formal elements
in certain parameters along the ‘zero’ sub-pathway walking line

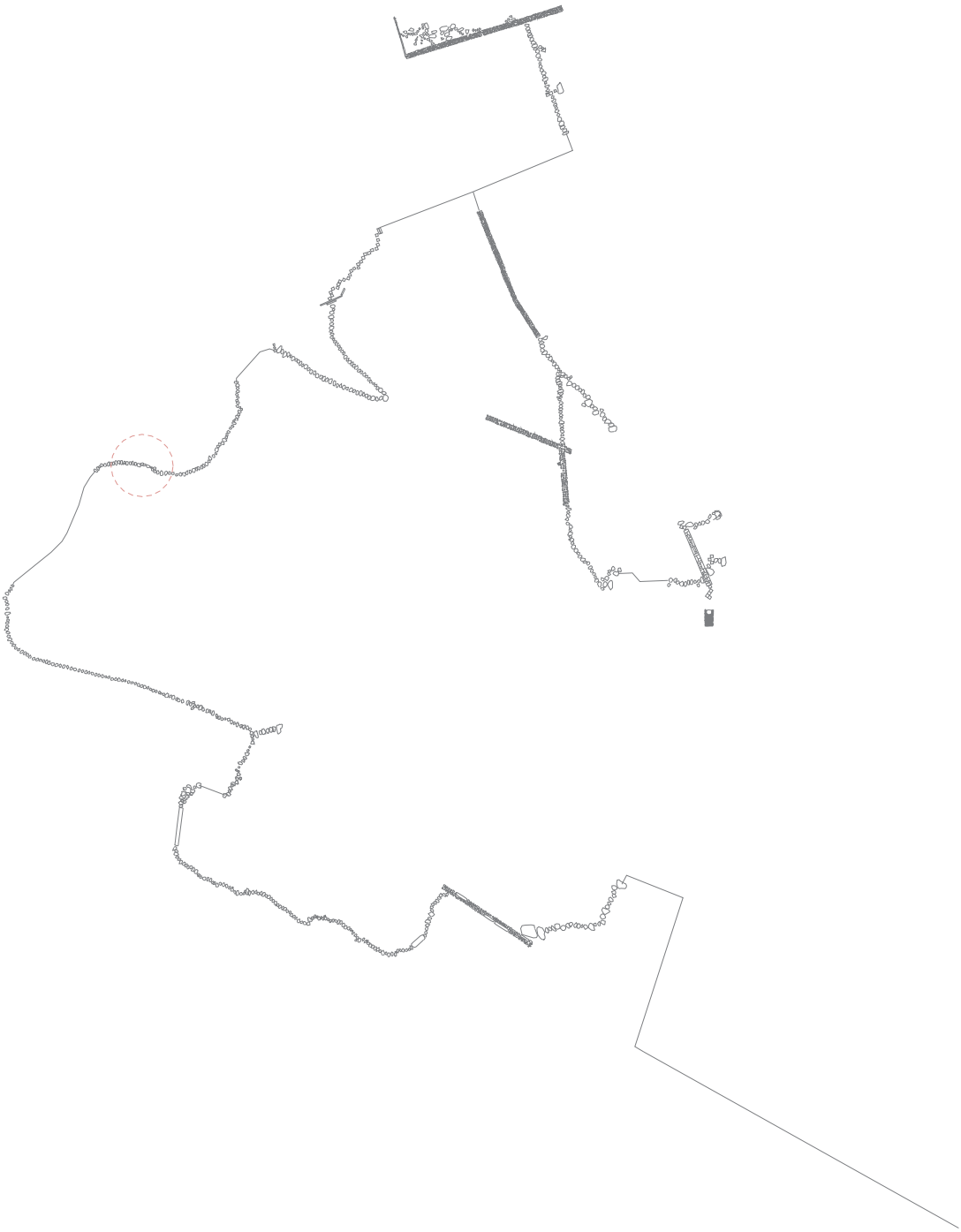

Fig.01: map of the sub-pathway position
within the overall pathway representation












Fig.02 [left page]: [left section] pathway photos taken at certain stepping points along the 'zero' sub-pathway walking lane

Fig.03 [left page]: [right section] diagrams which represent the greenery elements extracted from each of the sub-pathway photos taken at certain stepping points

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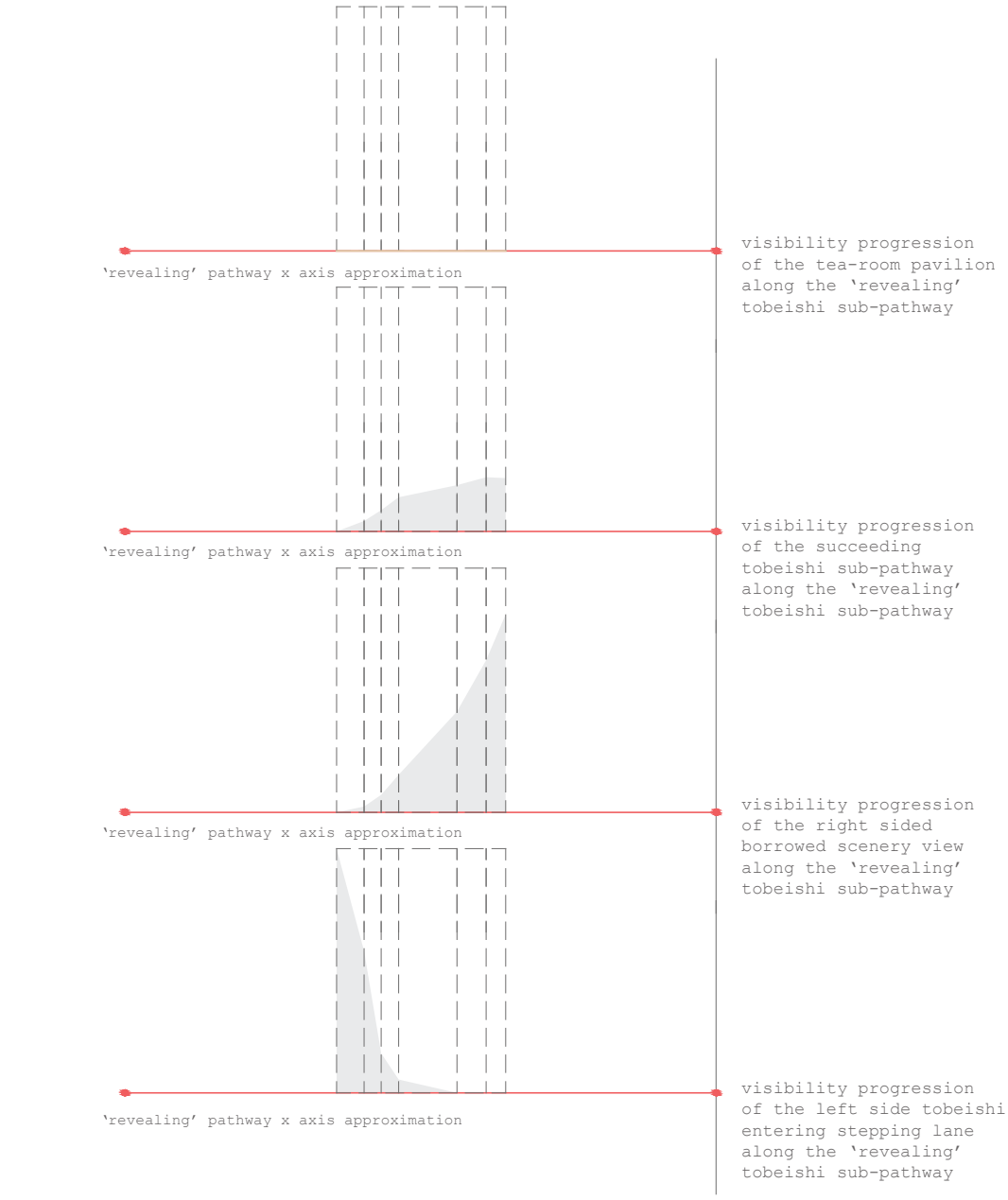
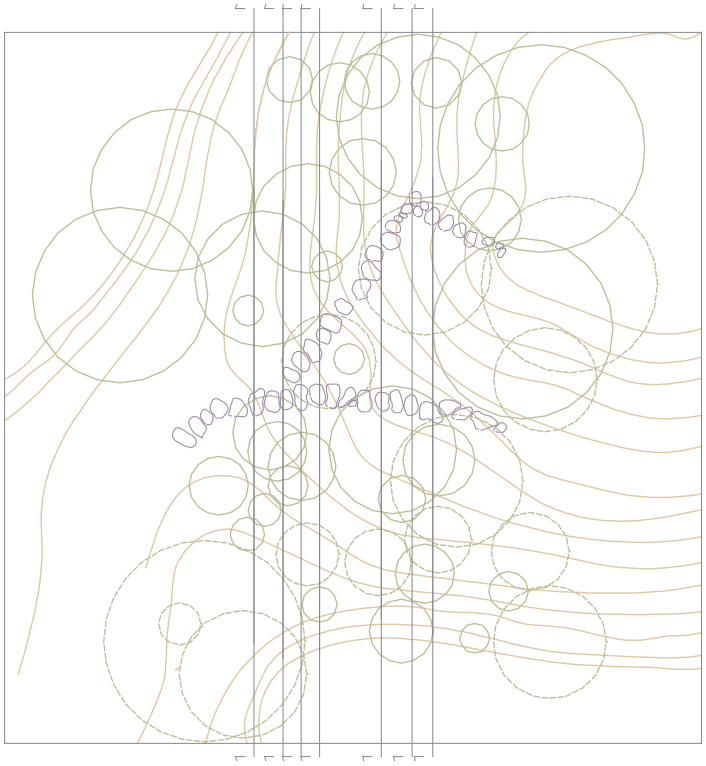
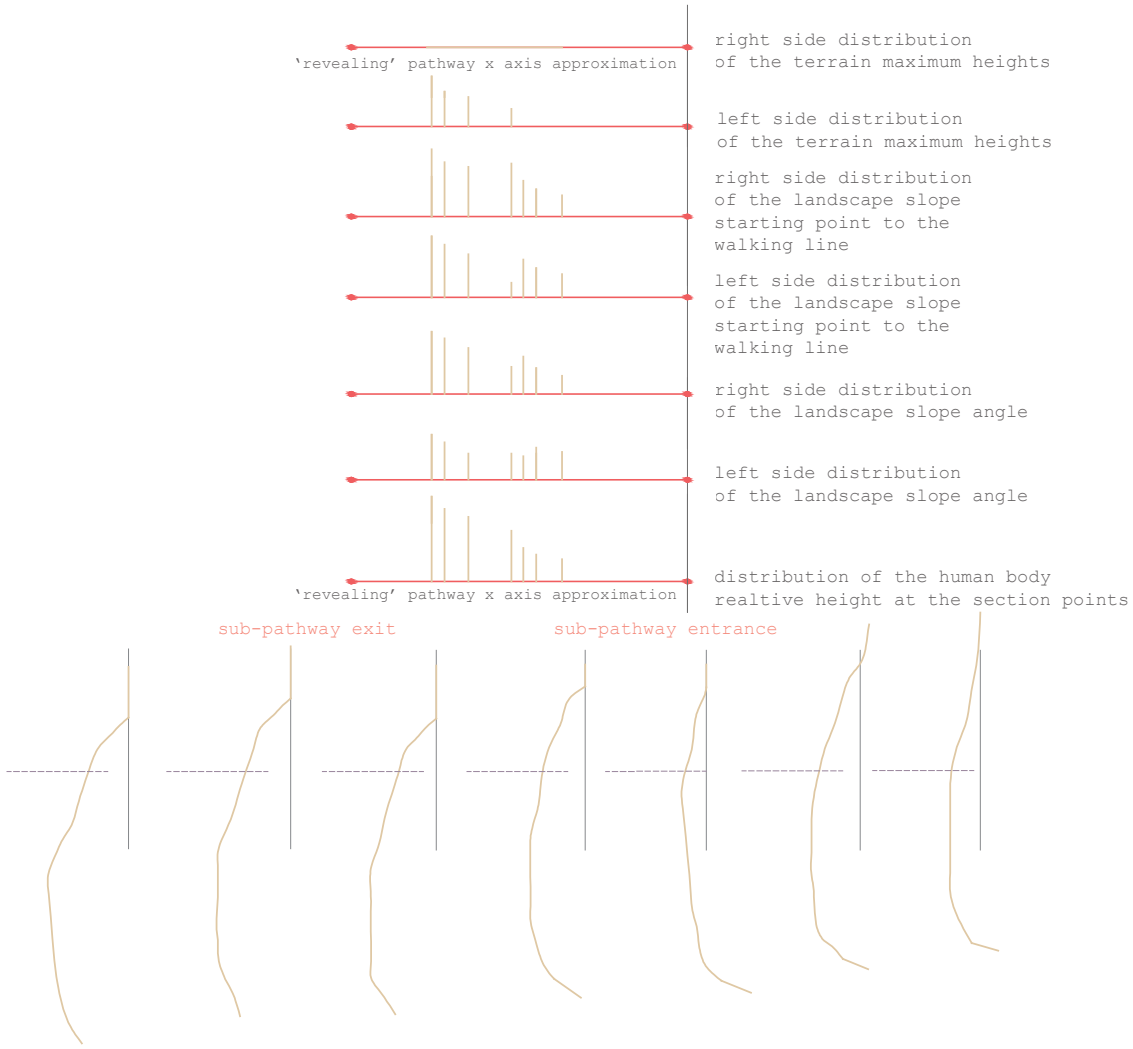




'hillside hidden' sub-pathway plan

Fig.06: overall visibility of certain garden formal elements, measured during human walking activity along the tobeishi pattern according to the field of view greenery density progression diagram



sub-pathway sections
distribution along the
stepping points

Fig.07: distribution of the landscape
formal elements along thewalking lane,
according to the relative height of
the human body position, terrain section
angle distribution, the distance from
the walking line to the point where
the terrain changes its direction

sub-pathway distribution
of the landscape isolines
along the stepping direction

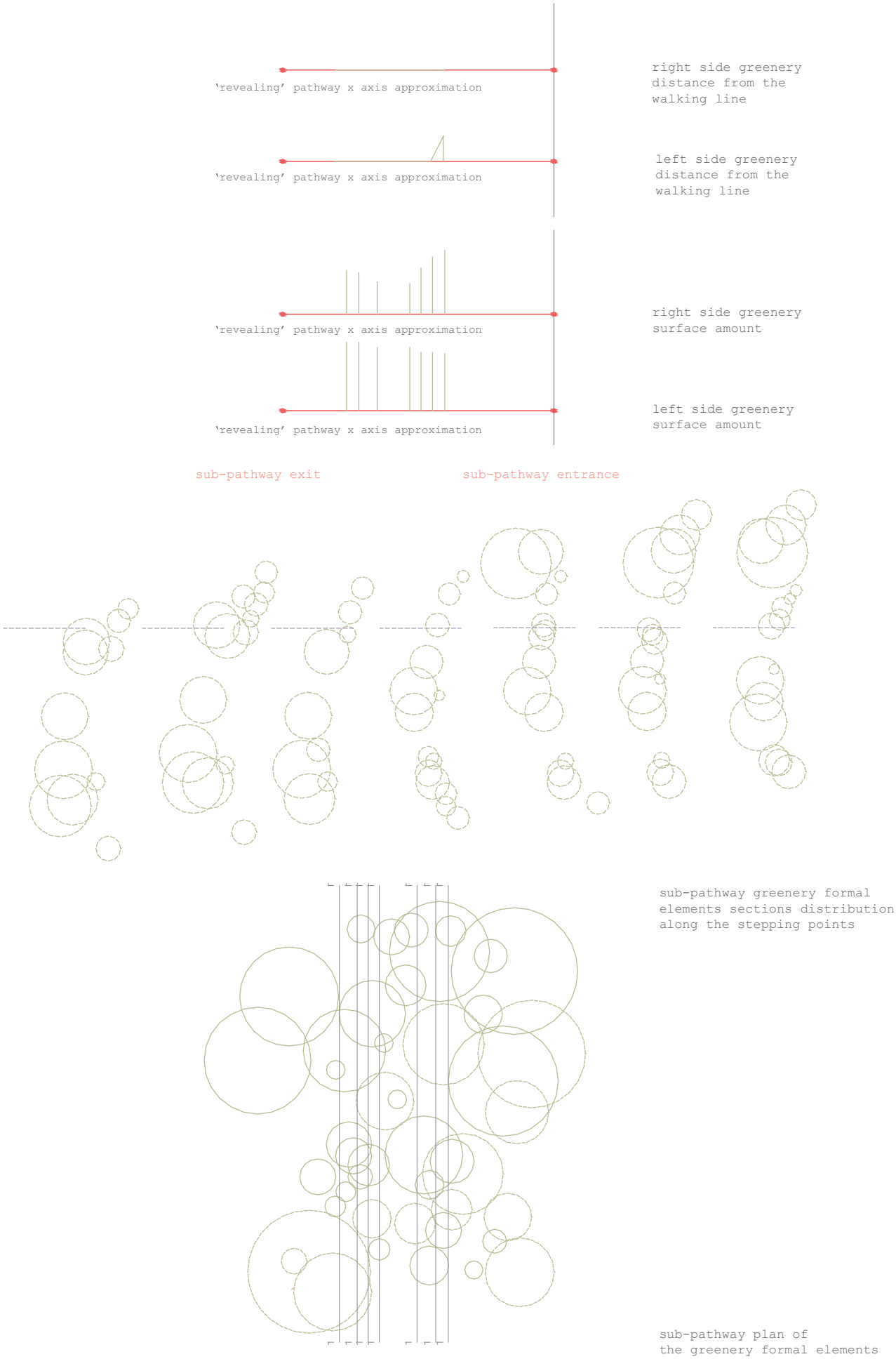
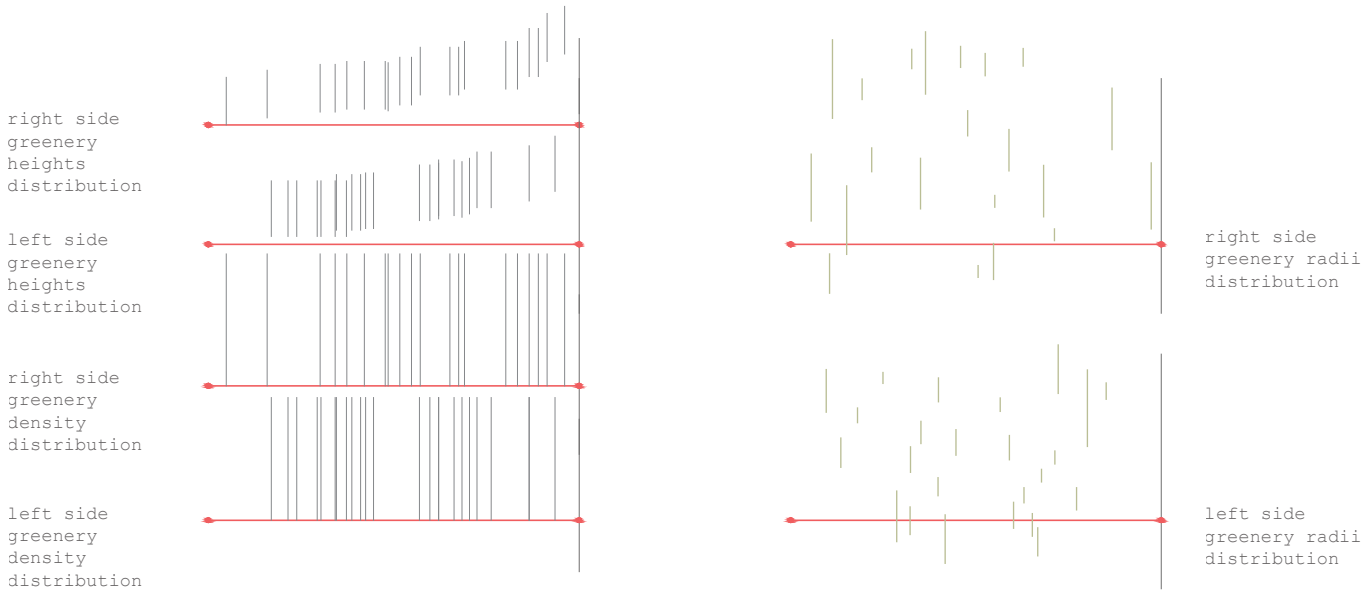
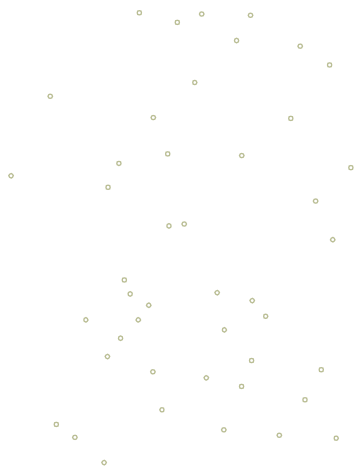
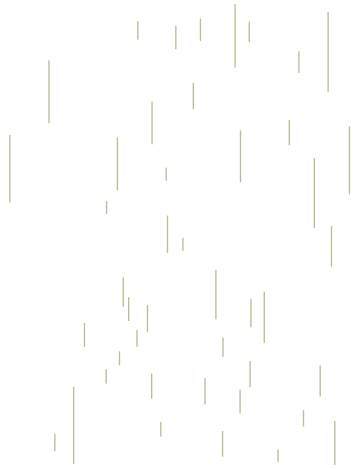


Fig.08: distribution of the greenery formal elements along the walking lane, according to the relative height of the human body position, terrain section angle distribution, the distance from the walking line to the point where the terrain changes its direction



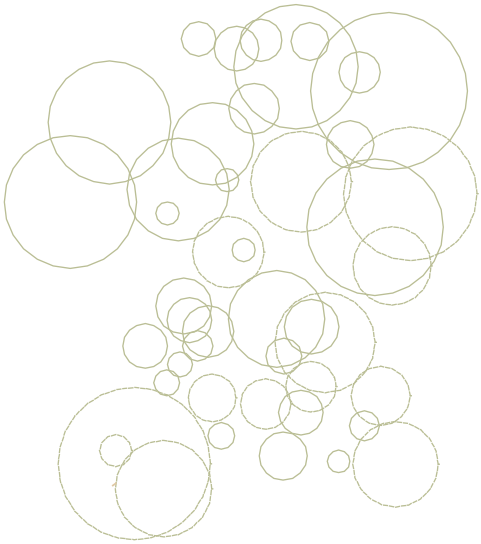


greenery formal elements
trunk points distribution plan
along the stepping sub-pathway



greenery formal elements
radii distribution plan along
the stepping sub-pathway

greenery formal elements
density and tree crowns
heights distribution



greenery formal elements
distribution according to
their their radii sizes

Fig.09: distribution of the [from left to right] greenery formal elements along the tobeishi sub-pathway according to the certain parameters measured in selected human body stepping points

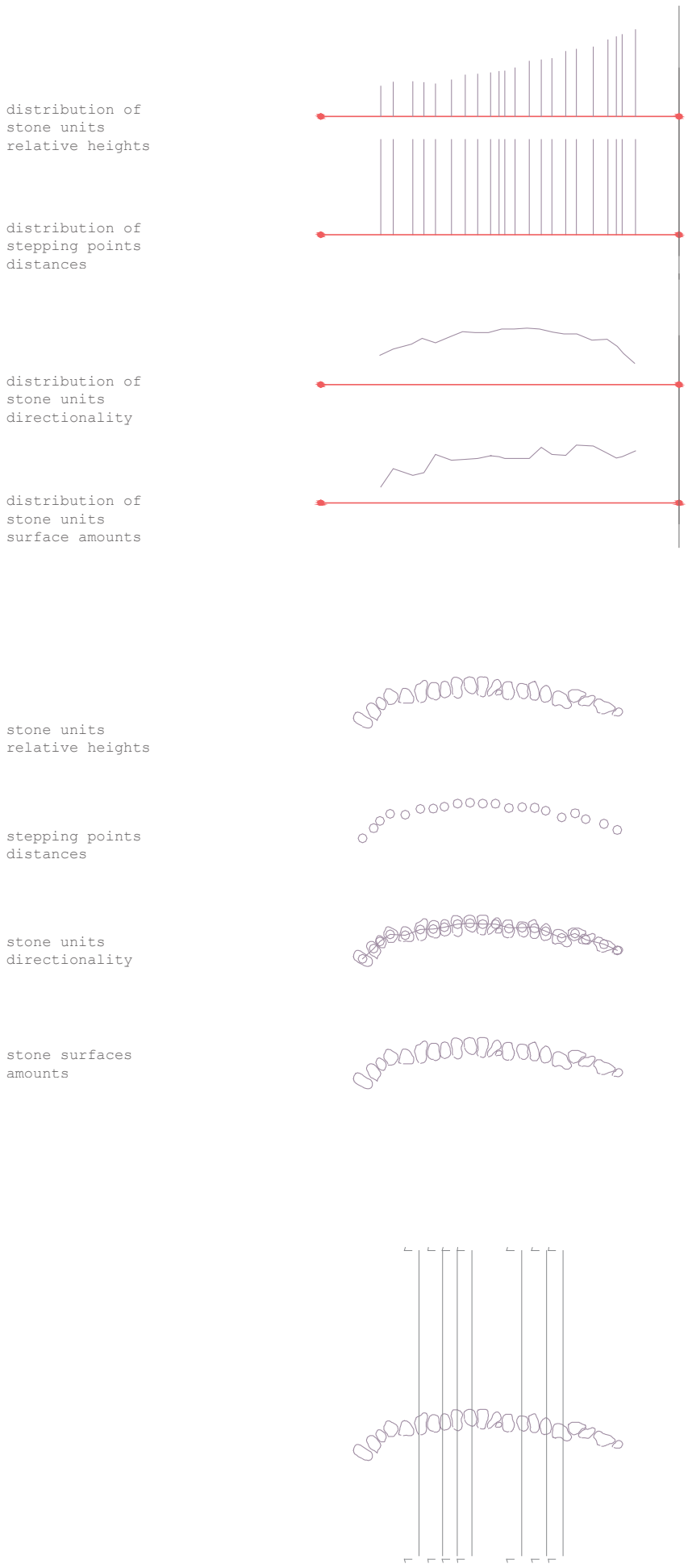


Fig. 10: distribution of the tobeishi stone units according to the relevant parameters which hold a meaning toward the other garden formal elements

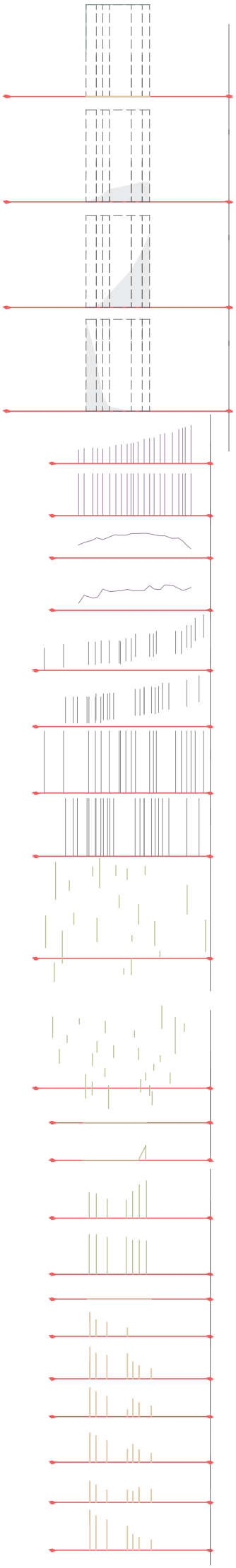


Fig.11: colliding diagram of all of the diagram rhythms
in relation to the distribution of the garden formal elements
in certain parameters along the ‘zero’ sub-pathway walking line

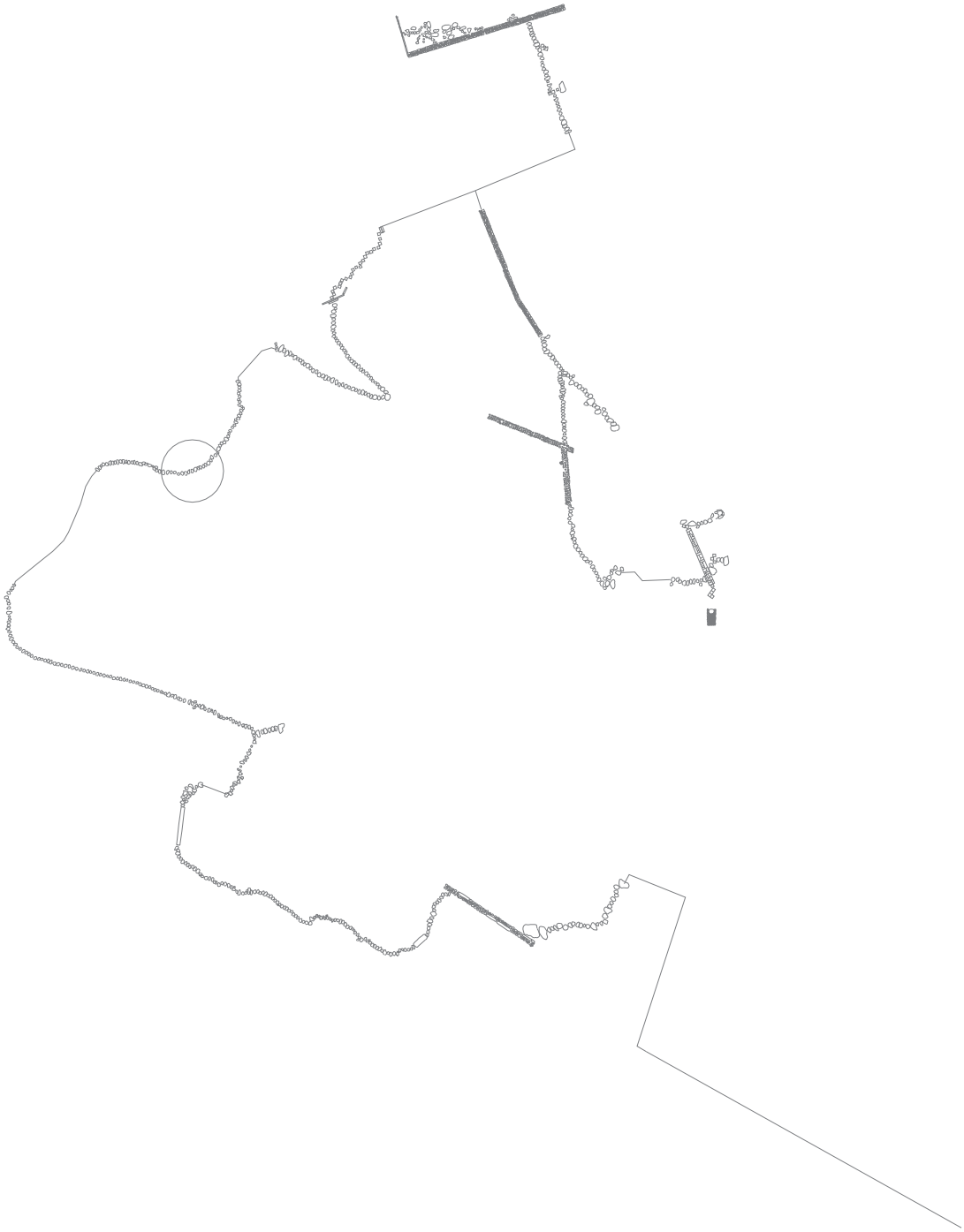
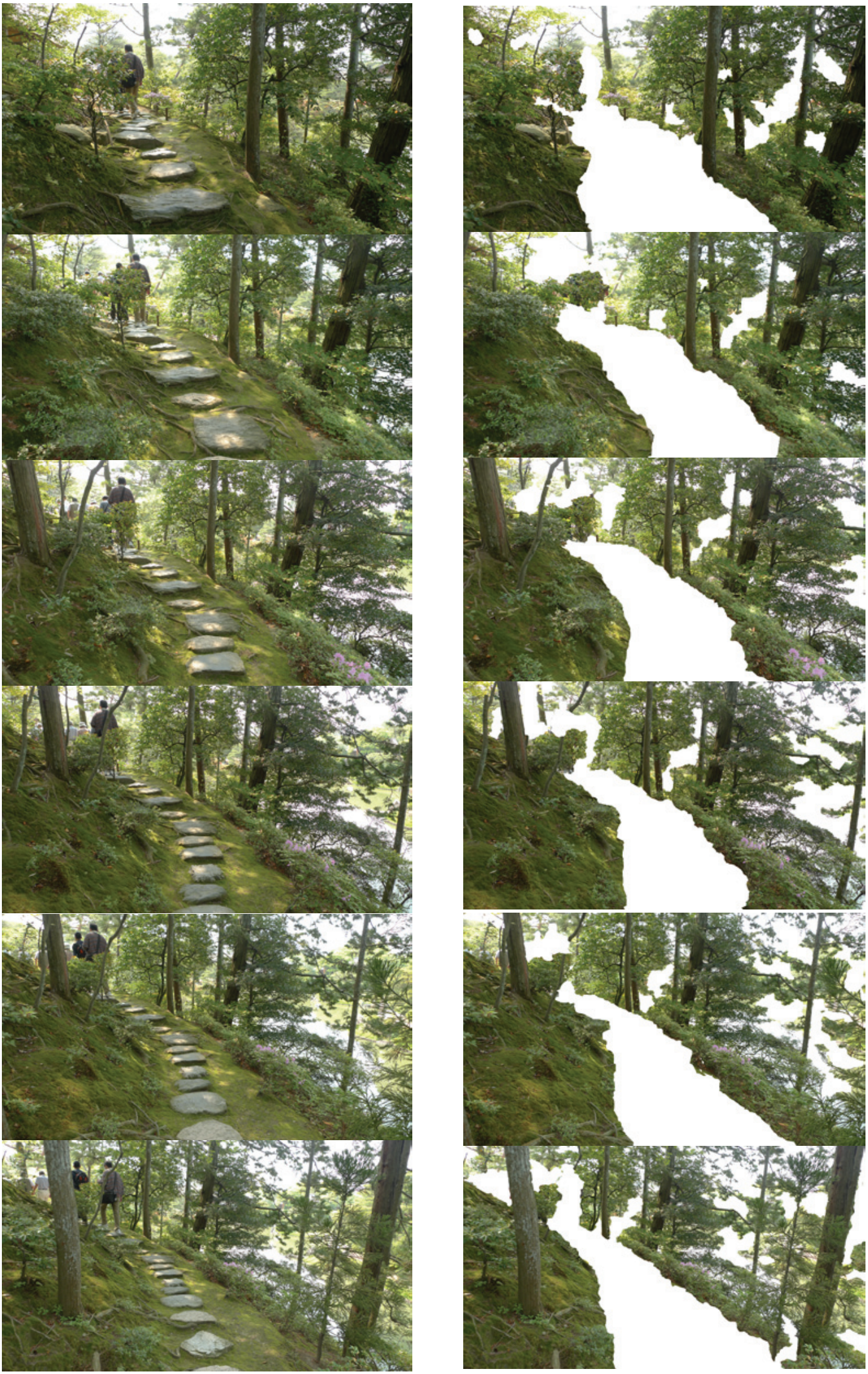


Fig.01: map of the sub-pathway position
within the overall pathway representation



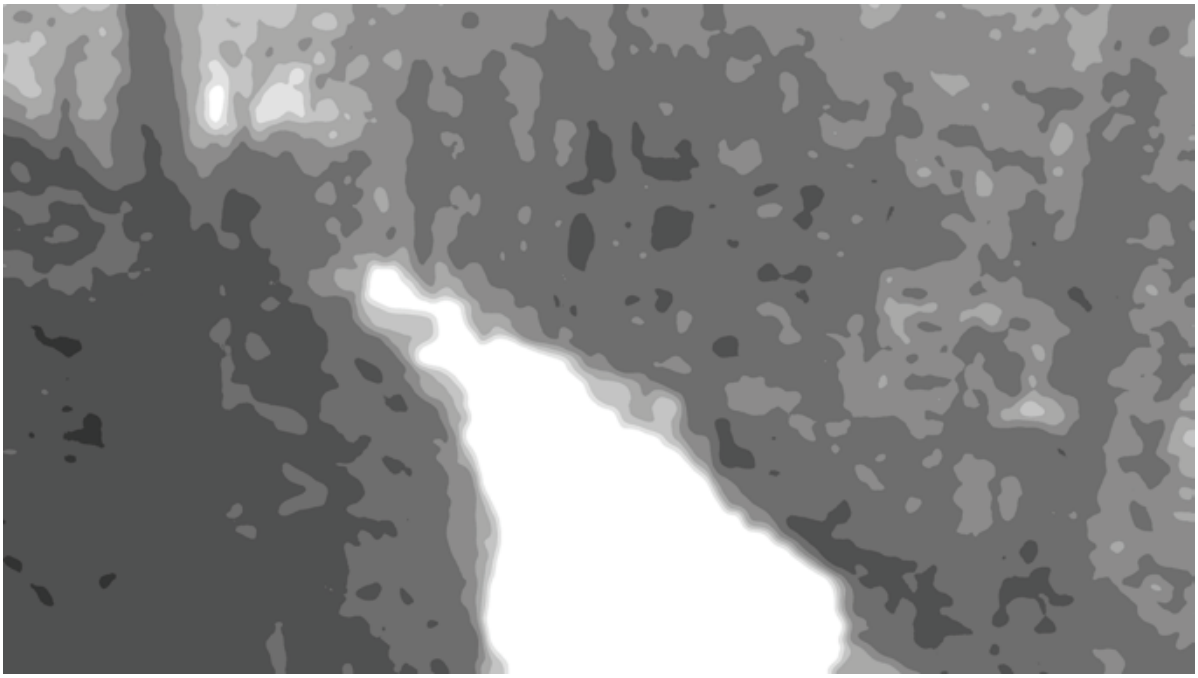


Fig.02 [left page]: [left section] pathway photos taken at certain stepping points along the 'zero' sub-pathway walking lane

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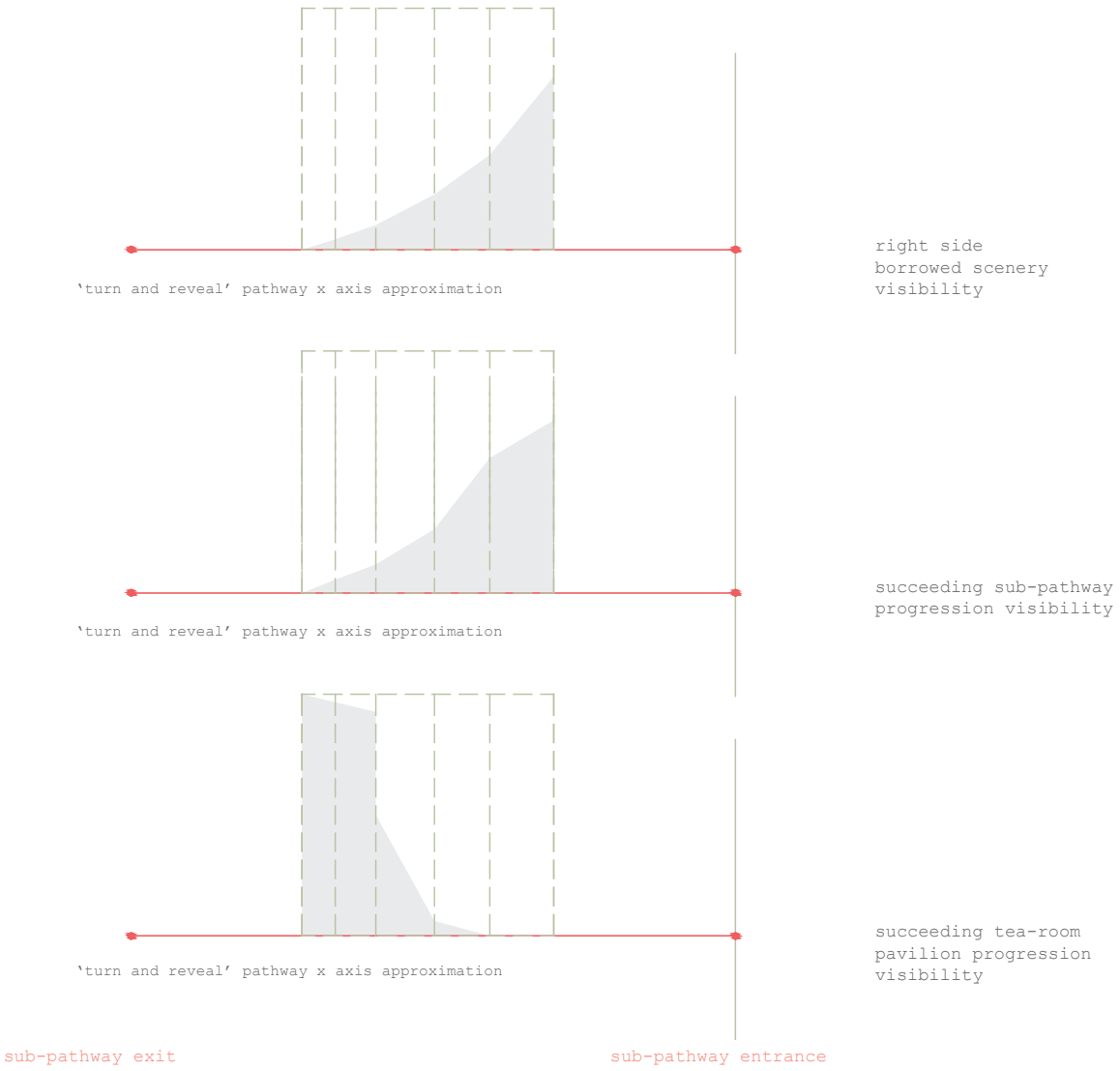
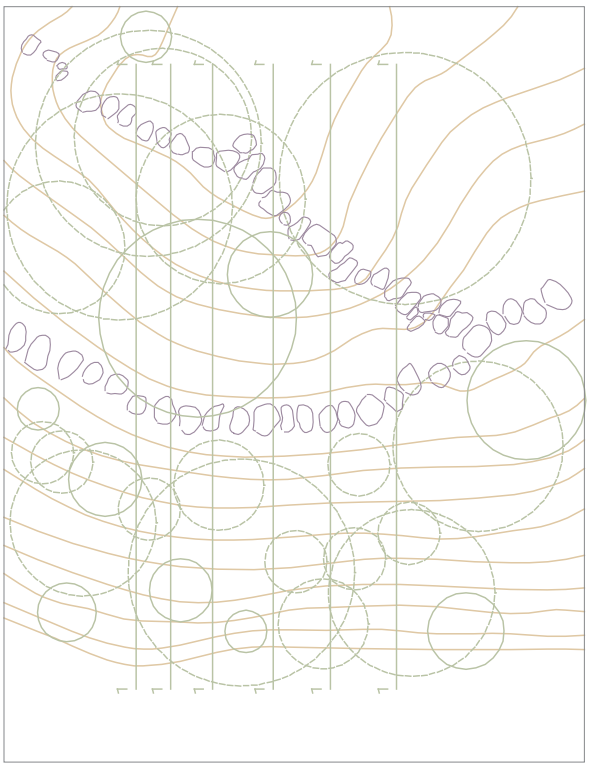




'turn and reveal' sub-pathway plan

Fig.06: overall visibility of certain garden formal elements, measured during human walking activity along the tobeishi pattern according to the field of view greenery density progression diagram

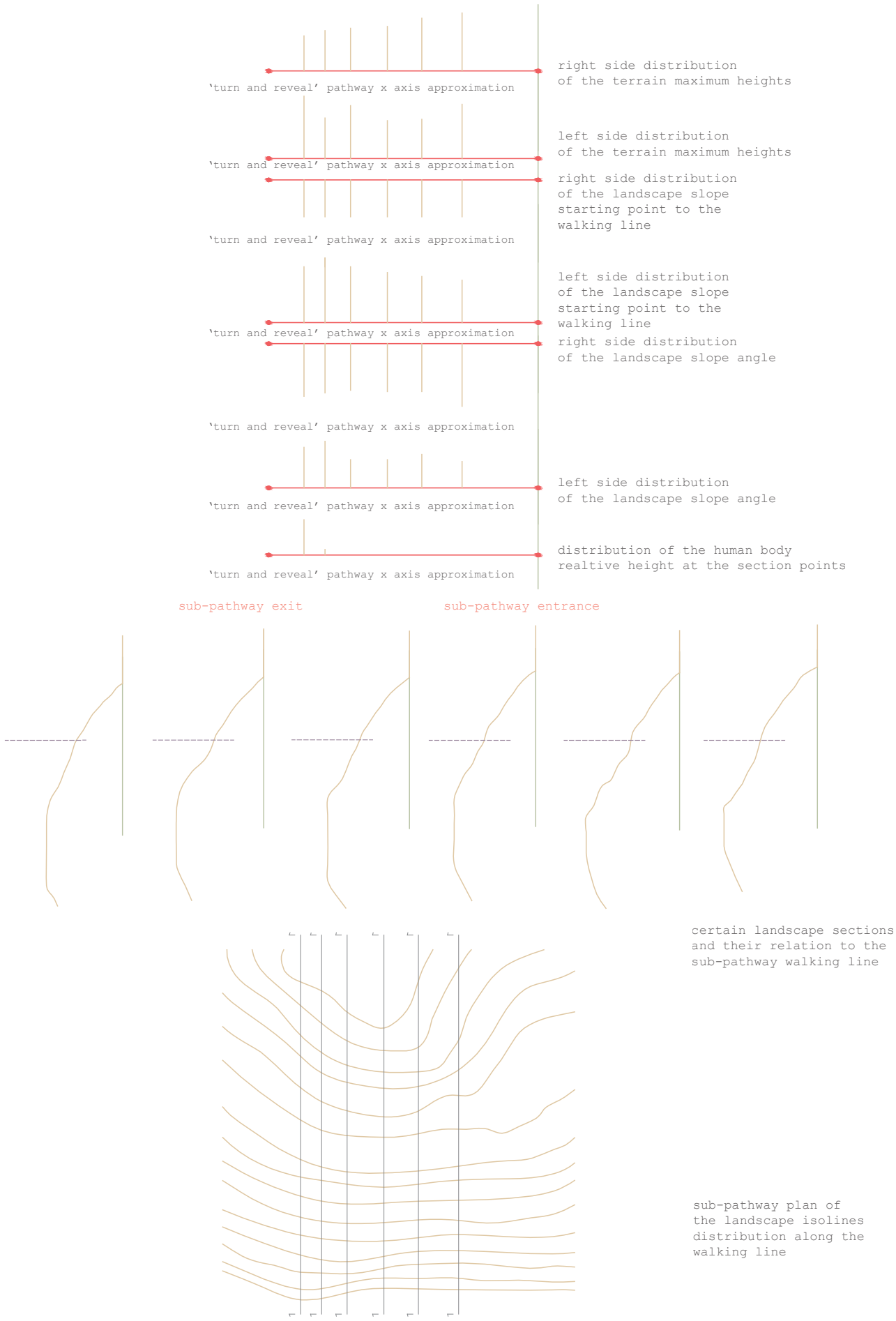
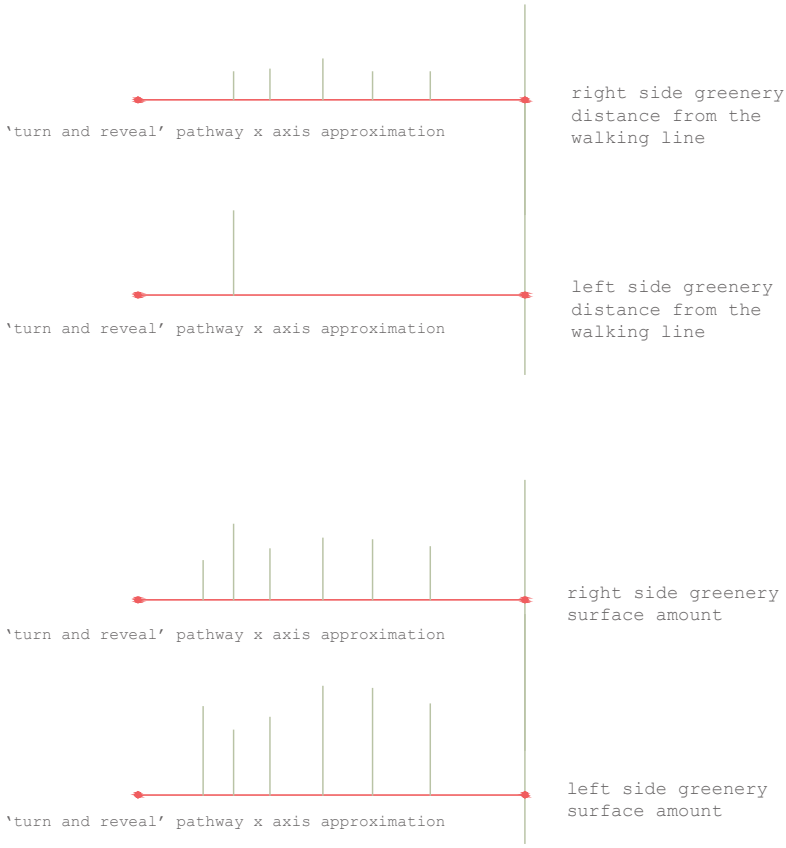
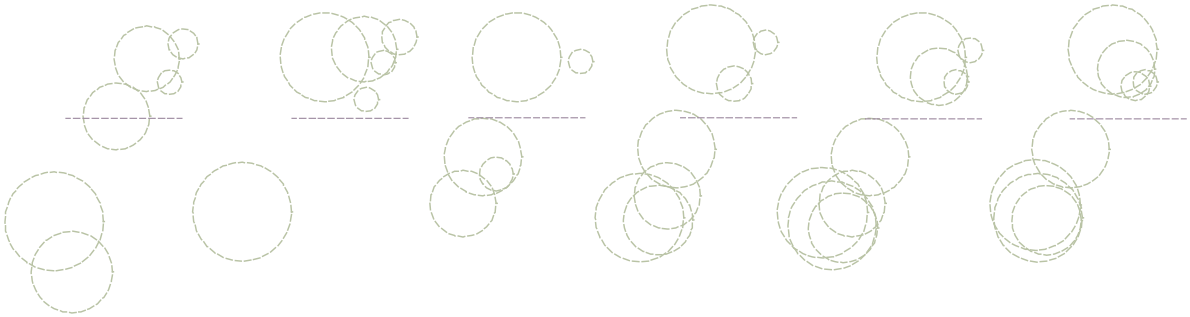
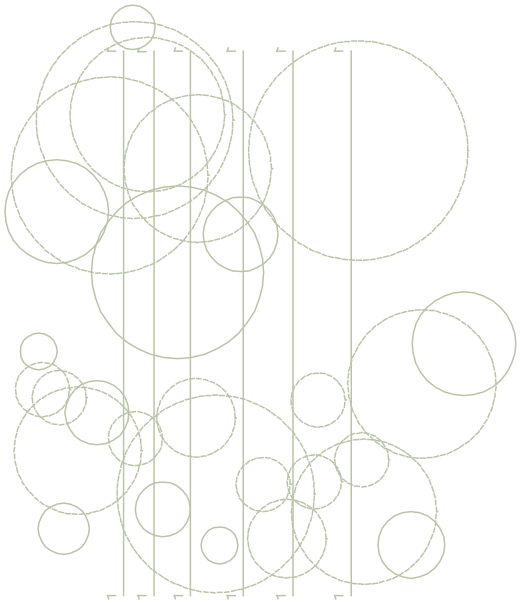


Fig.09: distribution of the landscape formal elements along the walking lane, according to the relative height of the human body position, terrain section angle distribution, the distance from the walking line to the point where the terrain changes its direction



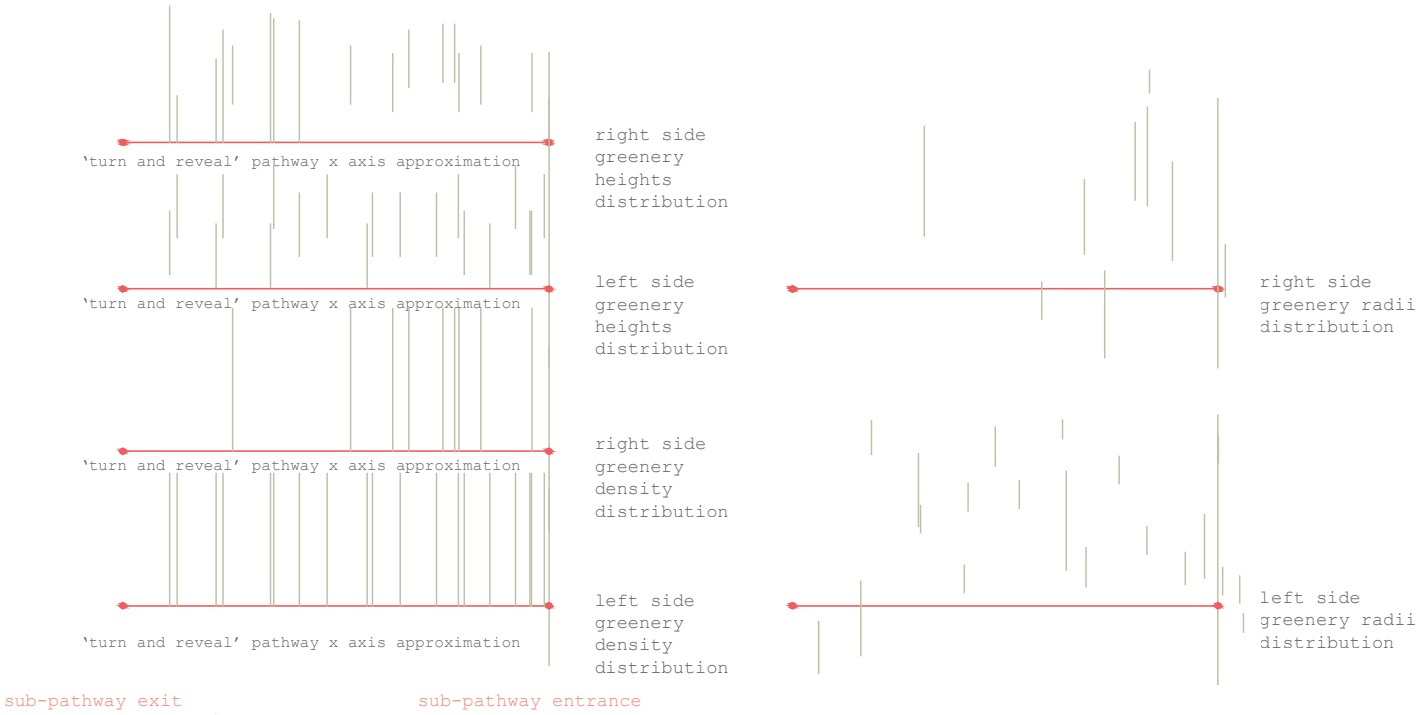


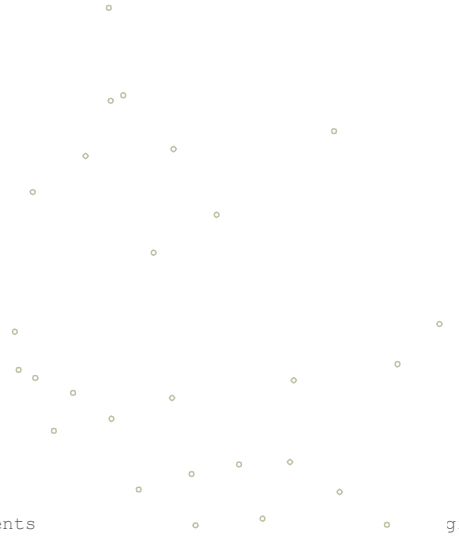


plan of the greenery radii distribution along the 'zero' sub-pathway

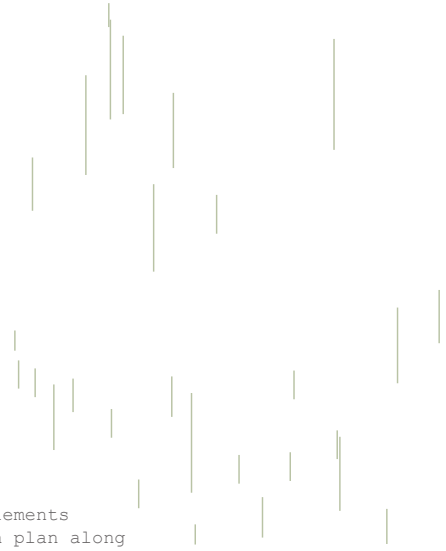
plan of the greenery distribution along the 'zero' sub-pathway

Fig.08: diagram representation of the sub-pathway greenery formal elements radii size distribution along the both sides of the walking lane



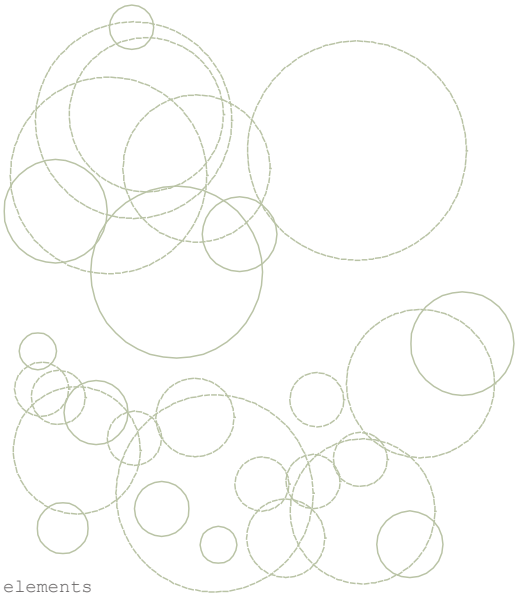


greenery formal elements
trunk points distribution plan
along the stepping sub-pathway



greenery formal elements
radii distribution plan along
the stepping sub-pathway

greenery formal elements
density and tree crowns
heights distribution



greenery formal elements
distribution according to
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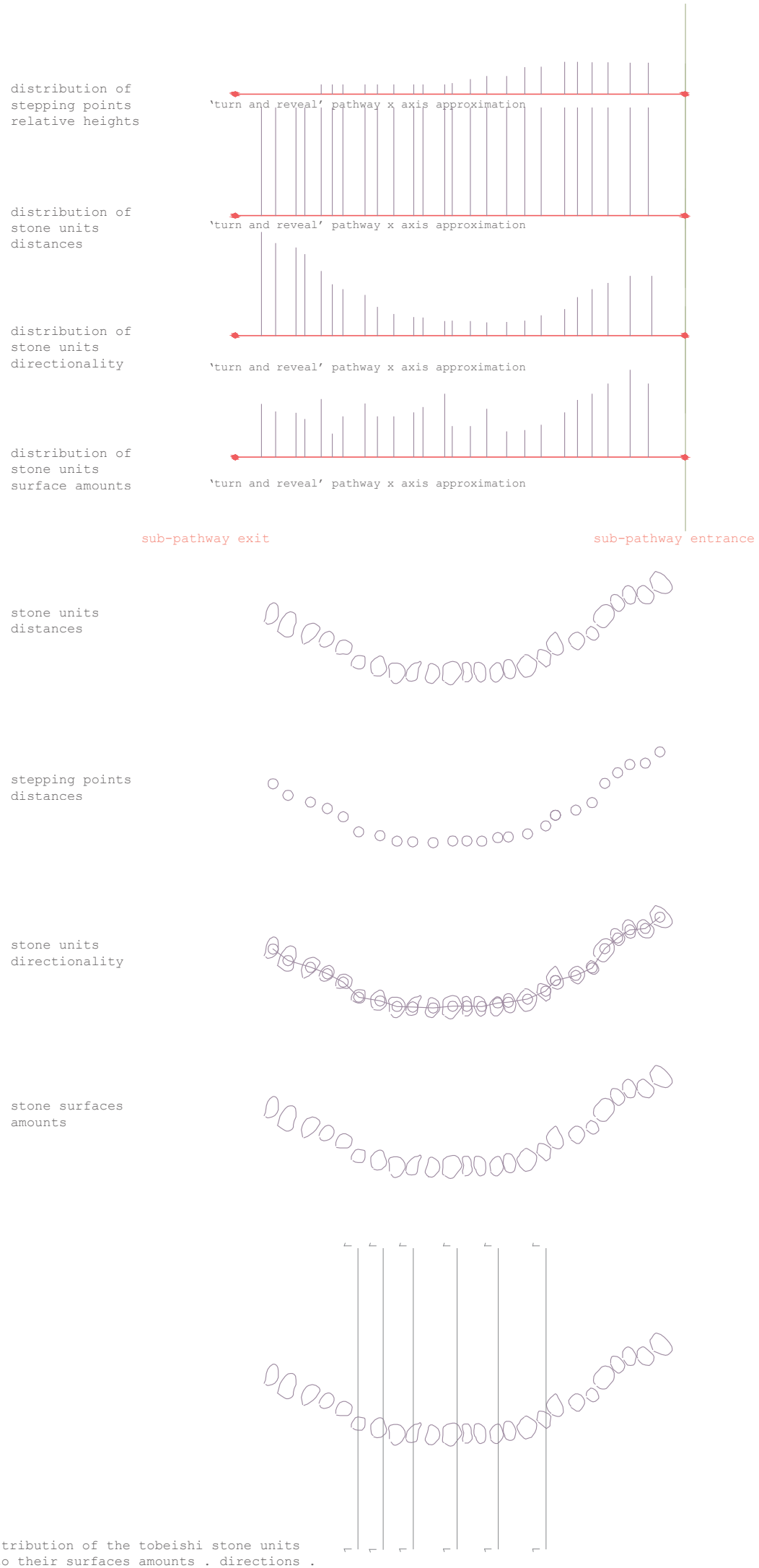

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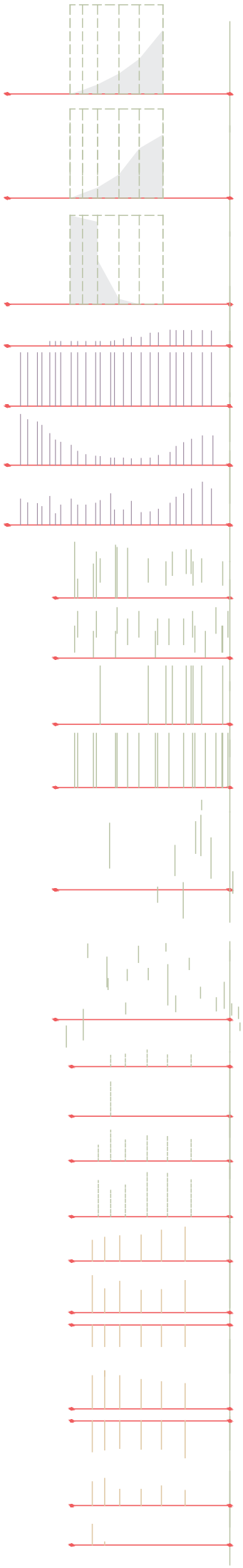

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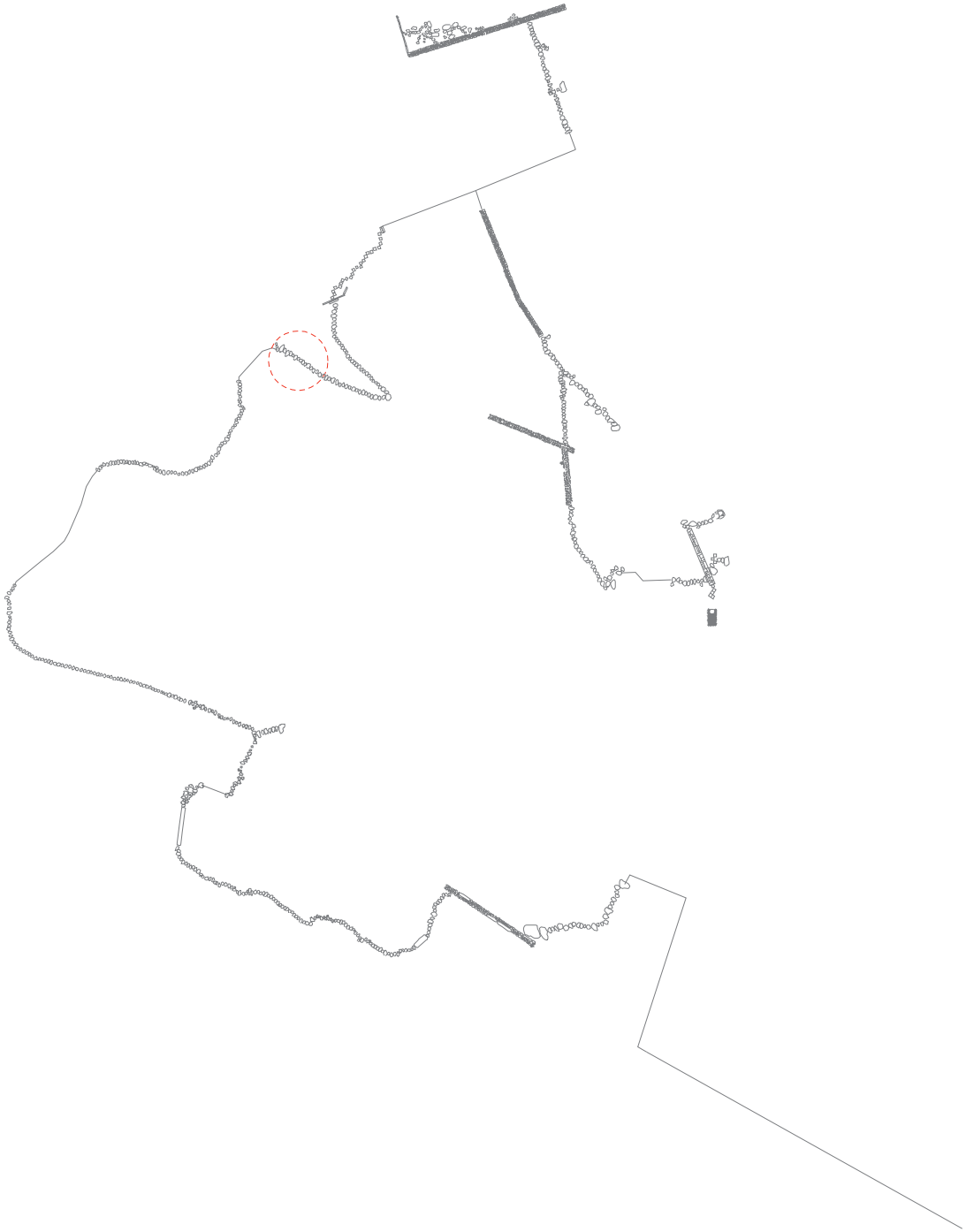
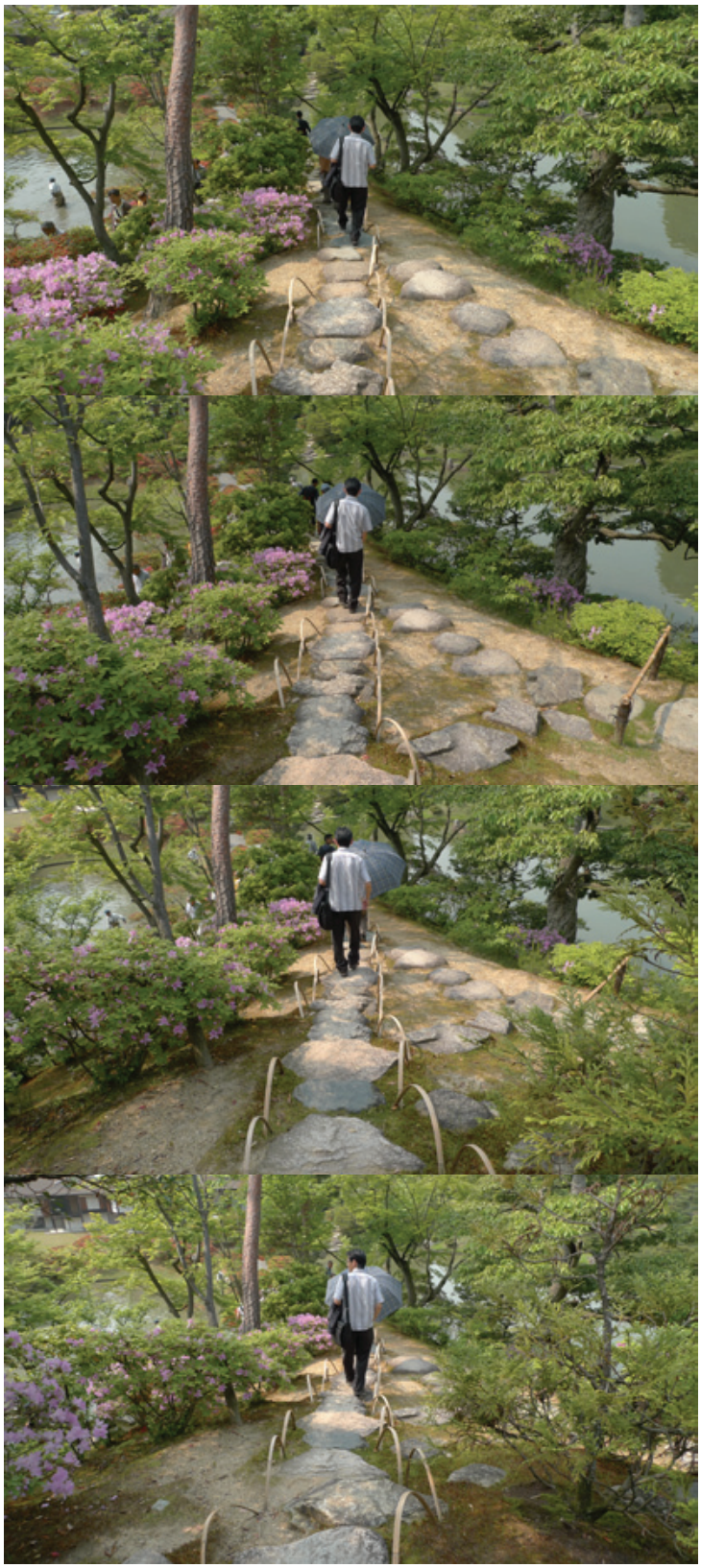
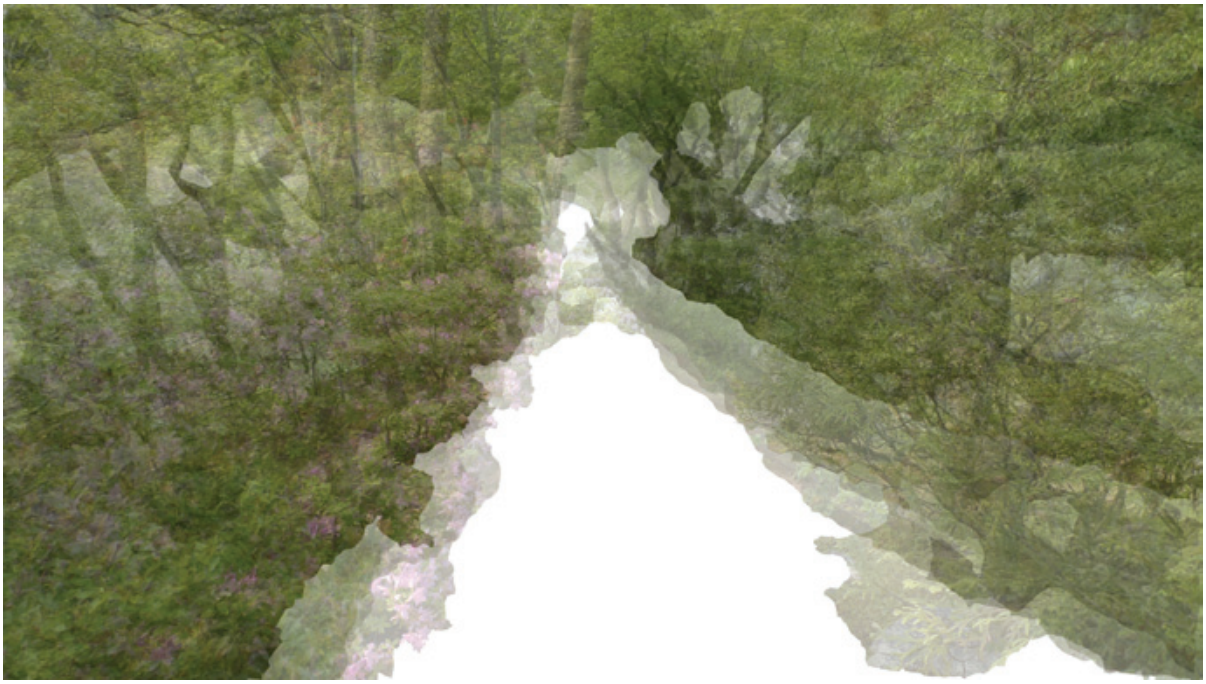
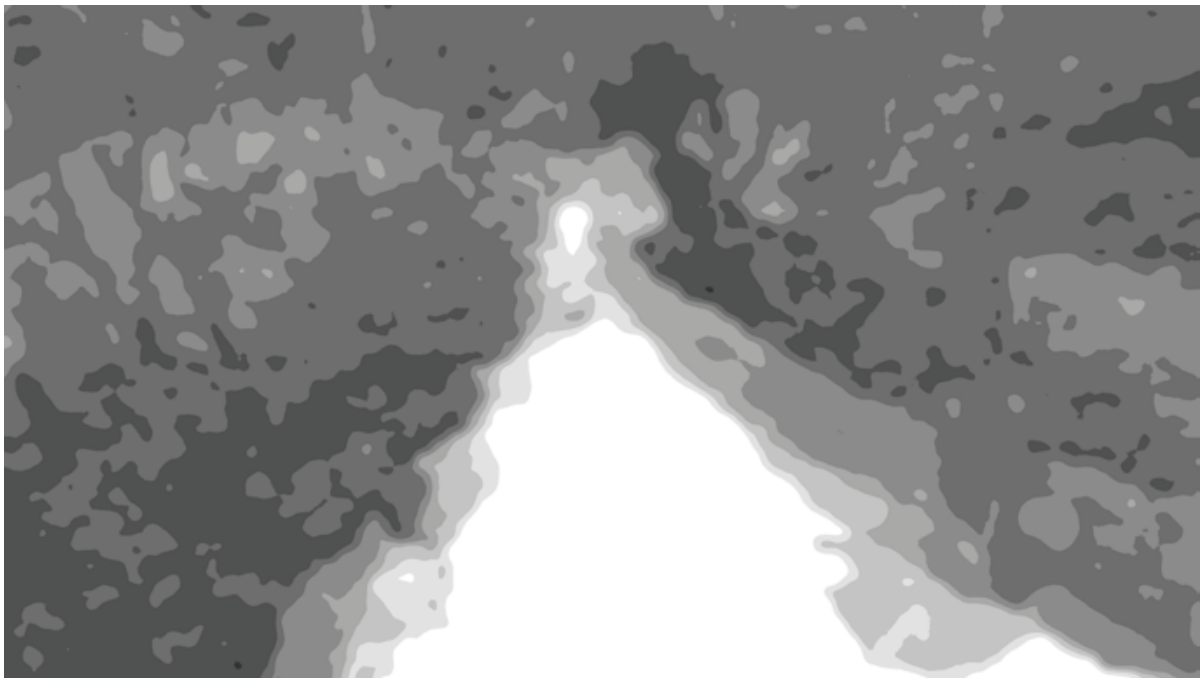


Fig.01: map of the sub-pathway position
within the overall pathway representation

‘DOWN THE HILL AND REVEAL ’ sub-pathway







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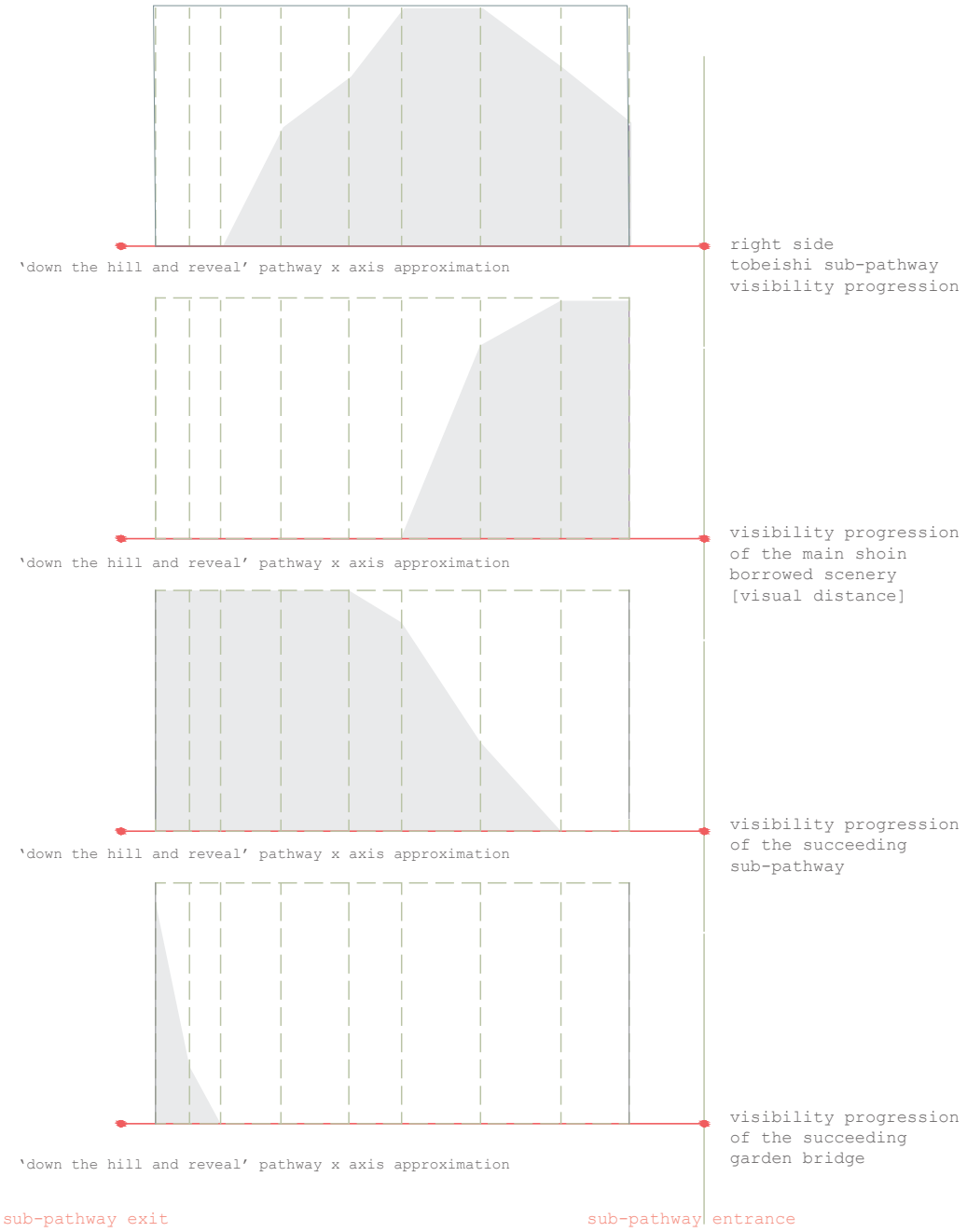

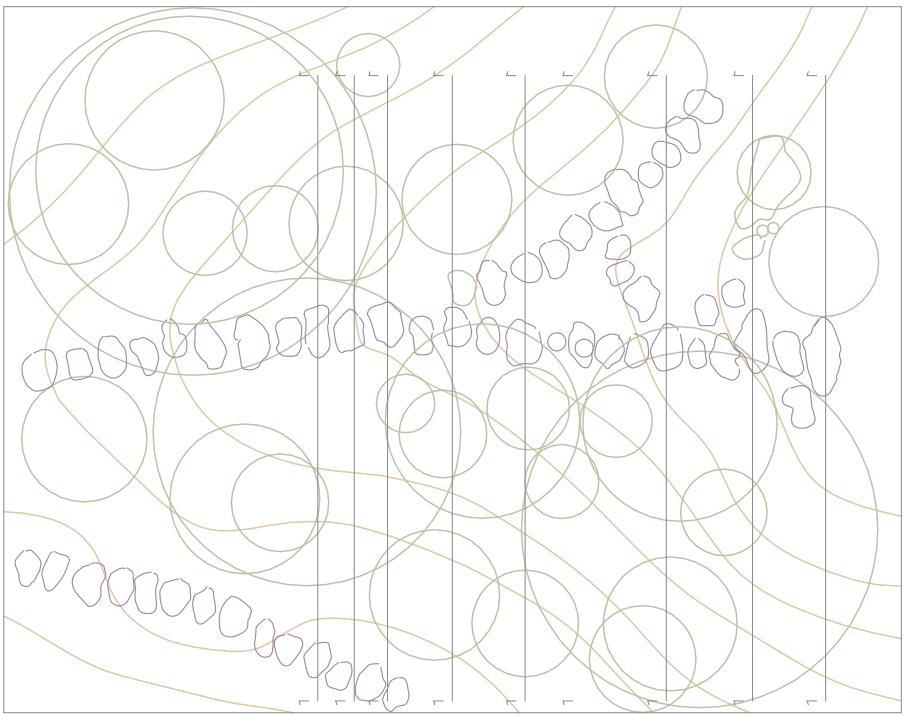

'down the hill and reveal'
sub-pathway plan

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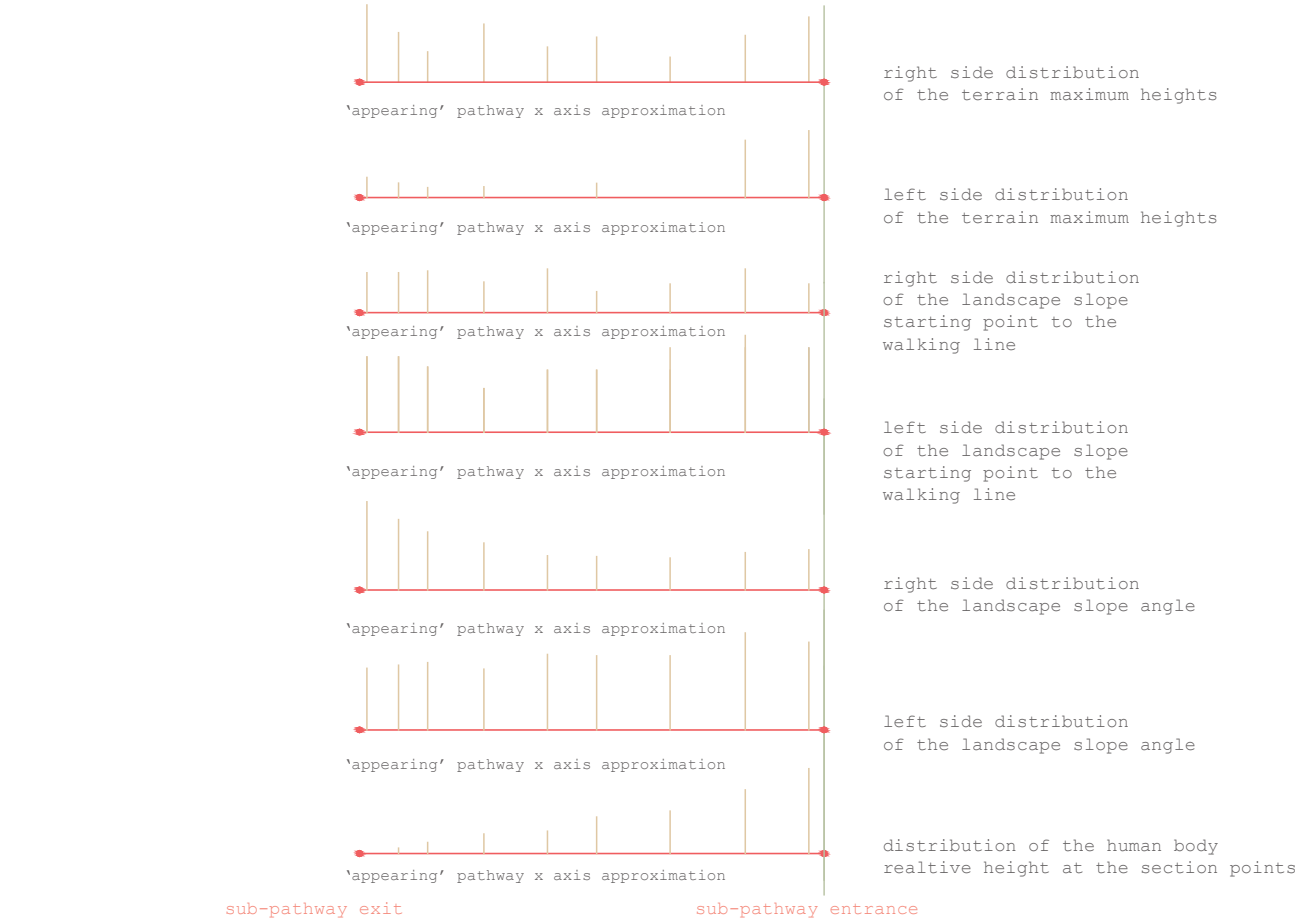
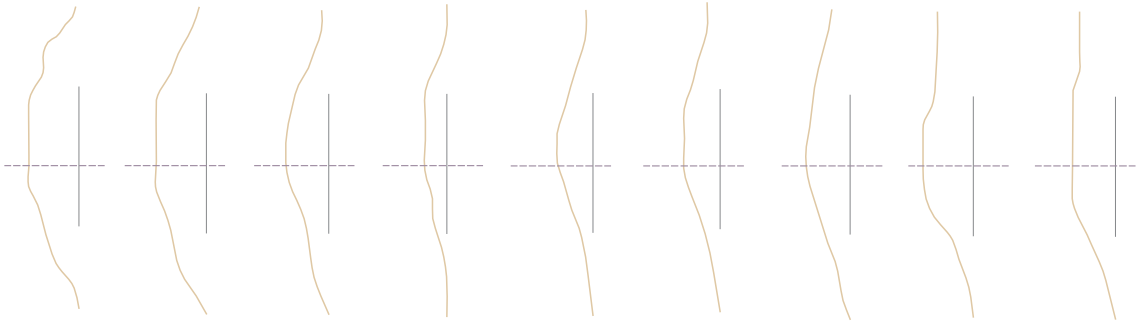
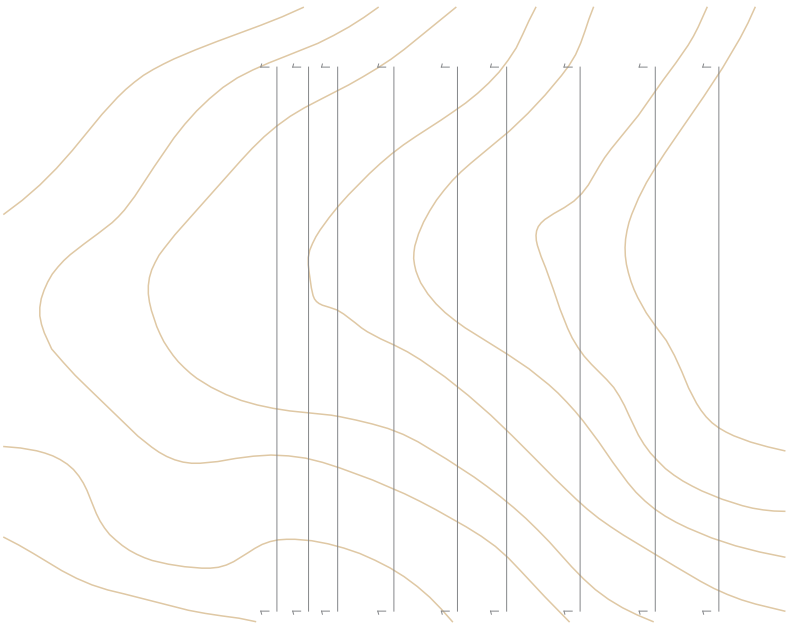


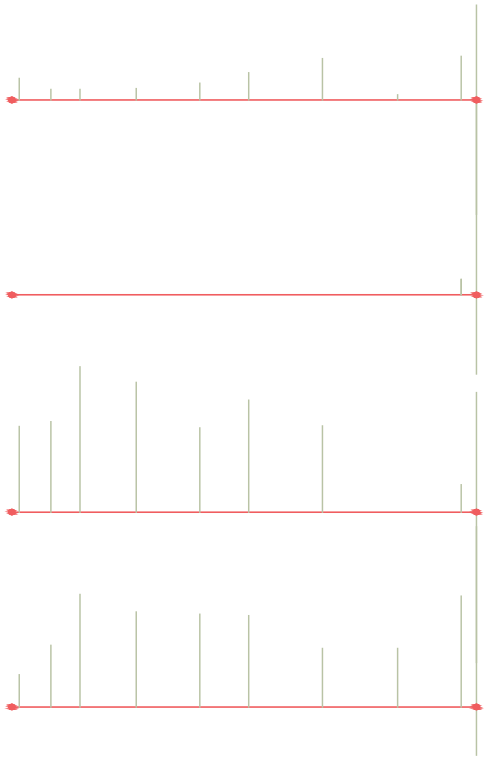




sub-pathway sections
distribution along the
stepping points

sub-pathway distribution
of the landscape isolines
along the stepping direction

Fig.07: distribution of the landscape formal elements along the walking lane, according to the relative height of the human body position, terrain section angle distribution, the distance from the walking line to the point where the terrain changes its direction

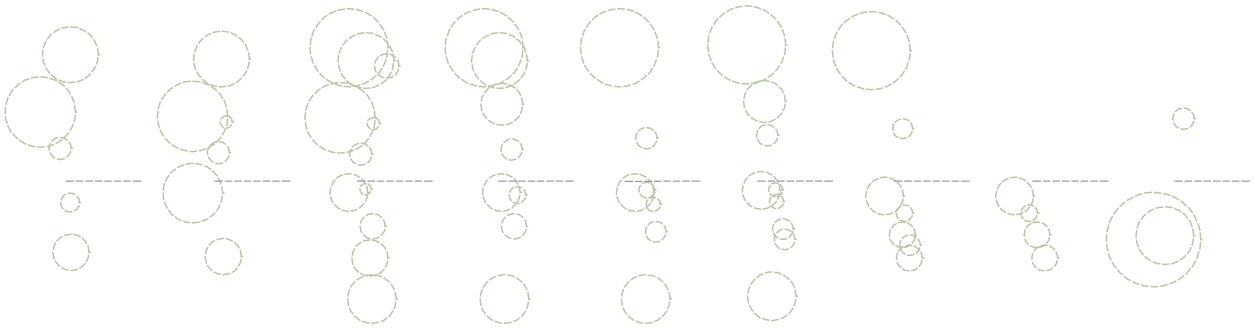


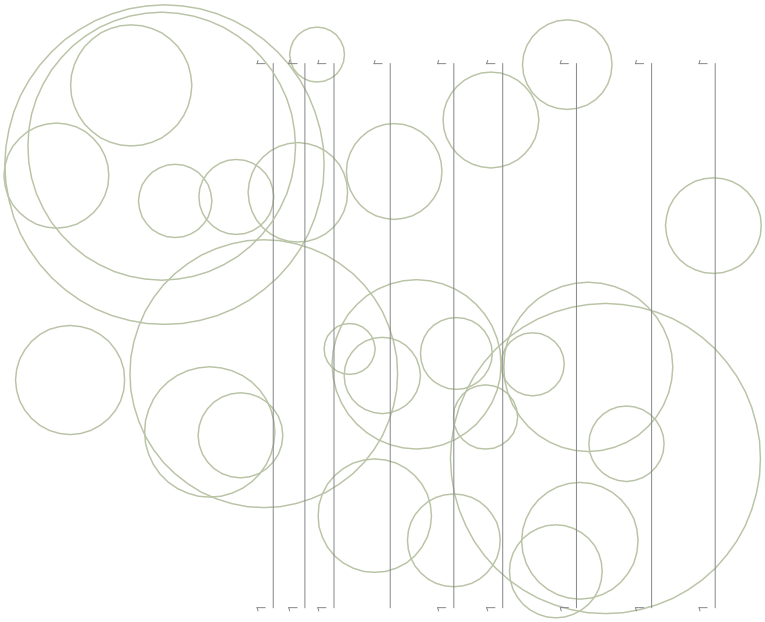
right side greenery distance from the walking line

left side greenery distance from the walking line

right side greenery surface amount

left side greenery surface amount





sub-pathway greenery formal elements sections distribution along the stepping points

sub-pathway plan of the greenery formal elements distribution along the tobeishi sub-pathway

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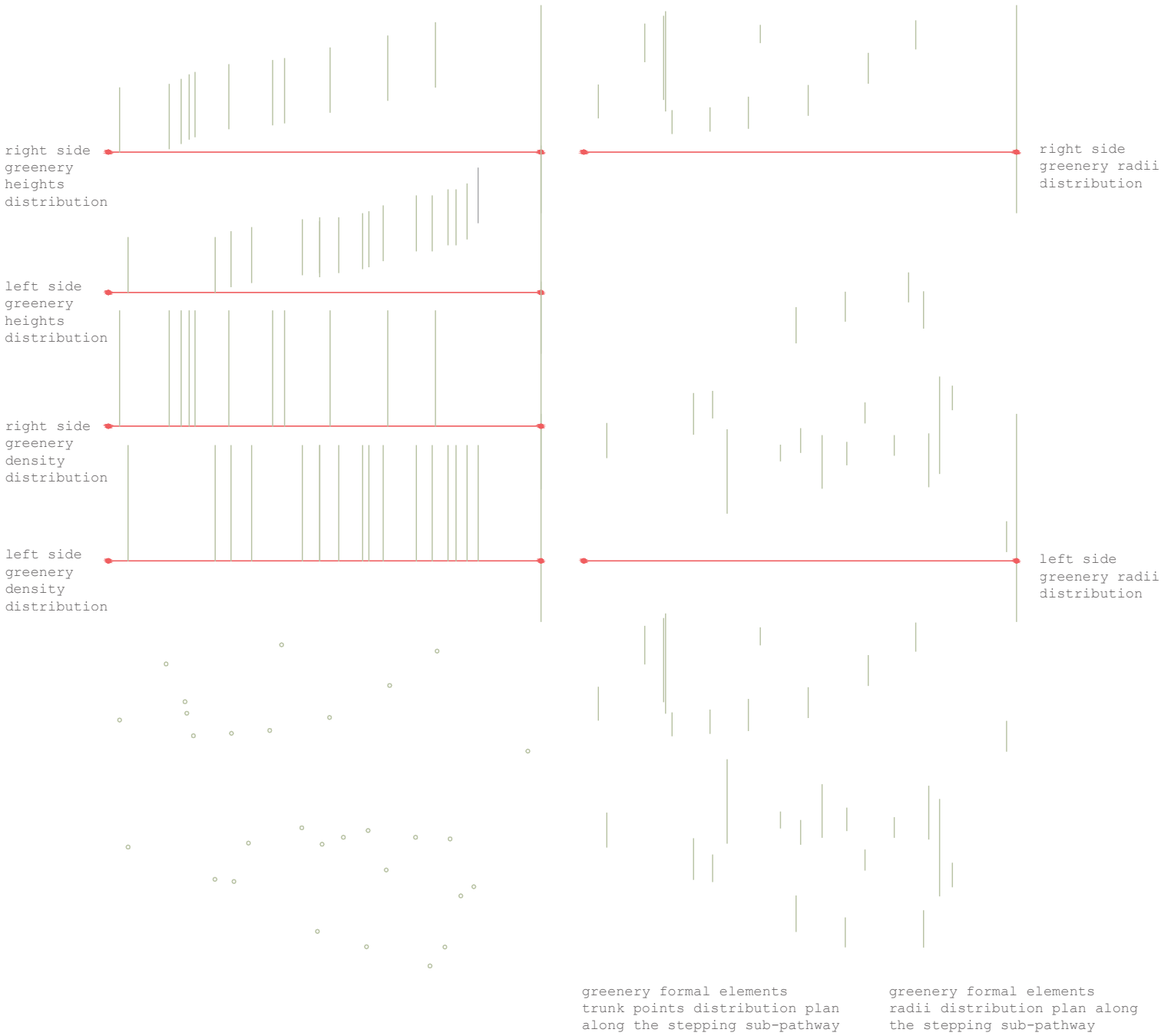


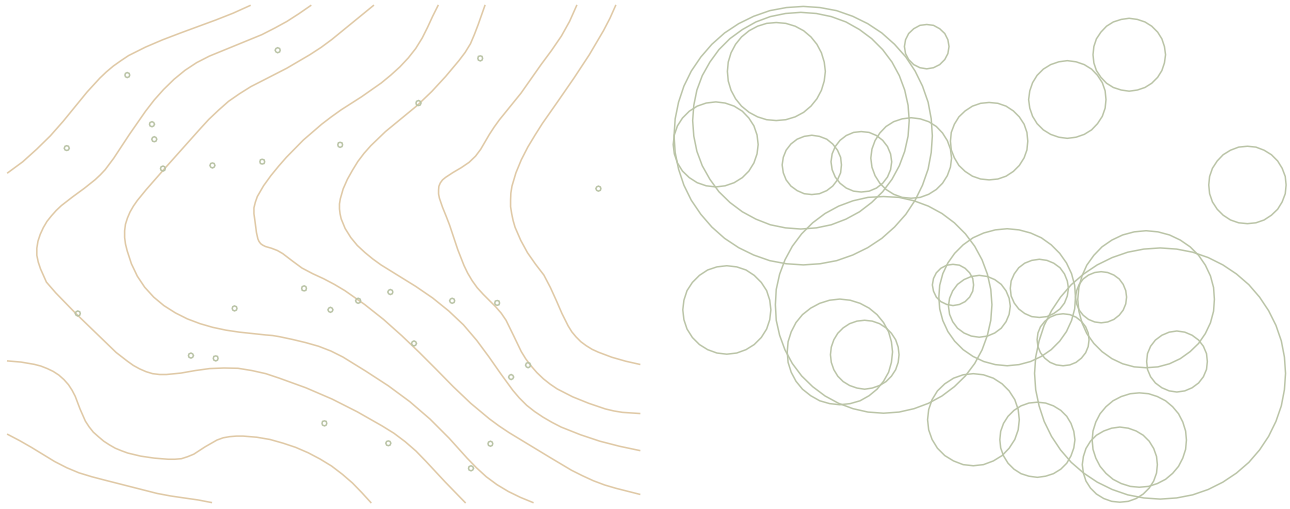
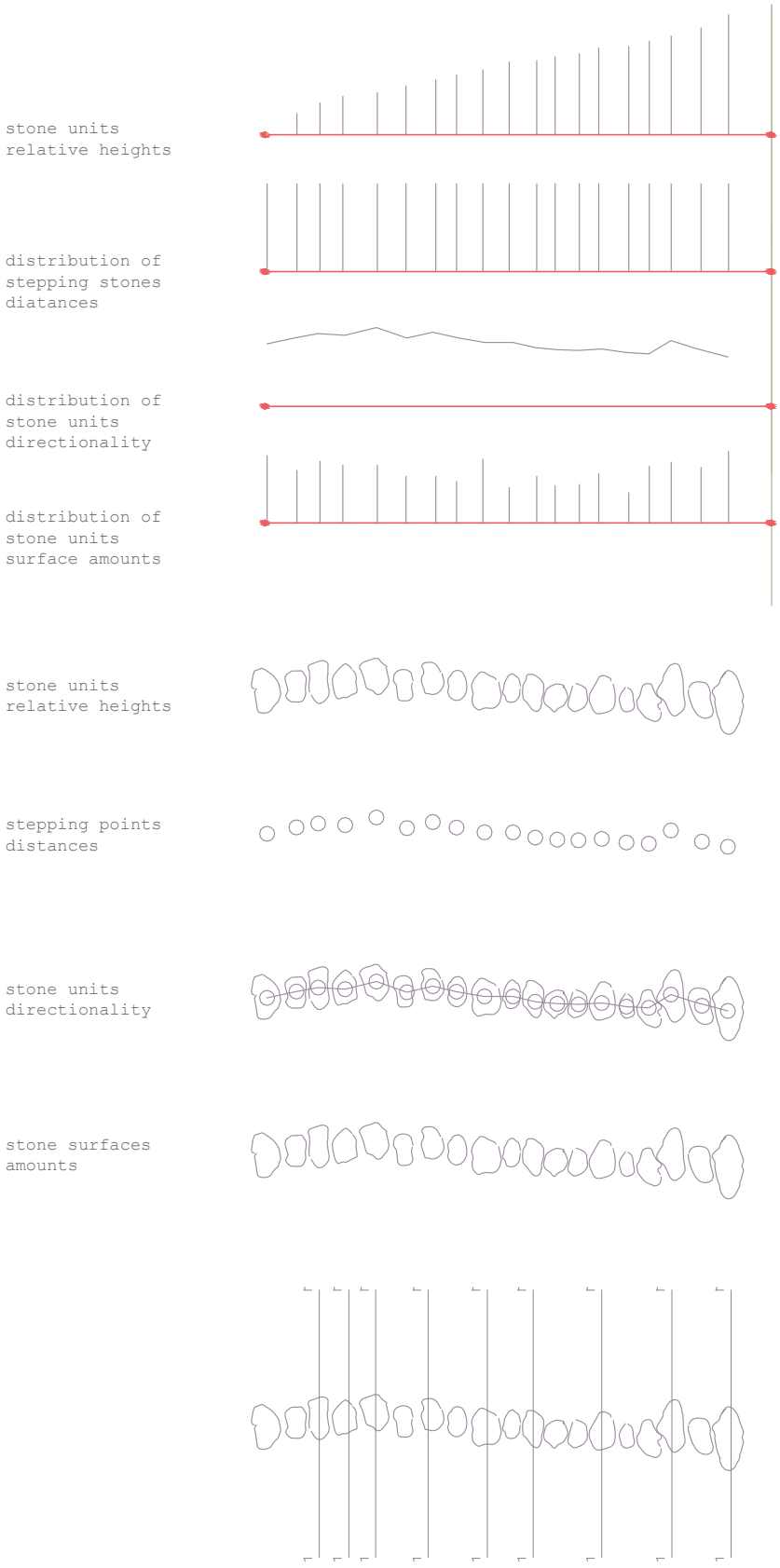


Fig.09: distribution of the [from left to right] stone formal elements and greenery formal elements along the tobeishi sub-pathway according to the certain paramters measured in selected human body stepping points



distribution of the tobeishi stone units according
to their surfaces amounts . directions . distance
among each of the units and among stepping points

Fig.10: distribution of the [from left to right] stone formal elements
along the tobeishi sub-pathway according to the certain paramters
measured in selected human body stepping points

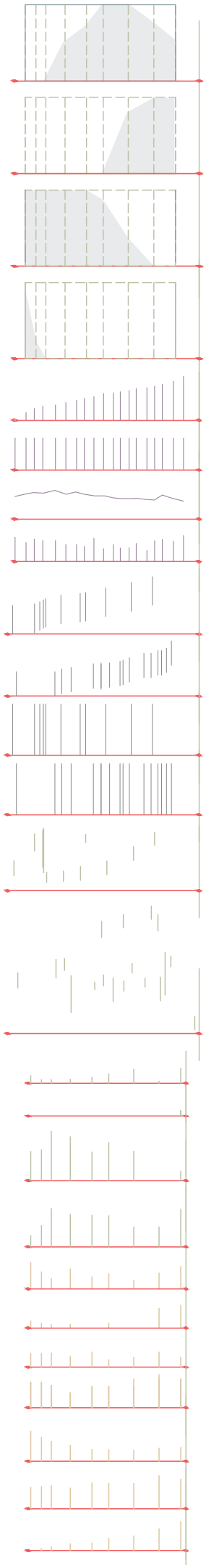


Fig.11: colliding diagram of all of the diagram rhythms
in relation to the distribution of the garden formal elements
in certain parameters along the ‘zero’ sub-pathway walking line

Fig.01: map of the sub-pathway position
within the overall pathway representation

‘ GREEN FENCE ’ sub-pathway











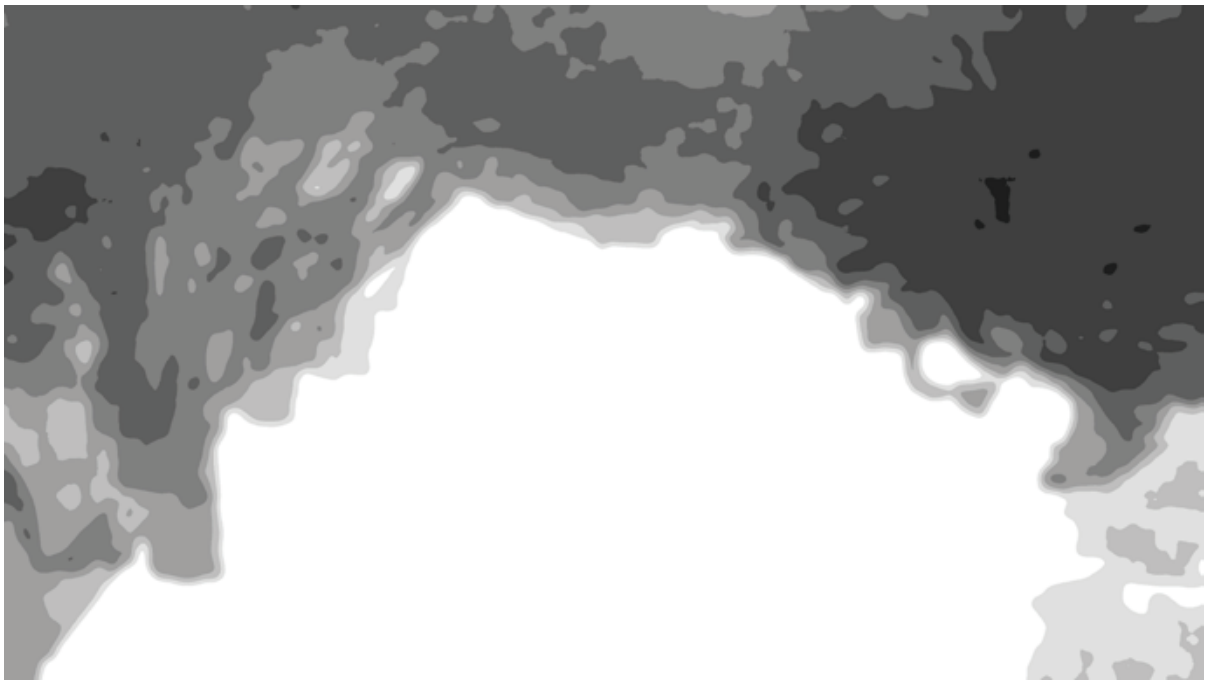



Fig.02 [left page]: [left section] pathway photos taken at certain stepping points along the 'zero' sub-pathway walking lane

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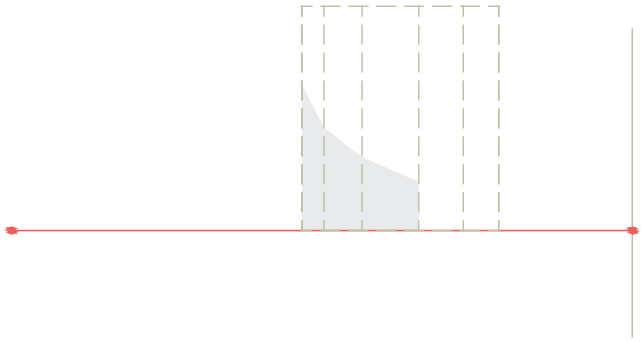
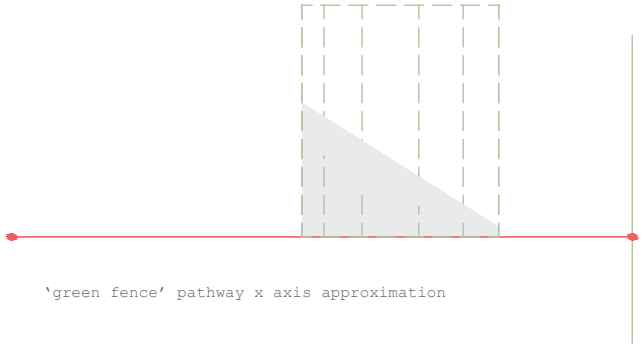


visibility progression
of the main shoin
building as a part
of the borrowed scenery

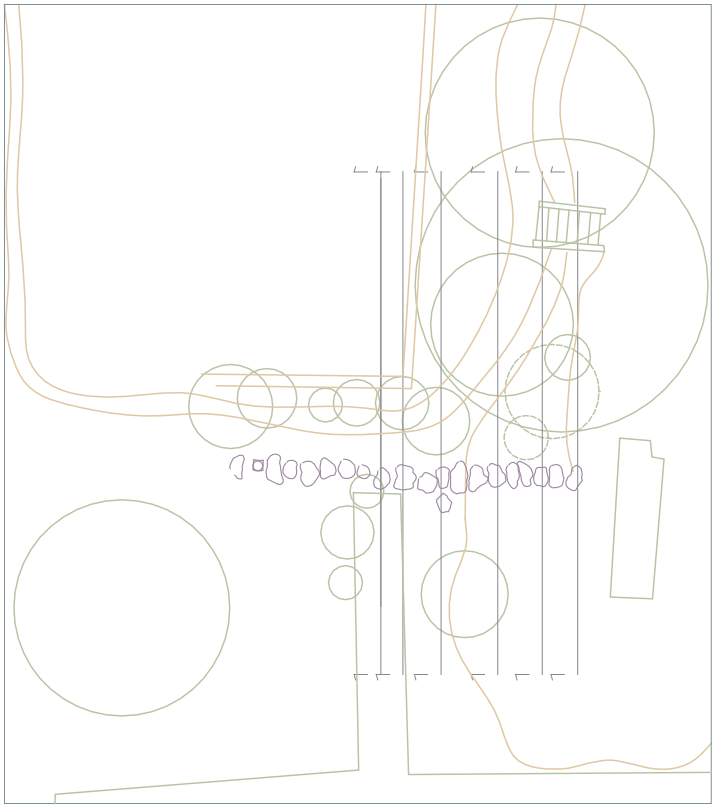


visibility progression
of the succeeding
tobeishi sub-pathway

'green fence' pathway x axis approximation

sub-pathway exit

sub-pathway entrance



'green fence'
sub-pathway plan

Fig.06: overall visibility of
certain garden formal elements,
measured during human walking activity
along the tobeishi pattern according
to the field of view greenery density
progression diagram

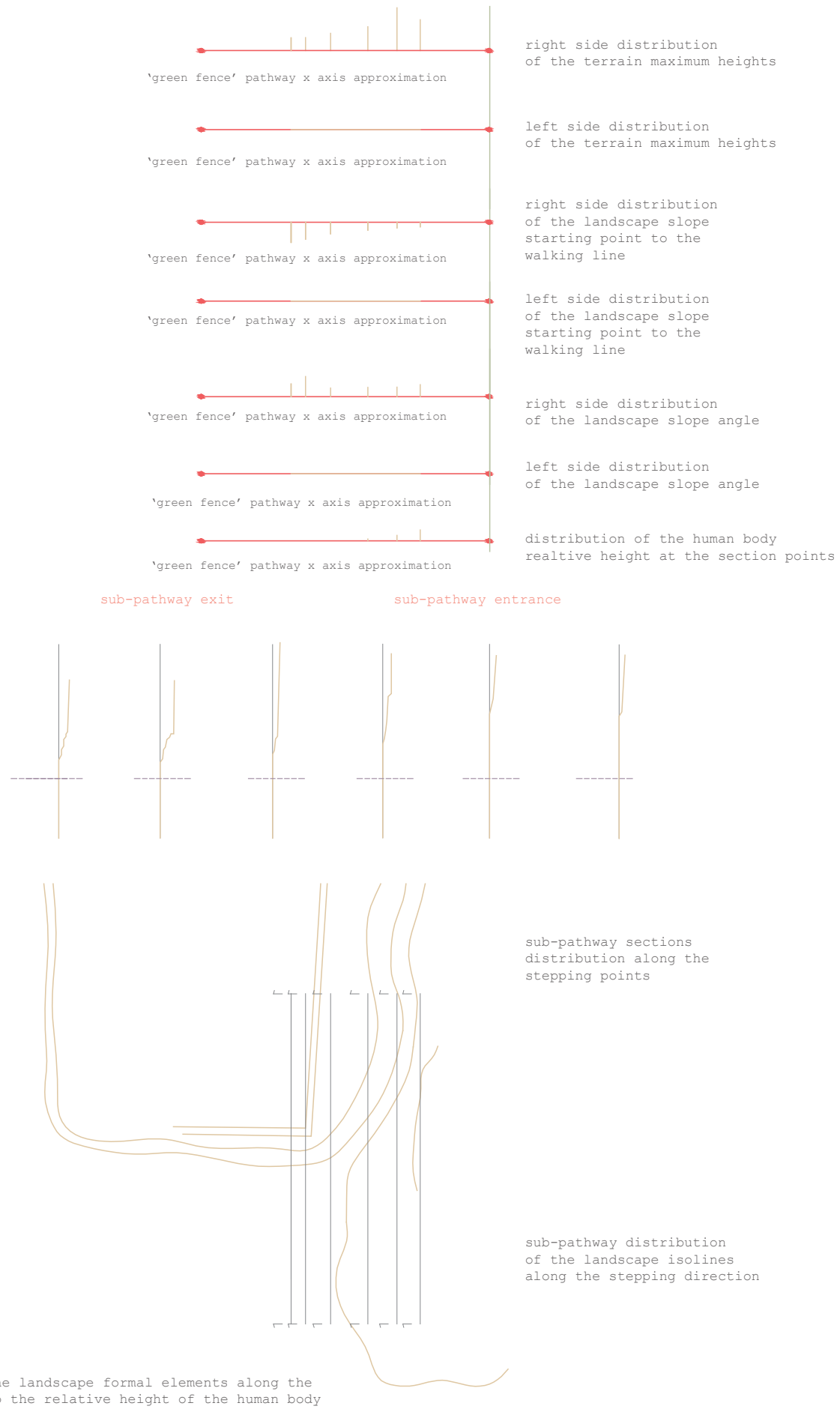
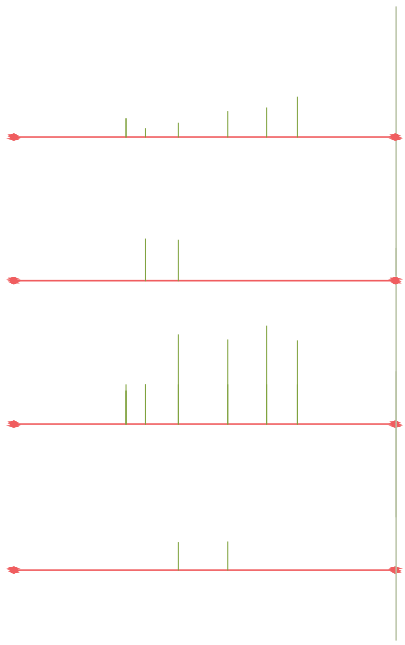


Fig.07: distribution of the landscape formal elements along the walking lane, according to the relative height of the human body position, terrain section angle distribution, the distance from the walking line to the point where the terrain changes its direction

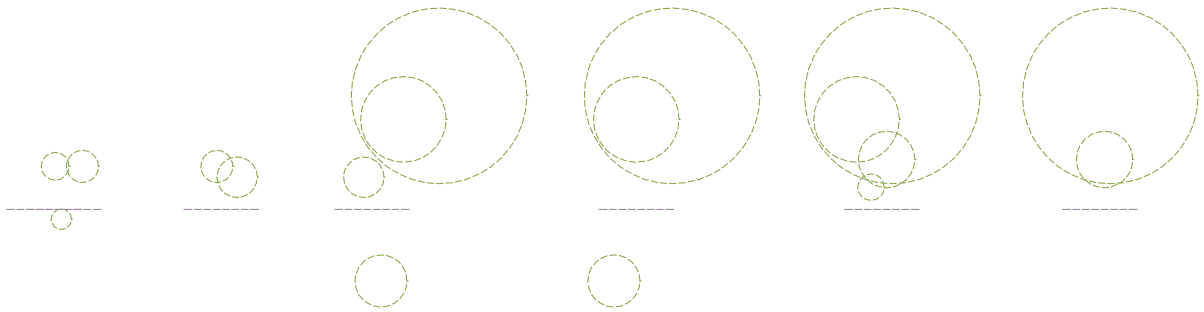


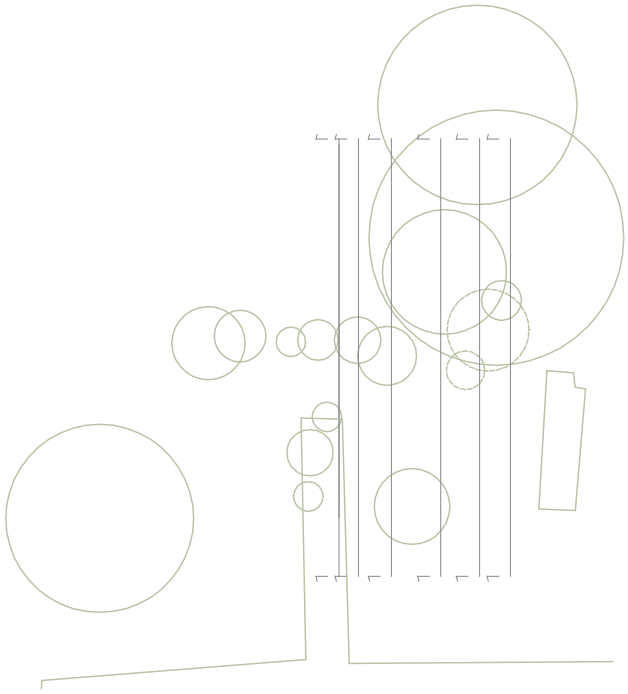
right side greenery distance from the walking line

left side greenery distance from the walking line

right side greenery surface amount

left side greenery surface amount

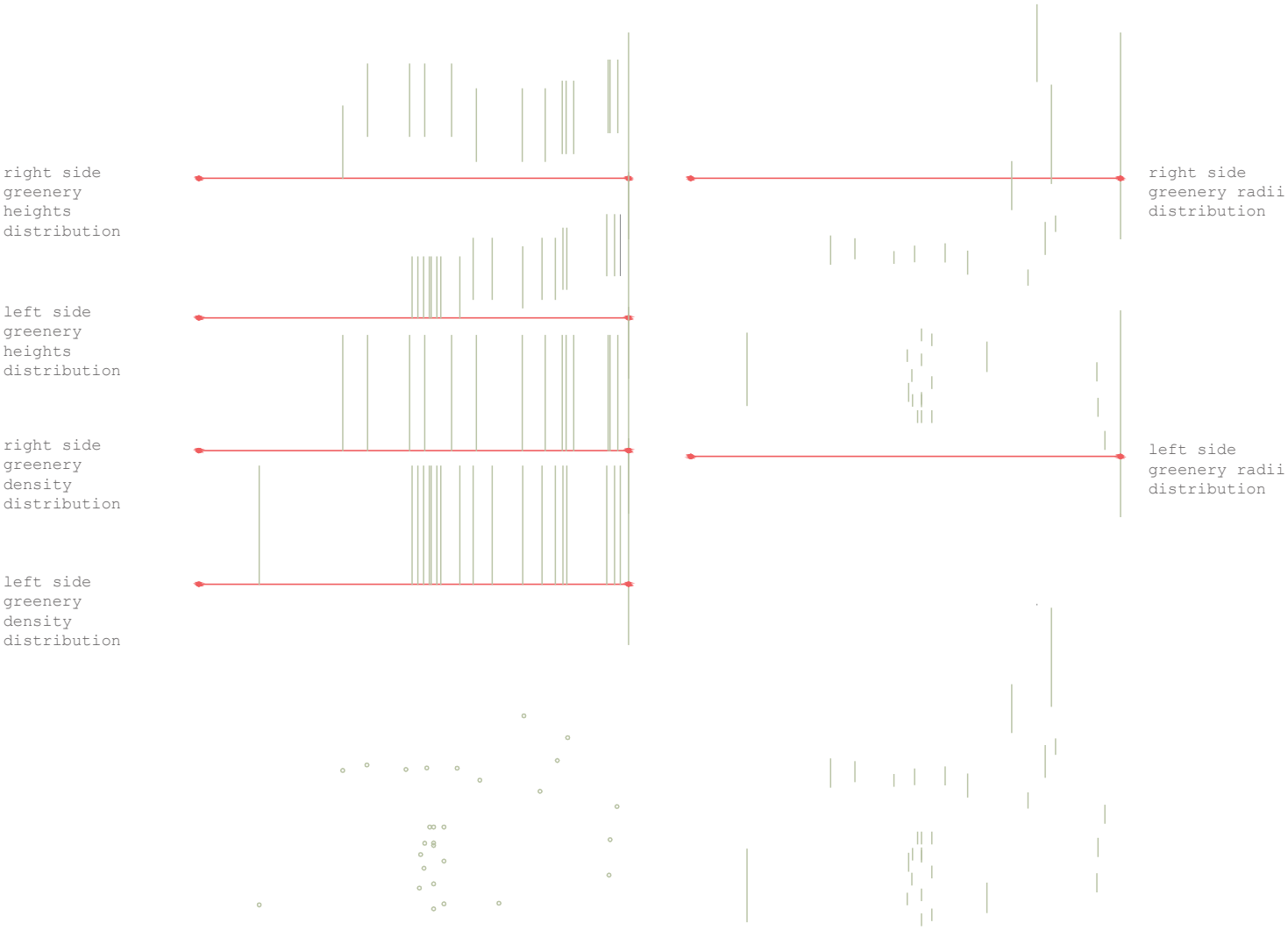




sub-pathway greenery formal elements sections distribution along the stepping points

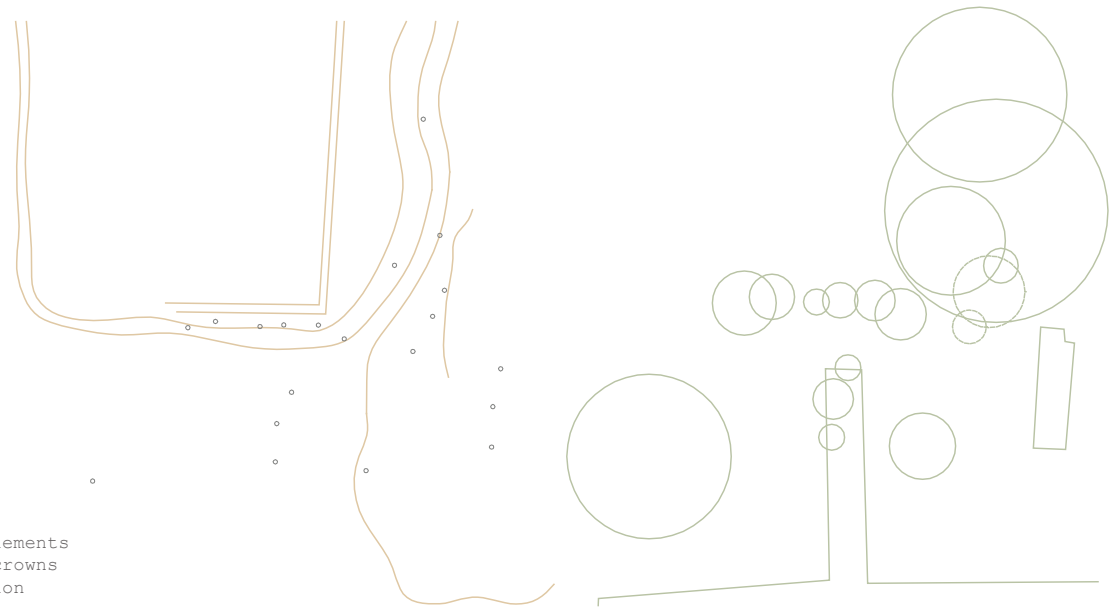
sub-pathway plan of the greenery formal elements distribution along the tobeishi sub-pathway

Fig.08: distribution of the greenery formal elements along the walking lane, according to the relative height of the human body position, terrain section angle distribution, the distance from the walking line to the point where the terrain changes its direction



greenery formal elements
trunk points distribution plan
along the stepping sub-pathway

greenery formal elements
radii distribution plan along
the stepping sub-pathway



greenery formal elements
density and tree crowns
heights distribution

greenery formal elements
distribution according to
their their radii sizes

Fig.09: distribution of the [from left to right] stone formal elements
and greenery formal elements along the tobeishi sub-pathway according
to the certain paramters measured in selected human body stepping points

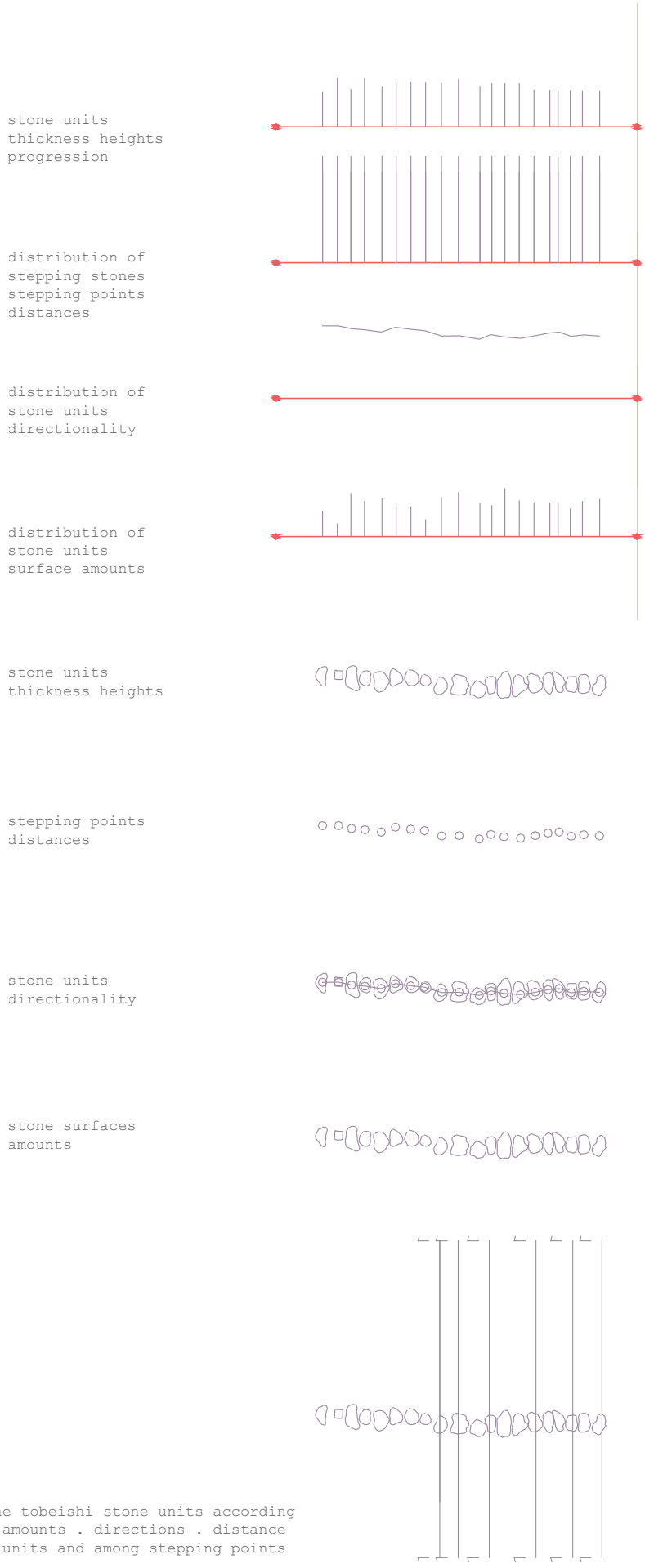


Fig.10: distribution of the [from left to right] stone formal elements along the tobeishi sub-pathway according to the certain paramters measured in selected human body stepping points

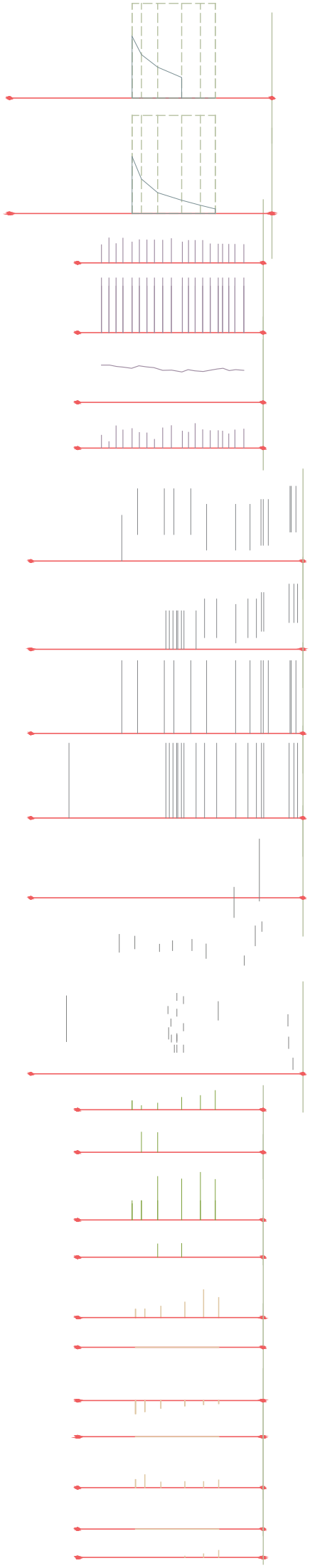
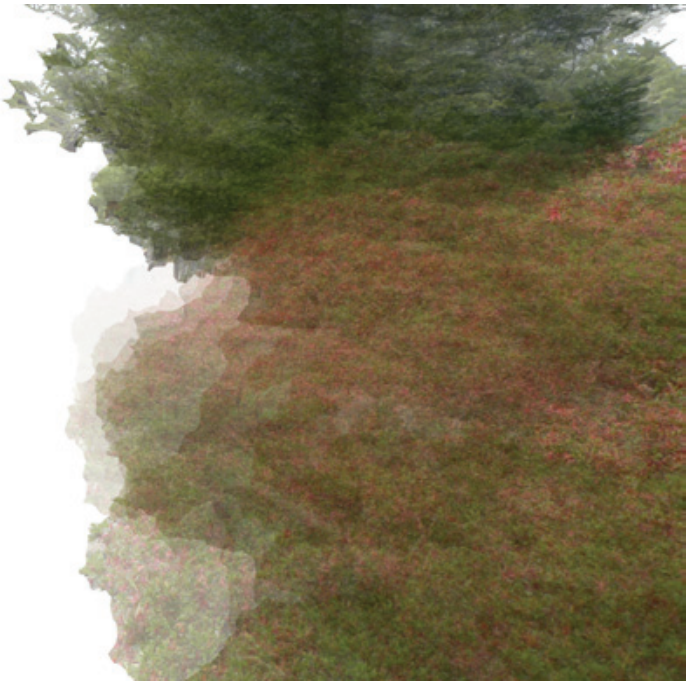


Fig.11: colliding diagram of all of the diagram rhythms
in relation to the distribution of the garden formal elements
in certain parameters along the ‘zero’ sub-pathway walking line

Fig.01: map of the sub-pathway position
within the overall pathway representation

‘ CLOSED RIGHT OPEN LEFT ’ sub-pathway

Fig.11: colliding diagram of all of [illegible] in relation to the distribution of [illegible] original elements in certain parameters along the [illegible] walking line



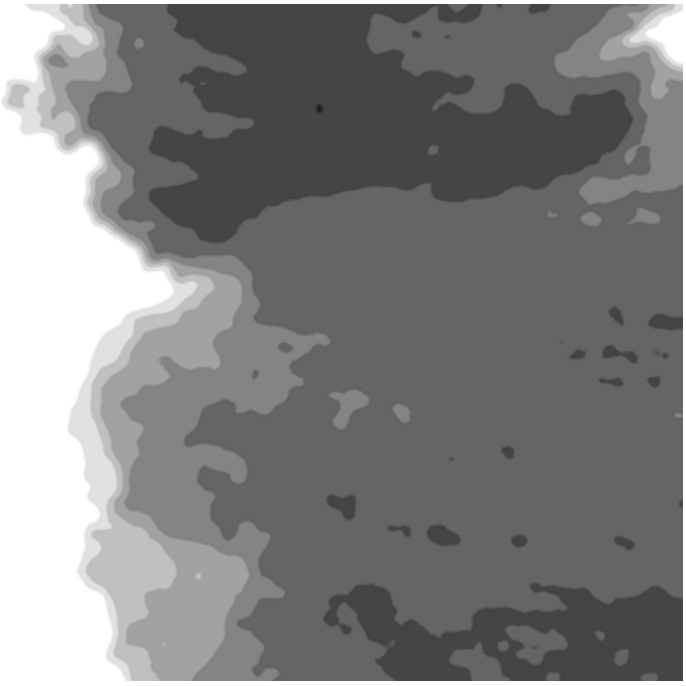


Fig.02 [left page]: [left section] pathway photos taken at certain stepping points along the 'zero' sub-pathway walking lane

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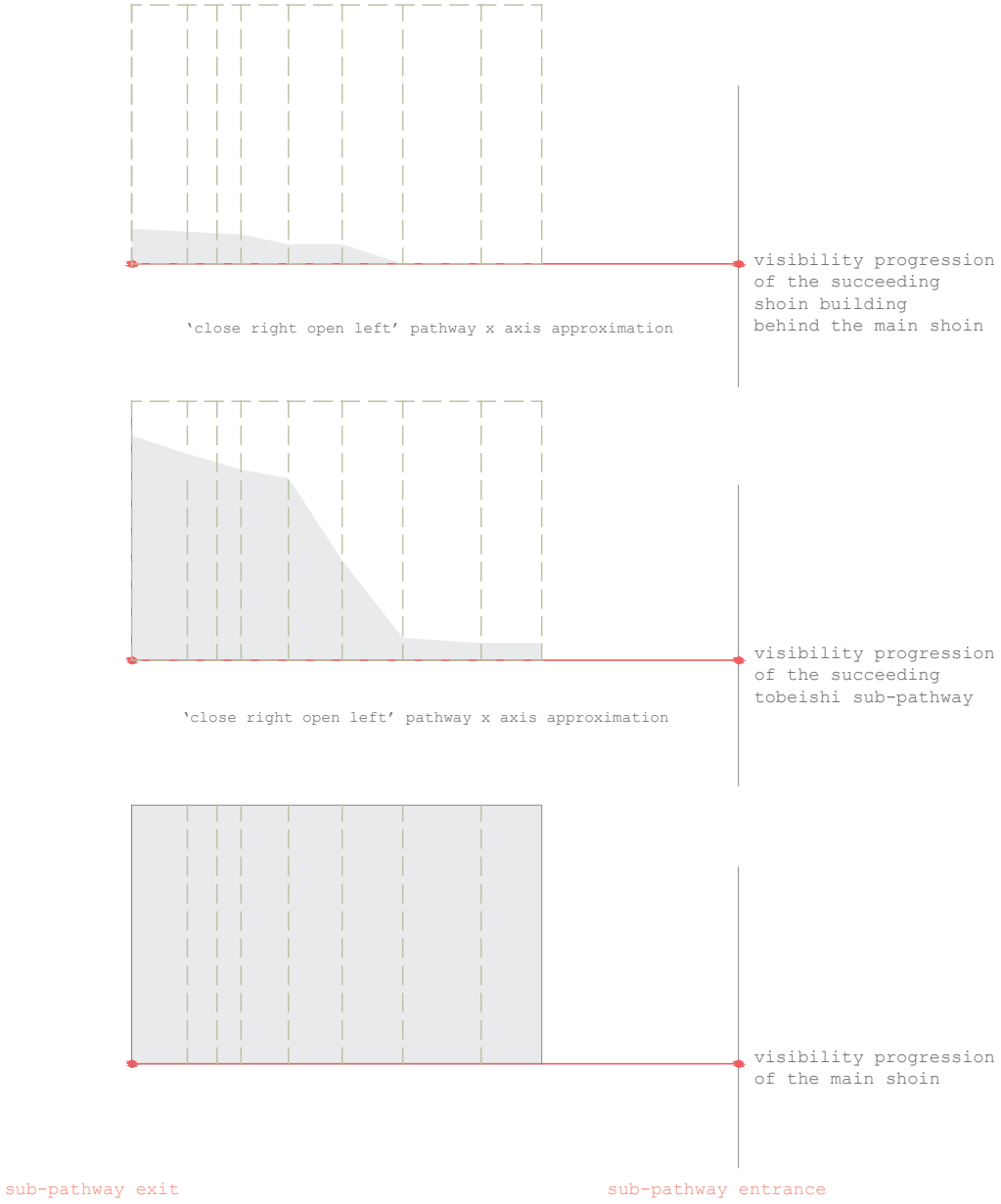


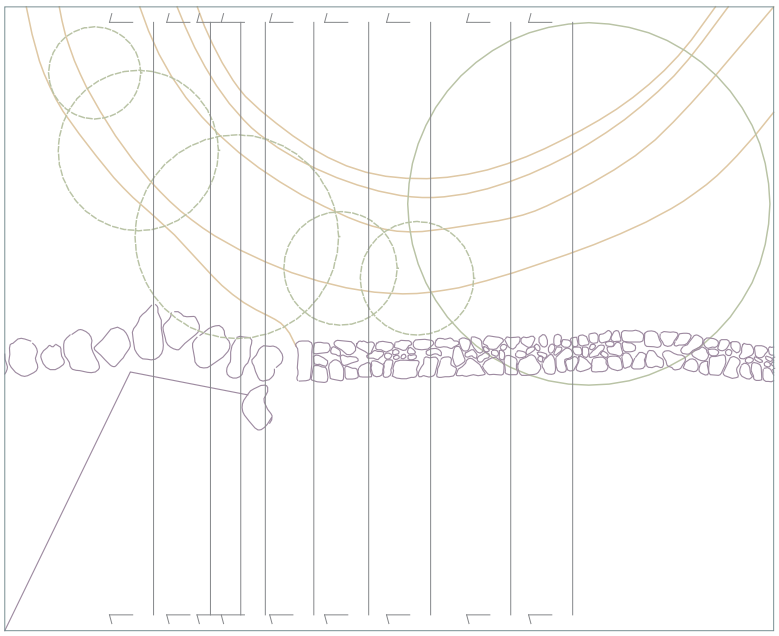


Fig.06: overall visibility of certain garden formal elements, measured during human walking activity along the tobeishi pattern according to the field of view greenery density progression diagram

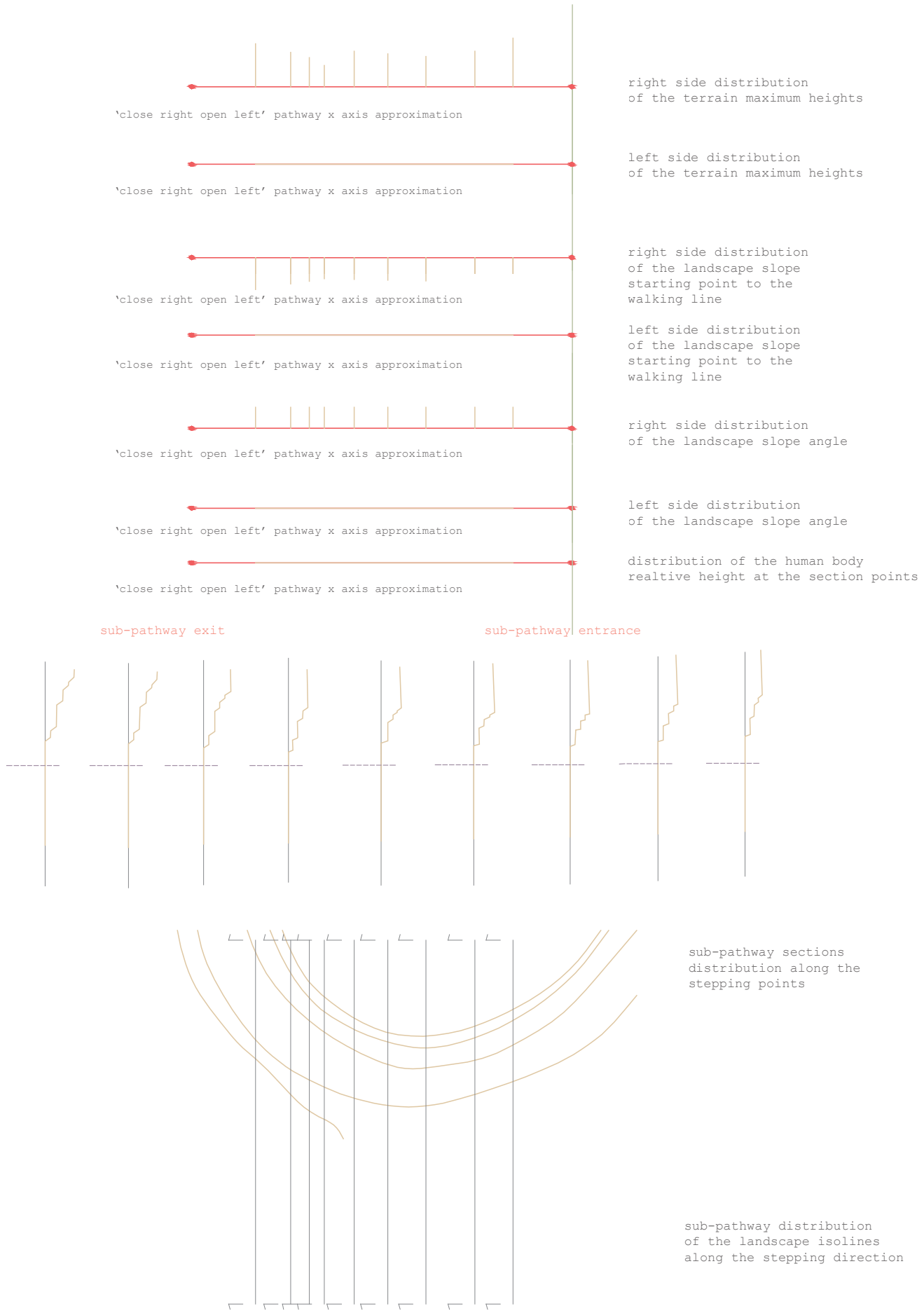
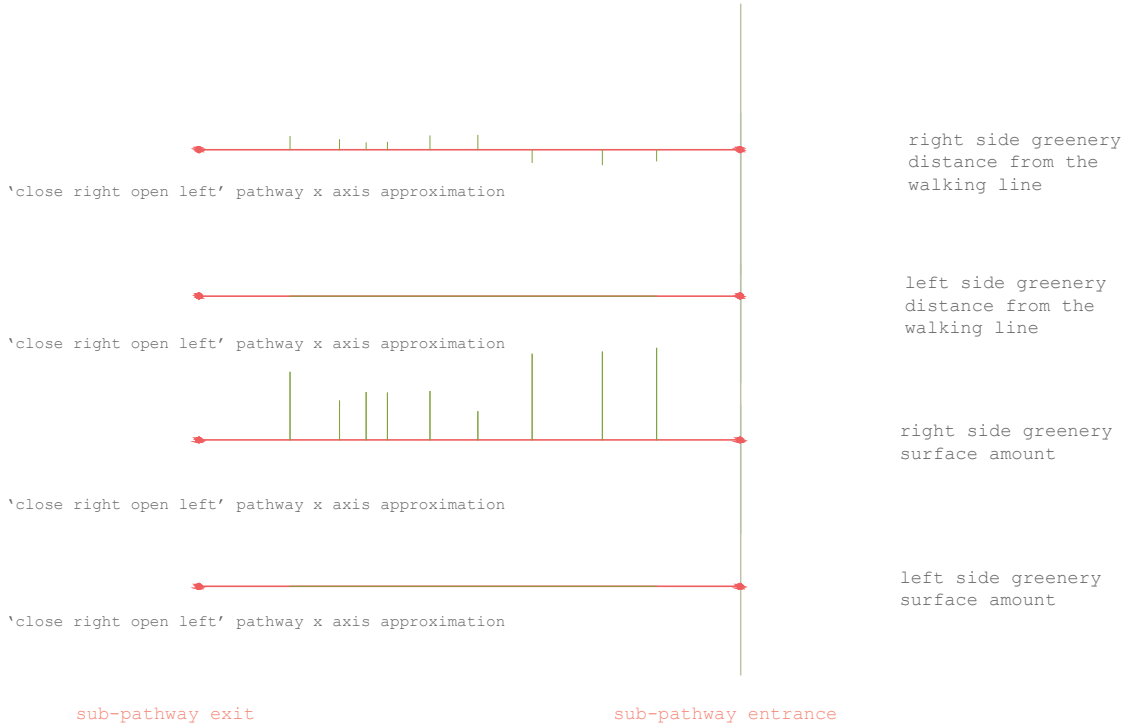
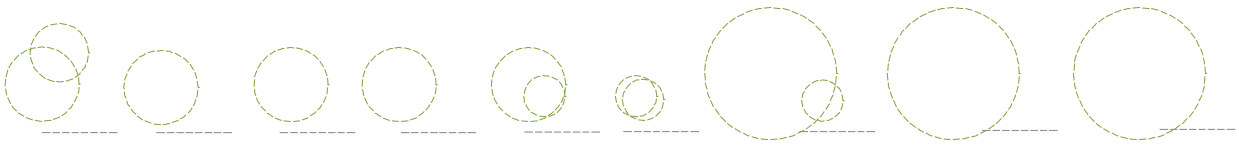
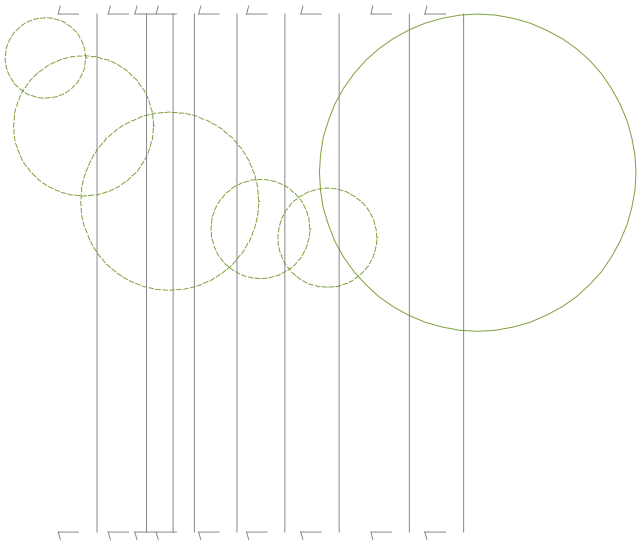


Fig.07: distribution of the landscape formal elements along the walking lane, according to the relative height of the human body position, terrain section angle distribution, the distance from the walking line to the point where the terrain changes its direction





sub-pathway greenery formal elements sections distribution along the stepping points



sub-pathway plan of the greenery formal elements distribution along the tobeishi sub-pathway

Fig.08: distribution of the greenery formal elements along the walking lane, according to the relative height of the human body position, terrain section angle distribution, the distance from the walking line to the point where the terrain changes its direction

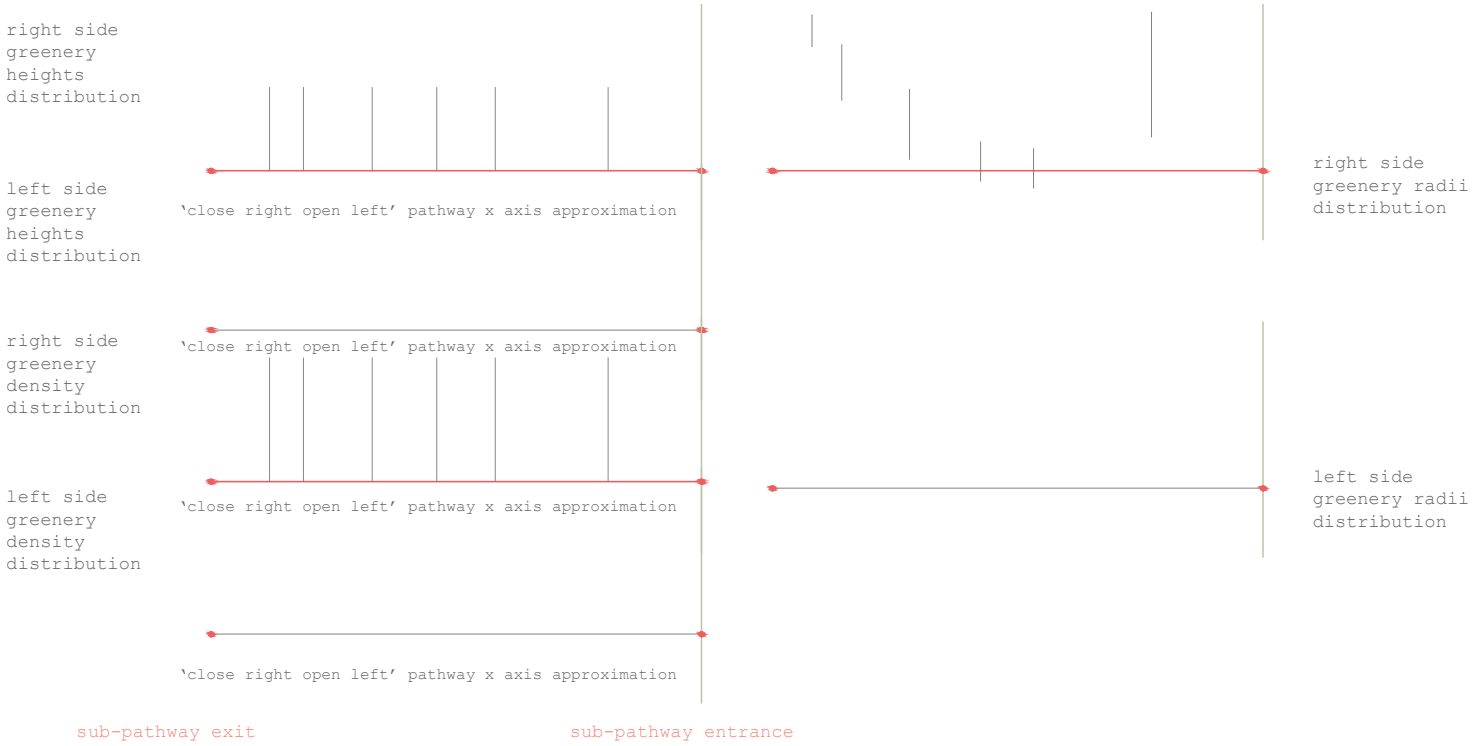
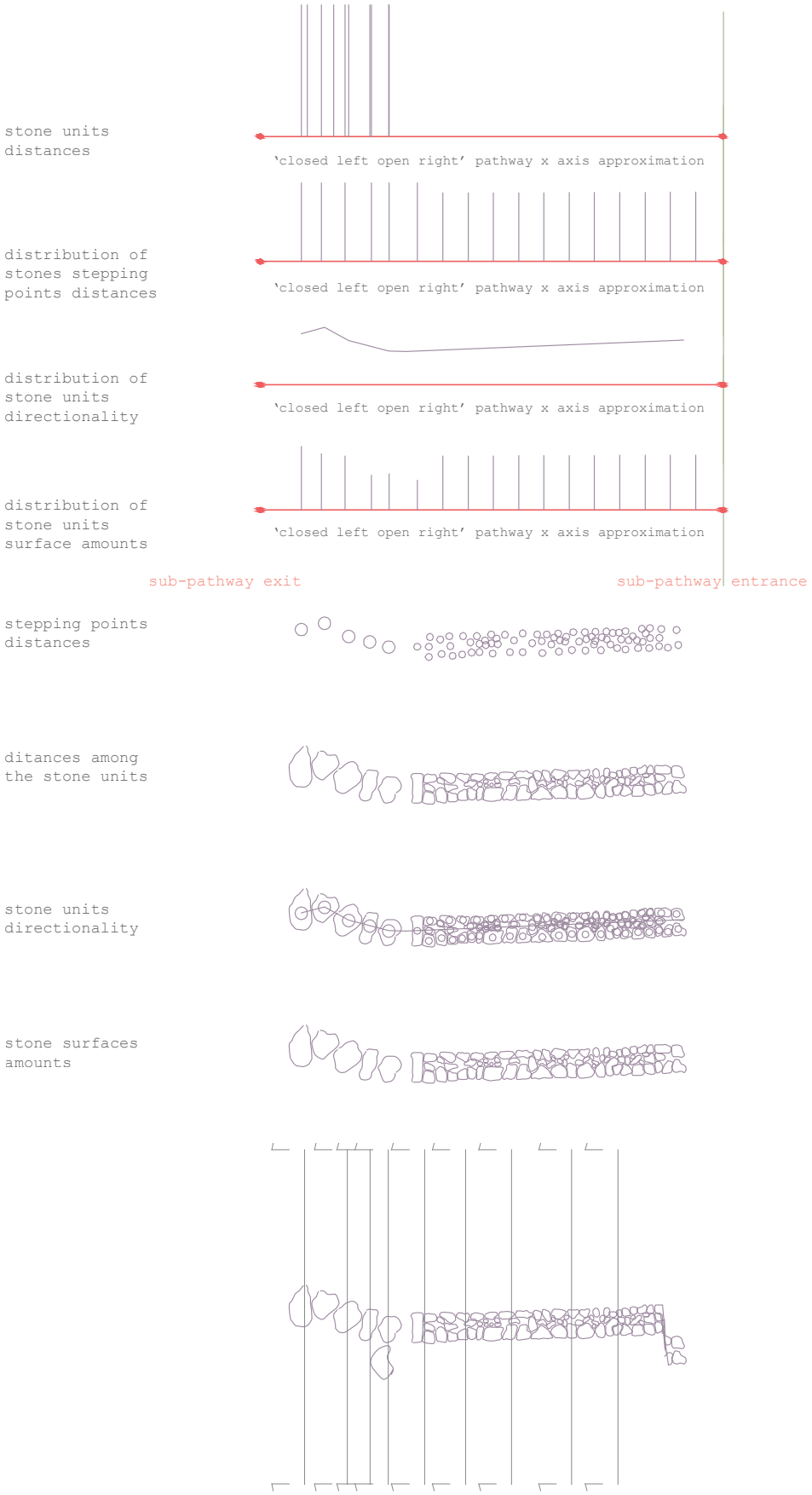


Fig.09: distribution of the [from left to right] stone formal elements and greenery formal elements along the tobeishi sub-pathway according to the certain paramters measured in selected human body stepping points



distribution of the tobeishi stone units according to their surfaces amounts . directions . distance among each of the units and among stepping points

Fig.10: distribution of the [from left to right] stone formal elements along the tobeishi sub-pathway according to the certain paramters measured in selected human body stepping points

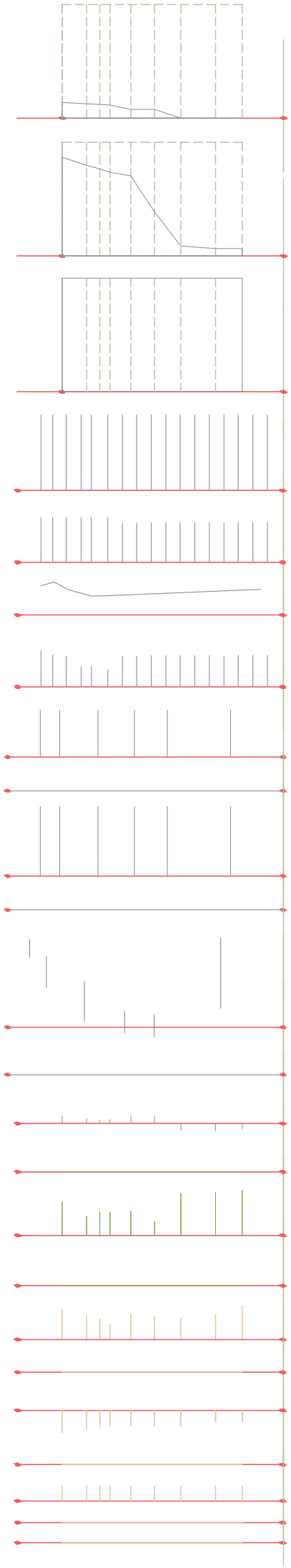


Fig.11: colliding diagram of all of the diagram rhythms
in relation to the distribution of the garden formal elements
in certain parameters along the ‘zero’ sub-pathway walking line

7.0 Conclusions on research results

7.1 Conclusion postulates

7.1.1 Polyrhythmia of the visual environment

‘Cobra, a San Bushman: enacting an encounter from the previous night between an ostrich and a black mamba. According to Bushman folklore, animals transmit their bodily and behavioral patterns to men, over distance and through time. Bushmen think of these somatic precognitions as letters that they receive and that make them move.’ [Kwinter, 1998, Assemblage 36: p.26]

Japanese masters of the *ukiyo-e* technique include anti-perspective and human emotional position as one of the experiential layers of their phenomenal, not perspective representations. Each of the screen layers in their works is represented with its phenomenal, atmospheric logic translated into the set of physical forms. Each of the *ukiyo-e* visual layers are influenced with the another layer atmosphere and events that are depicted.

The inexistence of perspective means that even the position of the master is just one of the layers of the physical forms that experience ones that are depicted. Other human at the screen could make their own *ukiyo-e* representations. Equally observed, artist world is just one of the layers within *Katsura Rikyu* garden which is perceptively influenced and can influence the other garden formal continuum physical forms in how they are visually perceived and accordingly cognitively understood.

Therefore, the whole garden complex can be observed as a rather relational, secondary forms continuum. Each of the physical forms can be observed as ‘foundational programs that families of forms share with one another and which determine both their visible kinships and their irreducible differences’ [Kwinter, 2005, p.95].

Their physical forms relationships are the mere relationship among the attributes that describe their physical form. These attributes expressions and data do not have to be expressed in same units and manners in order to be compared. If they belong to the same field of view that becomes in identical stepping coordinates, they can be accordingly compared as how they develop. Thus, they can be presented with that stepping pattern coordination in order to be simultaneously expressed and compared with those presentations. Proportions of their changes and rhythm of the drawings and graphs of their physical forms coexistence clearly show how they follow each other in their physical forms development in time. ‘This garden.. I have understood the rhythms: tree, flowers, birds and insects. They form a polyrhythmia with the surroundings: the simultaneity of the present [therefore of presence], the apparent immobility that contains one thousand and one movements’ [Lefebvre, 2004, p.17]. These rhythms within the *Katsura Rikyu* garden coexist without dividing territories of their separate existences. They contain the knowledge of the otherness that has to be gardened as such in order to keep the prevalence of the artificial formal logic which manipulates the natural ones. All of

their physical forms expressions [greeneries, landscape, tea room pavilions, and human beings] are adaptable toward each other without changing or penetrating into their own territories and existences attributes.

What releases their dependence at the level where it becomes understood by the third party is the stepping presence of a human being.‘We are social animals and our social and nervous apparatuses are products of the plain, its predator-prey relations, its complex territorialities, and its compound interactions’ [Kwinter, 1998, Assemblage 36: p.26].

Hence, one may put forward a human as a predator within the garden that releases all garden formal elements data and measures in what they are artificially gardened. ‘In the large, carnivorous, social predator these free-ranging energies are accumulated so densely, and placed under such pressure, that their ultimate effect is *to volatilize* space. It may be demonstrated, with the economist's or the ecologist's invertible equations, that concentration/volatilization of space always results in *an animal* [an organism, an event]’ [Kwinter, 1998, Assemblage 36: p.25] of one form or another.

7.1.2 Does one visually experience illusive dependencies of certain forms or their objective physical dependencies ?

The tension and relaxation which organize the space in wild are undoubtedly kept within *Katsura Rikyu*. Thus, human presence thoroughly releases the garden natural physical forms in their artificial logic which is indeed human oriented. Therefore, we can measure the behavior of the garden formal elements physical forms that occur and can be measured in their data expressions. To garden the garden complex means to keep these data formally independent but to maintain their proportion in time progression that corresponds to the human stepping walk along the garden pathway. The aim of the research thus becomes to classify the representation of the garden physical forms into the rhythms of data and to compare their development along the pathway stepping lane in certain walking time and in certain walking positions. There it can be understood the gardeners’ intention of how to establish the garden complex formal logic just with the careful classifications of certain data. Finally it becomes devised that *Katsura Rikyu* pathway stepping portions that occur in concrete times have rhythms, or rather are rhythms. Hereby they imply the relation of a time to a space into a localized time and a temporal space.

‘Rhythm is always linked to such and such a place.. which does not prevent it from being a time, which is to say an aspect of a movement or of a becoming’ [Bergson, 2004, p.89]. All of the physical forms, even though they don’t intrude each other’s singularity of their highest being origin, are in the constant state of tensions and confrontations. Walking human finds himself in the bespoke ‘harvesting of this perennial and primordial spatial tensions.. flows of females’ [Kwinter, 1998, Assemblage 36: p.30]. Hereby becomes the contraction of human memory into matter of garden physical forms which

represent themselves into the irregular ‘tensions and relaxations’ [Ibid] during the stepping period. They switch from visual to physical distances and complete absence from field of view. Dilation and ralenti move a walking human toward ‘the physical, the logical, and the perceptible [and thus the apprehensible]’ [Kwinter, 2005, p.36]. Hence, Pathway physical form zenith and visual impression final development in form of the tea room pavilions, comes into being but continues along its way. Here it is talked about the forces, not about the geometries and physical forms in their mere visual image representation, but rather what kind of intellectual processes they evoke and what kind of data and in which values they emerge with in human brain.

Garden formal elements physical relations ‘pass out of phase with itself, to become something different, to disaggregate and to become momentarily free to enter into new alliances’ Raw information always seeks the feminine combinatory, the *khre-hodos* [the directed route, or chreod] or the Will to Power [feminine principle] whose sole purpose is to guide preexisting forces and connect them to what it is in their power to do’ [Kwinter, 1998, Assemblage 36: p.39]. Therefore, the mere physical and visual form logics are nothing more than an illusion and they can never be specified, ‘arrested’ [Ibid] as they really are. Since the visual perception influences human body to react with primordial body mechanics, it enters the realm of intellect, cognitive imagination.

‘Insofar as artistic expression gives clear shape to our feelings it expresses a depth of self not accessible to the activity of intellect. Truth values arise in judgment, and aesthetic values arise in imagination. Of the two, imagination is the deeper level and therefore the more fundamental’ [Nishida, 1997, p.42].

7.2 **Conclusion results :** Dependencies of the physical forms attributes and their influence on visual experience acquired in *tobiishi* stones

Garden physical forms, both natural and artificial, are engaged in mutual physical relationship with their characteristic attributes. They establish certain visual experience about their relations that create visual environment prior tea ceremony engagement of the visitor. This kind of condition is achieved with those attributes acquiring certain measures. Only with those values and certain proportion in their changes, certain artificially envisioned design method occurs.

Therefore, these physical forms are measured in their research relevant attributes in 12 research cases. Thus, every attribute acquires certain value tendency, which is described in tables and charts, within each of *tobiishi* research case. The amount of their application determines dominance of their application and certain visual experience they condition.

Finally, there appear all dominant attributes measures. Their common dominance establishes the most often applied design method in order to create certain visual experience. This common visual experience embraces each separate effect of the most dominant attributes measures.

7.2.1 **Table and chart classification** : Attributes and their measures with separate conclusions on their influence on visual experience

Garden formal element: Tobiishi stepping stones

Attribute: **Progression of visual experience on greenery in gradient diagram**

THERE ARE 12 TOBIISHI PATH RESEARCH CASES.
EACH PATH HAS 2 , LEFT AND RIGHT SIDE- OBJECT OF VISUAL EXPERIENCE.

OVERALL THERE ARE 24 NR. OF CASES

Influence of attribute on visual experience in tobiishi stones:

Conclusions based on classification of research results in table and chart

Stepping stones' sub-pathway numeration	1		2		3		4		5		6		7		8		9		10		11		12		Nr.	Ratio [%]
PROGRESSION OF VISUAL EXPERIENCES ON GRENERIES OBSERVED FROM STEPPING STONES' COORDINATES	Field of view side																									
Attributes /Orientation →	Left	Right	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R		
Gradual progression [GP]	•	•	•	•			•	•	•										•	•		•		•	11	45 %
Sudden drop [SD]					•								•				•				•				4	17 %
Absence [A]												•											•		2	8 %
Complete Coverage [CC]						•				•	•			•	•	•		•							7	30 %

Figure 1: Table on greenery visual impression development, given by superposition of field of view captions photographed in stepping stones coordinates at both sides of the visual cone;
attributes that are attached physically depict how greeneries' physical advancement is staged to be successively visually experienced in tobiishi coordinates;

1st separate explanatory for table and chart figures :

Field of view acquired from tobiishi stepping stones units is separated in left and right sides that successively develop in each stone. They are mostly dominated with greenery, landscape and tea houses that are mutually superposed. Greeneries are the most dominant manipulated to visually reveal or enclose what stand behind them while observing from tobiishi points. However, table and chart represent 4 attributes that depict how these greeneries mutually suceed each other to specifically, in 4 manners, reveal or enclose intended visures.

Gradual progression is mostly applied in amount of 45% [11 cases]. That means that dominant design intention as a research result is to use greenery descreasingly gradual progression, in order to gradually reveal what stands behind their bodies. Total absence of greenery at one of field of view sides is minor [8% - 2 cases]. However, sudden absence of greenery observed from last portion of tobiishi stepping units is present in 4 cases [17%]. They result in sudden and complete prospect toward certain object.

Significant amount of 7 cases at 30% is attributed with Complete coverage of field of view with greenery progression, toward what stands behind that greenery. The garden constructor intentionally made that greenery view solid with constant visual repetition of greenery bodies observed from tobiishi stones' units.

Progression of Visual Experiences on Greenery

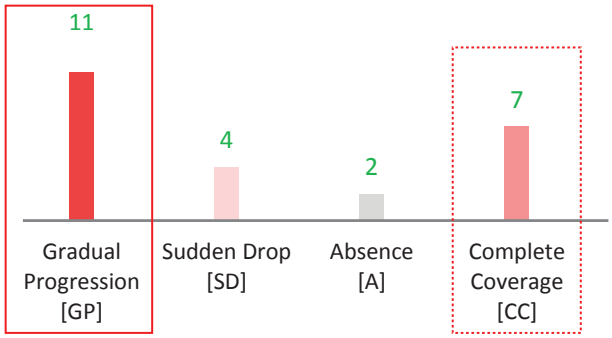


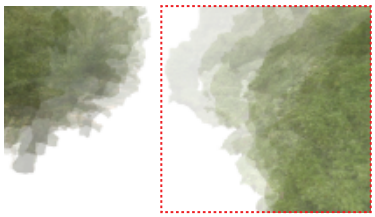
Figure 2: Chart on greenery visual impression with number and quantity attached to characters of its development in stepping stones' sub-pathways visually developped in their right and left sides;

Gradual progression [GP]

Explanations of attributes :

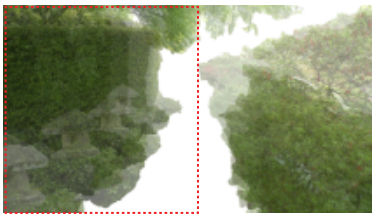
Field of view side : LEFT RIGHT

Greenery formal elements are successivelly positioned in front of each other with gradual revealing of equal parts of their physical forms. They constitute field of view superposition image, which resembles design logic. That logic is to increasingly visually reveal what is covered at that side of greenery, while one steps along tobiishi units sub-pathway;
Certain view is revealed in an increasing proportion oppositely equal to the decreasing amount of greenery in field of view plane;



Sudden drop [SD]

Greenery formal elements are successivelly positioned while completely mutually covering other ones' bodies;
Nonetheless, after several tobiishi positioned captiones one visually experiences, they lead to a final one without any greenery body at that side.
That caption suddenly discloses complete view toward formal elements that stood behind prior greeneries;



Absence [A]

These field of view captions are exempted from presence of any greenery formal elements at those sides of the field;
Their absence makes visual experiences from tobiishi units to be complete and continuous about what stands in front of the garden viewer in relation those units coordinates;

Complete Coverage [CC]

Greenery formal elements complete absolutely covered sides of field of view plane, acquired along certain tobiishi sub-pathway sides.
They successively mutually cover in order to absolutely disclose any kind of visual experience about formal elements that stand behind;
Outlines of their repetitions remain constant;

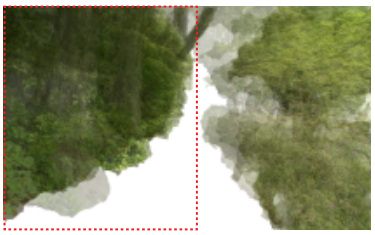


Figure 3: Samples of greeneries visual progressions superposition assembled in a single caption in reseach design chapter: quality of progressions can be understood as the praphical quality of each of the captions [separate explanations are applied for each case;

Garden formal element: Greenery

Attribute: **Greenery crown size in plan**

Influence of attribute on visual experience in tobiishi stones:
Conclusions based on classification of research results in table and chart

Stepping stones' sub-pathway numeration	1		2		3		4		5		6		7		8		9		10		11		12		Nr.	Ratio [%]
GREENERY CROWNS' SIZES ALONG STEPPING STONES' PATHWAY	Field of view side																									
Attributes /Orientation →	Left	Right	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R		
Increase [I]			•	•														•							3	13 %
Decrease [D]						•								•			•			•		•			5	21 %
Decrease – Increase [DI]	•	•			•														•					•	5	21 %
Increase – Decrease [ID]							•		•		•		•												4	16 %
Absence [A]								•		•											•		•		4	16 %
Steady values [SV]												•			•	•									3	13 %

Figure 4: Table on greenery crowns' sizes development observed from stepping stones coordinates at both sides of tobiishi sub-pathway and presented in plans; all of the attributes relate to the tree crowns' radii changes-behavior in size as one advances at tobiishi exactly directed stepping lane;

2nd separate explanatory for table and chart figures :

The most commonly used methods in selection of greenery crowns' sizes along tobiishi sub-pathway sides are 'decrease' [D] and 'decrease-increase' [DI] attributes.
They are applied with amounts of 21% each that equal 5 cases. That means that the garden constructor dominant intention was to create certain visual experiences with using these methods.
While visitor steps along tobiishi lane, its field of view side, applied with D method, gradually/instantly reveals certain vista.
Otherwise, in DI method, greenery volumes start to increase in second part of the path and gradually/instantly disclose the view after initial tendency to decrase in their values.
However, spread of the greenery volumes in their following changes in sizes is intentional. They are positioned at the side of tobiishi stepping lanes in order to acquire certain revealing or covering visual experiences.
'Increase-decrease' and 'absence' methods are applied separately in 4 cases with 16%. In ID method crowns' sizes increase and firmly close the view toward what stands behind the volumes. In second part of path, they decrease again and gradually open the view to another scenery. O contrary, in A method, the view is completely open toward certain scenery at that field of view side.
'Steady values' and 'increase' of greenery crowns are lastly applied in 13% of cases. In SV method greenery remains constant in its size and constantly closes the view. In 'I' method greenery sizes grows aside of tobiishi pathway. Thus it leads toward complete visual coverage at that side of the stepping lane.

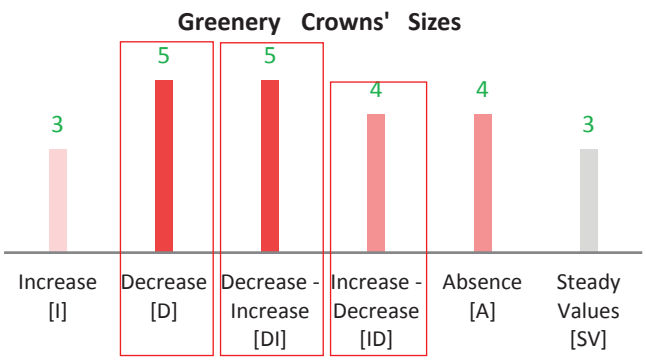


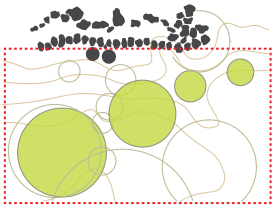
Figure 5: Chart on greenery crowns' sizes changes in values: numbers proportionally depict which of those sizes' characteristic progressions prevails as the most common visual experience counted at both sides of tobiishi stepping sub-pathway;

Increase [I]

STEPPING PATH AXIS

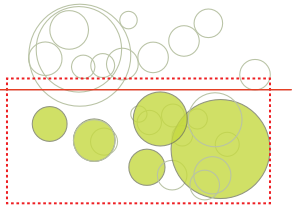
Character of radii sizes changes

Greenery radii gradually or suddenly increase with their values with tobiishi units succession along sub-pathway; that makes close or distant view to be intentionally covered with higher volumes of greenery;



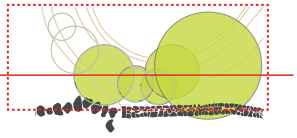
Decrease [D]

Greenery volumes [crowns and bushes] decrease in their sizes parallely observed to tobiishi lined sub-pathway; certain close or distant views become gradually revealed while successively observed from tobiishi stones;



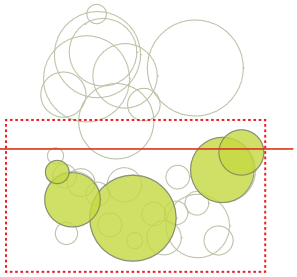
Decrease – Increase [DI]

Crowns' sizes gradually/instantly decrease and open succint view toward certain scenery observed from tobiishi points; afterwards, they gradually/instantly increase and close further view while retrieving starting sizes;



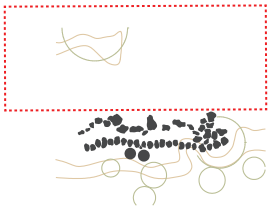
Increase – Decrease [ID]

Crowns' sizes gradually/instantly increase and firmly close view toward certain scenery observed from tobiishi points; afterwards, they gradually/instantly decrease and open certain view while retrieving starting sizes;



Absence [A]

These plans/field of view captions are exempted from presence of any greenery formal elements at those sides of the field;



Steady values [SV]

Greenery volumes are constant in their sizes set at the side of tobiishi sub-pathway;
thereby they constantly close any kind of directly open view toward certain garden scenery or formal element [mainly tea houses];

Figure 6: Samples of greeneries crowns' sizes changes: samples are represented in exempted plans from the garden tobiishi sub-pathway case studies;
quality of the crowns' sizes changes in values is obvious in drawings' encircled parts;

Attribute: **Distance between tree trunks**

Influence of attribute on visual experience in tobiishi stones:

Conclusions based on classification of research results in table and chart

Stepping stones' sub-pathway numeration	1		2		3		4		5		6		7		8		9		10		11		12		Nr.	Ratio [%]
GREENERY DISTANCES FROM STEPPING STONES' PATHWAY	Field of view side																									
Attributes /Orientation →	Left	Right	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R		
Increase [I]	•					•	•				•						•								5	21 %
Decrease [D]				•	•									•	•					•		•			6	25 %
Decrease – Increase [DI]			•						•															•	3	13 %
Increase – Decrease [ID]		•						•		•			•					•			•				6	25 %
Absence [A]												•				•			•				•		4	16 %
Steady values [SV]																									0	0 %

Figure 7: Table on greenery distances from the stepping stones sub-pathway axis that connects tobiishi stones' units;
table notified attributes relate to visitors' visual experience of their distances to side greeneries, which is furthermore represented and confirmed in plans at the page side;

3rd separate explanatory for table and chart figures :

'Decrease' and 'Increase-Decrease' are the most often used methods with 25% [6 cases] applied in greenery distances from garden tobiishi stepping paths. They are almost equally [21%] followed with 'increase' method.
Respectively, in D method, greenery crowns are successively set closer to the visitor stepping lane. Thereby, they tend to close the view at that field of view side. Depending on the other greenery attributes [landscape height, greenery crowns' sizes, position of the observed scenery] they completely or partially close the view.
In ID method, certain scenery is gradually revealed as the distances of greenery bodies firstly increase. In second part of the path, they decrease and start closing the view toward complete coverage.
In I method, the distance gradually increase and therefore gradually open the view to the visitor who steps along tobiishi path.
'Absence' method is applied with 16 %, in 4 cases of measured distances in research cases. Since there is no greenery at that side of field of view, the view completely revealed.
Two times less applied than D and ID method, DI method is present in 13% [3 cases]. While distances among the stepping visitor and greenery bodies firstly decreases and close the middle path caption depth, in second part of the lane they increase. The view is gradually/instantly inentionally recovered toward another certain garden scenery.
The changes in distances and possibility to obtain certain view is undoubtedly followed with changes in physical attributes attached to tobiishi stones' units.

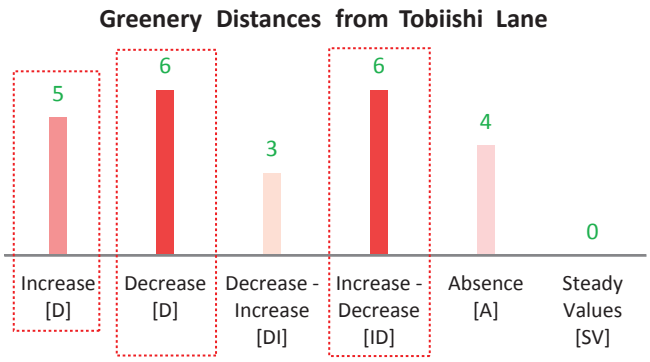


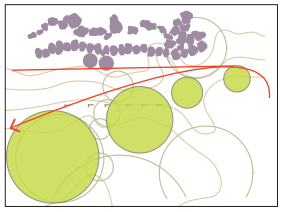
Figure 8: Chart on greenery distances from tobiishi lane : it represents the number of cases one can physically experience during stepping tour through the garden, according to exactly determined attributes of those distances variations one can visually perceive;

Increase [I]

Distance oscilations

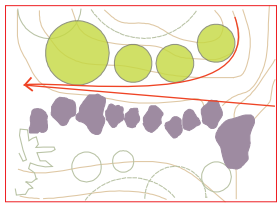
Diagram on greenery mutual distances

Greenery crowns become more distant to tobiishi pathway while visitor steps along the stones' units;
thereby, certain view is open toward tea houses scenery or upcoming tobiishi sub-pathway;



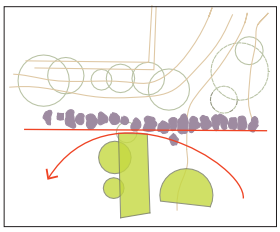
Decrease [D]

Crowns become successively closer to the stepping stones' path. This change in distance measures is obvious in plan and as well in field of view captions. It brings a succint change in sight on that side of lane that gradually encloses;



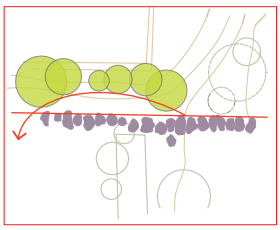
Decrease – Increase [DI]

An array of greenery formal elements become closer to the stepping stones' pathway while visitor advances forward. It makes the view toward second plan scenery successively closed. In second half of tobiishi path the greenery distances increase and disclose the view;



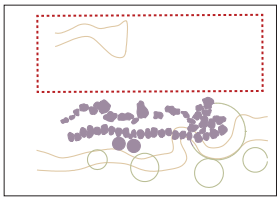
Increase– Decrease [ID]

Greenery crowns become more distant to tobiishi subpathway as one steps along the lane. Succintly, they open the view toward certain garden scenery at the middle lane field of view captions. However, the view closes along with the distances that afterwards gradually decrease;



Absence [A]

Distances among stepping stones' lane and greenery formal elements cannot be measured since those elements do not exist at these kind of field of view sides;
thereby the view toward certain garden portion is inevitably open;



Steady values [SV]

The distances are constant in their sizes set at the side of tobiishi sub-pathway. Thereby they constantly close or keep open any kind of directly open view toward certain garden scenery or formal element [mainly tea houses];

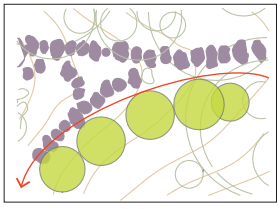


Figure 9: Samples of greenery distances changes in values measured from tobiishi stepping lanes: changes are presented in plans whereas crowns' arrays occupy adequate disposition in order to make attributes visually understandable in plans [as well as in field of view];

Garden formal element: Greenery

Attribute: **Greenery trunks density**

Influence of attribute on visual experience in tobiishi stones:
Conclusions based on classification of research results in table and chart

Stepping stones' sub-pathway numeration		1		2		3		4		5		6		7		8		9		10		11		12		Nr.	Ratio [%]	
GREENERY DENSITIES ALONG STEPPING STONES' PATHWAY		Field of view side																										
Attributes /Orientation →		Left	Right	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R			
Increase [I]																										0	0 %	
Increase to zero [IT0]									•																	1	4 %	
Decrease [D]			•																							1	4 %	
Decrease – Increase [DI]	Decrease-Increase [DI] TYPE			•	•					•																3	13 %	38 %
Decrease-Increase-Decrease-Increase [DIDI]						•	•										•	•				•	•			6	25 %	
Increase-Decrease-Increase-Decrease [IDID]	Increase-Decrease [ID] TYPE							•				•		•		•			•	•	•				•	8	33 %	33 %
Increase – Decrease [ID]																										0	0 %	
Absence [A]											•		•													2	8 %	
Steady values [SV]		•													•									•		3	13 %	

Figure 10: Table on greenery crowns densities that develops with their tree trunks coordinates: 7 methods are presented with percentage ration and number of cases they are applied. Fourth and fifth methods divided in 2 sub-methods with their separate ration and number of cases.
Point mark which method is applied in which research case number. Furthemore, one can finely grasp in connectuon between method dominances and certain visual experiences they acquire;

Greenery density increase at certain side of tobiishi path: it is measured in distances among tree trunks that become more closer as visitor advances forward along the lane;
Certain garden scenery is increasingly covered in field of view in gradual or sudden manner;

The density increase aside of stepping path while visitor walks along the stepping stones' units;
View toward what closely or far stands behind increasingly dense greenery becomes gradually or instantly closed. Nonetheless, in last portion of tobiishi path greenery is omitted and represents complete view in ttobiishi stand point that is intended to be observed from;

Greenery trunks density decrease at certain side of tobiishi path: it is measured in distances among tree trunks that become more distant as visitor advances forward along the stepping stones' lane;
Certain scenery is increasingly noticeable in gradual or sudden manner from certain tobiishi units;

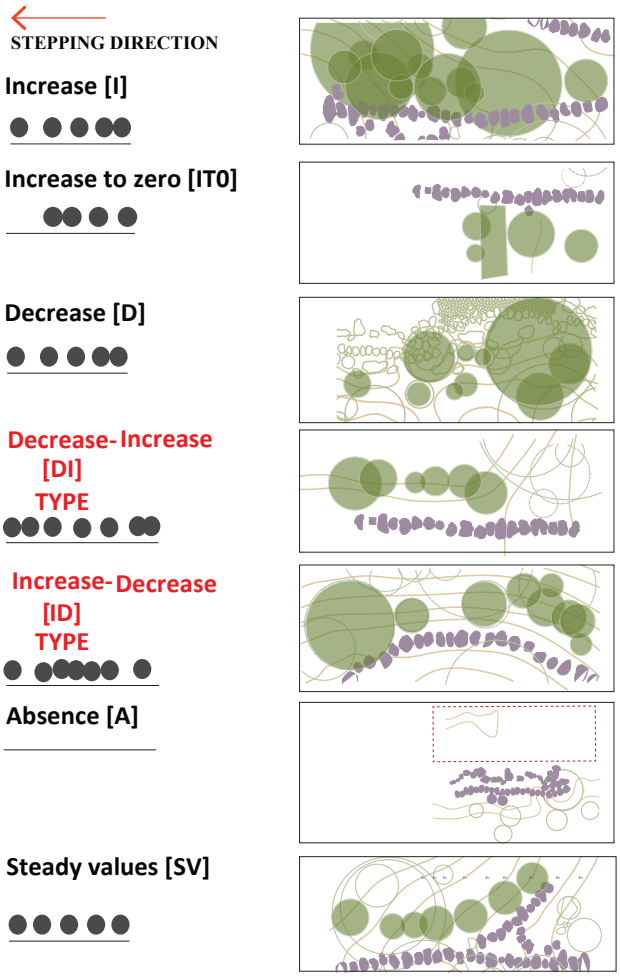
First part of the greenery covered side of tobiishi path is characterized with decreasing amount of tree trunks [or/and bushes and shrubs];
In second portion of the stepping lane the density increases in a sudden or gradual manner;
Thus, according close or far view behind the greenery bodies is revealed in first and then covered in sudden or gradual manner in second portion of stepping stones' pathway;

First part of the greenery covered side of tobiishi path is characterized with increasing amount of tree trunks [or/and bushes and shrubs];
In second portion of the stepping lane the density decreases in a sudden or gradual manner;
Thus, according close or far view behind the greenery bodies is covered in first and then revealed in sudden or gradual manner in second portion of stepping stones' pathway;

Greenery formal elements are absolutely omitted from these sides of tobiishi sub-pathways;
However, their absence result in completely revealed close or far garden scenery at that side of field of view observed from that sub-pathway stepping stones coordinates;

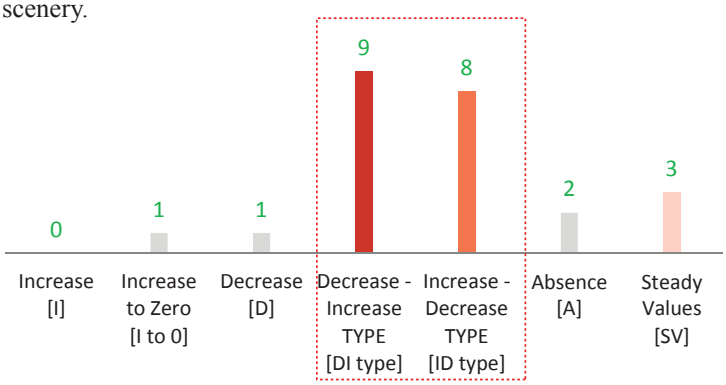
Tree trunks are spread in an array of constant density along tobiishi side;
Thus, they either keep sporadic or completely open or closed view toward certain garden scenery close or far behind the path;
The character of the view is further conditioned with other greenery/garden elements attributes;

Figure 11: Samples of greenery distances changes in values measured from tobiishi stepping lanes: changes are presented with gestalt method in plans and separate text boxes that explain each research case representation;



4th separate explanatory for table and chart figures :

'Decrease-Increase' type method and 'Increase-Decrease' type method are mostly applied in relocating greenery along tobiishi pathway in order to create certain densities. Respectively, they are applied in amounts of 9 and 8 cases [17 cases from total 24 cases [2 sides of 12 research cases]], which respectively counts 38% and 33% [totally 71%].
These densities are intentionally applied to influence certain visual experiences acquired in that path tobiishi stones' units. However, those visual experiences acquired in those units, in forms of close and far garden sceneries behind those densities, are inevitably influenced by those densities. They are either revealed or closed or gradually revealed and closed.
In the most dominant, DI type method, this influence refers to both decreasing and increasing values of densities that respectively work together to firstly reveal and then close certain view.
Equal, but opposite in implication on the field of view content, is second equally dominant ID type method that firstly closes and then lastly reveals certain garden prospect. This kind of visual experience is initiated with firstly increasing and then decreasing amount of side greenery.
Steady values of greenery amount covers or reveals irrelevant glimpses of certain scenery along the whole path side views. O contrary, in A method, the view is completely revealed along the whole side of the path.
Ito0 and D methods are rather irrelevant with single case they apply. Respectively, Ito0 method firslty covers and then suddenly completely reveals certain scene, whereas in D method greenery gradually decrease in their amount and accordingly gradually reveals certain garden scenery.



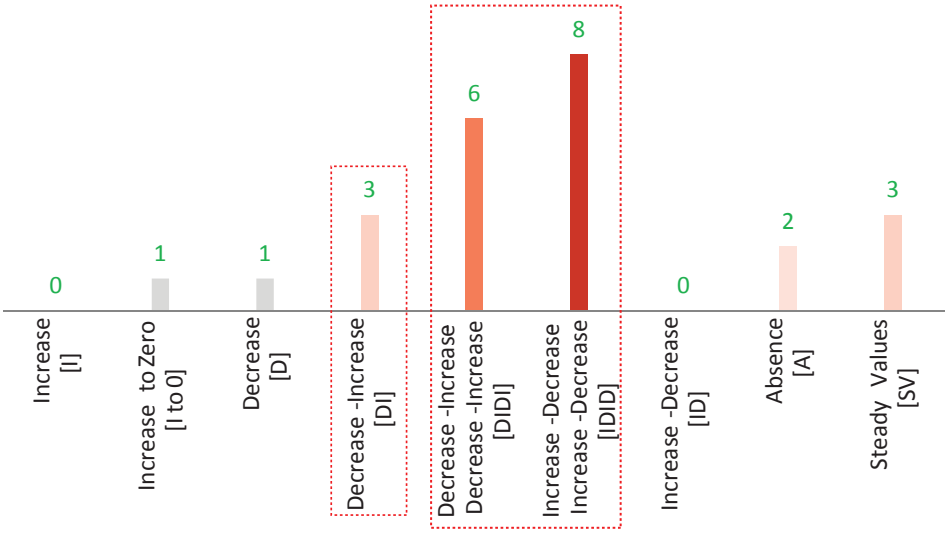
Greenery Densities *Simplified*

Figure 12: Chart on greenery densities changes that occur along the right and left side of tobiishi stepping sub-pathway;
Certain attributes that describe their changes in values in relation to stepping stones' walking line are applied in different quantities [prevailing and minor];

One can conclude their further implication onto the garden visual analysis observed from according stepping stones' coordinates;

DI method that counts 9 cases is divided in 3 cases of DI and 6 cases of DIDI sub-methods.
DIDI method refers to changes in greenery densities that counts two repetitions of DI basic method. They result in two consecutive visual experiences [reveal-close-reveal-close] of two separated garden sceneries that are revealed and closed according to greenery decreasing and increasing amounts - densities. They are gradually/instantly revealed and closed while observed from a single tobiishi sub-pathway whose stepping stones' and terrain changes are applied to support these kind of visual experiences changes.
Those repeated changes from decreasing to increasing values and vice versa apparently follow changes in those other physical forms that together create content of visitor visual experiences.
Thus, every increment in greenery density brings complete or sporadic visual obstacle. Nonetheless, even if these obstacles in forms of greenery trunks and crowns are sporadic, they make the scenery behind unclear and therefore partially visually noticeable, but absolutely cognitively unrecognizable from visitors.

ID method is applied with a single sub-method - IDID. However, double Increase-Decrease changes result in two consecutive visual experiences [close-reveal-close-reveal] of two separated garden sceneries that are closed and revealed according to greenery increasing and decreasing amounts - densities.
Furthermore, 'Steady values' method is applied in 3 cases [13%] of total 24. It absolutely closes or reveals sporadic field of view captions recorded in each of the stones' units. However, visual experience with this method is carefully depending on other formal elements and character of tobiishi stones attributes.
Remaining 3 methods of 'Absence', 'Increase to 0' and 'Decrease' are respectively applied in 3, 1 and 1 cases [8%, 4% and 4%]. However, even though they are minor, in total they count 16%. Thus, their application is not dominant but rather very specific according to their superposition to other garden formal elements' attributes. 'A' method is notable with 3 cases where greenery is minor or absolutely omitted from the field of view content. That method result in completely open view toward close or distant scenery.



Greenery Densities

Figure 13: Chart on greenery densities changes that occur along the right and left side of tobiishi stepping sub-pathway;
ID and DI types are relocated back to their 2 sub-groups [total 4 groups] in order to grasp specifically into the research design results;
It will lead toward the final detailed thesis conclusions and further design methodology;

Garden formal element: Greenery

Attribute: **Greenery height**

Influence of attribute on visual experience in tobiishi stones:
Conclusions based on classification of research results in table and chart
with textual and graphical explanation and garden samples :

Stepping stones' sub-pathway numeration		1		2		3		4		5		6		7		8		9		10		11		12		Nr.	Ratio [%]	
GREENERY RELATIVE HEIGHTS ALONG STEPPING STONES' PATHWAY		Field of view side																										
Attributes /Orientation →		Left	Right	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R			
Increase [I]			•																							1	4 %	
Increase to zero [IT0]																										0	0 %	
Decrease [D]		•						•								•	•			•	•	•				7	29.5 %	
Decrease – Increase [DI]	**Decrease-Increase [DI] TYPE**																	•								1	4 %	12.5 %
Decrease-Increase-Decrease-Increase [DIDI]												•											•			2	8 %	
Increase-Decrease-Increase-Decrease [IDID]	**Increase-Decrease [ID] TYPE**			•			•			•									•							4	16 %	28.5 %
Increase – Decrease [ID]					•				•					•												3	12.5 %	
Absence [A]											•		•											•		3	12.5 %	
Steady values [SV]						•									•										•	3	12.5 %	

Figure 14: Table on greenery relative heights in their disposition parallel to tobiishi sub-pathway measured. Noted attributes describe how heights values develop along the sides of the path: when they increase, decrease, are absent or in steady state. However, their changes are complex in several cases [described in table] that are grouped in 2 major rows. They hold equal intention to produce certain visual experience according to these changes but observed from exactly decided tobiishi stepping coordinates;

Figure 15: Samples of greenery relative heights changes in values measured from tobiishi stepping lanes: changes are presented in diagrams of elevations; these changes are visually noticeable from tobiishi units.
Nonetheless, diagrams are presented in order to understand how these changes increase/decrease along stepping path sides;

Greenery relative heights gradually/suddenly increase and close the view toward what stands behind their succession;
Their increasing relative height occurs due to tree trunks heights' growth or/and to the growth of the garden landscape relative heights that carry those greenery formal elements;

Greenery relative heights gradually/suddenly increase and close the view toward what stands behind their succession. Nonetheless, in last portion of tobiishi lane from where this increment is visually perceived, greenery is omitted. Therefore their relative heights growth dissappears as a property of field of view development;

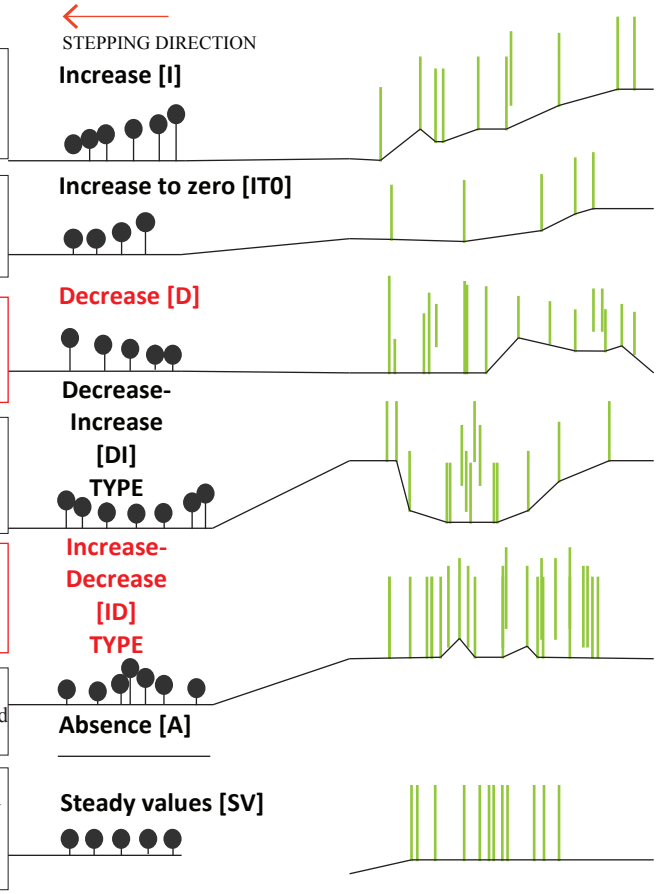
Greenery relative heights gradually/suddenly decrease and therefore gradually close the view toward the scenerey behind their progression;
Greeneries' relative heights are defined solely with greenery growths or along with increase of landscape heights that hold the tree trunks;

Decrease-Increase kind of greenery growth characteristically firstly opens and then closes field of view that is referred in order to reveal and then close certain garden scenery. This change of heights opositions could be followed with change in landscape heights that hold tree trunks;
However, these values are followed with certain manner of tobiishi disposition;

Increase-Decrease kind of greenery growth characteristically firstly closes and then opens field of view side that is referred in order to close and reveal certain garden scenery. This change of heights opositions could be followed with change in landscape heights that hold tree trunks;
However, these values are followed with certain manner of tobiishi disposition;

Greenery formal elements are absolutely omitted from these sides of tobiishi sub-pathways;
However, their absence result in completely revealed close or far garden scenery at that side of field of view observed from that sub-pathway stepping stones coordinates;

Tree trunks are spread in an array of equal height along tobiishi side;
Thus, they either keep sporadic or completely open or closed view toward certain garden scenery close or far behind the path;
The character of the view is further conditioned with other greenery/garden elements attributes;



5th separate explanatory for table and chart figures :

'Decrease' method in relative heights' values tendency is mostly applied in 7 cases with 29,5% ratio. It is characteristic with visual experience it provokes. Scenery that far/close stands behind this method greeneries is gradually revealed with an decreasing amount of the greeneries relative heights.
'Increase-Decrease' type method is at the second place as mostly applied in 7 research cases [sides of field of view] with 28,5%. However, that method brings specific visual experience exactly observed from certain tobiishi units in coordination with greenery layout along tobiishi pathway. What far/close stand behind these greenery formal elements is firstly visually closed with increasing greenery relative height. In another part of the visual experience at the same tobiishi lane, the scenery is visually revealed with decreasing relative heights' values.
'Decrease-Increase' type, 'Absence' and 'Steady values' methods are applied with 12,5% ratio in 3 cases. In 'DI' type, field of view potential content is firstly revealed and then closed with respectively decreasing and increasing greenery relative heights values. In 'A' method greeneries are omitted with completely open view toward certain scenery, while in 'SV' method depending on values of the heights, the scenery is completely/partially visually noticeable or completely disassociated from field of view content. 'I' and 'IT0' methods are minor with 0/4%.

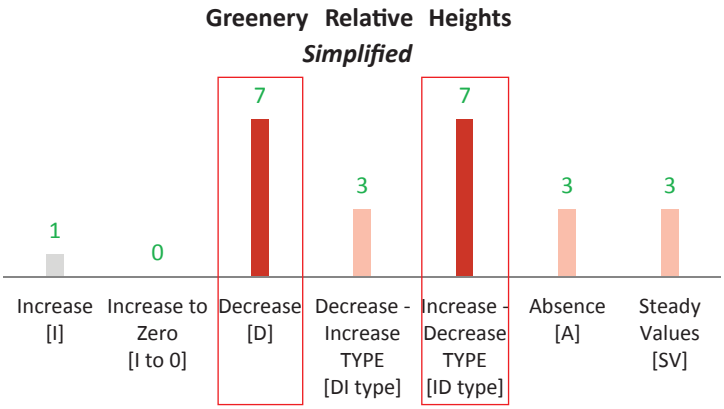


Figure 16: Chart on greenery relative heights [measured from the ground level at the point of garden ground] typology distribution;
one can grasp more clearly in dominant visual experiences one gain during tobiishi directed walk in relaton to the densities and how their changes effect field of view;

D method as the most dominant one is applied in coordination with landscape and tobiishi units physical attributes changes. The heights of greeneries change either due to the tree trunks lower growth rates, or due to the landscape declination in heights. However, revealing of certain scenery as the most dominant visual experience is followed with certain changes in tobiishi attributes. These attributes support and suggest one's stepping activity to be conducted in such manner to make one to embrace that suggestion of how to and what to observe in those tobiishi units when greeneries height decrease.
In ID type method sub-method IDID is the most dominant with 16% and 4 cases it applies. However, that means that during one tobiishi sub-pathway one visually experiences 2 different sceneries that reveal behind the greenery bodies. Greneery decreases and increases two times during the single tobiishi lane and therefore twice reveal and hide certain field of view potential content. Simplier ID sub-method with single visual experience takes 2nd place with 12,5% in 3 cases.
In DI type two methods are applied. DIDI sub-method is first with 8% [2cases], while simplier DI sub-method is applied in 4% [1case]. However, in first one certain field of view content is firstly hidden and then revealed and then this kind of visual experience is repeated again. In second case this manner of hiding and revealing is repeated once.
'Absence' method is applied in 12,5% [3 cases] where greenery is minor or is completely omitted from application at this side of field of view. It does not participate in forming [revealing/hiding] of visual experience that is now continously complete while one steps along tobiishi units at these kind of lanes.
SV values are applied in equal amount with greeneries that completely reveal/hide the scenery behind them or keep them in quality of field of view constant glimpses of partial visual experiences.I method is applied with 4% [1 case] where the garden designers decided to continuosly grow with greenery heights values that result in constantly growing coverage of that field of view side.IT0 method is not applied in methods of greenery growth in realtive heights sizes.All of these methods are applied with certain changes in physical attributes in other garden formal elements. Theysupport and even more focus attention on how the sceneries behind the greenery are visually experienced.

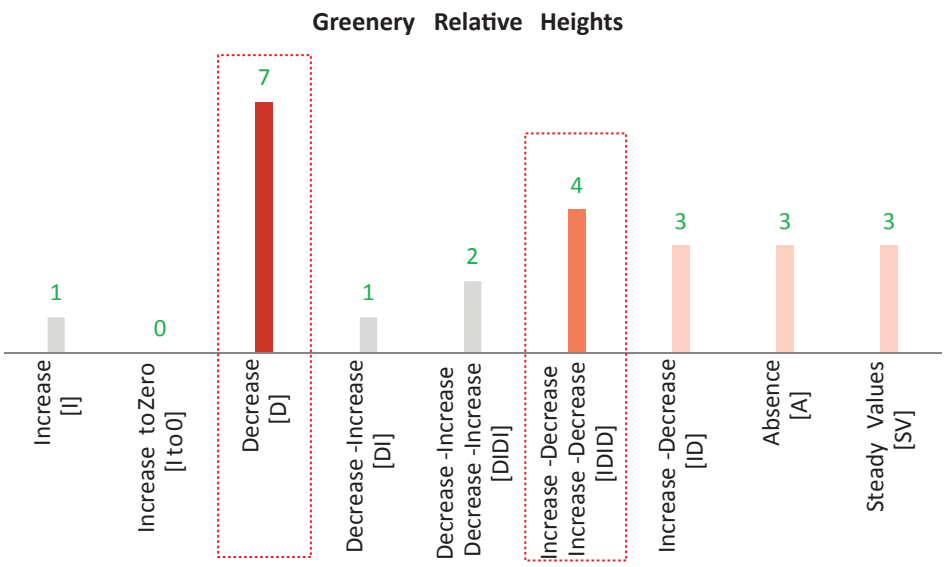


Figure 17: Chart on greenery relative heights [measured from the ground level at the point of garden ground] more detailed distribution derivates that actually form typologies in previous chart depiction;
one can grasp more clearly in dominant visual experiences one gain during tobiishi directed walk in relaton to the densities and how their changes effect field of view;
these density variations are represented in such a menner in order to provide more effective and applicable comparison among case studies research design results and their tabular classification;
that method provides more objective research conclusion to be derivated;

Attribute: **Terrain slope angle**

Influence of attribute on visual experience in tobiishi stones:
Conclusions based on classification of research results in table and chart

Stepping stones' sub-pathway numeration	1		2		3		4		5		6		7		8		9		10		11		12		Nr.	Ratio [%]
SLOPE ANGLES' VALUES ALONG STEPPING STONES' PATHWAY	Field of view side																									
Orientation →	Left	Right	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R		
Increase [I]					•						•		•		•	•				•					6	25 %
Decrease [D]	•	•	•					•											•						5	21 %
Decrease – Increase [DI]				•																		•			2	8 %
Increase – Decrease [ID]							•		•								•	•							4	17 %
Absence [A]										•		•		•							•		•		5	21 %
Steady values [SV]						•																		•	2	8 %

Figure 18: Table on the landscape slopes development in their angles that orthogonally spread along the garden tobiishi stepping pathways:
they are classified in 6 kinds of development with results and quantity of the their application [Nr.-number and ration-percentage]. According to the inclination/declination of slopes they finally cover/reveal certain scenery that stands behind greenery ;

6th separate explanatory for table and chart figures :
'Increase' is the mostly applied method in 6 cases [25%] of total 24. At second and third place are 'Decrease' and 'Absence' methods applied in 21% [5 cases]. Respectively, I method results in growing and constant coverage of field of view and according visual experience of the scenery that stands behind the land.
In 'D' method occurs opposite phenomenon while in 'A' method in case of absence of any land occurs direct and constant visual experience of certain far or close scenery.
Usually, changes in slopes' angles values work in coordination with changes in terrain heights. Depending on their relationship one can be disclosed from any visual experience or can perceive far scenery or close one that stands immediatelly behind terrain. Usually in that case one perceives the upcoming sub-pathway or final pathway portion close to the garden tea houses.
With 17% [4cases], slope angles' ID method firstly resultS in coverage and then openning of certain prospective while it increases and then decreases in angle values.
Lastly, the opposite, but minor occurencies develop in DI method with 8% [2 cases]. Equal amount of application is reserved for SV method whereas visual experience is achived or cancelled depending on the other formal elements physical attributes development.
Their mutual influences and final coordinated influence on creation of visual experiences is going to be explained at the the end of tabular and graphic representation in their final conclusions.

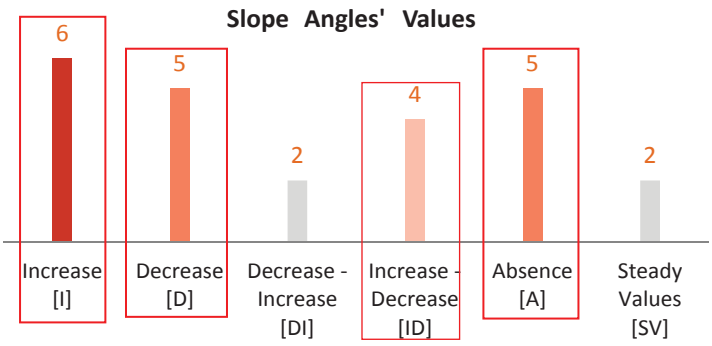


Figure 19: Chart on the garden landscape slopes angles' values: slopes that develop along sides of tobiishi stepping lanes obtain different values according to what kind of visual experience they are intended to initiate;
They are developed in 6 attributes that applied in different quantities result in different field of view contents development;

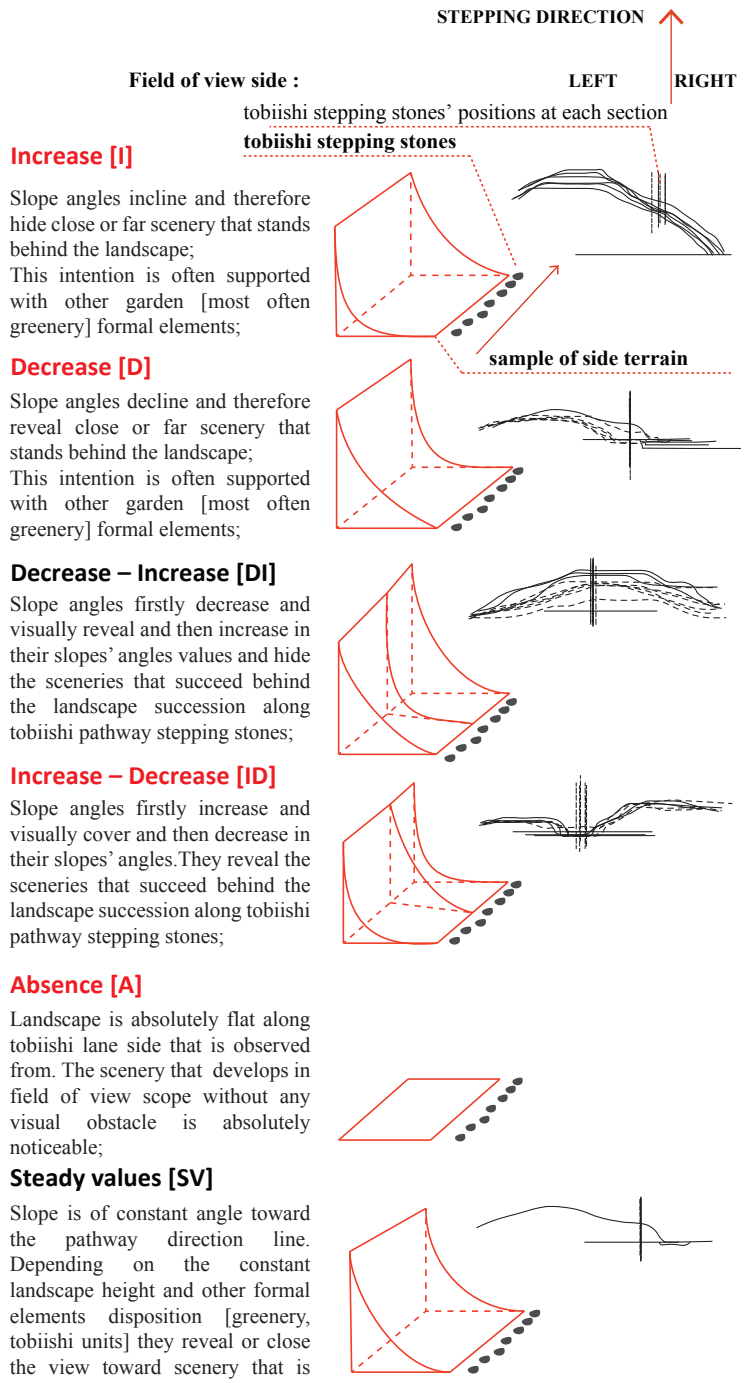


Figure 20: Samples of the garden landscape slopes development in their angles values: angles are measured orthogonally to pathway in each tobiishi stepping point coordinate. Progression is measured at field of view side portrayed in axonometries and sections;

Attribute: **Terrain height**

Influence of attribute on visual experience in tobiishi stones:
Conclusions based on classification of research results in table and chart

Stepping stones' sub-pathway numeration	1		2		3		4		5		6		7		8		9		10		11		12		Nr.	Ratio [%]
TERRAIN HEIGHTS MEASURED ALONG STEPPING STONES' PATHWAY	Field of view side																									
Orientation →	Left	Right	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R		
Increase [I]		•			•	•	•			•					•										6	25 %
Decrease [D]			•	•				•					•					•							5	21 %
Decrease – Increase [DI]									•		•						•		•	•				•	6	25 %
Increase – Decrease [ID]																						•			1	4 %
Absence [A]	•																				•		•		3	12.5 %
Steady values [SV]												•		•		•									3	12.5 %

Figure 21: Table on the landscape heights that occur orthogonally on pathway, measured in each tobiishi stepping coordinate : their succession define development of the landscape terrain heights at both sides of tobiishi lane and according coverage/disclosure of certain visual experiences. They are devided in 6 groups of attributes with amounts of their application in numbers and percentages;

7th separate explanatory for table and chart figures :

'I' and 'DI' are the mostly applied method in 6 cases [25%] of total 24 each. At second and third place are 'Decrease' with 21% in 5 cases and 'Absence' and 'Steady Values' methods applied in 12,5% [3 cases].
Respectively, in I method terrain heights increment results in growing and constant coverage of field of view and according visual experience of the scenery that stands behind the land.
In 'DI' method occurs opposite phenomenon at the beginning of tobiishi lane where certain scenery is visually revealed. At second portion of stepping lane it becomes equal again whereas certain another scenery is gradually covered with increasing terrain side.
In 4% less applied 'D' method certain visual experience is constantly gradually revealed with constantly descending terrain side.
Usually, changes in terrain heights values work in coordination with changes in slope angles. Depending on their relationship one can be disclosed from any visual experience or can perceive far/close scenery that stand behind terrain.
'A' and 'SV' values half less used [12,5%] respectively result in complete disclosure or constant coverage/disclosure of certain amount depending on the height values and other formal elements progression. 'ID' is minor with 4% [1 case] whereas certain field of view content is firstly covered and then revealed.

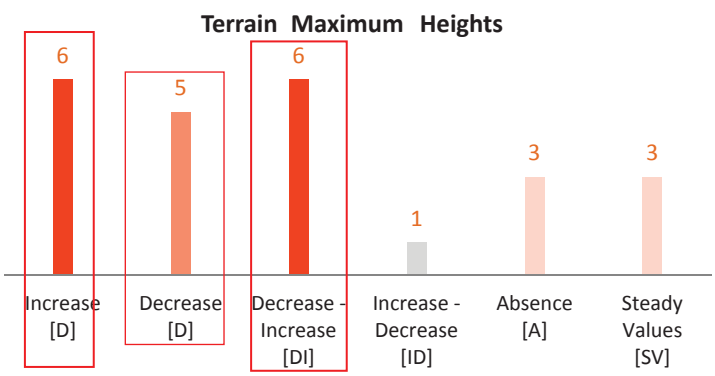


Figure 22: Chart on terrain relative heights [measured from the ground level at the point of garden ground] typology distribution;
one can grasp more clearly in dominant visual experiences one gain during tobiishi directed walk in relaton to the attributes and how their changes effect field of view;

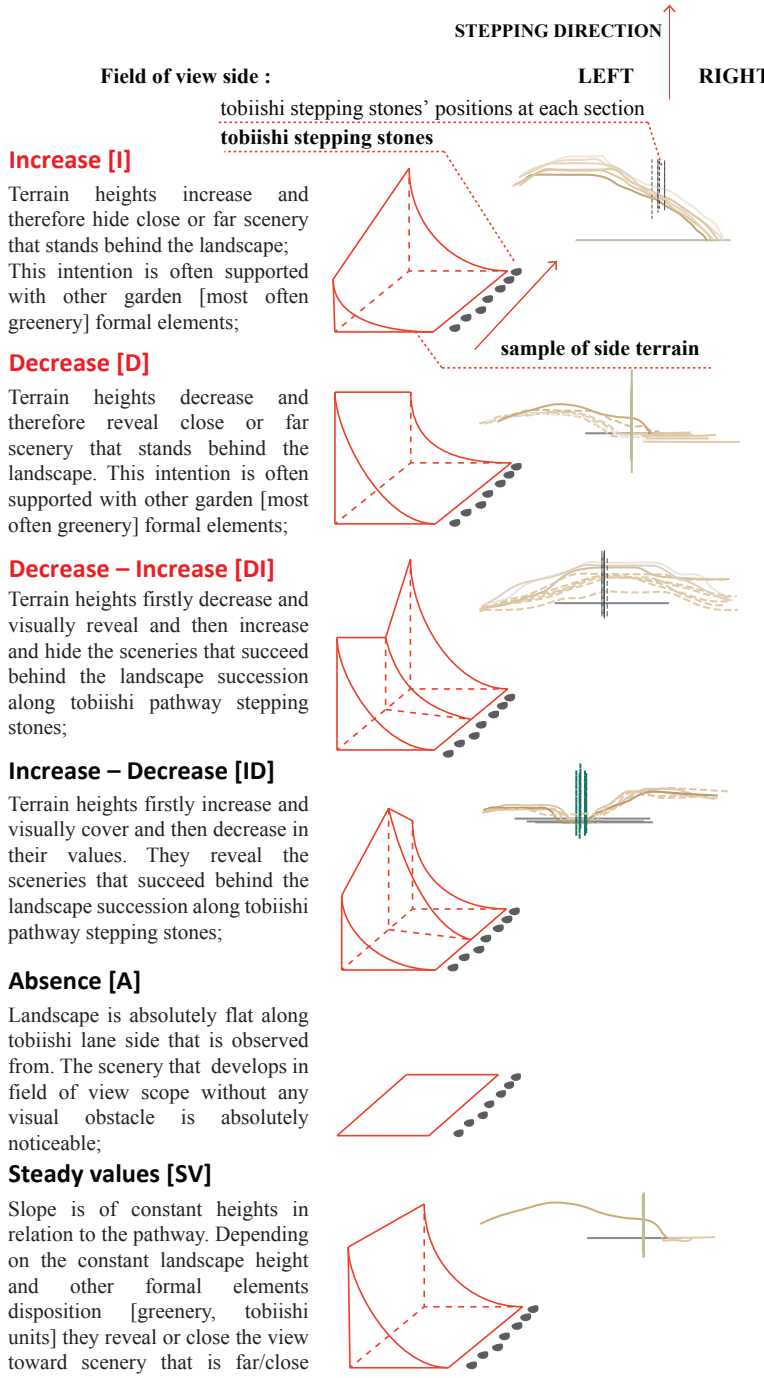


Figure 23: Samples of the garden tobiiishi sides' terrain heights development :
heights are measured orthogonally to pathway in each tobiishi stepping point coordinate. Progression is portrayed in axonometries and sections;

Garden formal element: Terrain

Attribute: **Distance between terrain edge and tobiishi path**

Influence of attribute on visual experience in tobiishi stones:

Conclusions based on classification of research results in table and chart

Stepping stones' sub-pathway numeration		1		2		3		4		5		6		7		8		9		10		11		12		Nr.	Ratio [%]	
TERRAIN SLOPE DISTANCES FROM STEPPING STONES' PATHWAY		Field of view side																										
Orientation →		Left	Right	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R	L	R			
Increase [I]				•										•		•	•	•								**5**	**22 %**	
Decrease [D]									•														•	•		**3**	**12.5 %**	
Decrease – Increase [DI]																										**0**	**0 %**	
Increase-Decrease-Increase [IDI]	**Increase-Decrease [ID] TYPE**	•				•	•	•												•	•					**6**	**25 %**	**41 %**
Increase-Decrease-Increase-Decrease [IDID]			•									•														**2**	**8 %**	
Increase – Decrease [ID]					•					•																**2**	**8 %**	
Absence [A]											•		•									•			•	**4**	**16.5 %**	
Steady values [SV]															•				•							**2**	**8 %**	

Figure 24: Table on terrain slopes' distances values classification in their development in relation to tobiishi stepping lane: they are classified in 6 methods in which one has 3 sub-methods. Their values are expressed in numbers of cases and percentage ratios. Hence, one can clearly understand what kind of dominant visual experience is conditioned with these values proportions;

Increase attribute is represented in schematic axonometry and array of sections. One can notice how terrain distance from tobiishi path increases. Thence, field of view is respectively open in an increasing amount as one steps along the lane. However, the visual experience of the scenery behind is complete or partial depending on the distance increasing rate. Therefore, the progression of section removal from the axis can be slow or rather fast;

Decrease attribute is represented in schematic axonometry and array of sections. One can notice how terrain distance from tobiishi path decreases in physical environment. Thence, field of view is respectively covered in a decreasing amount as one steps along the lane. However, the visual experience of the scenery behind is complete /partial depending on the distance increasing rate. Therefore, the progression pace can be slow or rather fast;

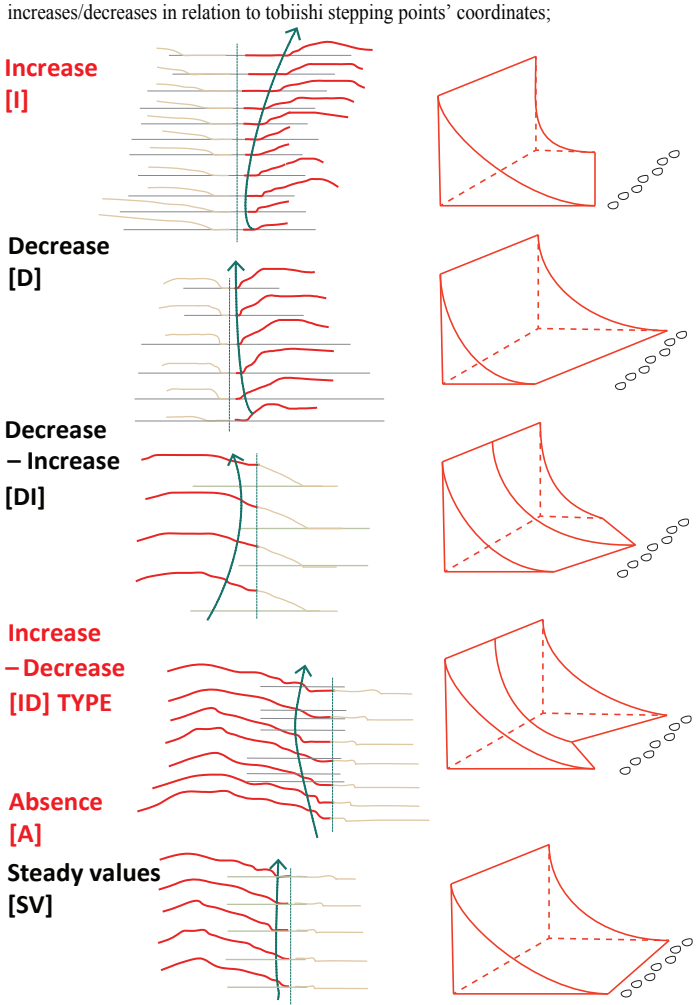
Terrain distances from tobiishi path firstly decrease and then increase in their values. They are measured in sections from the terrain edges to the stepping, tobiishi stones' coordinates. Accordingly, their changes firstly close view to the certain scenery that stands behind.
In second portion, along with secondary changes in distances' increasing values, field of view depth is gradually/suddenly revealed with the view toward another scenery that stands behind that another portion of terrain progression.

Terrain distances from tobiishi path firstly increase and then decrease in their values. They are measured in sections from the terrain edges to the stepping, tobiishi stones' coordinates. Accordingly, their changes firstly reveal view to the certain scenery that stands behind.
In second portion, along with secondary changes in distances' decreasing values, field of view depth is gradually/suddenly closed to the view toward another scenery that stands behind that another portion of terrain progression.

Terrain progression is absolutely omitted along sides of these tobiishi paths. Therefore, the view is completely open toward the scenery view that develops along the path observation;

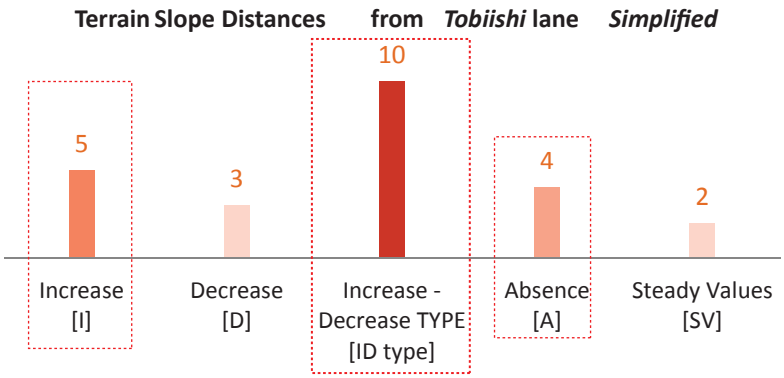
Terrain distances in this group of attributes are determined as steady in their progression. According to their values they either absolutely or partially cover or reveal certain views depending on their terrain sides heights and values of other garden formal elements [greenery, tobiishi coordinates etc]. Mainly, they do not reveal any view and keep it absolutely covered or revealed in glimpses at the last tobiishi point along that tobiishi

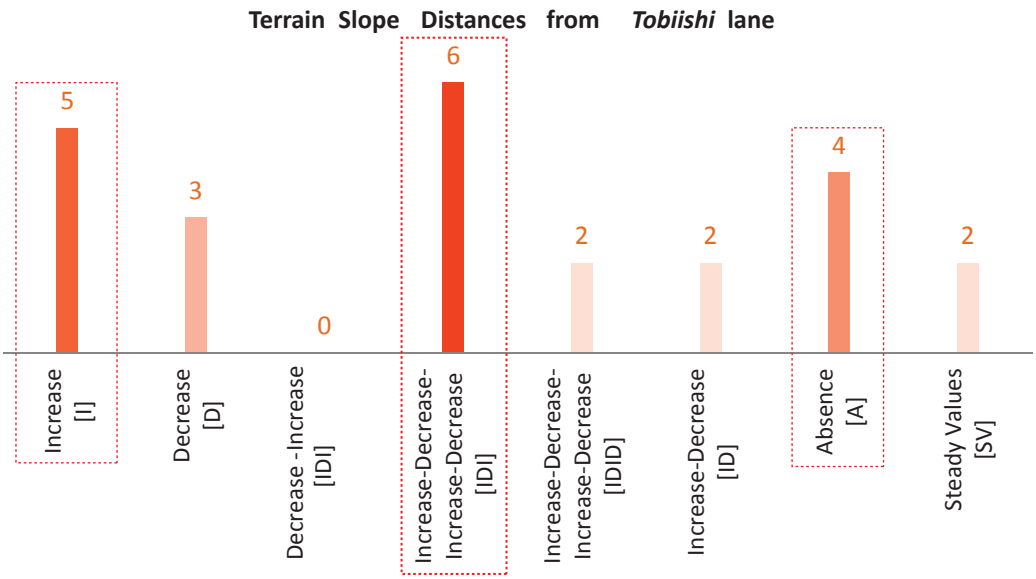
Figure 25: Samples of the garden terrain slopes distances from tobiishi path : they are presented in 6 groups of attributes with axonometry simplification and successions in orthogonal terrain sections. Arrowhead curves point how terrain progressions increases/decreases in relation to tobiishi stepping points' coordinates;



8th separate explanatory for table and chart figures :

'Increase-Decrease' type method is mostly applied with amount of 41%. It equals to 10 cases of total 24 researched terrain sides in terms of terrain distances from tobiishi path axis. They make field of view depth to be gradually uncovered and therefore offer an insight what stands behind the side terrain. In second portion of tobiishi path, terrain distances to tobiishi coordinates lane decrease. Consequently they gradually partially or completely close the view toward the garden scenery that develops behind.
With 22% occupied [5 cases] 'Increase' method is the second most used. However, it continuosly develops gradually revealing field of view content with an increasing terrain distance. It simply disclose certain visual experience since the terrain occupies increasingly lesser portion of the field of view plane.
The visual prospect is completely or partially revealed as a hint of visual experience that is going to completely develop in next tobiishi stones sub-pathway. 16,5% of 'Absence' method are at third place while 'Decrease' comes afterwards with 12,5% [3 cases].
Respectively, in'A' method, terrain is rather without any relative height in relation to tobiishi path stepping level. That diminishes its importance in covering or revealing of potential field of view content, whereas in 'D' method field of view is gradually covered with decreasing distances. Terrain thus becomes closer to the stepping line and therefore closes visual cone angle. Therefore, the visual experience content becomes lesser or completely closed. Usually, terrain slope distance decreasing tendency keeps certain scenery out from visitor field of view since while one steps along tobiishi stones one becomes closer to that potential scenery of observation. Hence, terrain has to identically become closer to the viewer in an equal rate at least.
This method applied also as before mentioned in 'ID' type method intentionally assures that certain scene stays out from field of view in this tobiishi pathway portion. Also, it does not allow on eto understand how to arrive to that certainly observed scenery with visually covering next tobiishi paths. Consequently, that scenery can only be visualy noticed. It stays at the visual distance, without reaching state of physical distanc where one completely understand not only visual, but also physical relationship toward the scene.
However, all of these changes are followed with other garden formal elements' physical attributes changes in order to simultaneously support what can or cannot be perceived and in which manner. In minor 8% with 2 cases applied, 'Steady Values' method is applied in order to maintain steady distanced terrain progression in relation to tobiishi stones. Depending on nominal value of the steady terrain height and other garden formal elements [mainly greenery that is hold by terrain] heights and position, the scenery that stands close or far behind that side of tobiishi lane iscompletely covered or partially revealed. If it is partially revealed it is at the visual distance.
Visitor gains glimpses of its parts in its field of view cone, but its complete visual experience fulfillment is achieved in next tobiishi sub-pathway that develops with new kind of terrain succession.
In 'ID' type method develop 3 separate methods. 'IDI' method is the most used one with 25% [more then half of total 41%] and 6 cases of side terrains where it is applied. It firstly expands field of view coverage with an increasing distances array, then closes with decreasing values and then again reveals another scenery behind the landscape with finally increasing values. 'ID' and 'IDID' methods are applied both in 8% [2 cases], which makes them minor in comparison to 'IDI' method. 'ID' method is already described in previous paragraph at this page. 'IDID' method is composed of repetitions : equal opening, closing and then repeated closing and opening vista toward the scenery that stands behind. In this manner it undertakes more then one direction of visual experiences while covering what is not intended to be viewed among these two separate field of view contents. 'IDI' method is more applied since it rather more intensively connects visual experiences that switch from one to another tobiishi stepping path. In its last portion it leaves an increasingly wider experience that completely develops in succeeding lane.





Thus, it is the most commmonly used method along with 'I' method 22%, due to both physical and visual continuities that are passed to succeeding path. That makes 'IDI' and 'I' attributes the most important applications of the garden landscape. They determine greenery trunks coordinates and supremely condition tobiishi units' physical attributes that have to support affirmative stepping manner. Increment in tobiishi to terrain distances array has to be followed with stable stepping along tobiishi stones. One should not relocate its visual attention from scenery to the stepping lane and eventually interupt field of view continuity;

Figure 26: Chart on the garden landscape distances from tobiishi line changes, which occur along the right and left side of tobiishi stepping sub-pathway; IDI, IDID and ID separate methods are located intheir main ID method type: it becomes the most common method used in 10 cases from total 24;
It is followed most closely with I method [5 cases] and A method [4 cases];

Figure 27: Detailed chart on terrain distances from tobiishi stepping axis :
ID method type is relocated to 3 sub-methods : IDI, IDID and ID methods, with respectively applied in 6, 2 and 2 cases. Thus, IDI method is closely followed with I method and A methods applied in 5 and 4 cases;
Nonetheless, IDI method of covering and final revealing of certain garden scenery remains dominantly applied method in terrain distances array;
An I method results in an equal final visual experience even though it misses 'I' and 'D' mutual changes;

Attribute: **Tobiishi stone size**

Influence of attribute on visual experience in tobiishi stones:
Conclusions based on classification of research results in table and chart

STEPPING STONES' *SURFACES AMOUNTS*														Nr.	Ratio [%]	
Stepping stones' sub-pathway numeration		1	2	3	4	5	6	7	8	9	10	11	12			
Decrease – Increase- Decrease [DID]	**Decrease -Increase [DI] TYPE**		•										•	2	18.18 %	45.45 %
Decrease – Increase – Decrease – Increase – Decrease - Increase [DIDIDI]										•	•			2	18.18 %	
Decrease – Increase – Decrease- Increase- Decrease [DIDID]						•								1	9.09 %	
Increase- Decrease- Increase- Decrease- Increase- Decrease [IDIDID]	**Increase- Decrease [ID] TYPE**							•	•			•		3	27.27 %	45.45 %
Increase – Decrease – Increase- Decrease [IDID]					•									1	9.09 %	
Increase – Decrease – Increase- Decrease – Increase [IDIDI]				•										1	9.09 %	
Steady values [SV]							•							1	9.09 %	

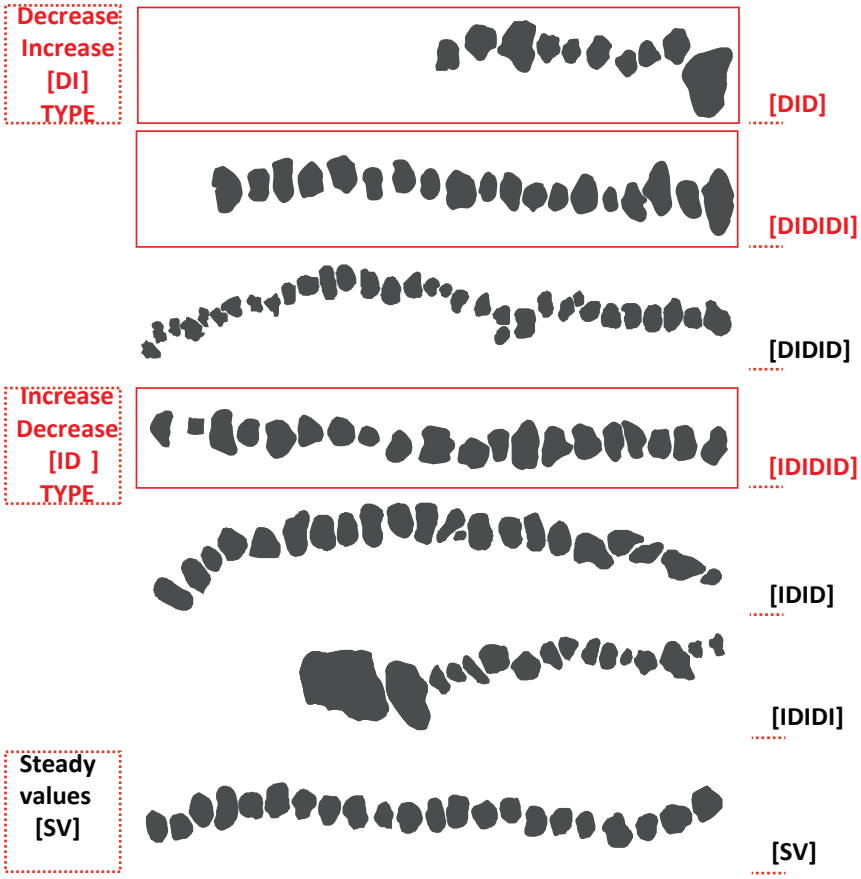
Figure 28: Table on tobiishi stepping stones' surfaces amount they obtain along the garden Imperial pathway;
They rather imply on sizes of the stone items : values are classified in 7 groups of attributes whereas two supreme groups are consisted of 3 basic groups of attributes. They are expressed in percentage amounts with number of cases they are applied;

Decrease-Increase attribute type consists of 3 similar but differently complex methods. They influence stepping character in its speed and carefullnes. Thus, their sizes are coordinated with other garden formal elements and final visual experience. Bigger units mark observing coordinates and the smallest units mark no nearby visual experience importance;

ID attribute type consists of 3 similar but differently complex methods. They influence stepping in its speed and carefullnes. Their sizes are coordinated with other garden formal elements and final visual experience. Bigger units mark observing coordinates and the smallest units mark no nearby visual experience importance;

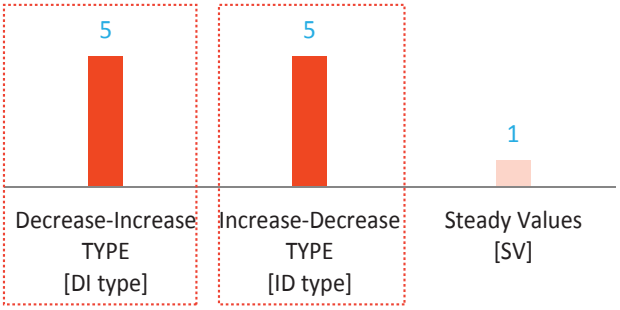
Tobiishi surfaces with SV progression create paths of rather similar stone items. They influence stepping/observing actions with other physical attributes;

Figure 29: Samples of the garden tobiishi layouts, which express various methods how values of their outline surfaces are applied. They are expressed in three methods whereas each of those methods is is presented in several garden research cases. One can understand how their sizes vary in mere observation of tobiishi spreads.
Nonetheless, within DI and ID types are represented three tobiishi stones' pathway samples in order to convey the logic of each sub-method that are grouped in those two type methods;



9th separate explanatory for table and chart figures :

‘Decrease-Increase’ and ‘Increase-Decrease’ are type methods that are mostly applied in order to place certain sizes of tobiishi stones along the garden stepping directions. They are both applied with 45,45% in 5 cases, which totally counts 10 from 12 cases. ‘Steady values’ method is applied with 9.09% [1 case] whereas 1 remaing research case does not have tobiishi stones applied.
However, DI and ID methods consist of equal changes in tobiishi stones sizes, but differently combined in stepping order. Therefore, differently they differently influence stepping activity and according visual experience one acquires along tobiishi path.

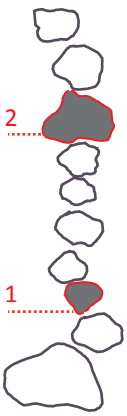


Stepping Stones' Surfaces Amounts ***Simplified***

Figure 32: Chart on attributes that describe how tobiishi stones sizes change alongside the intended garden paths;
One can grasp more clearly in dominant manner of tobiishi application. Further, one can suppose how different distribution of their sizes must have certain influence on how visual experience develops differently if observed from differently tobiishi stones;

In DI method type, tobiishi stones are firstly positioned in order to decrease in their surface sizes. In second portion of the pathway they increase in their sizes.
In ID method types tobiishi stones are firstly positioned in order to increase in their surface sizes. In second portion of the pathway they decrease in their sizes.
While tobiishi sizes decrease one has to be careful about where to put its feet. Since tobiishi stones become smaller one has to be careful in order not to step on the ground instead on stones. Thereby, visitor looks at the stepping ground in order to maintain consecutively accurate stepping on tobiishi stones. Consequently, field of view loses its continuity and does not result in continuous visual experience about the garden paths‘ far and nearby environments. They become interrupted with visual observations of the ground.
While tobiishi sizes increase one does not have to be persistently careful about where to put each of one’s feet. Since tobiishi stones become bigger in their sizes one has to be assured that steps are going to be committed on the stones without any exceptional visual care. Thereby, visitor almost continuously observe around or in front of oneself, while maintaining consecutively accurate stepping on tobiishi stones. Consequently, field of view pertains its almost unbroken continuity and results in continuous visual experience about the garden paths’ far and neraby environments.
That being so, tobiishi stones sizes reach two extreme values, lowest and highest ones. While stepping on the stone with the lowest sizes, one cannot visually observe the garden environment, whereas stepping at the stones with the highest sizes, one is intended to observe certain garden scenery from those stepping coordinates. Hence, due to the significantly higher than feet sizes of tobiishi units, one can almost stop at those stones and carefully engage with certain visual experience.
In DI method visitors are firstly left out from any visual experience [’D’ part] with decreasing sizes of tobiishi units. They then become drawn into an active visual attention [’I’ part] toward certain garden scenery with increasing sizes of tobiishi units.
O contrary, in ID method visitors are firstly increasingly drawn into visual experience [’I’ part] toward the garden environment along tobiishi path. They then become increasingly left out from any visual experience [’D’ part].
Stepping activity that occurs along tobiishi paths of both kinds develops among two kinds of visual experiences: the complete and obstructed one. However, these changes in tobiishi stones sizes and following visual experiences occur gradually without sudden drops. Hence, visitor is exposed to gradual changes of stepping and following visual awarenesses.
Passage from ordinary life to tea ceremony environment that can result in lack of visitor attention is avoided, while the visitor is carefull brought to tea house interior. This phenomenon is achieved with gradual changes of visual experiences and most important changes in tobiishi stones sizes, which bottom-top support the whole intention.
In SV method, tobiishi stones are with rather equal sizes. They result in steady speed stepping activity. Hence, undoubtedly depending on other stones’ physical attributes, if they sizes are rather bigger, they will result in uninterrupted, continuous visual experience. If their sizes are rather smaller, they will inevitably result in no visual experience but the one about where to place succeeding steps.

Figure 32: Chart on attributes that describe how tobiishi stones sizes change along the garden paths. Further, one can suppose how visual experience becomes different if one steps along differently sized tobiishi stones;
At the left side is presented tobiishi sample of DI method, whereas first size of tobiishi unit decreases to certain value. In second portion tobiishi stones increase in their sizes.
At the rightside is presented a sample of ID method whereas first size of tobiishi unit increases to certain value. In second portion of the pathway tobiishi unit decrease in their sizes. Hence, with increasing values of tobiishi stones’ sizes develop firm visual experiences and vice versa [photos from Katsura Rikyu garden];

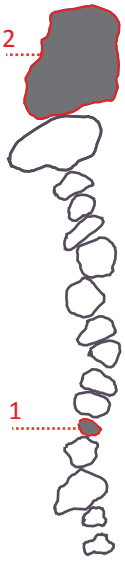


Significant field of view development observed from tobiishi stepping stone 2 with INCREASED size;

Significant field of view development observed from tobiishi stepping stone 2 with INCREASED

Insignificant field of view development observed from tobiishi stepping stone 1 with DECREASED

Insignificant field of view development observed from tobiishi stepping stone 1 with DECREASED



DI type consists of three - DID, DIDIDI and DIDID methods. That means that DI type, with firstly decreasing values is applied with multiple shifts in firstly decreasing and then increasing values of stone sizes along a single tobiishi path. I
D type consists of three - IDIDID, IDID and IDIDI methods.That means that ID type, with firstly increasing valuesis applied with multiple shifts in increasing and decreasing values of stone sizes along a single tobiishi path.
Therefore, visual experiences along a single path vary several times from being absolutely directed to certain scenery [highest values of stone size], to the state of field of view that is solely directed to how not to step out from tobiishi fields [lowest values of stone size] and vice versa.

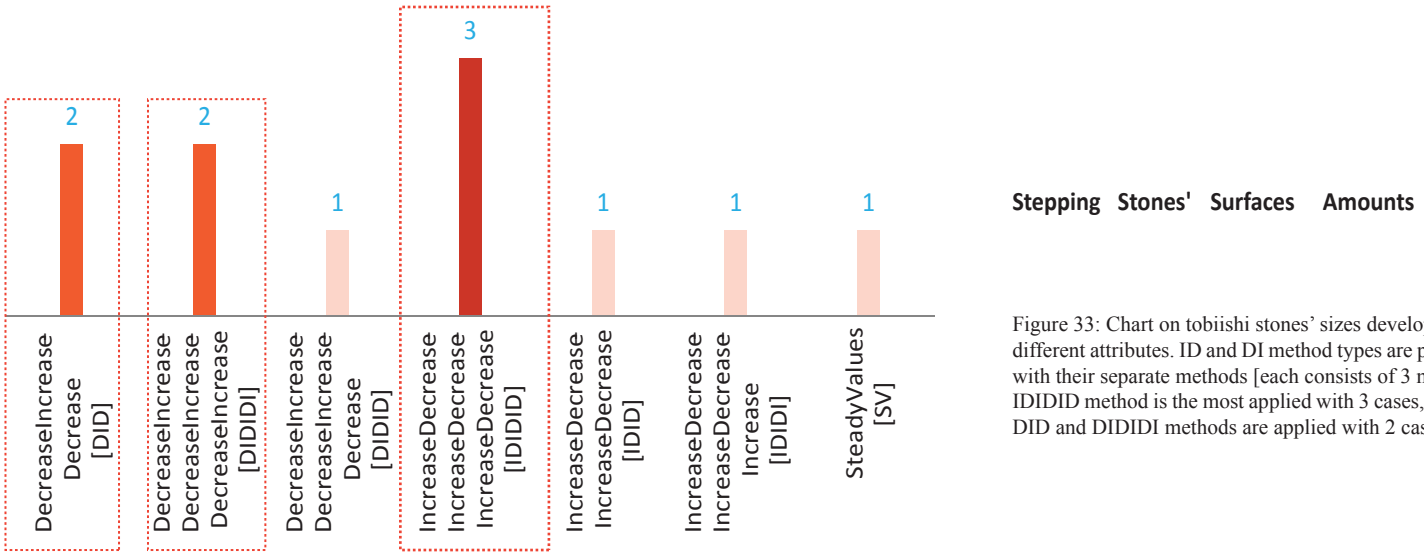


Figure 33: Chart on tobiishi stones' sizes development in different attributes. ID and DI method types are presented with their separate methods [each consists of 3 methods]; IDIDID method is the most applied with 3 cases, whereas DID and DIDIDI methods are applied with 2 cases;

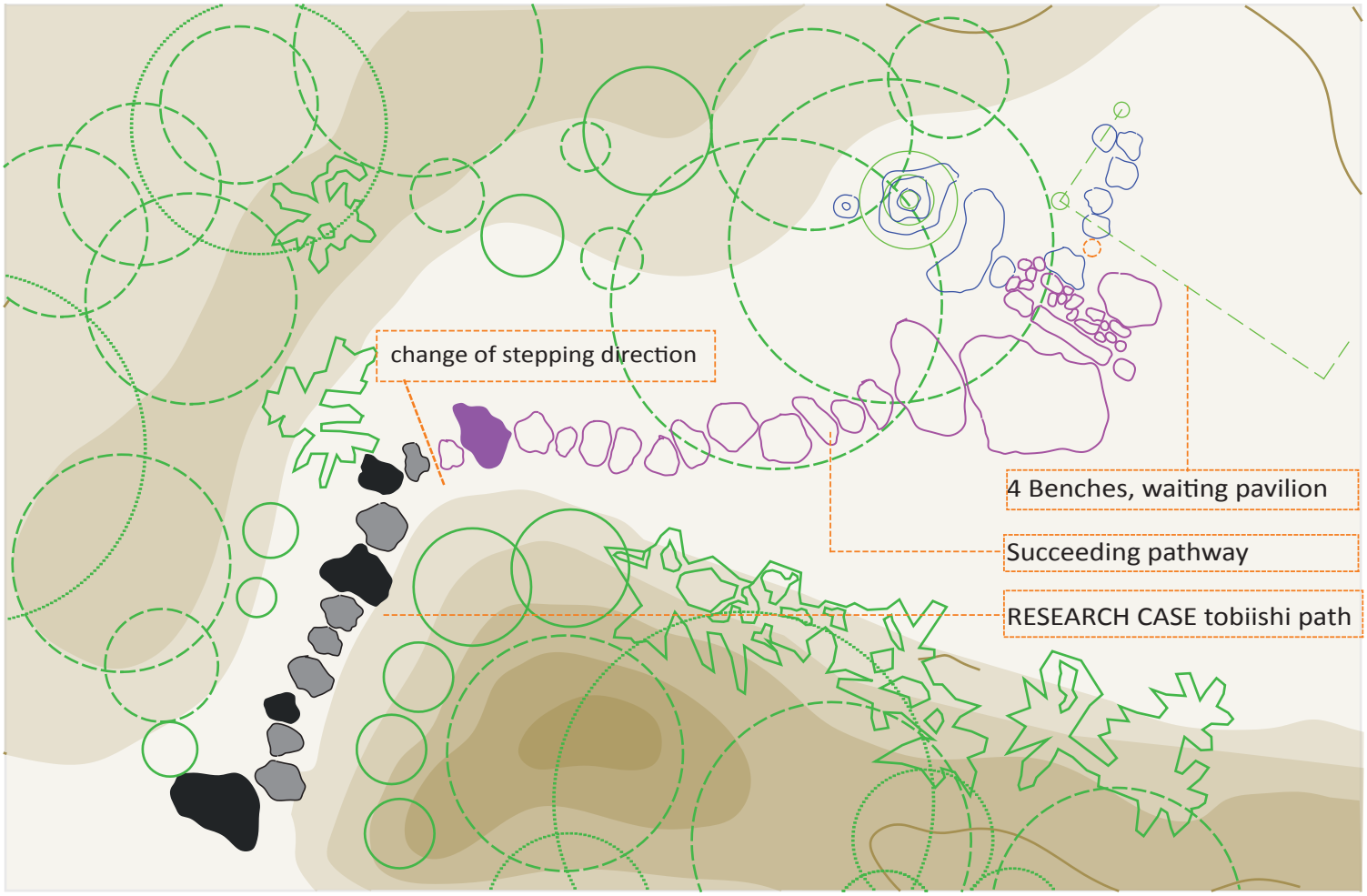
DI methods:
DID and DIDIDI methods are applied in 18,18% [2 cases] each, while DIDID [1 case] method is applied with 9,09%. They all start with D- decreasing sizes of tobiishi stones. Therefore, they firstly do not initiate any prominent visual encounter. Inevitably, they start to increase in certain stepping coordinate. That change results in visitor's capability to step and observe at the same time. Field of view becomes occupied with certain garden scenery that develops at certain path side. This single change in size never solely occurs.

In DID method stepping stones repeatedly becomes bigger once more. Since visitor again has to take care about stepping coordinates it results in finally repeated obsolence of significant visual experience.
DIDIDI method consists of triple decrease-increase changes in tobiishi sizes. Thus, it finally results in I, increasing sizes of stepping stones and significant visual experience that can be carefully observed from larger tobiishi stones.
DIDID method consists of almost triple changes that is cut with one D change. Hence, it ends with D- decreasing sizes of tobiishi stones. There is no significant visual objective then the ground level occupied view, which assures exact stepping on rather small stepping stones' units.

ID methods:
IDIDID and IDID methods are applied in respectively 27,27% and 9,09% [3 and 1 cases], while IDIDI [1 case] method is applied with 9,09%. They all start with I- increasing sizes of tobiishi stones. Therefore, they immediately start to initiate prominent visual encounter, which is going to result with explicit garden scenery inevitably observed from tboiishi stone with the highest size. Inevitably, they start to decrease in that very highest value stepping coordinate. That change results in visitor's incapability to step and observe at the same time. Field of view becomes occupied with how to correctly step on tobiishi stones without stepping on side ground.

In IDIDID method stepping stones repeatedly becomes smaller and bigger two times more. It results in three times repeated dominance and obsolence of significant visual experience of certain garden scenery.
IDID method consists of two times increase-decrease changes in tobiishi sizes. It results in two times repeated dominance and obsolence of significant visual experience of certain garden scenery.
IDIDI method consists of almost triple changes that is cut with one I change. Hence, it ends with set of I- increasing sizes of tobiishi stones. There is a significant visual objective that occupies field of view caption in last tobiishi stone with the highest size in that part of IDIDI path.

Final conclusion about ID method is that 3 cases end with D- decreasing sizes of tobiishi stones [DID + DIDID] in last stepping portions, whereas 2 cases [DIDIDI] end with I- increasing sizes of tobiishi stones in last stepping portions. In ID method 4 cases end with D- decreasing sizes of tobiishi stones [IDIDID + IDID in last stepping portions, whereas 1 case [IDIDI] end with I- increasing sizes of tobiishi stones in last parts of stepping paths.
Therefore, an overall higher intention of the garden designer was to insert smaller stepping stones in last portions of tobiishi paths [7 against 3 cases]. That last 'D' portion of the path, with shrinking stones, interrupts dominant vista observed from big tobiishi stones from the pre-last 'I' portion of the same path. Finally, visitor is not lastly exposed to that strong visual impression, but again directed with field of view attention to the ground level and decreasing tobiishi stones. Thence, one does not suddenly but gradually experience succint change of tobiishi path portion and direction [Figure 34]. Lower visual awareness makes visitor to be gradually involved with new tobiishi pathway.
It happens without continuous field of view development from previous tobiishi pathway that would make one to be absolutely immersed in change of field of view direction and content. That makes one to experience more continuous and one directed development of tobiishi Imperial pathway. Read in plan in Reaseach design chapter it is divided in connected but various angles connected tobiishi sub-pathways.



First tobiishi stone of next stepping path : it marks the step from previous path last stone that consists of rotating of field of view toward new direction;

Figure 35: Field of view caption at the second tobiishi stone of the next stepping pathway.
Previous tobiishi pathway ends with D- decreasing values of stepping stones sizes. Visitor experiences no significant view at those last steps of the same path. That makes one to gradually experience physical and visual changes brought with new tobiishi path. This photography presents first field of view caption experienced at the beginning of new tobiishi lane. It develops on previous no significant views acquired from decreasing values of tobiishi stones. At the beginning of new path their sizes increase again and therefore put forward new development of visual experience and stepping activity;

Figure 34: [upper drawing] Sample of Katsura Rikyu garden tobiishi pathway that belong to DI type, DIDID method of tobiishi sizes progression. Stones that mark changes from D to I groups of stones and vice versa are marked with dark grey solids

Array of tobiishi stones drawings is followed with field of view captions obtained in those stepping coordinates. Development of their sizes and order they are positioned with result in certain development of visual experience. It consists of points of significant and not significant visual impressions [respectively highest and lowest values of tobiishi sizes]. However, greenery and landscape are not distinguished and develop in order to support characteristic field of view progression.

Figure 36: Drawing of the biggest stone item, among I- increasing portion of the path. While stepping on it visitor acquires the most significant field of view captionPrevious captions consist solely of greenery and landscape, which nonetheless develop in order to reveal that important view with glimpses of pavilion;

Figure 37: Drawing of the last tobiishi unit of D and first unit of I portion. Visitior mostly takes care of how to properly commit steps on tobiishi stones. Side greenery and landscape cover potential far and close vistae;

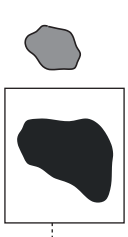


Figure 38: First tobiishi stone of DIDID method tobiishi path. It ends with mostly applied D- decreasing values of stone sizes. It brings complete of view of the path and stone units with glimpses of the next pathway beginning. Side greenery and slopes cover any further visual impressions. One obtains complete visual impression on what to expect in further stepping advancement;

Garden formal element: Tobiishi stepping stones

Attribute: **Tobiishi path stepping direction**

Influence of attribute on visual experience in tobiishi stones:

Conclusions based on classification of research results in table and chart

STEPPING STONES' *PATHWAY STEPPING DIRECTION*														Nr.	Ratio [%]	
Stepping stones' sub-pathway numeration		1	2	3	4	5	6	7	8	9	10	11	12			
Straight [ST]		•						•						2	16.66 %	
Polyline- Straight [PS]	**Polyline-Straight [PS] TYPE**		•											1	8.33 %	33.33 %
Polyline-Straight-Polyline [PSP]							•		•		•			3	25 %	
Polyline [P]				•						•				2	16.66 %	
Straight- Polyline-Straight [SPS]	**Straight-Polyline [SP] TYPE**				•							•		2	16.66 %	33.33 %
Straight- Polyline-Straight- Polyline [SPSP]						•								1	8.33 %	
Straight- Polyline [SP]													•	1	8.33 %	

Figure 39: Table on classification of attributes that describetobiishi directions of pathways applied within Katsura Rikyu garden: they are distributed in 4 methods. Two 2 types consist of respectively 2 and 3 separate methods. Methods on tobiishi path directions differ in quantity of cases and percentages ratio they are applied. One understands which method is mostly applied in order to bring out another conclusions;

Figure 40: Bellow are presented samples of Katsura Rikyu garden tobiishi plans. Additionally, bellow each drawing is represented linear connection of their tobiishi stones stepping points. These lines are characteristic tobiishi paths' stepping directions that determine names of the methods structured in table [above].
They are also simplified in their appearance in forms of diagrams bellow titles. Therefore, one can compare table numbers and drawings and notice which methods are most often applied;

Figure 41: Drawing and diagram that decsribe Straight method applied in tobiishi stepping direction. Stepping stones are positioned in a linear array. Their stepping points they hold connected form almost an accurate straight line;

Straight [ST]

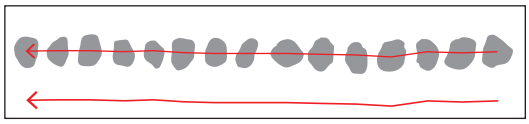


Figure 42: PS method is presented in two: PS and PSP methods with their plans and diagrams. Both methods start and change from polyline to straight whereas second method has one more polyline segment and make stepping activity furthermore complex.
Polyline segment becomes when tobiishi stones are connected in their stepping points and form several changes of stepping directions.
Straight segment results in straight stepping activity that in PSP method is finally extended in several stepping directions.
These changes in stepping directions are sinhronized with changes in garden physical forms changes in surrounding environment;

Polyline - Straight [PS] TYPE

PS method

PSP method

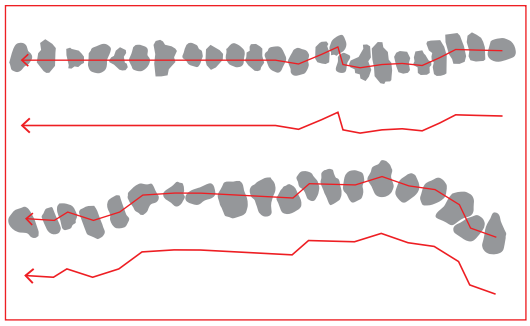


Figure 43: Polyline method stepping line consists of steps whereas each is differently directed but inevitably connected. Therefore, visitor is persuaded to additionally concetrate in order to each time step exactly on tobiishi stone. That makes 'P' stepping direction method to result in constant obstruction of field of view continuity. since one has to constantly direct view to the ground plane;

Polyline [P]

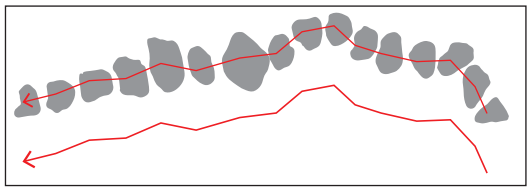


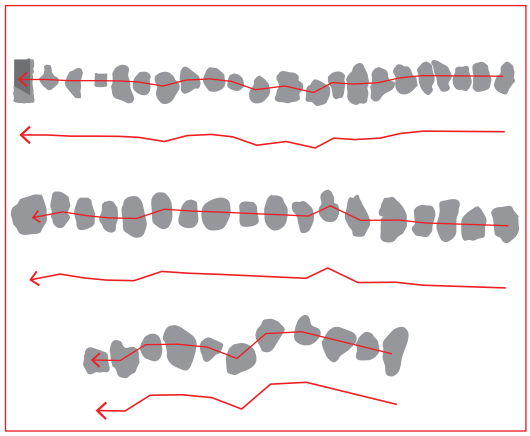
Figure 44: SP method is presented in three: SPS, SPSP and SP methods with their plans and diagrams. All methods start and change from straight to polyline. First method [SPS] results in one more straight stepping portion, second method results in one more change of S and P stepping directions, whereas third, SP method remains with that single change.
This method type is the most complex in sense of methods it consists of and relations with surrounding environment changes. Their harmonized relationship results in changes of field of view directions. In P segment one is forced to almost look at the ground before each step to be committed. Therefore, when environment does not offer any significant visual experience or does not permit to be observed one is occupied with correct stepping activity. When visitor is allowed to experience certain scenery stepping direction becomes straight. However, P stepping directions is often cut with bigger stepping stones. They offer pause and significant view;

Straight - Polyline [SP] TYPE

SPS method

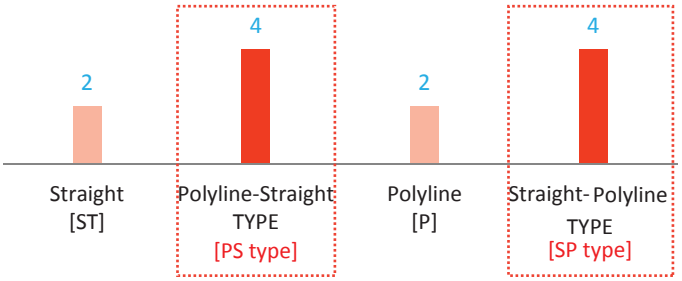
SPSP method

SP method



10th separate explanatory for table and chart figures :

Polyline-Straight and Straight-Polyline method types are the most often used methods in order to assemble tobiishi stone units in certain order along the garden lanes. They are applied in 4 cases [33,33%] each. That makes 8 cases [66,66%] from 12 to hold these methods. Straight and Polyline methods are applied in 2 cases [16,16%] each. They occupy remaining 4 cases [33,33%].
PS and SP methods consist of tobiishi paths polyline and straight portions that assembled in different manners in a single stepping stone path. What makes initial difference among these two methods is whether they start with P or S portion. Their further mutual differences among further methods they divide is how these portions are combined.
Final intention of using different kinds of stepping stones disposition, that defines different stepping directions, is to manipulate stepping activity. Furthermore, different stepping directions follow changes in other garden formal elements [landscape, greenery, tea houses, other tobiishi stones attributes]. Their mutual coordination finally determines visual experience in all of its attributes : field of view continuity, speed of field of view development, its content and direction of visual cone.
In S and P methods each step is coordinated in same direction with previous and succeeding one [S] or vice versa [P]. They result in constantly straight or turning steps to be committed. Respectively, they either completely support field of view unobstructed development or constantly disturbed field of view direction in each stepping coordinate.



Stepping Stones' Pathway Direction
Simplified

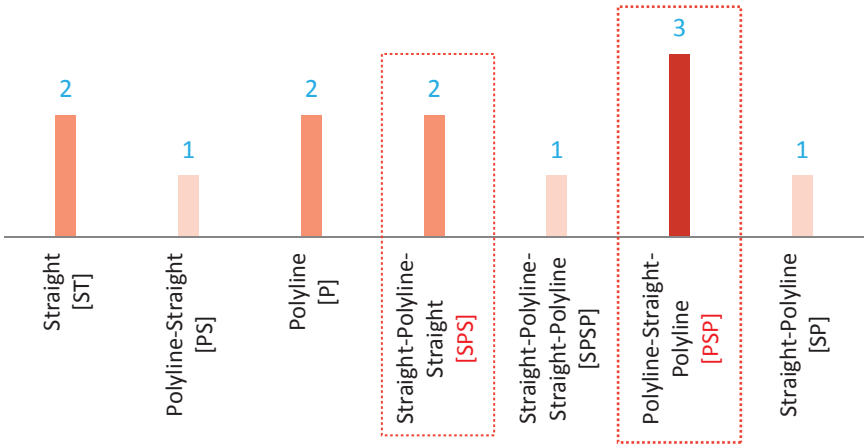
Figure 45: Chart on tobiishi stepping path directions in Katsura Rikyu garden in their simplified presentation. They consist of 4 methods with number of cases they are applied. One can easily understand dominance of PS and SP methods. The chart is an important research resut to be compared with other charts in this chapter in order to compare all typologies in their dominant methods;

Polyline- Straight method consists of two: Polyline- Straight and Polyline- Straight- Polyline separate methods. PS method is applied in 1 case [8,33%] whereas PSP is applied in 3 cases [25%].
Straight- Polyline method consists of three: Straight- Polyline- Straight, Straight- Polyline- Straight- Polyline and Straight- Polyline separate methods. SPS method is applied in 2 cases [16,66%], SPSP is applied in 1 case [8,33%] and SP is applied in 1 case [8,33%].
However, even though PS and SP group methods are both equally applied in total 33,33% both, PSP sub-method [belongs to PS group of methods] is the most often applied with 3 cases that count 25%. ST, P and SPS share second place with 2 cases applied [16,16%]. whereas PS, SPSP and SP are applied in 1 case separately [8,33%].

PS type :
PS separate method consists of one change from polyline to straight portion in tobiishi stepping direction. Visitor is firstly omited in its stepping activity in order to obstruct constant field of view direction tothe garden sceneries that develop along that tobiishi path. One has to be constantly careful to step right on tobiishi stone since each step changes in its direction. In second, straight portion, visitor is permitted to step along the paths without constantly observing not to step beside on tobiishi stones. One can visually experience certain garden scenes.
PSP, the most often applied method, consists of one more change of stepping direction with third polyline portion added to the same kind of PS stepping path. In that third part of PSP method tobiishi path, visitor is repeatedly forced to be careful not to step beside than stepping stone surfaces. However, one cannot visually experience complete garden environment that develops along third, polyline part of path. Visual experience is obstructed and cannot complete many views due to the visual attention directed to tobiishi ground.

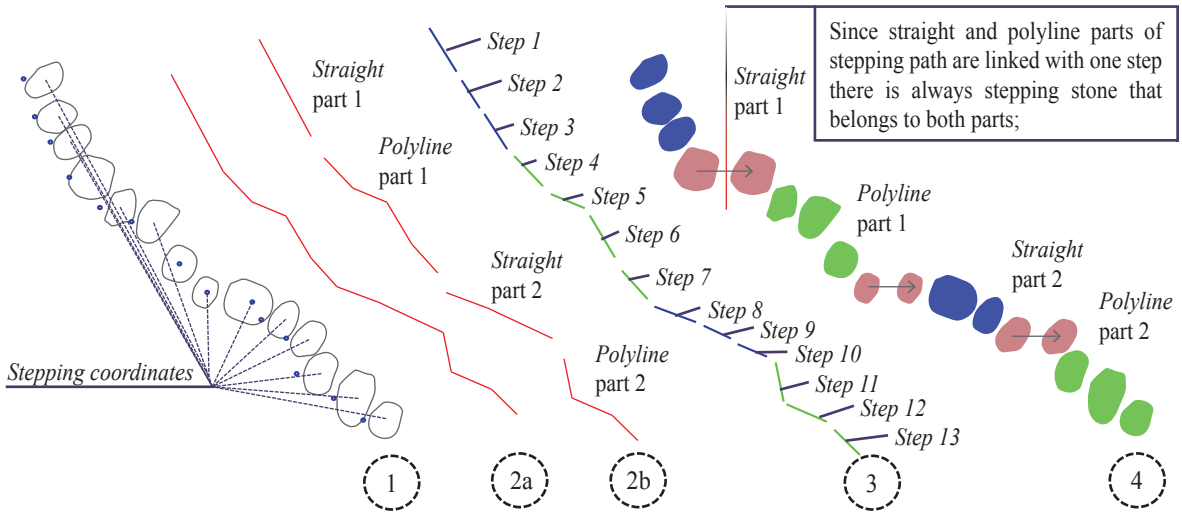
SP type:
SP methods consist of S and P stepping paths portions that bring equal qualities in visal experiences and stepping activity as in PS methods. Nonetheless, SP methods are initiated with S, straight stepping parts and then succeeded with P, polyline parts.
In SPS method this single change is ended with one more change to S, straight stepping part.
Change from straight to polyline stepping path portions is repeated twice in SPSP method, whereas SP method consists of their single change.
Overall, beginning of these paths stepping experience bring unobstructed field of view direction toward surrounding environment. First and every other change to polyline segment brings unstable field of view that changes its direction to tobiishi grund with every step committed.

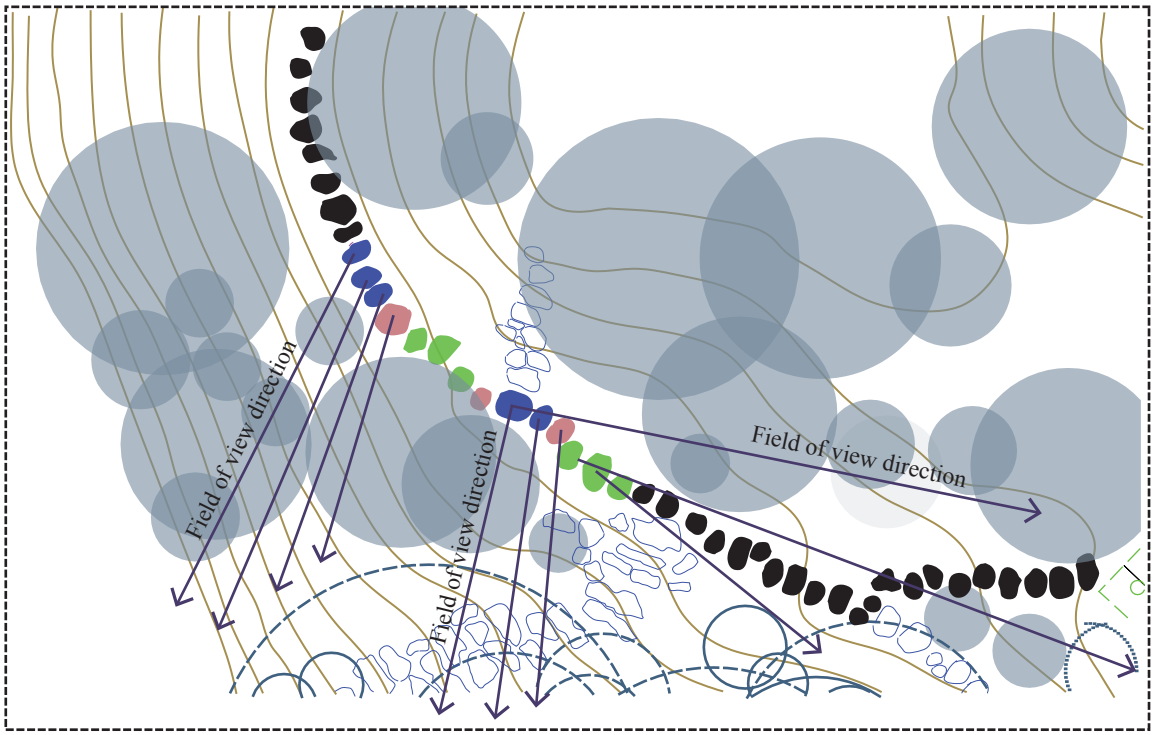
S, P, and SPS methods stand with 16,16% ratio, whereas PSP method stands with 25% ratio. An overall conclusion is that tobiishi paths with their directions changing from polyline to straight lines and vice versa with one more change are the most dominant unitary method applied in 41,16%. That means that their switches apply in order to deliberately manipulate with visual experience direction/content support and obstruction. Support/obstruction hereby means favorizing/dismantling of field of view continuous direction to and content with certain garden sceneries.



Stepping Stones' Pathway Direction

Figure 46: Chart [left] represents every method applied to establish certain tobiishi paths direction, without grouping them in similar types. Thus, one can grasp in more detailed understanding of the most common method manner applied in Katsura Rikyu. Even though they belong to different SP and PS types, SPS and PSP separate methods are applied with equal inlfuences to visitor visual experience. They start with different value but they result in switches of opposite visual experiences directions and contents. That makes them equal in how these directions spread, but different in order of changes in both stepping activity and visual experience. Nonetheless, that makes them more similar then SPS with SP and PSP with PS methods;





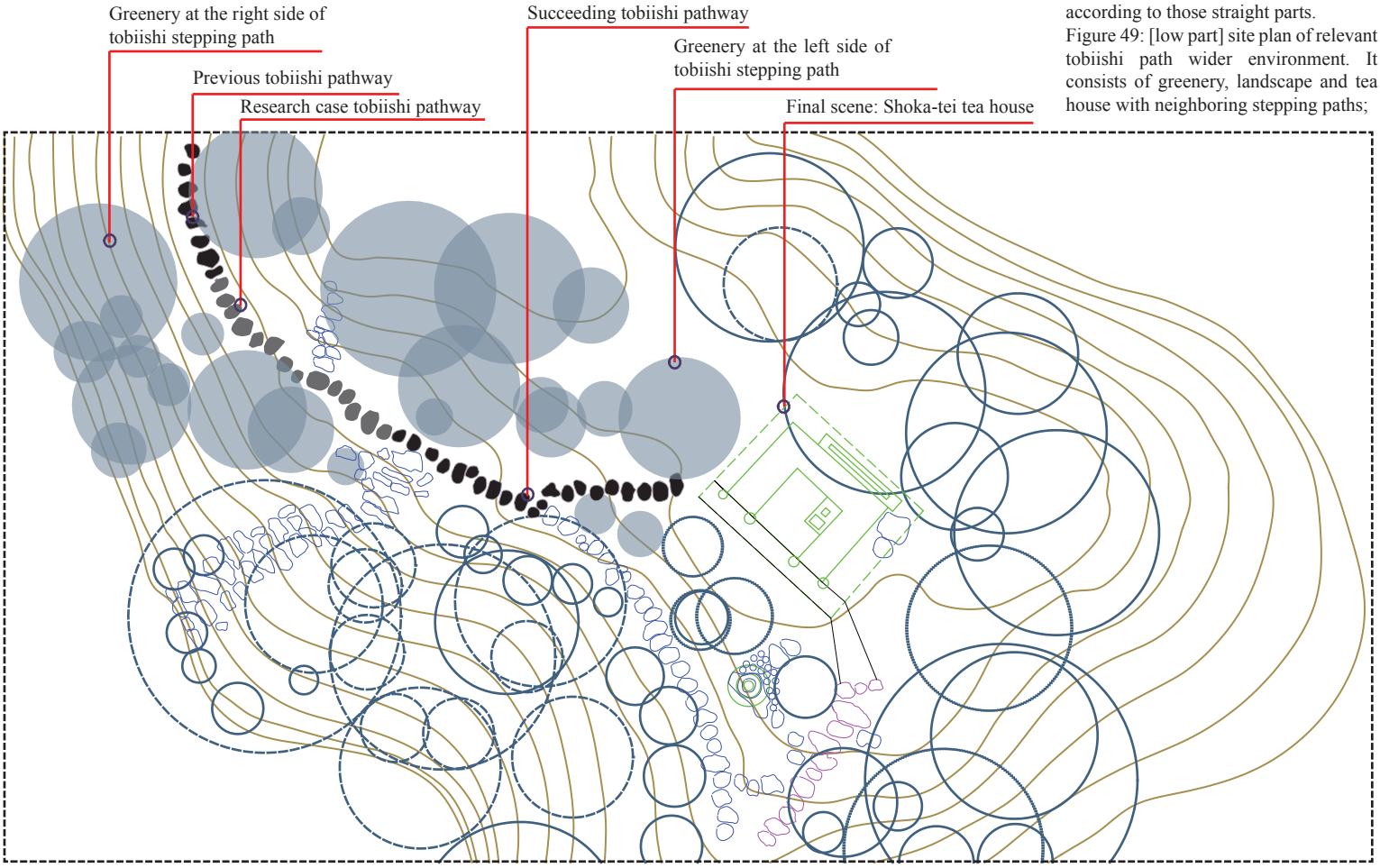
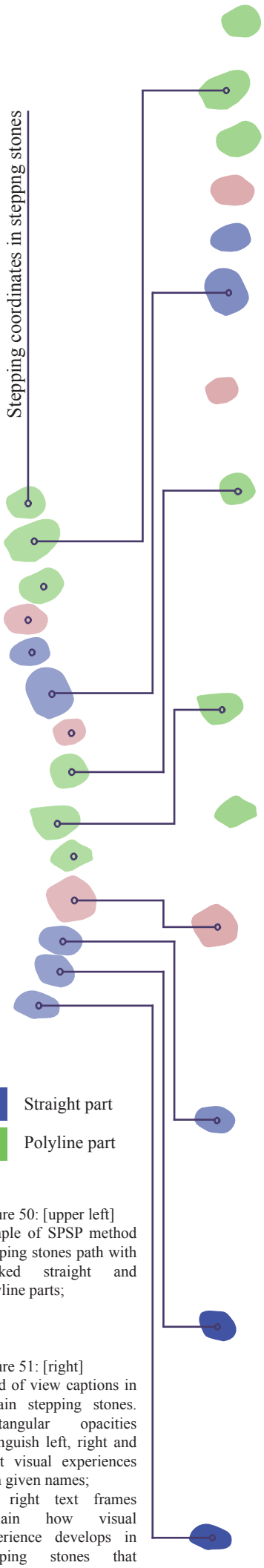


Figure 47 [left upper plans and diagrams on tobiishi pathway] :
Stepping path research case [plan 1] is applied with **SPSP method.** Its direction [2a] is a linear connection of stepping stones' stepping coordinates [plan 1]. It develops with Straight-Polyline double repetition [2a, 2b].
Each S,P part consists of several steps committed in those parts of stepping path [3]. Totally there are 13 steps: Straight part 1- 3 steps, Polyline part 1- 4 steps, Straight part 2- 3 steps and Polyline part 2- 3 steps [plan 3]
However, each step is committed while stepping from previous on succeeding tobiishi stone. Therefore, a single step is made of two feet stepped on two neighboring stones. Hence, there is always a single stone that belongs to both end of straight and beginning of polyline stepping parts and vice versa [red fill stones in plan 4];
Figure 48 : [left middle] close site plan of research case tobiishi path [black units] and its previous and subsequent tobiishi paths [grey units]. They are presented with Katsura Rikyu relevant environment that influences visual experience acquired from black tobiishi units. Arrow lines mark constant visual experience at the right side of pathway [first and second straight part]. Furthermore, while stepping along second straight part one notices beginning of last tobiishi path that leads to tea house at the left side of field of view. Also, at the last stone of second polyline part, one acquires complete visual experience of tea house and last tobiishi path that leads to its veranda.
Straight and polyline parts infleunce direction of visitor visual cone. Therefore, one can unserstand how visual experiences develop in straight parts. That makes desired sceneries of the garden environment to be positioned according to those straight parts.
Figure 49: [low part] site plan of relevant tobiishi path wider environment. It consists of greenery, landscape and tea house with neighboring stepping paths;



Second last stepping stone in second polyline part. It offers firm view in discontinuous field of view due to its high surface amount.
It offers equal amount of front view borrowed scenery, right side glimpses through dense greeneries and left side slightly increased view of tea house and its veranda. Its size and important view mark first stepping coordinate where one can notice complete length of tobiishi path that leads to tea house area.

This is the second straight part stone with poor right side view and front side view with the garden borrowed scenery. This is the biggest stepping stone in this stepping path.
It marks increasing left view where tea house and tobiishi connection become more revealed. However, visitor does not need to constantly observe the ground due to straight stepping direction.
That make these visual experiences to occur in continuous field of view development.

This is the third stone in first polyline part. Field of view is not constant since one has to be careful to step solely on stone surfaces. It offers poor right side view of certain garden glimpses much lower than in straight part views. Left side consists of visual experience of tea house and approaching path in same amount as in previous view case. Front view is concentrated solely about tobiishi units in order to step solely on their surfaces.

This is the second stone in first polyline part. Field of view is not constant since one has to be careful to step solely on stone surfaces. It offers poor right side view of certain garden glimpses much lower than in straight part views. Left side consists of visual experience of tea house and approaching path in same amount as in previous view case. Front view is concentrated solely about tobiishi units in order to step solely on their surfaces.

This stone belongs to both straight and polyline part. Thus, it offers right side view of certain garden glimpses of scenery in lower amount then in previous coordinate.
Left side consists of visual experience of tea house in an increasing amount.
Front part of field of view consists of complete view of front tobiishi pathway and sevral stones of tobiishi path that takes to the right side tea house platform .

Straight part results in continuous visual experience. Thus, first stepping stone of straight part offers right side view of certain garden glimpses of scenery.
Left side consists of visual experience of tea house roof in an increasing amount.
Front part of field of view consists of complete view of front tobiishi pathway and beginning of tobiishi path that takes to the right side tea house platform .

Straight part results in continuous visual experience.
Thus, first stepping stone of straight part offers right side clear view of certain garden scenery in lower amount than previous one.
Left side consists of visual experience of tea house roof in an increasing amount.
Front part of field of view consists of complete view of front tobiishi pathway.

Straight part results in continuous visual experience.
Thus, first stepping stone of straight part offers right side clear view of certain garden scenery and glimpses.
Left side consists of visual experience of tea house roof.
Front part of field of view consists of complete view of tobiishi path that develops ahead of visitor position.

Figure 50: [upper left]
Sample of SPSP method stepping stones path with marked straight and polyline parts;

Figure 51: [right]
Field of view captions in certain stepping stones. Rectangular opacities extinguish left, right and front visual experiences with given names;
Far right text frames explain how visual experience develops in stepping stones that belong to different straight and polyline parts.

Garden formal element: Tobiishi stepping stones

Attribute: **Distance between stepping points**

Influence of attribute on visual experience in tobiishi stones:

Conclusions based on classification of research results in table and chart

STEPPING STONES' *CENTRAL POINTS DISTANCES*														Nr.	Ratio [%]	
Stepping stones' sub-pathway numeration		1	2	3	4	5	6	7	8	9	10	11	12			
Decrease- Increase [DI]			•											1	8.3 %	
Increase- Decrease- Increase [IDI]	Increase- Decrease [ID] TYPE			•					•	•		•		4	33.3 %	50 %
Increase- Decrease- Increase- Decrease [IDID]					•									1	8.3 %	
Increase- Decrease- Increase- Decrease- Increase- Decrease [IDIDID]						•								1	8.3 %	
Steady- Decrease[SD]													•	1	8.3 %	
Steady [SY]		•					•	•			•			4	33.3 %	

Figure 52: Chart on attributes that describe how distances change measured between central points every two neighboring stepping stones. Since central point of each stepping stone is assumed as stepping point these distances can be named stepping points distances. These distances are divided in 4 groups: DI, ID, SD and SY. Second ID group is divided in 3 methods whose common denominator is ID. Groups are expressed in number of cases and percentage ratio they are applied. Their application is marked with point sign in empty field reserved for each stepping pathway research case [12 samples]

Figure 53: Diagrams that present each method are explained in each text box with original garden samples of tobiishi paths. Each method has its certain infleunce on field of view direction and stepping activity speed.
Compared to each method percentage of application within Katsura Rikyu garden, one can understand which method is the most common used to position stepping stones units at certain distances measured among their central points. However, their central points ideally represent central points of each step, namely stepping points. Therefore, distances between their central points are distances between their stepping points;

Distances among stepping coordinates firstly decrease and then increase in their values while one steps along this type of stepping paths. That makes visitor to increase and then decrease with speed of their stepping activity since steps firstly become smaller and then larger.
This method is applied in 8,3% - 1 research case in 12.

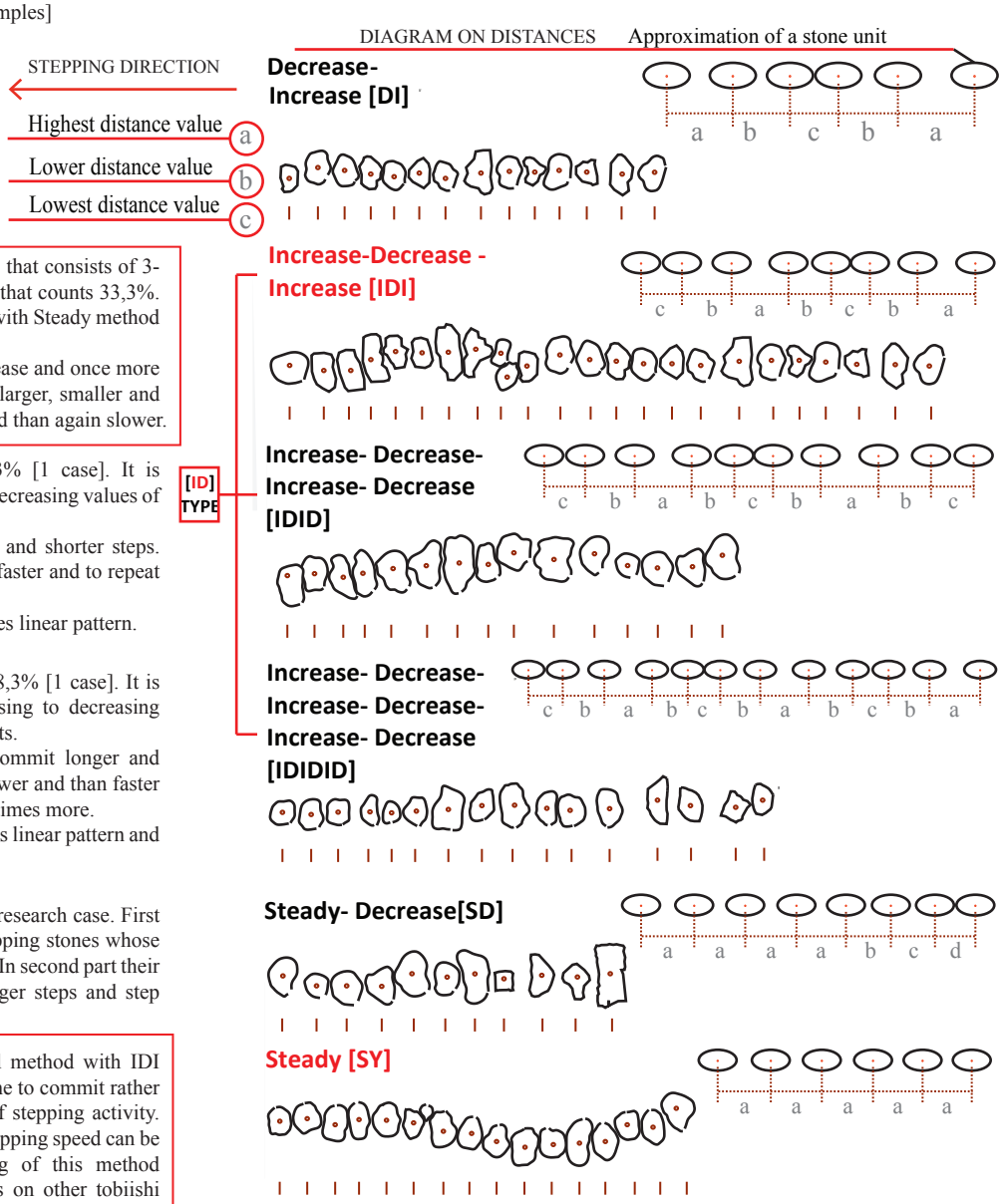
IDI method is the most often applied method in ID type that consists of 3- IDI, IDID and IDIDID methods. It is applied in 4 cases that counts 33,3%. It is also the most applied method in complete typology with Steady method that also counts 33,3% ratio.
Distances between stepping points firstly increase, decrease and once more increase with their values. Thus visitors commit firstly larger, smaller and larger steps and accordingly firstly step slower, faster and than again slower.

IDID method is an ID group method applied in 8,3% [1 case]. It is characteristic with its double change from increasing to decreasing values of distances among stepping stones stepping points.
However, that makes one to repeatedly commit longer and shorter steps. Thus, that makes visitor to firstly walk slower and than faster and to repeat this change in stepping activity speed once more.
This method makes rather makes complex stepping stones linear pattern.

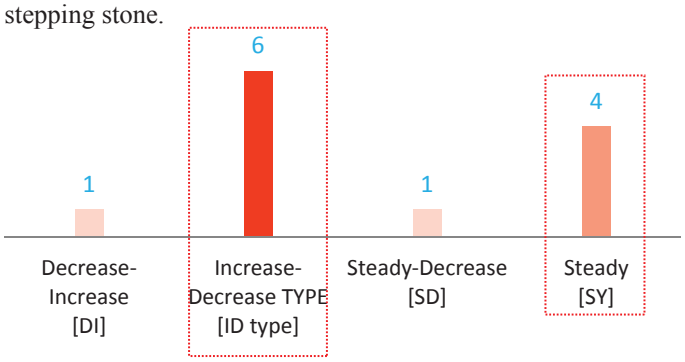
IDIDid method is an ID group method also applied in 8,3% [1 case]. It is characteristic with its three times change from increasing to decreasing values of distances among stepping stones stepping points.
However, that makes one to three times repeatedly commit longer and shorter steps. Thus, that makes visitor to firstly walk slower and than faster and to repeat this change in stepping activity speed two times more.
This method makes rather makes complex stepping stones linear pattern and is applied in longer set of Katsura Rikyu tobiishi path.

SD, steady-decrease method is also applied in 8,3% - 1 research case. First part of this kind of stepping stones' path consists of stepping stones whose stepping points are at rather constant values of distances. In second part their distances become bigger and make one to commit larger steps and step slower than in previous part of the path.

SY- steady- decrase method is the most often applied method with IDI method. It is applied in 4 cases- 33,3% ratio. It makes one to commit rather constant sizes of steps and to acquire constant speed of stepping activity. These steps can be constantly larger or small and their stepping speed can be constantly higher or lower in their values. Meaning of this method application and its influence on field of view depends on other tobiishi



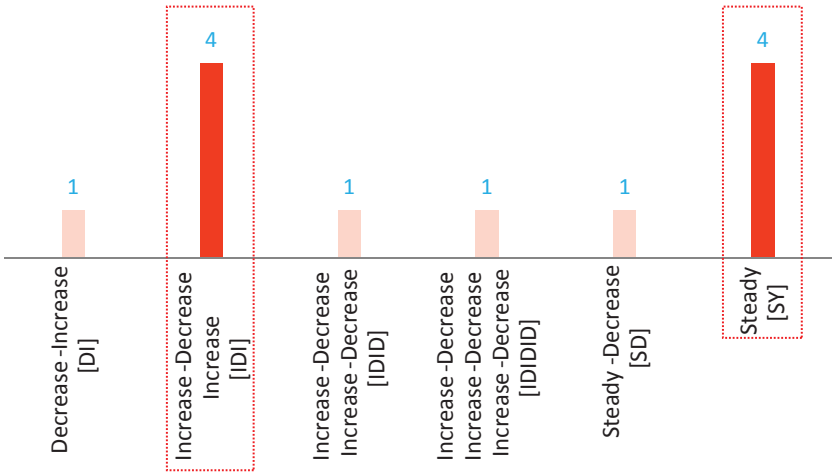
11th separate explanatory:
Distances among stepping stones' stepping points are classified in 4 main methods that explain how they are applied. All groups are singular whilest ID [increase-decrease] common type consists of 3 methods. Hence, ID method is the most often applied with 6 cases from total 12 [50% ratio]. Steady [SY] method is at the second place with 4 cases applied [33,3%], whereas Decrease-Increase [DI] and Steady-Decrease [SD] methods are applied in 1 case each [8,3%].
ID method generally develops from initial change in two different sizes of values. First part of tobiishi path is applied with increasing distances among stepping coordinates and second part develops with decreasing sizes of these distances. Therefore, visitor experiences slower stepping activity in first part of the path due to bigger stepping distances and acquires consequently higher length of steps. In second part of tobiishi path, one experiences faster stepping activity due to smaller stepping distances and acquires consequently lower length of steps.
Hence, when there have to be committed longer steps [increase part] one has to be careful of each of stepping feet to position exactly on succeeding stepping stone. O contrary, when there have to be committed shorter steps [decreasing part] one does not have to be constantly focused on its stepping feet position. Distances among stepping points are rather small and one is not going to step beside succeeding stepping stones surfaces even though its field of view is kept straight.
While stepping on 'I' part of path, one's field of view constantly changes its direction from straight to low and vice versa in order to keep both, view ahead of visitor and view toward the ground that keep feet on tobiishi stones. Nonetheless, while stepping on 'D' part, one's field of view does not change its direction. Due to closer distances between stepping points, one does not need to dominantly visually take care not to step aside from stone surfaces. Field of view becomes constantly oriented to garden front sceneries that develop at both sides of tobiishi path.
In second place Steady method stepping stones stepping points are set in a constant array of distances. Mostly they are set at distances equal to standard lengths of step. That allows visitor not to be distracted from having a continuous field of view, due to stepping activity that suits standard human walk. Field of view direction becomes constantly oriented toward the environment.
In minor DI method stepping points are set oppositely than in ID methods. However, they are initially set to decrease in their distances in first part and to increase in their distances in second part of stepping path. That makes first part stepping activity to be committed with standard walking speed, whereas visitor can continuously observe surrounding environment. In second part, stepping activity has to be committed with greater care not to step aside from tobiishi units and at the slower stepping speed rate. That makes visitor to constantly obstruct field of view continuity. It is constantly changed from front to the ground direction. Therefore, one is intentionally pursued not to have an absolute visual experience of the garden sceneries at that part of stepping path.
In SD method, steady values of stepping points' distances change to increasing value in stepping part second part. That makes first part continuous field of view development and standard stepping speed to change to slower speed rate stepping motion. First part of the path consisted of constant visual experience about certain sceneries switches to visual experience occupied about to properly step on succeeding stepping stone.



Stepping Stones' Central Points Distances
Simplified

Figure 54: Chart on attributes that describe different applications of distances between stepping stones' stepping points. They are divided in 4 methods. ID method is a common group denominator and its consists of 3 methods. They start with ID parts change with further development. Exactly this method group and Steady method are the most dominantly applied in Katsura Rikyu garden;

ID type consists of 3 methods: IDI, IDID and IDIDID. IDI is the most dominant one with 4 cases applied [33,3% ratio], whereas IDID and IDIDID are minor common group methods applied in 1 case each [8,3%].
IDI method is equal to basic ID logic with one more change from D to third I part. In third part of stepping path, stepping points distances repeatedly increase. They make stepping speed rate lower and field of view discontinuous. Thus, visual experience of certain sceneries is again obstructed in last part of the path equally to the first Increase part. In succeeding stepping path one is exposed to new visual exprience development that extends on IDI last Increase part.
IDID and IDIDID methods constists of respectively two and three changes from Increase to Decrease part. Visitor experiences three changes in continuous and cut off field of view. Stepping activity is also committed in three changes from slow stepping speed rate to standard walking rate. Field of view content is thus divided in three portions experienced while walking along D parts and three portions with no content arisen in I stepping parts.
Overall, distances among stepping points are important physical attribute given to tobiishi stones in order to assemble single path. They directly influence stepping speed and field of view direction. Finally, they directly decide if there is going to occur any substantial visual experience. Nevertheless, this attribute is calibrated in coordination with other stepping stones and garden formal elements physical attributes.



Stepping Stones' Central Points Distances

Figure 55: Detailed chart presents how different kinds of distances are applied in order to assemble stepping stones at certain stepping coordinates. ID methods are separately presented in order to understand their specifity. IDI and SYmethods appear the most often applied, whereas other methods are almost minor. Nonetheless, ID methods are identical in their appliance that solely result in more complex IDID and IDIDID methods and their final D part in comparison to the most dominant IDI I final part;

Sample - INCREASE-DECREASE-INCREASE [IDI] values of distances among stepping points:

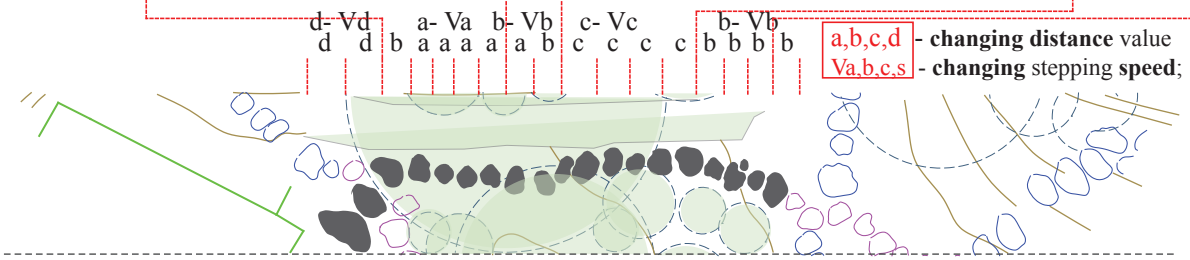
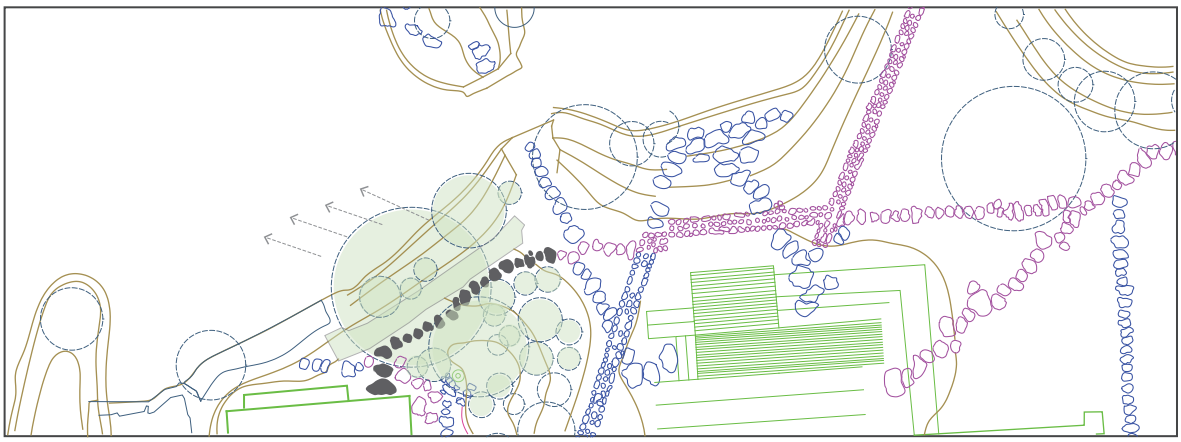
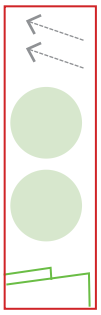


Figure 55: Array of photos documented in certain stepping coordinates in 5 stepping stones.They represent captions of dis/continuous field of view depending they belong to 'I' or 'D' part. One can notice how visual content significanlty appears at both sides only during middle 'D' [a,b distances] part. In final 'I' [d distances] part stepping stones are big sized, thus they make important views to succeeding path. Filed of view thus become concetrated where to take off shoes and how to enter tea house interior;





Direction of borrowed scenery visual experience;

Left side greenery bodies;

Right side greenery bodies;

Tea house;

Figure 56, 57: Sample of stepping stones path, assembled with stones positioned in IDI method. In first part of stepping path their stepping points distances increase and therefore slow the stepping speed rate. Therefore, one cannot sustain continuous field of view development due to distant stepping points. Hence, it has to be taken care of steps to be positioned on stone surfaces. Nonetheless, there is no significant visual content at both sides of path. Greenery formal elements cover both field of view sides.
At second part, stepping point become closer whereas field of view development becomes continuous. One does have to constantly look down in order to step exactly on stone surface. Field of view left side gradually reveals tea house, whilest right side offers garden 'borrowed scenery' view;

Sample - STEADY values of distances among stepping points:

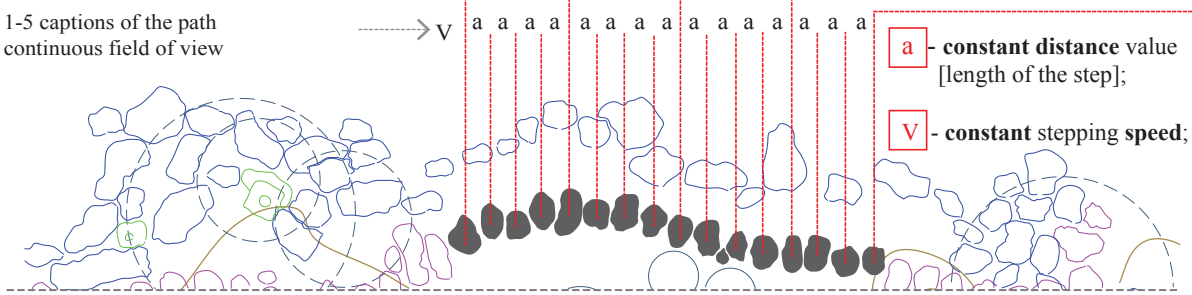
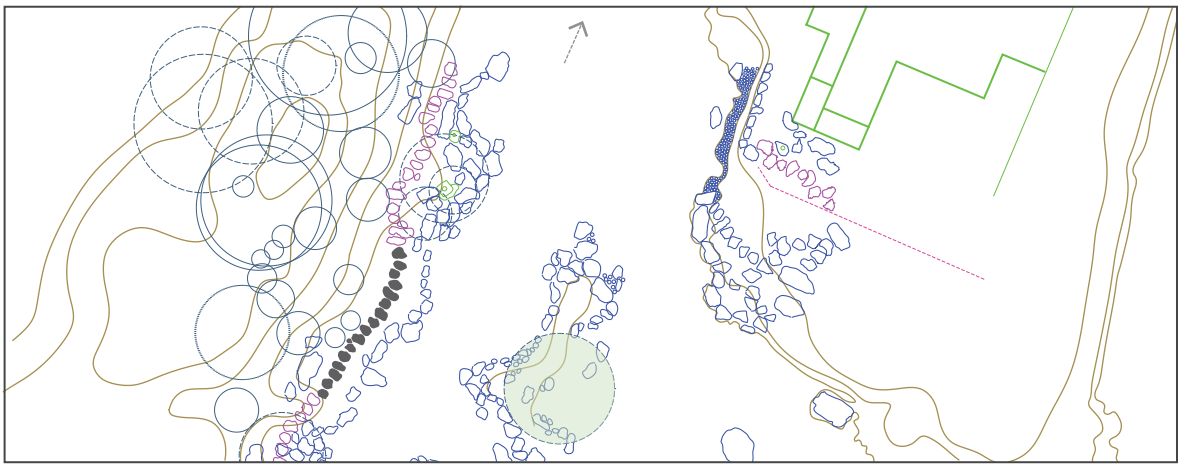
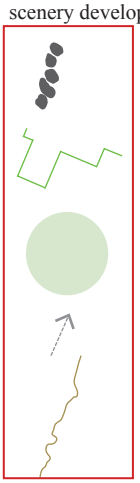


Figure 58: Array of photos documented in certain stepping coordinates in 5 stepping stones.They represent captions of continuous field of view. Its continuity is pursued due to the stepping points distances that are applied in Steady method with almost equal values. These kind of distances do not obstruct standard lenght of steps. Therefore, one can continuously observe certain garden scenery development.





Sample of a stepping path applied with Steady method;

Tea house - Shokin-tei pavilion;

Single pine tree;

Stone bridge near position : it takes directly to Shokin-tei;

Outline of terrain slope that decreasingly lowers the field of view depth;

Figure 59, 60: Sample of stepping stones path assembled with stones positioned at steady values of stepping distances. Lower drawing present Katsura Rikyu site plan with stepping path along with several important formal elements [right legend]. Important forms at right side of field of view are Shokin-tei pavilion, the garden pond single pine tree and distant pond bridge. Left side consist of importan development of terrain slope. Upper drawing presents more detailed plan of the path. Stepping stones are positioned at [a] stepping distance value whereas visitor steps with constant speed [V]. Thence, one can attain continuous visual experience [Fig.58] that consists of pine tree, Shokin-tei and distant stone bridge [right side] and slope [left side]. Since one obtains standard stepping speed field of view captions are continuous with sucessive development of visual experience of the garden scenery

Garden formal element: Tobiishi stepping stones

Attribute: **Stepping stones relative height**

Influence of attribute on visual experience in tobiishi stones:

Conclusions based on classification of research results in table and chart

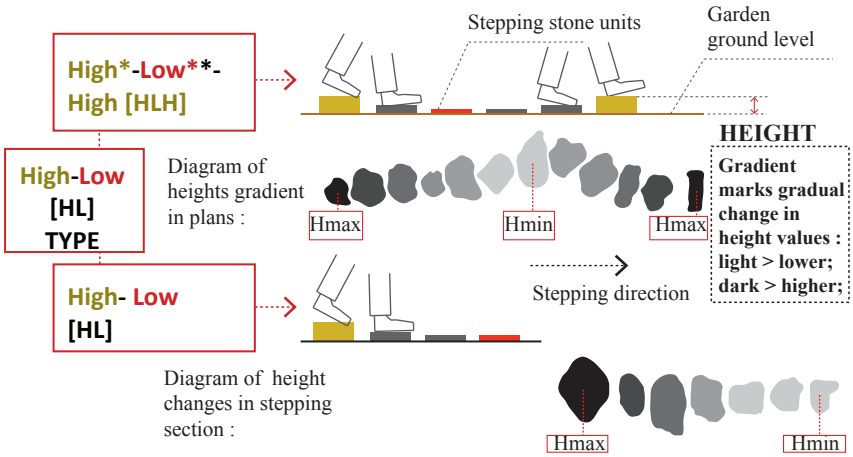
STEPPING STONES' *RELATIVE HEIGHTS [STONE THICKNESS above the ground]* * **high [H]** marks values higher than 3cm; ** **low [L]** marks values lower than 3cm; *** **steady [SY]** values equal to 3cm of height;														Nr.	Ratio [%]	
Stepping stones' sub-pathway numeration		1	2	3	4	5	6	7	8	9	10	11	12			
High*-Low**-High [HLH]	High-Low [HL] TYPE		•		•							•		3	25 %	50 %
High- Low [HL]							•		•		•			3	25 %	
Low- High-Low-High [LHLH]	Low-High [LH] TYPE			•										1	8.33 %	25 %
Low- High [LH]										•			•	2	16.67 %	
Steady*** [SY]		•				•		•						3	25 %	

Figure 61: Table on stepping stones relative heights measured from the ground level to the stepping surface level. Values are divided in 3 methods. Two first are actual groups that consist both of 2 separate methods.
They are table counted in number of cases they are applied and percentage ratio they occupy.
Points mark research cases reserved for certain method they belong. Furthermore, one can understand what are dominant and minor methods applied;

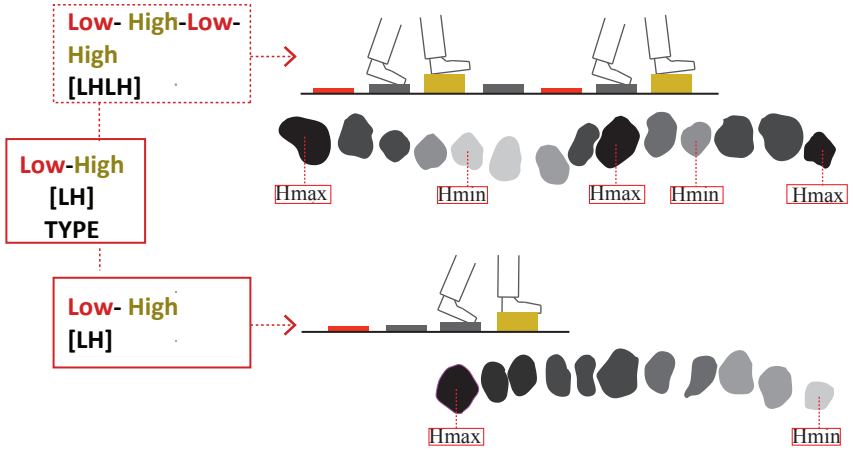
Figure 62: Bellow are presented table methods in two kinds of drawings: plan and section. One can understand how the height is measured and therefore classified in different values and methods applied in single path changes in stepping heights. Stepping at higher height demands higher awareness and visual care.
One has not to step aside of stepping stone surfaces. That makes field of view to be disturbed in its continuity. Otherwise, low height speed up stepping activity and does not obstruct field of view continuous development;

In HLH method stepping stones are positioned in 3 different kinds of relative heights that come one after another. They appear in high-low-high order.
Undoubtedly, they influence field of view continuity.
Higher stepping levels acquire higher visual care in order to keep body balance and not to step aside of stepping stones surafces.
Therefore, visitor practices continuous field of view in middle lower part of the path;

High-Low method applies in a single change of two values of stepping heights. Thicker stones are gradually changed to thinner stepping stones.
This height change resembles in relaxation of both, body that commits stepping activity and field of view direction that is effortlessly occupied with the garden environment.
It does not become disturbed with ground level visual care to be undertaken, since stepping height is rather close to ground. That makes stepping activity similar to walking activity;

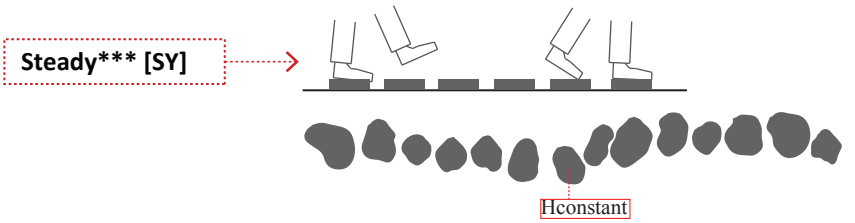


LHL method consists of two changes from low level to heigh level stepping heights. These two changes initiate two usurpations of continuous field of view development.
Two low parts enhance continuous field of view development whose content is solely occupied with the garden environment.
Two high parts demand additional visual care in order to strictly step on stone surfaces. Those changes of field of view direction break continuous visual experience of the left, right and frontal garden environment;



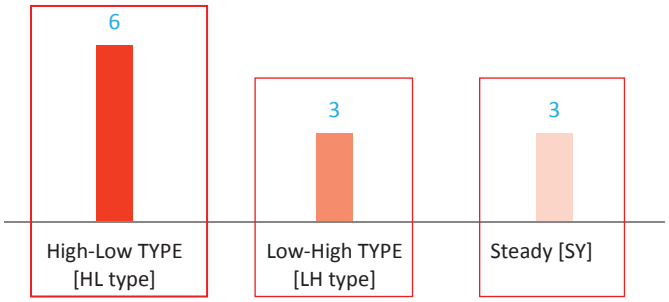
Low-high method results in development of gradually higher stepping stone stepping level. However, stone surfaces gradually gain higher stepping surfaces measured from the garden ground level. They result in gradually usurped field of view development due to increasing stepping effort.
It has to be undertaken to step correctly on stepping stones' surfaces and to keep one's stepping body balance. Field of view continuity becomes of secondary importance;

Stepping heights obtain rather equal values of stepping heights measured from the ground level and observed at a single stepping stones path.They are at heights around 3cm.
That height makes visitor to effortlessly develop continuous field of view progression about garden environment. It occurs without directing crucial attention to step within stone surfaces and bring the feet high enough to step on their top surfaces;



12th separate explanatory:

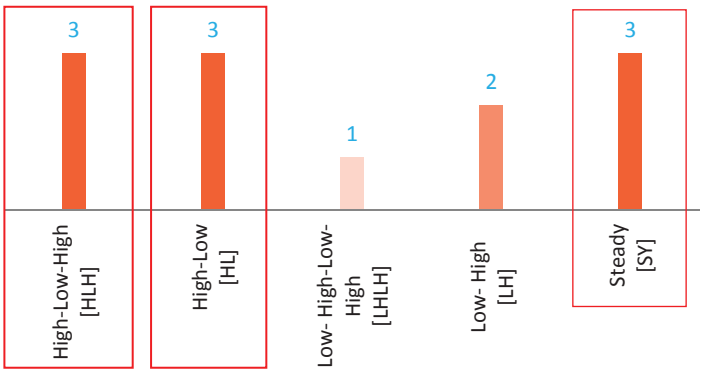
Stepping stones stepping heights are divided in 3 main groups of common methods. They are simplified and therefore grouped in HL, LH and SY methods. The most often used method is HL, High-Low method with 50% suage ration applied in 6 stepping paths. Remaining two LH, Low-High and SY, Steady values methods are applied both in 25% that equals 3 stepping stones paths. Low hereby means height lower then 3cm, high means higher then 3cm and steady approximately equals to 3cm.
Method attributes describe how stepping stones relative height, measured from the garden ground level, changes along a single pathway. However, these heights are actual stepping heights, since stone surfaces whose height is measured is an actual stepping surface.
Since surface whose height is measured is stepping surface, value of height inevitably influences stepping activity. Therefore, it also influences field of view direction and its according continuity. Its continuity is defined in longevity of visual experience concetrated about the garden environment at left, right and front side of visitor stepping along tobiishi path. Hence, when one has to break this kind of visual experience and be careful not to step aside of stone surface, field of view is not continuous anymore.
As a matter of fact, stepping height that is of higher values makes one to carefully step since stepping surface becomes more distant from the ground level. That makes field of view discontinuous. Nonetheless, lower values of stepping stones relative heights make steps more closer to the ground level and therefore more similar to standard walking acitivity. Thence, field of view is continuous in its development of visual experience since one does not need to be dominantly careful not to step aside of tobiishi surfaces.
Overall, lower values of heights are applied when visitor is intended to percieve certain garden scenery. O contrary, higher values are applied when there is no exquisite visual experience to be undertaken or the scenery is not prominent.
Dominant HL method consists of first part of the path with low values of stepping heights, whereas its second part is of higher values of stepping heights. That makes its stepping activity to develop with firstly disturbed and then continuous visual experience of the garden environments.
In LH method , everything is arranged oppositely. First part consists of stepping stones with low values, whereas second part consists of higher values of relative heights. They initiate careless in first and careful stepping activity in second part stepping path. That makes field of view discontinuous in second part, whilest in first part its continuity enhances visual experience to consist solely of the garden environment.
Steady values [S] method consist of stepping stones with height relatively equal to 3cm measured from the ground. However, they do not demand additional visual care not to step aside of stone surfaces. Hence, they enhance continuous visual experience along the whole stepping path. Toobishi units in these paths are not intended to change visual experience attention directed toward the side and front garden scenes to ground. However, they support stepping activity rather similar to walking activity;



Stepping Stones' Relative Heights
Simplified

Figure 64: Chart on stepping stones relative heights measured from the garden ground level. They are classified in 3 main groups of methods. Two of them consists of more methods that are denominated with HL and LH prefix. Vertical pies express their proportions in application with their sizes and color shade.
Furthermore, number of cases they are applied is written on top of each pie;

HL method consists of 2 separate methods: HLH- High-Low-High and HL- High-Low methods. They both has a common HL denominator. In HLH method first part of stepping path is assembled with stone units of higher values of height from the ground. Second part is applied with lower values of heights, whereas last third part repeats high values. Therefore, first and third part of those paths demand additional visual care directed to ground level. It makes steps to be committed exactly on stones surfaces. That makes stepping speed rate slower and more careful, whereas visual experience of the garden surrounding is constantly broken with ground observation.
In second part, with low values, stepping activity speed is rather faster, with continuous development of field of view captions that consists of the garden environment. One does not need to be careful not to step aside from stone surface due to values of stepping height that make stepping surface almost equal to ground level. HL method is equal besides it does not have third part with repeated H values.
LH method consists of 2 separate methods: LHLH- Low-High-Low-High and LH- Low-High method. They both has a common LH denominator. First part of the path consist of stepping stones with lower heights, whereas second part consist of higher values of heights. In LHLH method this change occurs two times, whereas in LH method it stays once.
Therefore in LHLH method there is two times change in firstly higher and then lower values of stepping speed rates. It equally occurs in field of view. It firstly consists of continuous array of the garden environment captions, and then discontinuous one with necessary views to the ground in order to maintain steps concetrated on tobiishi units.
In LH method this change happens once.
Among the others, HLH- High-Low-High method, HL- High-Low method and Steady S method are the most often applied with 25% ratio in 3 cases of stepping paths. LH- Low-High method is applied in 16,67% that counts 2 cases of stepping paths. LHLH- Low-High-Low-High method is applied in 8,33%, which counts for 2 researh cases.
Thence, on next page there is going to be discussed and presented in its attributes one of the most dominant HL method [25%].



Stepping Stones' Relative Heights

Figure 65: Chart on stepping stones relative heights. They are conveyed in detailed methods whereas two previous methods are divided in 2 separate methods each. One can understand more deeply amount of their application in size and shade of each vertical pie and numbers of cases applied wrriten on top of them.
However, there are clearly understood the most often and less used methods in size and shade of their pies. These results are to be discussed in further research conclusions in their influence on stepping activity and development of visual experience;

4
Stone height - **LOWEST**
Part of the path - L

Left view - next tobiishi path, pond
Right view - garden pond, isles
Front view - pond bridge,
complete width of main villa

3
Stone height - **LOW**
Part of the path - L

Left view - next tobiishi path, pond
Right view - covering greenery,
garden pond glimpses, isles glimpses
Front view - pond bridge, part of main villa

2
Stone height - **HIGH**
Part of the path - L

Left view - covering greeneries
Right view - covering greenery,
garden pond glimpses
Front view - glimpses of main villa

1
Stone height - **HIGHEST**
Part of the path - L

Left view - covering greeneries
Right view - covering greenery,
garden pond glimpses
Front view - small glimpses of main villa

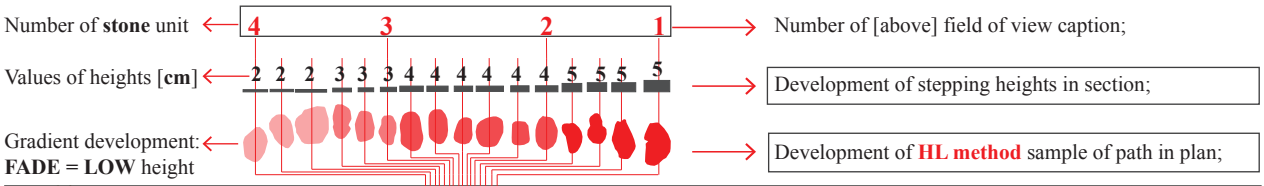


Figure 66: Field of view captions [above];
Tobiishi sample taken from the garden **LH method** research case. One understands how stepping heights vary in plan/section;

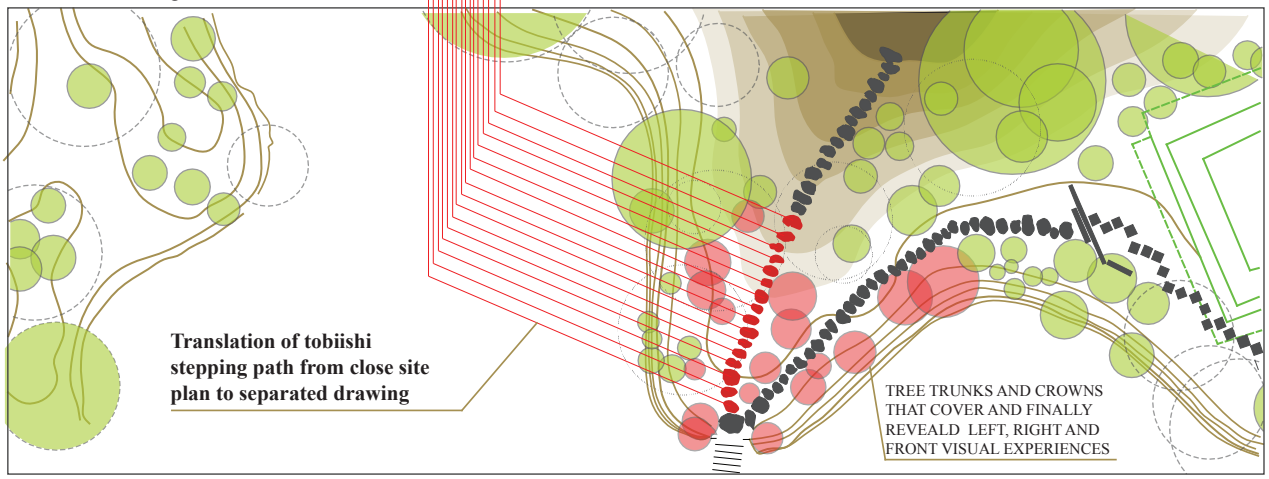


Figure 67:
Close site drawing that present exemption from Katsura Rikyu garden environment.
Tt appears in forms of coherent development of certain physical atrributes of greenery bodies [crown size and height decrease], landscape [height decrease], other formal elements: tea house, main villa, bridges, pond and isles, with their positions and final development of relative heights **High-Low method** developed tobiishi path;

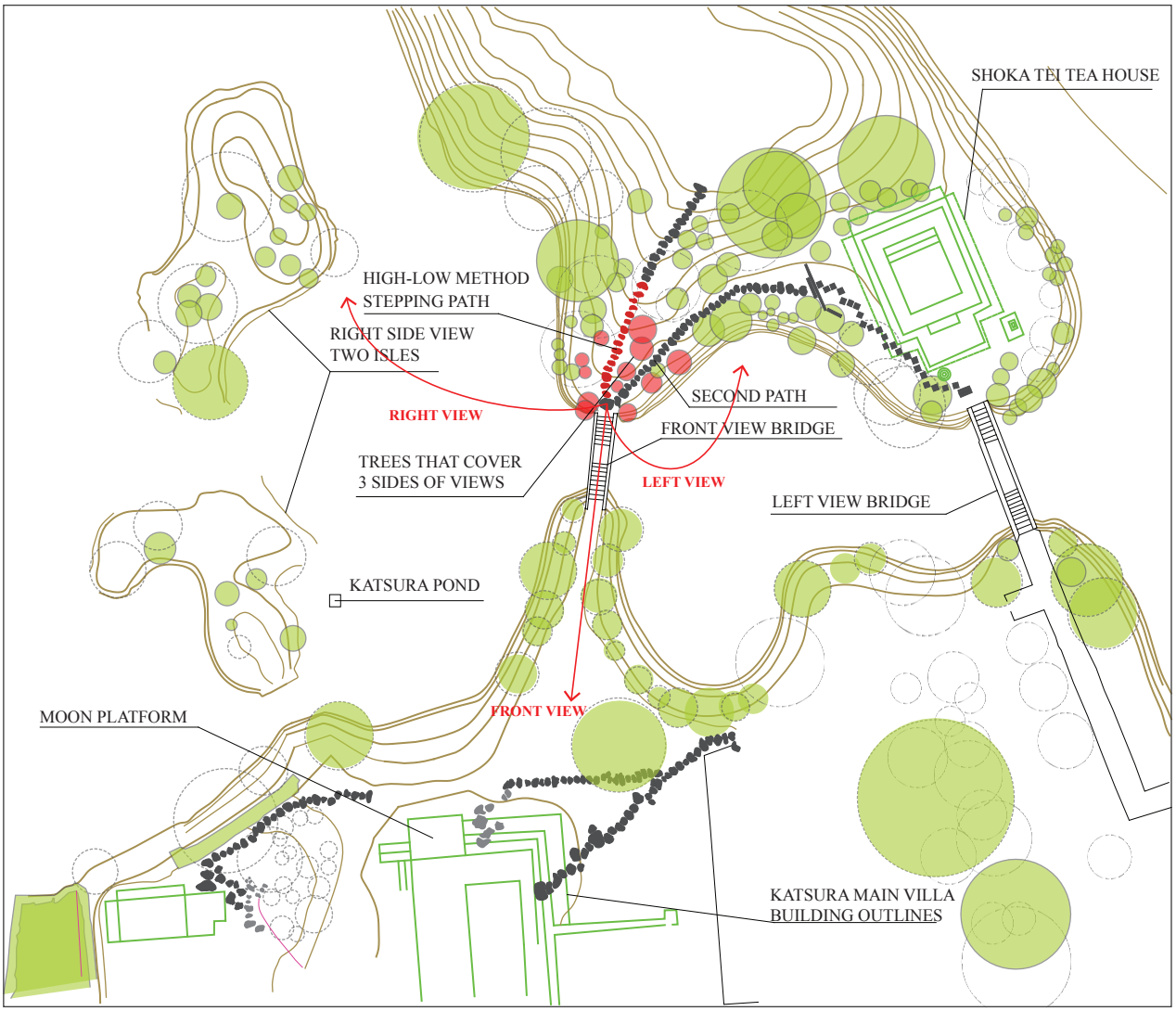


Figure 64:
Far site view along with legend of the garden formal elements that are targets of HL method influenced visual experience;

Left side visual experience final target develops in second part of the path with low relative heights. In that last part visitors understand where the next tobiishi path starts and where does it further take in relation to the garden environment: shoka tei tea house and left view bridge.

Front view develops from starting 90% covered view of main villa. Absence of visual experience overlaps with high values of relative heights whereas one has to be careful not to step aside from tobiishi stones. Furthermore, view is covered with front and left side greenery trunks and crowns.
In second part of stepping path with lower values of relative heights, develops front view of main villa building and moon platform. Finally, visual experience completely reveals those two.
Overall, final right side view of tw pond isles, merges with left and front views into a single, wide field of view caption. It occurs in tobiish unit with lowest height value;

Garden formal element: Tobiishi stepping stones

Attribute: **Stepping stones mutual distances**

Influence of attribute on visual experience in tobiishi stones:

Conclusions based on classification of research results in table and chart

STEPPING STONES' *DISTANCES*														Nr.	Ratio [%]	
Stepping stones' sub-pathway numeration		1	2	3	4	5	6	7	8	9	10	11	12			
Decrease- Increase [DI]	**Decrease- Increase [DI] TYPE**		•											1	9.09 %	45.45 %
Decrease- Increase- Decrease- Increase- Decrease- Increase [DIDIDI]				•		•				•	•			4	36.36 %	
Increase- Decrease- Increase [IDI]	**Increase- Decrease [ID] TYPE**											•	•	2	18.18 %	36.36 %
Increase- Decrease- Increase- Decrease- Increase- Decrease [IDIDID]					•			•						2	18.18 %	
Steady- Decrease[SD]														0	0 %	
Steady [S]							•		•					2	18.18 %	

Figure 68: Table on tobiishi stones arrays and their 12 reaseach cases applied in 4 different types of distances. These distances are measured between neighboring stones outlines in their stepping direction.
Two methods are groups of two sub-methods with common DI and ID denominators. All types are expressed in number of cases they are applied and percentage ratio they occupy accordingly in both group and single cases.These numbers are calculated by counting point marks. These marks underline which method is used in certain of reseach cases from 1 to 12;

Figure 69: Bellow are presented diagram and drawing samples attached to each separate method. Group methods are presented with all 4 sub-methods and their separate drawings. One can understand how distances [a>b>c] among stepping stones are actually measured and how their different progressions are classified in above methods. Furthermore one can grasp how they reflect on stepping stones disposition in a single tobiishi path.
Each case is accompanied with text box. It explains the method principles and further implications on stepping activity and field of view continuity;

In DI method distances between stepping stones are arranged to firstly decrease and then increase. This change in values brings stepping stones closer and then more distant. Accordingly, stepping activity becomes faster and then slower, whereas field of view becomes enhanced and then obstructed in its continuous development. Hence, one has to be careful not to step aside of stone surface when distances become higher and following steps longer;

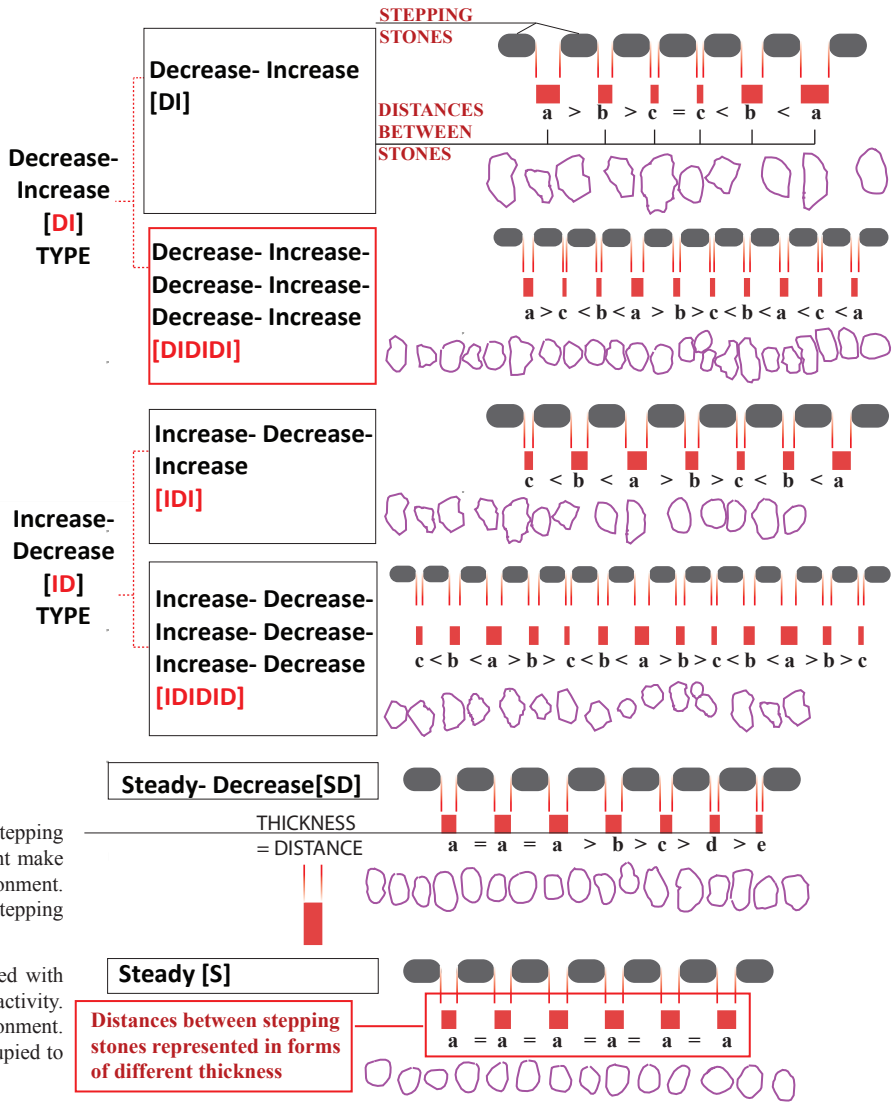
DIDIDI method brings three times change from decreasing to increasing values in distances between stepping stones. Accordingly, it repeats three times in single, DI attached, changes in stepping activity and field of view. These changes occur in a single switch of slower to faster conduct of stepping activity and continuous and obstructed development of field of vew. Higher values of distances make one to be more careful about a single step to be committed on tobiishi surfaces and vice versa;

IDI method involves opposite changes from firstly increasing, decreasing and then repeatedly increasing values of distances between stepping stones. Stepping activity becomes accordingly slower, faster and then slower. Thence, field of view changes from continuous, obstructed and again continuous development of captions. If distances increase one has to take a look of stepping places. Thus, these captions will develop without changing field of view direction if distances decrease and vice versa.

IDIDID method identifies with three times change from increasing to decreasing values of distances. They bring three times change from slower to faster stepping activity, whilest field of view development changes three times from continuous to discontinuous array of captions. Their simple repetition of a single change result in complex array of stepping stones path;

SD method develops from steady to descreasing distances among stepping stones outlines. However, steady speed and field of view development make one to engage with active visual intercourse with the garden environment. Decreasing part more expressively makes one to be engeged in equal stepping and observing activities;

Steady method in stepping stones distances makes one to be involved with continuous field of view development as the matter of steady stepping activity. It allows visitor to simultaneously step and observe the garden environment. Carefulness of visual experience does not need to be dominantly occupied to step exactly on stone surfaces;



13th Separate Explanatory :

Stepping stones are positioned at certain distances that make these units to be separated. They do not create continuous stepping surface but rather separated stone surfaces to accustom single step or standing position. Therefore, distance between tobiishi units determine character of stepping activity- its speed, and field of view direction- continuity of development of captions that assemble visual experience.

Methods applied in Katsura Rikyu are divided in 4 groups: DI, ID SD and S methods. First two groups consist of 2 separate sub-methods each. Nonetheless, they are denominated according to their characteristic first two attributes: DI and ID. However, their equal change in distances values in these common prefix makes them significantly similar.

DI, Decrease-Increase method is the most often applied with 45,45% [5 cases from 12 research cases], whereas ID, Increase-Decrease method is at the second place with 36,36% percentage ratio that counts 4 cases they are applied. S, Steady method is applied in 2 research cases, which counts 18,18%, whilest SD, Steady-Decrease method, applied in other tobiishi units attributes is 0% applied. Chart bellow applied presents proportional relations between these amounts in vertical pies array. Thus, one can understand which are most/less applied in Katsura garden.

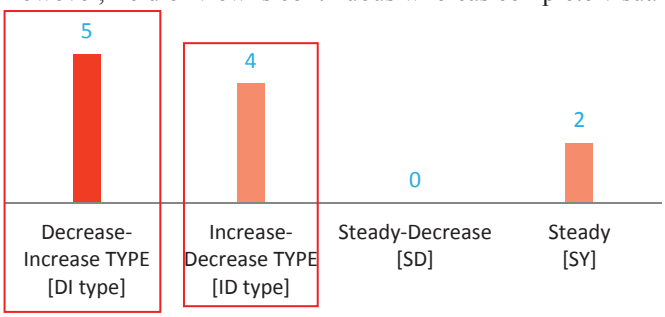
DI method consists of two kinds of distances. In first part of stepping path distances among stone units decrease in their values and then increase in second part of stepping path.

Decreasing values make stone units closer and therefore similar to continuous stepping surface. Therefore, visitor does not need to constantly pay attention not to step aside from stone surfaces. That makes stepping activity to be conducted in moderate, slower speed rate, almost equal to usual walking speed. Field of view is constantly directed to the garden environment that shows off at left, right and front sides. That makes visual experience to develop in a constant array of captions. It does not become usurpated with visual attention to the stepping ground.

Second part of path belonging, increasing values of distances, make visitor to conduct longer steps and therefore walk rather faster. Field of view is constantly obstructed in order to conduct steps at proper stone surfaces. That makes visual experience of the environment to be separated with stepping ground visual attention.

ID method consist of two kinds of distances. In first part of stepping path distances increase in their values, whereas in second part they decrease. However, they bring equal changes in stepping activity and field of view characters as in DI method, but they are arranged in opposite order. Stepping activity is firstly arranged in faster pace with longer steps, whilest field of view is usurpated in first part of stepping path. In second part stepping activity is of slower, standard pace, whilest field of view is supported in its continuity.

In S, Steady method, distances are of rather equal values. They make visitor to acquire constant stepping speed of rather slower, standard rate. However, field of view is continuous whereas complete visual attention is directed to the garden environment.



Stepping Stones' Distances ***Simplified***

Figure 70: Chart on stepping stones distances distribution in forms of vertical pies array. One can grasp in their dominance order and further implications discussed in above applied text box immanent in stepping activity and field of view character;
Blue text indicates number of cases each method is applied whereas vertical pies represent geometrical, but proportional though simplification of their percentages ratios;

Bellow attached chart presents distribution of methods where DI and ID methods are represented with their two sub-methods each.

DI method consists of DI and DIDIDI methods, while ID method consists of IDI and IDIDID sub-methods.

DI type:

DI method consists of a single change from decreasing to increasing values of distances between stepping stones. It is applied in 9.09% [1 case].

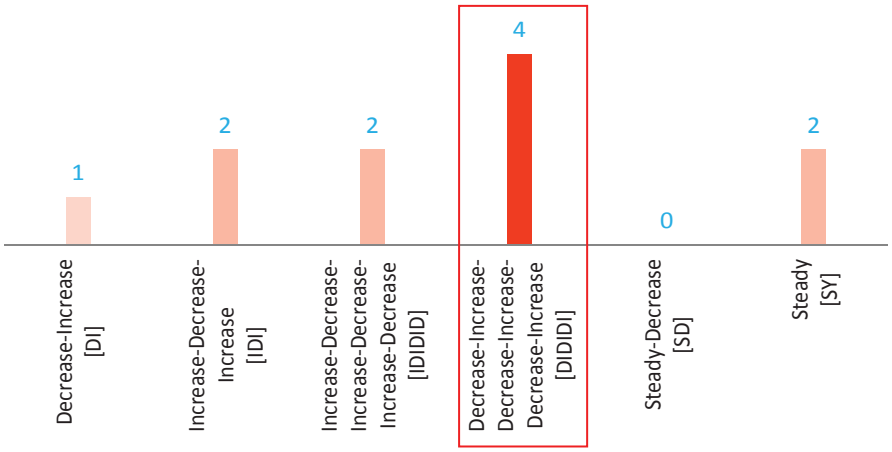
DIDIDI method consists of triple change from decreasing to increasing values of distances. It is the most often applied method with 36,36% [4 stepping paths]. This method follows triple change from faster to slower stepping activity and field of view triple change from continuous to obstructed development of visual experience. However, rather complex application of and D and I parts follows disposition of the garden environment. When there is a visual experience that has to be acquired stepping stones become closer and stepping activity is rather slow, with standard walking length of steps. If there is no significant view, intended to be observed, stepping stones become distant and stepping activity become faster with longer steps. Hence, one has to be careful to step solely on stepping stone surfaces;

ID type:

IDI method is applied in 2 research case representative that counts 18,18%. It is characteristic with its ending I [increasing] part of the path, whereas its first and second parts are with respectively increasing and decreasing values of distances.

IDIDID method consists of triple change of increasing and decreasing values of distances between stepping stones. It equally counts 18,18% in 2 research cases. It applied with same conclusions about coherence among visual experience progression and changes in distances values. Nonetheless, their initial difference is starting part of the path that is assembled with increasing values of distances between stones.

An overall conclusion is that stepping activity speed, visual experience development and distances between stone units are sinhronized.



Stepping Stones' Distances

Figure 71: Chart on greenery relative heights [measured from the ground level at the point of garden ground] typology distribution; one can grasp more clearly in dominant visual experiences one gain during tobiishi directed walk in relaton to the densities and how their changes effect field of view;

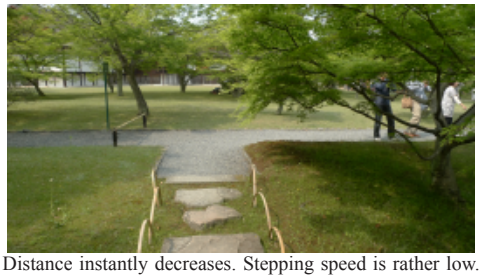
3

Distance is small, stepping speed rate rather slow. Field of view is continuous. Left [main villa] and right [next stepping path] views are revealed inhigher amount;

6

Distance increases. Stepping activity speed increases. Field of view is obstructed due to care not to step aside of stone. Villa is equally revealed. Next path is more covered;

9



Distance instantly decreases. Stepping speed is rather low. Right side view gradually reveals next path development. Left side view gradually reveals main villa second floor;

2

Distances decrease, stepping speed rate decrease. Field of view is continuous. Left [main villa] and right [next stepping path] views are gradually partially revealed;

5

Distance gradually increases. Villa and right side path visibility is equally revealed. Stepping speed is rather equal. One cannot grasp how next path continues to villa;

8

Distance instantly increases. Left side view of main villa is equal. Stepping speed is instantly faster. Right side view completely closes view to the second part of next path;

1

1st stone of decreasing values. It has bigger size neighboring distance. Left/right views are covered with demarkation greenery. It has slower faster speed rate;

4

Distance is equally small. Left side absolutely reveals glimpses of villa first floor. Stepping speed is equally slow. Right side reveals central part of next stepping path;

7

Neighboring distance decreases. Right side offers complete view of first part of next stepping path. Left side view offers glimpses of the garden main villa second floor;

Figure 72: Array of the garden environment photos. They are recorded in stepping stones coordinates of this page research case. However, each stone they are captured belong to part of the path that is with either increasing or decreasing values of distances between its stepping stones. Hence, one can understand how the content of the photos and the part stones belong mutually correlate. Certain visual experiences are revealed or covered whether stone belongs to part with respectively decreasing or increasing distances between stones;

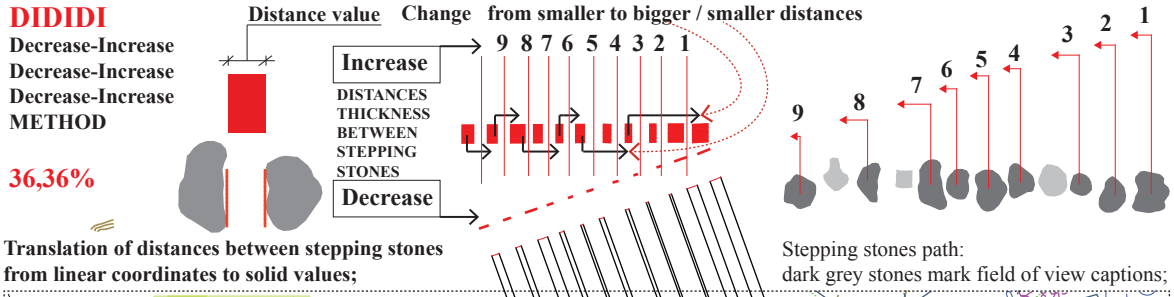


Figure 73: Set of diagrams and drawings that explain DIDIDI method applied in distance values between stepping stones. It consists of triple change [arrow marks] from decreasing to increasing values that cordially influence stepping and field of view character.
Decreasing values are followed with slower Vi stepping speed, while increasing values of distances are followed with faster Vd stepping speed;

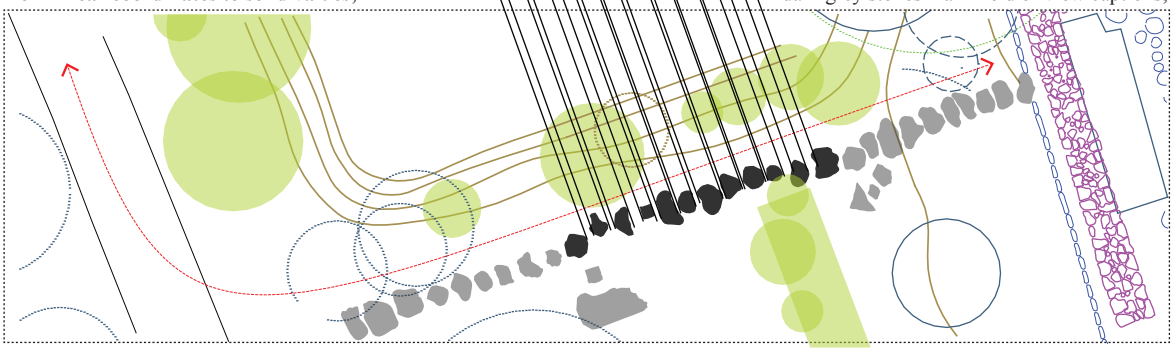
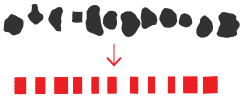


Figure 74: Close site plan of stepping path. Stones are positioned at certain distances. They are applied with DIDIDI method. Lines mark those distances. They are translated to red solids that mark distances values [diagrams above]. One can understand these stone mutual distances actually develops;



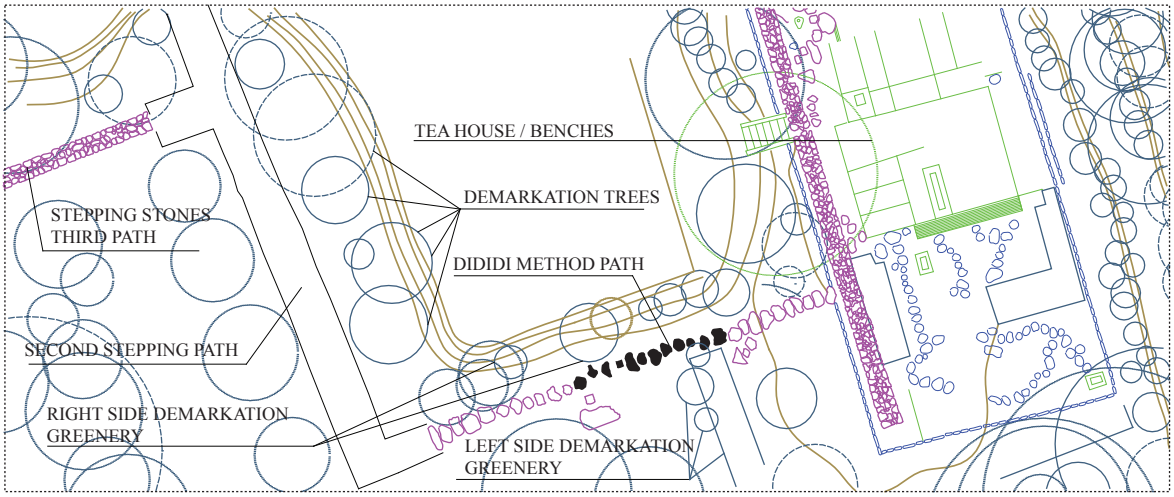


Figure 75: Site plan of stepping path. Their distances changes and accordingly influences stepping activity speed rates and field of view direction changes. Overall, these changes are harmonized with changes in environment formal elements. Visual experiences of these garden environments therefore develop in accordance with these changes.
In this research case, right side greenery and demarkation trees cover views toward next stepping paths. Left side greenery covers view toward far main villa pavilion. Revealing of these views and their coverage occur along with certain changes in stepping stones distances. These distances increase while views are covered, whereas these views are revealed when distances decrease;

7.2.2 Comparison of the most dominant measures in visual experiences they create

7.2.2.1 Textual seclusion of the most dominant measures and explanation of visual experiences they create

Hereby are presented the most dominant measures applied to the garden physical forms attributes. There are written down one or two samples of measures [descriptions] with values they are applied. Accordingly, bellow each attribute name and measure is a short description how it affects field of view development [close/reveal] and stepping activity [speed, visual attention].
Furthermore, these attributes can be compared in order to understand they simultaneously create an overall visual experience. Their most dominant attributes and values they acquire have to be selected in order to mutually support and enhance common visual experience.

Garden formal element : Greenery

1st Attribute name:

PROGRESSION OF VISUAL EXPERIENCES ON GRENERIES
OBSERVED FROM
STEPPING STONES' COORDINATES

Dominant measures :

1 **Gradual progression [GP]: 45%**

Influence on visual experience :

That means that dominant design intention as a research result is to use greenery decreasingly gradual progression, in order to gradually reveal what stands behind their bodies. Certain garden scenery as a significant visual experience progressively appears on that side of stepping stones path.

2 **Complete coverage [CC]: 30%**

Influence on visual experience :

Complete coverage of field of view with persistent greenery progression, toward what stands behind that greenery.
There is no possible visual experience on that side of stepping stones pathway due to solid greenery cover over field of view angle.

2nd Attribute name:

GREENERY CROWNS' SIZES
ALONG
STEPPING STONES' PATHWAY

Dominant measures :

1 **Decrease [D]: 45%**

Influence on visual experience :

While visitor steps along *tobiishi* lane, its field of view side, applied with D method, gradually/instantly reveals certain vista. That occurs due to decreasing values of greenery crowns that consequently open the view toward the garden scenery that stands behind.

2 **Decrease-Increase [DI]: 30%**

Influence on visual experience :

Greenery volumes decrease in first part of the path and close the view that stands behind.
However, they start to increase in second part of the path and gradually/instantly disclose the view after initial tendency to decrease in their values.

3rd Attribute name:

GREENERY DISTANCES
FROM
STEPPING STONES' PATHWAY

Dominant measures :

1 **Decrease [D]: 25%**

Influence on visual experience :

Greenery crowns are successively set closer to the visitor stepping lane. Thereby, they tend to close the view at that field of view side. Depending on the other greenery attributes [landscape height, greenery crowns' sizes, position of the observed scenery] they completely or partially close the view.

2 **Increase -Decrease [ID]: 25%**

Influence on visual experience :

In ID method, certain scenery is gradually revealed as the distances of greenery bodies firstly increase. In second part of the path, they decrease and start closing the view toward complete coverage.

3 **Increase [I]: 21%**

Influence on visual experience :

While visitor steps along *tobiishi* lane, its field of view side, applied with D method, gradually/instantly reveals certain vista. That occurs due to decreasing values of greenery crowns that consequently open the view toward the garden scenery that stands behind.

4th Attribute name:

GREENERY DENSITIES
ALONG
STEPPING STONES' PATHWAY

Dominant measures :

1 **Decrease-Increase TYPE [DI]: 38%**

Influence on visual experience :

Close or far view behind the greenery bodies is revealed in first and then covered in sudden or gradual manner in second portion of stepping stones' pathway.

2 **Increase-Decrease- Increase-Decrease [IDID]: 33%**

Influence on visual experience :

Double Increase-Decrease changes result in two consecutive visual experiences [close-reveal-close-reveal] of two separated garden sceneries that are closed and revealed according to greenery increasing and decreasing amounts - densities.

5th Attribute name:

GREENERY
RELATIVE HEIGHTS
ALONG STEPPING STONES' PATHWAY

Dominant measures :

1 **Decrease [D]: 29.5%**

Influence on visual experience :

Greenery relative heights gradually/suddenly decrease and therefore gradually reveal the view toward the scenery behind their progression.

2 **Increase-Decrease TYPE [ID]: 28,5%**

Influence on visual experience :

Increase-Decrease kind of greenery growth firstly closes and then opens field of view side that is referred in order to close and reveal certain garden scenery.

Garden formal element : Terrain

6th Attribute name:

SLOPE ANGLES' VALUES
ALONG STEPPING STONES' PATHWAY

Dominant measures :

1 **Increase [I]: 25%**

Influence on visual experience :
I method results in growing of a terrain angle and gradual covering of field of view and according visual experience of the scenery that stands behind the land.

2 **Decrease [D]: 21%**

Influence on visual experience :

I method results in declination of the slope and gradual revealing of field of view and according visual experience of the scenery that stands behind the land

3 Absence [A]: 21%

Influence on visual experience :

In case of absence of any land occurs direct and constant visual experience of certain far or close scenery.

7th Attribute name:

TERRAIN HEIGHTS
MEASU RED ALONG STEPPING STONES' PATHWAY

Dominant measures :

1 **Increase [I]: 25%**

Influence on visual experience :

I method terrain heights increment results in growing and constant coverage of field of view and according visual experience of the scenery that stands behind the land.

2 **Decrease [D]: 21%**

Influence on visual experience :

Certain visual experience is constantly gradually revealed with constantly descending terrain side.

3 **Decrease- Increase [DI]: 25%**

Influence on visual experience :

In 'DI' method occurs phenomenon at the beginning of *tobiishi* lane where certain scenery is visually revealed. At second portion of stepping lane it becomes equal again whereas certain another scenery is gradually covered with increasing terrain side.

8th Attribute name:

TERRAIN SLOPE DISTANCES
FROM STEPPING STONES' PATHWAY

Dominant measures

1 **Increase [I]: 22%**
Influence on visual experience :
Field of view is respectively open in an increasing amount as one steps along the lane. However, the visual experience of the scenery behind is complete or partial depending on the distance increasing rate.
2 **Increase-Decrease TYPE [ID]: 41%**

Influence on visual experience :

Changes in distances firstly reveal view to the certain scenery that stands behind.
In second portion, along with secondary changes in distances' decreasing values, field of view depth is gradually/suddenly closed to the view toward another scenery that stands behind that another portion of terrain progression.

2.1 **Increase-Decrease-Increase [IDI]: 25%**

Influence on visual experience :

It firstly expands field of view coverage with an increasing distances array, then closes with decreasing values and then again reveals another scenery behind the landscape with finally increasing values.

3 **Absence [DI]: 16,5%**

Influence on visual experience :

The view is completely open toward the scenery view that develops along the path observation.

Garden formal element : Stepping stones

9th Attribute name:

STEPPING STONES' *SURFACES AMOUNTS*

Dominant measures :

1 **Decrease-Increase TYPE [DI]: 45,45%**

Influence on visual experience :

In DI method visitors are firstly left out from any visual experience ['D' part] with decreasing sizes of *tobiishi* units. They then become drawn into an active visual attention ['I' part] toward certain garden scenery with increasing sizes of *tobiishi* units.

1.1 **Decrease-Increase-Decrease-Increase-Decrease-Increase [DIDIDI]: 18,18%**

Influence on visual experience :

DIDIDI method consists of triple decrease-increase changes in *tobiishi* sizes. Visual experiences along a single path vary several times from being absolutely directed to certain scenery [highest values of stone size]- I stones, and to the state of field of view that is solely directed to how not to step out from *tobiishi* fields [lowest values of stone size]- D stones.

2 **Increase-Decrease TYPE [ID]: 45,45%**

Influence on visual experience :
In ID method visitors are firstly increasingly drawn into visual experience ['I' part] toward the garden environment along *tobiishi* path.
They then become increasingly left out from any visual experience ['D' part].

2.1 **Increase-Decrease-Increase-Decrease-Increase-Decrease [IDIDID]: 27,27%**

Influence on visual experience :

IDIDIDI method consists of triple increase-decrease changes in *tobiishi* sizes. Visual experiences along a single path vary several times from being solely directed to how not to step out from *tobiishi* fields [lowest values of stone size]- D stones, and to the state of field of view that is absolutely directed to certain scenery [highest values of stone size]- I stones.

10th Attribute name:

STEPPING STONES' *PATHWAY STEPPING DIRECTION*

Dominant measures :

1 **Polyline-Straight TYPE [PS]: 33,33%**

Influence on visual experience :

Visitor is firstly omitted in its stepping activity in order to obstruct constant field of view direction to the garden sceneries that develop along that *tobiishi* path. One has to be constantly careful to step right on *tobiishi* stone since each step changes in its direction.
In second, straight portion, visitor is permitted to step along the paths without constantly observing not to step beside on *tobiishi* stones. One can visually experience certain garden scenes.

1.1 **Polyline-Straight-Polyline [PSP]: 25%**

Influence on visual experience :

The measure consists of one more change of stepping direction with third polyline portion added to the same kind of PS stepping path.

In that third part of PSP method *tobiishi* path, visitor is repeatedly forced to be careful not to step beside than stepping stone surfaces. However, one cannot visually experience complete garden environment that develops along third, polyline part of path.

2 **Straight-Polyline TYPE [SP]: 33,33%**

Influence on visual experience :

SP methods consist of S and P stepping paths portions that bring equal qualities in visual experiences and stepping activity as in PS methods. Nonetheless, SP methods are initiated *vice versa* with S, straight stepping parts and then succeeded with P, polyline parts.

2.1 **Straight-Polyline-Polyline [SPS]: 16.16%**

Influence on visual experience :

In SPS method this single change is ended with one more change to S, straight stepping part.

11th Attribute name:

STEPPING STONES' *CENTRAL POINTS DISTANCES*

Dominant measures :

1 **Increase-Decrease TYPE [ID]: 50%**
Influence on visual experience :

While stepping on 'I' part of path, one's field of view constantly changes its direction from straight to low and vice versa in order to keep both, view ahead of visitor and view toward the ground that keep feet on *tobiishi* stones.
Nonetheless, while stepping on 'D' part, one's field of view does not change its direction. Due to closer distances between stepping points, one does not need to dominantly visually take care not to step aside from stone surfaces. Field of view becomes constantly oriented to garden front sceneries that develop at both sides of *tobiishi* path.

1.1 **Increase-Decrease-Increase [IDI]: 33,3%**

Influence on visual experience :

IDI method is equal to basic ID logic with one more change from D to third I part. In third part of stepping path, stepping point's distances repeatedly increase.
They make stepping speed rate lower and field of view discontinuous. Thus, visual experience of certain sceneries is again obstructed in last part of the path equally to the first Increase part.

2 **Steady [SY]: 33,3%**

Influence on visual experience :

In second place Steady method stepping stones, stepping points are set in a constant array of distances. Mostly they are set at distances equal to standard lengths of step. That allows visitor not to be distracted from having a continuous field of view, due to stepping activity that suits standard human walk.

Field of view direction becomes constantly oriented toward the environment. In second, straight portion, visitor is permitted to step along the paths without constantly observing not to step beside on *tobiishi* stones. One can visually experience certain garden scenes.

12th Attribute name:

STEPPING STONES' *RELATIVE HEIGHTS*

Dominant measures :

1 **High-Low TYPE [HL]: 50 %**

Influence on visual experience :

Dominant HL method consists of first part of the path with low values of stepping heights, whereas its second part is of higher values of stepping heights.
That makes its stepping activity to develop with firstly disturbed and then continuous visual experience of the garden environments.

2 **Low-High [LH]: 25%**

Influence on visual experience :
In LH method , everything is arranged oppositely. First part consists of stepping stones with low values, whereas second part consists of higher values of relative heights. They initiate careless in first and careful stepping activity in second part stepping path.
That makes field of view discontinuous in second part, whilest in first part its continuity enhances visual experience to consist solely of the garden environment.

3 **Steady [SY]: 25%**

Influence on visual experience :

Steady values [S] method consists of stepping stones with height relatively equal to 3cm measured from the ground.
However, they do not demand additional visual care not to step aside of stone surfaces. Hence, they enhance continuous visual experience along the whole stepping path. *Tobiishi* units in these paths are not intended to change visual experience attention directed toward the side and front garden scenes to ground.

13th Attribute name:

STEPPING STONES' *DISTANCES*

Dominant measures :

1 **Decrease-Increase TYPE [DI]: 45,45 %**

Influence on visual experience :

Decreasing values make stone units closer and therefore similar to continuous stepping surface. Therefore, visitor does not need to constantly pay attention not to step aside from stone surfaces. That makes stepping activity to be conducted in moderate, slower speed rate, almost equal to usual walking speed. Field of view is constantly directed to the garden environment that shows off at left, right and front sides. That makes visual

experience to develop in a constant array of captions. It does not become usurped with visual attention to the stepping ground.
Second part of path belonging, increasing values of distances, make visitor to conduct longer steps and therefore walk rather faster. Field of view is constantly obstructed in order to conduct steps at proper stone surfaces. That makes visual experience of the environment to be separated with stepping ground visual attention.

1.1 **Decrease-Increase-Decrease-Increase-Decrease-Increase[DIDIDI]: 36,36 %**

Influence on visual experience :

This method follows triple change from faster to slower stepping activity and field of view triple change from continuous to obstructed development of visual experience.

2 **Increase-Decrease TYPE [ID]: 36,36 %**

Influence on visual experience :

Stepping activity is firstly arranged with field of view is usurped in first part of stepping path.
In second part stepping activity is of slower, standard pace, whilst field of view is supported in its continuity.

7.2.2.2 Textual seclusion of the most dominant measures
and explanation of visual experiences they create

Lower table objective: Encompassing table in this chapter [low] represent condensed content of previous chapter. The aim of that method is to concentrate on the far right side of the table what kind of visual experience, acquired in *tobiishi* stones, is the most dominantly applied in Katsura Rikyu. Progression of field of view content is classified with words: reveal, cover as far opposites along with their combining methods when they change from one state of description to another.
The dominant measures that are also classified with percentages they are applied along with visual experience they condition. Nonetheless, they do not work singularly. Attributes are inevitably in mutual relationships. The relationships they mutually acquire are bond of different measures. Different measures condition different field of view development. Thence, field of view content that develops or is absent along stepping stones paths becomes as a consequence these relationships. Only those measures of certain attributes that singularly result in equal or matching kind of visual experience are engaged in relations along *tobiishi* path whose stepping coordinates offer that visual experience. Therefore, the most dominant visual experience development offered by the most dominantly applied measures is a common visual experience.
The objective of table classification is to decipher which measures of the garden unique set of attributes are intended to be mutually applied along a single path. This objective is further intended to develop significant design method rules. These rules undoubtedly reveal potential of further design method application that can result in an environment different then Katsura Rikyu. Difference of new environment occurs in juxtaposition of different measures than in Katsura Rikyu garden. Hereby potential, different relations of attributes in their measures need to condition equal or matching development of field of view content along paths.

PHYSICAL FORM	ATTRIBUTES	DOMINANT MEASURES	**DOMINANT VISUAL EXPERIENCES**
Greenery	Progression of greenery bodies	Gradual decreasing progression 45%	**Revealed**
		Complete coverage 30%	**Covered**
	Crown size	Decrease 45%	**Revealed**
		Decrease-Increase	**Covered-Revealed**
	Greenery distance	Decrease 25%	**Covered**
		Increase-Decrease 25%	**Revealed-Covered**
		Increase 21%	**Revealed**
	Greenery density	Decrease-Increase TYPE 38%	**Revealed-Covered**
		Increase-Decrease-Increase-Decrease 33%	**Covered-Revealed-Covered-Revealed**
	Greenery relative height	Decrease 29,5%	**Revealed**
		Increase-Decrease TYPE 28,5%	**Covered-Revealed**
Terrain	Slope angle	Increase 25%	**Covered**
		Decrease 21%	**Revealed**
		Absence 21 %	**Revealed**
	Terrain height	Increase 25%	**Covered**
		Decrease 21%	**Revealed**
		Decrease-Increase 25%	**Revealed- Covered**
	Slope distance from path	Increase 22%	**Revealed**
		Increase-Decrease TYPE 41%	**Revealed-Covered**
		Increase-Decrease-Increase 25%	**Revealed-Covered-Revealed**
		Absence 16,5%	**Revealed**
Stepping stones	Stepping stones size	Decrease-Increase 45,45%	**Covered-Revealed**
		Decrease-Increase- Decrease-Increase - Decrease-Increase - Decrease-Increase 18,18%	**Covered-Revealed-Covered-Revealed-Covered-Revealed-Covered-Revealed**
		Increase-Decrease TYPE 45,45%	**Revealed-Covered**
		Increase-Decrease-Increase-Decrease-Increase-Decrease 27,27%	**Revealed-Covered- Revealed-Covered- Revealed-Covered**
	Stepping path direction	Polyline-Straight TYPE 33,33%	**Covered-Revealed**
		Polyline-Straight-Polyline 25%	**Covered-Revealed-Covered**
		Straight-Polyline TYPE 33,33%	**Revealed-Covered**
		Straight-Polyline-Straight 16,16%	**Revealed-Covered-Revealed**
	Stepping points distances	Increase-Decrease TYPE 50%	**Covered-Revealed**
		Increase-Decrease-Decrease 33%	**Covered-Revealed-Covered**
		Steady 33%	**Revealed**
	Stepping stones heights	High-Low TYPE 50%	**Covered-Revealed**
		Low-High 25%	**Revealed-Covered**
		Steady 25%	**Revealed**
	Stepping stones distances	Decrease-Increase TYPE 45,45%	**Revealed-Covered**
		Decrease-Increase- Decrease-Increase-Decrease-Increase 36,36%	**Revealed-Covered- Revealed-Covered- Revealed-Covered**
		Increase – Decrease TYPE 36,36%	**Covered-Revealed**

Figure 136: Table classification on visual experiences development according to the most dominant measures of the garden physical forms attributes. These most often applied developments of field of views are to be visually experienced while one steps along *tobiishi* path. They are depicted whether the view is or is to be revealed or closed or differently applied in changes of these two measures;

Dominant visual experience	Number of cases applied	
Reveal	**11**	**28%**
Cover	4	10%
Reveal-Cover	**8**	**20%**
Cover-Reveal	**7**	**18%**
Reveal-Cover-Reveal	2	5%
Cover-Reveal-Cover	2	5%
Cover-Reveal-Cover-Reveal	1	2,5%
Reveal-Cover-Reveal-Cover-Reveal-Cover	2	5%
Cover-Reveal-Cover-Reveal-Cover-Reveal-Cover-Reveal	1	2,5%

Figure 137:
Table classification on dominances of visual experiences development.
Left column describes the relationship between the field of view holder and potential field of view content. Mediators are garden physical forms that develop dominantly in their attributes and following measures according to the same chapter upper table.
However, there are named [left side] all kinds of field of view content appearance/ disappearance attributes. Right side revealsthe most dominant kind according to the number of cases they are applied;

Second [upper] table represents an extension of previous table more complex definition. It shows all most often applied field of view developments [left side] according to the most often applied measures [previous table]. Right column classifies numbers of measures that condition left side description on development of field of view content.

From total 9 descriptions on how field of view content develops 3 are closely the most dominant ones.

Reveal develops in 28%, Reveal-Cover in 20% as well as 18% Cover-Reveal field of view progression.

That means that the attributes in their measures tend to dominantly develop these visual experiences in their mutual juxtapositions along a single stepping stones path.However, the minor, more complex field of view developments are matching with all of dominant ones in case they result from certain measure that is applied.

Nonetheless, obvious dominance of those three visual experiences suggest that they are the most often intended to be experienced in Katsura Rikyu complex.

Reveal method represents gradual development of field of view content. Garden physical forms develop in their attributes in such manner that certain garden scenery appears in frame of visual experience at side or front side along stepping path.

Reveal-Cover and Cover-Reveal methods are applied with changes in revealing and covering of field of view content with certain development if the attributes measures. Either certain garden scenery respectively firstly reveals and then becomes covered or *vice versa*. The minor methods are rather more complex, multiply repeated versions of previous two methods.

Thence, these methods are the ones applied within Katsura Rikyu. They open potential for different application of measures that result in equal progression of visual experiences. Therefore, they can be further applied in different set of dominance among progressions of field of view contents.

7.2.3 **New design method classification** : Further relations in dominant measures

VISUAL EXPERIENCE PROGRESSION	**APPLIED IN MEASURES :**	BELONGING ATTRIBUTE	**MATCHING MEASURES**
Revealed [R]	Gradual decreasing progression	Progression of greenery bodies	1 RC 2 RCR 3 RC-RC-RC
	Decrease	Crown size	
	Increase	Greenery distance	
	Decrease	Greenery relative height	
	Decrease	Slope angle	
	Absence	Slope angle	
	Decrease	Terrain height	
	Increase	Slope distance from path	
	Absence	Slope distance from path	
	Steady	Stepping points distances	
	Steady	Stepping stones heights	

VISUAL EXPERIENCE PROGRESSION	**APPLIED IN MEASURES :**	BELONGING ATTRIBUTE	**MATCHING MEASURES**
Covered [C]	Complete coverage	Progression of greenery bodies	1 CR 2 CRC 3 CRCR 4 CRCRCR
	Decrease	Greenery distance	
	Increase	Slope angle	
	Increase	Terrain height	

VISUAL EXPERIENCE PROGRESSION	**APPLIED IN MEASURES :**	BELONGING ATTRIBUTE	MATCHING MEASURES
Revealed-Covered [RC]	Increase-Decrease	Greenery distance	1 R 2 RCR 3 RCRCRC
	Decrease-Increase	Greenery density	
	Decrease-Increase	Terrain height	
	Increase-Decrease	Slope distance from path	
	Increase-Decrease	Stepping stones size	
	Straight-Polyline	Stepping path direction	
	Low-High	Stepping stones heights	
	Decrease-Increase	Stepping stones distances	

VISUAL EXPERIENCE PROGRESSION	**APPLIED IN MEASURES :**	BELONGING ATTRIBUTE	MATCHING MEASURES
Covered-Revealed [CR]	Decrease-Increase	Crown size	1 C 2 CRC 3CRCR 4 CRCRCR
	Increase-Decrease TYPE	Greenery relative height	
	Decrease-Increase	Stepping stones size	
	Polyline-Straight TYPE	Stepping path direction	
	Increase-Decrease TYPE	Stepping points distances	
	High-Low TYPE	Stepping stones heights	
	Increase – Decrease TYPE	Stepping stones distances	

VISUAL EXPERIENCE PROGRESSION	**APPLIED IN MEASURES :**	BELONGING ATTRIBUTE	**MATCHING MEASURES**
Reveal-Cover-Reveal [RCR]	Increase-Decrease-Increase	Slope distance from path	R, RCR, RCRCRC
	Straight-Polyline-Straight	Stepping path direction	

VISUAL EXPERIENCE PROGRESSION	**APPLIED IN MEASURES :**	BELONGING ATTRIBUTE	MATCHING MEASURES
Covered-Revealed-Covered [CRC]	Polyline-Straight-Polyline	Stepping path direction	1 C 2 CRCR 3 CRCRCR
	Increase-Decrease-Decrease	Stepping points distances	

VISUAL EXPERIENCE PROGRESSION	**APPLIED IN MEASURES :**	BELONGING ATTRIBUTE	MATCHING MEASURES
Covered-Revealed-Covered-Revealed [CRCR]	Increase-Decrease-Increase-Decrease	Greenery density	1 C 2 CRC 3CRCR 4 CRCRCR

VISUAL EXPERIENCE PROGRESSION	**APPLIED IN MEASURES :**	BELONGING ATTRIBUTE	MATCHING MEASURES
Revealed-Covered-Revealed-Covered-Revealed-Covered- [RCRCRC]	Increase-Decrease-Increase-Decrease-Increase-Decrease	Stepping stones size	1 R 2 RCR
	Decrease-Increase- Decrease-Increase- Decrease-Increase	Stepping stones distances	

VISUAL EXPERIENCE PROGRESSION	**APPLIED IN MEASURES :**	BELONGING ATTRIBUTE	MATCHING MEASURES
Covered-Revealed-Covered-Revealed-Covered-Revealed- [CRCRCR]	Decrease-Increase-Decrease-Increase–Decrease-Increase–Decrease-Increase	Stepping stones size	1 C 2 CRC 3 CRCR

Figure 138-146 :

Table classifications on the most dominant, separate attributes that describe development of visual experience development most often applied in Katsura Rikyu;

Each table consists of left side named, single development with succeeding [to the right] list of garden physical forms measures and attributes create that kind of visual experience.

At the far left side is a list of matching measures that note which other kinds of field of view progressions with their attributes and measures can be combined in eventual new design approach;

Katsura Rikyu garden consists of many relations physical forms that are positioned along *tobiishi* paths. They create certain visual experiences while visitor advances along stepping stones pattern. Stepping progression inevitably develops certain progression of field of view content that undoubtedly is determined with those relations. Certain garden physical forms, with certain attributes applied with exact measures dominantly result in 11 kinds of visual experience progressions [previous chapter, second table]. That means that those measures that result in different kind of visual experience development cannot be drawn in relationships along certain *tobiihi* path. They only can be matched with those that create either equal visual experience or matching one.

Within combining different measures within same table of new design method [upper tables], there become equal progression of field of view content. Nonetheless, the environment is different in physical forms that are newly assembled even though they create equal visual experience denomination.

Thence, there can be combined attributes that result in matching visual experiences.

Matching hereby means that their visual experiences results in similar ones, that combined together on the garden ground can result in a single visual development [one of those similar ones].

However, that means that Katsura Rikyu does not overwhelm definite number and possible relationships between their physical forms. Their attributes measures that result in equal or matching visual experiences can be combined in different manners.Therefore, there can be other kinds of new environments, new gardens, that result in equal visual experiences developments, but differ in how their physical forms are combined along *tobiishi* path. They evoke equal field of view cognitive impressions, but resemble with different field of view content.Attributes with certain measures that result in for example Revealing visual experience progression [certain scenery gradually reveals] can be combined with other kind of measures that result in RC [reveal-cover], RCR [Reveal-Cover-Reveal] and RCRCRC [reveal-cover- reveal-cover- reveal-cover].

New kind of visual experience become in new design method always change to more complex visual experiences if matched with similar ones. Thus, there can be combined several matching field of view progression with measures they carry.

Classified in groups there can be combined measures of these visual experiences developments:

Group 1 :

1 Revealing,

2 Revealing-Covering

3 Revealing-Covering-Revealing

4 Revealing-Covering- Revealing-Covering- Revealing-Covering

Group 2 :

1 Covering

2 Covering-Revealing

3 Covering-Revealing-Covering

4 Covering-Revealing- Covering-Revealing- Covering-Revealing

Sample of new kind of garden table classification applied with design method rearrangement:

Group : **Group 1**
Visual experiences combined : **Revealed + Revealed-Covered**

Table 1, 2:

VISUAL EXPERIENCE PROGRESSION	**APPLIED IN MEASURES :**	BELONGING ATTRIBUTE	**MATCHING MEASURES**
Revealed [R]	Gradual decreasing progression	Progression of greenery bodies	1 RC **2 RCR** 3 RC-RC-RC
	Decrease	Crown size	
	Increase	Greenery distance	
	Decrease	Greenery relative height	
	Decrease	Slope angle	
	Absence	Slope angle	
	Decrease	Terrain height	
	Increase	Slope distance from path	
	Absence	Slope distance from path	
	Steady	Stepping points distances	
	Steady	Stepping stones heights	

VISUAL EXPERIENCE PROGRESSION	**APPLIED IN MEASURES :**	BELONGING ATTRIBUTE	MATCHING MEASURES
Revealed-Covered [RC]	Increase-Decrease	Greenery distance	1 R 2 RCR 3 RCRCRC
	Decrease-Increase	Greenery density	
	Decrease-Increase	Terrain height	
	Increase-Decrease	Slope distance from path	
	Increase-Decrease	Stepping stones size	
	Straight-Polyline	Stepping path direction	
	Low-High	Stepping stones heights	
	Decrease-Increase	Stepping stones distances	

New environment table classification:

NEW VISUAL EXPERIENCE PROGRESSION	**APPLIED IN MEASURES :**	BELONGING ATTRIBUTE
Revealed-Covered [R]	Gradual decreasing progression	Progression of greenery bodies
	Decrease	Crown size
	Increase	Greenery distance
	Decrease	Greenery relative height
	Decrease-Increase	Greenery density
	Decrease	Slope angle
	Decrease	Terrain height
	Increase-Decrease	Slope distance from path
	Increase-Decrease	Stepping stones size
	Straight-Polyline	Stepping path direction
	Low-High	Stepping stones heights
	Decrease-Increase	Stepping stones distances

Figure 147, 148, 149 : Tables [upper two] of matching visual experience progressions [Revealed, Revealed-Covered] that are going to be combined according to new design method. Their selected measures are linked in a common list, potentially applicable in order to assemble new kind of relationship of new garden physical forms [third table].
Nonetheless new list resembles different content of visual experience it cognitively develops in equal RC progression;

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Figure 14 Koncarevic Bojan [2011] Shinto shrine garden area: Iwakura rock
[Photograph] In possession of : The Author : Kyoto

Figure 15 Koncarevic Bojan [2011] Shinto shrine garden area: Gohei papers
at shimenawa rope wrapped around iwakura rock
[Photograph] In possession of : The Author : Kyoto

Figure 17 Koncarevic Bojan [2012] Sanja-Matsura festival
Portable shrine details screened in break time in small street in Tokyo
[Photograph] In possession of : The Author : Tokyo

Figure 18 Koncarevic Bojan [2012] Sanja-Matsura festival
Portable shrine details screened in break time in small street in Tokyo
[Photograph] In possession of : The Author : Tokyo

Figure 19 Koncarevic Bojan [2011] Katsura Rikyu garden :
Various application of stone units aside of stepping path nearby entrance area
[Photograph] In possession of : The Author : Kyoto

Figure 20 Koncarevic Bojan [2011] Fujimi Inari shrine
Naturally found rock as a monument posture surrounded with shishi figures
[Photograph] In possession of : The Author : Kyoto

Figure 21 Koncarevic Bojan [2011] Summer festival processing :
Portable himorogi shrine prepared to be taken throughout the city
[Photograph] In possession of : The Author : Kyoto

Figure 22 Koncarevic Bojan [2013] Katsura Rikyu garden tobiishi units :
Katsura Rikyu formal element – tobiishi stones:
Various attributes and their measure applied to stepping stones
[Technical drawing] Created by : The Author

Figure 23-34 Koncarevic Bojan [2012] Katsura Rikyu garden :
Set of succeeding photo frames in two kind of approaches to tea houses
[Photographs] In possession of : The Author : Kyoto

Figure 35 Koncarevic, Bojan [2010] Katsura Rikyu eastern site plan :
[Technical drawing] In possession of : The Author : Tokyo:

Drawing is made according to personal survey and scanned drawing from book:

Publication Committee for Fumitaka Nishizawa's Survey Drawings,
Japanese 9 Traditional Architecture and Historic Gardens, Tokyo,
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Figure 37 Koncarevic Bojan [2010] Katsura Rikyu garden :
Caption of tobiishi path field of view development in front of tea house entrance
[Photograph] In possession of : The Author : Kyoto

Figure 38-41 Koncarevic Bojan [2010] Katsura Rikyu garden :
Set of field of view succeeding caption that lead to Shokin-tei
[Photographs] In possession of : The Author : Kyoto

Figure 42 Koncarevic Bojan [2012] Katsura Rikyu garden :
Entrance to tea house just before veranda space with tobiishi stone
that is intended to step on and take off shoes before approaching in interior
[Photograph] In possession of : The Author : Kyoto

Figure 43 Koncarevic Bojan [2012] Katsura Rikyu garden :
Detail of shoji fence preserved traces of its natural origin
applied in order to serve to artificial purpose
[Photograph] In possession of : The Author : Kyoto

Figure 44 Koncarevic Bojan [2010] Ise Jingu shrine complex :
Detail of main temple roof patched with earth, straw and bitumen
[Photograph] In possession of : The Author : Ise shrine complex

Figure 45-47 Koncarevic Bojan [2012] Katsura Rikyu garden :
Set of three captions taken in different tobiishi sub-pathways with different application
of stepping stones and following garden environment
[Photograph] In possession of : The Author : Kyoto

Figure 48-60 Koncarevic Bojan [2012] Katsura Rikyu garden :
Left part presents set of continuous field of view captions taken along the garden tobiishi path;
Right part represents same array of captions with extracted physical forms of greenery;
[Photograph] In possession of : The Author : Kyoto

Figure 61-62 Koncarevic Bojan [2011] Ryonaji temple :
Detailed caption of earthen wall behind the main courtyard area in temple
[Photograph] In possession of : The Author : Kyoto

Figure 63-64 Koncarevic Bojan [2012] Katsura Rikyu garden :
Side of the garden street fence made of alive bamboo
[Photograph] In possession of : The Author : Kyoto

Figure 65-70 Koncarevic, Bojan [2010] Katsura Rikyu eastern site plan :
Various drawings of same portion of site plan that presents how
different physical forms applied to the garden area enter in various mutual relationships
[Technical drawing] In possession of : The Author : Tokyo:

Drawing is made according to personal survey and scanned drawing from book:

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Japanese 9 Traditional Architecture and Historic Gardens, Tokyo,
Chuo-koron Bijutu Shuppan, 5.2006

Figure 71 Koncarevic Bojan [2012] Katsura Rikyu garden :
Shokin tei tea room tokonoma alcove
[Photograph] In possession of : The Author : Kyoto

Figure 72 Koncarevic Bojan [2012] Ise Jingu shrine complex :
Shimenawa roped off area of natural environment for future artificial works to be applied
[Photograph] In possession of : The Author : Kyoto

Figure 73-84 Koncarevic Bojan [2012] Katsura Rikyu garden :
Various application of tobiishi stones within the garden area
[Photograph] In possession of : The Author : Kyoto

Figure 85-86 Koncarevic Bojan [2012] City shrine in Ueno area :
Shishi figures at sides in front of tori gate
[Photograph] In possession of : The Author : Tokyo

Figure 87-89 Koncarevic Bojan [2012] Torii gates :
Variosu kinds of gates applied in front of shrine entrance with equal meaning
[Photograph] In possession of : The Author : Kyoto

Figure 90-91 Koncarevic Bojan [2012] Honden area in shrines :
Hidden and revealed sacred area in front of main space for prays, namely honden
[Photograph] In possession of : The Author : Ise Jingu complex, Kyoto

Figure 92 Koncarevic Bojan [2012] Katsura Rikyu garden :
Katsura Rikyu tea house tokonoma alcove detail and its surrounding tatami area
[Photograph] In possession of : The Author : Kyoto

Figure 93-96 Koncarevic Bojan [2012] Katsura Rikyu garden :
Various kinds of interaction of tobiishi units natural and artificial outlines with various environments
[Photograph] In possession of : The Author : Kyoto

Figure 97 Koncarevic Bojan [2010] Tofuku ji moss garden :
[Photograph] In possession of : The Author : Kyoto

Figure 98 Koncarevic Bojan [2012]
Portable himorogi shrine during summer festival
[Photograph] In possession of : The Author : Kyoto

Figure 99-100 Koncarevic Bojan [2012] Katsura Rikyu garden, ikidori design method :
Different seasons result in different quality of field of view equal captions
[Photograph] In possession of : The Author : Kyoto

Figure 101 Koncarevic Bojan [2012]
Diagram drawing : representation how natural branching units builds
construction of greenery physical forms that is trimmed from outside
in order to fulfill artificial design method
[Technical drawing] In possession of : The Author : Kyoto

* Separate list of illustrations presented within Research Design Chapter of 4.4 :

All drawings [next Figure 1-13] are absolutely investigated with author *in situ* survey.
They are finally updated and redrawn in CAD due to assembled scanned drawings from book:

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Japanese 9 Traditional Architecture and Historic Gardens, Tokyo,
Chuo-koron Bijutu Shuppan, 5.2006

Figure 1 Koncarevic Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawing; Katsura Rikyu compelx with all formal elements included]
Created by : The Author

Figure 2 Koncarevic Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawing; Katsura Rikyu formal element – terrain isolines distribution]
Created by : The Author

Figure 3 Koncarevic Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawing; Katsura Rikyu formal element – distribution of various greenery crowns]
Created by : The Author

Figure 4 Koncarevic Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawing; Katsura Rikyu formal element – tobiishi stones complete pattern]
Created by : The Author

Figure 5 Koncarevic Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawing; Katsura Rikyu formal element - shokin tei . shoin distribution along the terrain]
Created by : The Author

Figure 6 Koncarevic Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawing; Katsura Rikyu formal element - lanterns distribution throughout the garden area]
Created by : The Author

Figure 7 Koncarevic Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawing; Katsura Rikyu formal element - tobiishi and tatami units patterns mutually related and connected distrubution] Created by : The Author

Figure 8 Koncarevic Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawing; Katsura Rikyu formal element - tobiishi stone units: shin gyo so immediate distribution] Created by : The Author

Figure 9 Koncarevic Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawing; Katsura Rikyu density of the greenery physical forms trunks coordinates]
Created by : The Author

Figure 10 Koncarevic Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawing; Katsura Rikyu greenery formal elements radii distribution] Created by : The Author

Figure 11 Koncarevic Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawing; Katsura Rikyu simultenous distribution of tobiishi stone items and greenery coordinates] Created by : The Author

Figure 12 Koncarevic Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawing; Katsura Rikyu simultenous distribution of landscape isolines and greenery coordinates] Created by : The Author

Figure 13 Koncarevic Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawing; Katsura Rikyu simultenous distribution of the landscape isolines and greenery radii] Created by : The Author
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Figure 102 Koncarevic Bojan [2011] Fujimi Inari shrine :
Field of view caption recorded in along tori gates array
[Photograph] In possession of : The Author : Kyoto

Figure 103 Koncarevic Bojan [2010] Ise Jingu Naiku inner shrine :
Close view of different kinds of rawness of wooden material in relation to visitor position
[Photograph] In possession of : The Author : Kyoto

Figure 104 Koncarevic Bojan [2012] Katsura Rikyu garden :
Field of view caption at final part of tobiishi Imperial pathway
several steps in front of small tea house
[Photograph] In possession of : The Author : Kyoto

Figure 105 Koncarevic Bojan [2012] himorogi sample :
Caption from festivity street during summer in Kyoto old area
[Photograph] In possession of : The Author : Kyoto

Figure 106 Koncarevic Bojan [2010] Ise Jingu area :
Demarcation of a sacred tree unit
[Photograph] In possession of : The Author : Kyoto

Figure 107 Koncarevic Bojan [2012] Katsura Rikyu garden:
Iwakura unit tied with nawa rope
[Photograph] In possession of : The Author : Kyoto

Figure 108 Koncarevic Bojan [2010] Ise Jingu shrine area :
Tamagushi demarcation of gate wooden pillars
[Photograph] In possession of : The Author : Kyoto

Figure 109 Koncarevic Bojan [2010] Ise Jingu shrine area :
Tamagushi demarcation of shrine wooden pillars

[Photograph] In possession of : The Author : Kyoto

Figure 110 Koncarevic Bojan [2010] Ise Jingu shrine area :
Naiku shrine secondary entrance covered with white cloth
[Photograph] In possession of : The Author : Kyoto

Figure 111 Koncarevic Bojan [2010] Ise Jingu shrine area :
Empty Sengu lot with shin-no-mihashira unit of a small inner shrine
[Photograph] In possession of : The Author : Kyoto

Figure 112-119 Koncarevic Bojan [2012] Katsura Rikyu garden :
Field of view separate captions that belong to three different stepping paths
with [right side] repeated captions with solely greenery physical forms
[Photograph] In possession of : The Author : Kyoto

Figure 120 Koncarevic, Bojan [2010] Katsura Rikyu close view of a tea house plan :
[Technical drawing] In possession of : The Author : Tokyo:

Drawing is made according to personal survey and scanned drawing from book:

Publication Committee for Fumitaka Nishizawa's Survey Drawings,
Japanese 9 Traditional Architecture and Historic Gardens, Tokyo,
Chuo-koron Bijutu Shuppan, 5.2006

Figure 121 Koncarevic, Bojan [2012] Ise-Jingu site diagram :
[Technical drawing] In possession of : The Author : Tokyo:

Figure 122a Koncarevic, Bojan [2012] Ise-Jingu site diagram :
[Technical drawing] In possession of : The Author : Tokyo:

Figure 122b Koncarevic, Bojan [2012] Shinto shrine :
[Photography] In possession of : The Author : Kyoto

Figure 123a Koncarevic, Bojan [2012] Sample of Katsura Rikyu tea house close plan :
[Technical drawing] In possession of : The Author : Tokyo

Drawing is made according to personal survey and scanned drawing from book:

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Japanese 9 Traditional Architecture and Historic Gardens, Tokyo,
Chuo-koron Bijutu Shuppan, 5.2006

Figure 123b Koncarevic, Bojan [2012] Katsura Rikyu sample of a tea house tokonoma alcove :
[Photography] In possession of : The Author : Kyoto

Figure 124-126 Koncarevic Bojan [2010] Katsura Rikyu garden:
Bamboo fence at eastern side – outer and inner views
[Photograph] In possession of : The Author : Kyoto

Figure 127a Koncarevic Bojan [2012] Katsura Rikyu garden:
Method of research applied in progression of visual experiences:
original and posterized version
[Drawing diagram] Created by : The Author
In possession of : The Author : Tokyo

Figure 127b Koncarevic Bojan [2012] Katsura Rikyu garden tobiishi path:
Field of view captions with and without extracted greenery
[Photograph] In possession of : The Author : Kyoto

Figure 128 Koncarevic Bojan [2012]
Research method of desaturation and posterization
[Graphs, diagrams] Created by : The Author

In possession of : The Author : Tokyo

Figure 129-133 Koncarevic Bojan [2010] Katsura Rikyu garden:
Array of the garden field of view captions,
[Photograph] In possession of : The Author : Kyoto

Figure 134 Koncarevic, Bojan [2010] Katsura Rikyu close view of tobiishi path :
[Technical drawing] In possession of : The Author : Tokyo:

Drawing is made according to personal survey and scanned drawing from book:

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Chuo-koron Bijutu Shuppan, 5.2006

Figure 135 Koncarevic Bojan [2012] Katsura Rikyu garden:
Method of research applied in progression of visual experiences:
original and posterized version
[Drawing diagram] Created by : The Author
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* Separate list of illustrations presented within Research Design Chapter of 6.2 :

All drawings of plans that appear are absolutely investigated with author *in situ* survey.
They are finally updated and redrawn in CAD due to assembled scanned drawings from book:

Publication Committee for Fumitaka Nishizawa's Survey Drawings,
Japanese 9 Traditional Architecture and Historic Gardens, Tokyo,
Chuo-koron Bijutu Shuppan, 5.2006

'Zero' sub-pathway

Fig.01 Koncarevic Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawing; Katsura Rikyu map of the sub-pathway position within the overall pathway representation]
Created by : The Author

Fig.02 Koncarevic Bojan [2012] Katsura Rikyu garden : set of succeeding photo frames
[Photographs] In possession of : The Author : Kyoto

Fig.03 Koncarevic Bojan [2014] Katsura Rikyu garden photo diagrams
[Diagrammatic drawings; diagrams which represent the greenery elements extracted from each of the sub-pathway photos taken at certain stepping points]
Created by : The Author

Fig.04 Koncarevic Bojan [2014] Katsura Rikyu garden processed photo diagrams
[Diagrammatic drawings; diagram of greenery elements field of view density distribution along the zero subpathway which became with overlapping of the separate photo extractions]
Created by : The Author

Fig.05 Bojan [2014] Katsura Rikyu garden processed photo diagrams
[Diagrammatic drawings; diagram of the greenery elements field of view density pixalated distribution simplified according to the posterization process] Created by : The Author
Fig.06 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawing; overall visibility of certain garden formal elements, measured during human walking activity along the tobeishi pattern according to the field of view greenery density progression diagram]
Created by : The Author

Fig.07 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawings; distribution of the landscape formal elements, measured during human walking activity along the tobiishi pattern]
Created by : The Author

Fig.08 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawings; diagram representation of the sub-pathway formal elements distribution along the both sides of the walking lane]
Created by : The Author

Fig.09 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawings; distribution of the garden formal elements along the sub-pathway walking lane direction]
Created by : The Author

Fig.10 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawings; left side and right side sub-pathway garden formal elements distribution diagram]
Created by : The Author

Fig.11 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawings; colliding diagram of all of the diagram rhythms in relation to the distribution of the garden formal elements in certain parameters along the sub-pathway walking line]
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‘Appearing’ sub-pathway

Fig.01 Koncarevic Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawing; Katsura Rikyu map of the sub-pathway position within the overall pathway representation]
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Fig.02 Koncarevic Bojan [2012] Katsura Rikyu garden : set of succeeding photo frames
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Fig.03 Koncarevic Bojan [2014] Katsura Rikyu garden photo diagrams
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Fig.04 Koncarevic Bojan [2014] Katsura Rikyu garden processed photo diagrams
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Fig.05 Bojan [2014] Katsura Rikyu garden processed photo diagrams
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Fig.06 Bojan [2014] Katsura Rikyu garden plan diagram
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Fig.07 Bojan [2014] Katsura Rikyu garden plan diagram
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Created by : The Author

Fig.08 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawings; diagram representation of the sub-pathway formal elements distribution along the both sides of the walking lane]
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Fig.09 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawings; distribution of the garden formal elements along the sub-pathway walking lane direction]
Created by : The Author

Fig.10 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawings; left side and right side sub-pathway garden formal elements distribution diagram]
Created by : The Author

Fig.11 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawings; colliding diagram of all of the diagram rhythms in relation to the distribution of the garden formal elements in certain parameters along the sub-pathway walking line]
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‘Increment’ sub-pathway

Fig.01 Koncarevic Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawing; Katsura Rikyu map of the sub-pathway position within the overall pathway representation]
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[Photographs] In possession of : The Author : Kyoto

Fig.03 Koncarevic Bojan [2014] Katsura Rikyu garden photo diagrams
[Diagrammatic drawings; diagrams which represent the greenery elements extracted from each of the sub-pathway photos taken at certain stepping points]
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Fig.04 Koncarevic Bojan [2014] Katsura Rikyu garden processed photo diagrams
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Fig.05 Bojan [2014] Katsura Rikyu garden processed photo diagrams
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Fig.06 Bojan [2014] Katsura Rikyu garden plan diagram
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Fig.07 Bojan [2014] Katsura Rikyu garden plan diagram
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Created by : The Author

Fig.08 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawings; diagram representation of the sub-pathway formal elements distribution along the both sides of the walking lane]
Created by : The Author

Fig.09 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawings; distribution of the garden formal elements along the sub-pathway walking lane direction]
Created by : The Author

Fig.10 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawings; left side and right side sub-pathway garden formal elements distribution diagram]
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Fig.11 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawings; colliding diagram of all of the diagram rhythms in relation to the distribution of the garden formal elements in certain parameters along the sub-pathway walking line]
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‘Sudden bridge’ sub-pathway

Fig.01 Koncarevic Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawing; Katsura Rikyu map of the sub-pathway position within the overall pathway representation]
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Fig.02 Koncarevic Bojan [2012] Katsura Rikyu garden : set of succeeding photo frames
[Photographs] In possession of : The Author : Kyoto

Fig.03 Koncarevic Bojan [2014] Katsura Rikyu garden photo diagrams
[Diagrammatic drawings; diagrams which represent the greenery elements extracted from each of the sub-pathway photos taken at certain stepping points]
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Fig.04 Koncarevic Bojan [2014] Katsura Rikyu garden processed photo diagrams
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Fig.05 Bojan [2014] Katsura Rikyu garden processed photo diagrams
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Fig.06 Bojan [2014] Katsura Rikyu garden plan diagram
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Fig.07 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawings; distribution of the landscape formal elements, measured during human walking activity along the tobiishi pattern]
Created by : The Author

Fig.08 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawings; diagram representation of the sub-pathway formal elements distribution along the both sides of the walking lane]
Created by : The Author

Fig.09 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawings; distribution of the garden formal elements along the sub-pathway walking lane direction]
Created by : The Author

Fig.10 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawings; left side and right side sub-pathway garden formal elements distribution diagram]
Created by : The Author

Fig.11 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawings; colliding diagram of all of the diagram rhythms in relation to the distribution of the garden formal elements in certain parameters along the sub-pathway walking line]
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‘Pine-tree hidden’ sub-pathway

Fig.01 Koncarevic Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawing; Katsura Rikyu map of the sub-pathway position within the overall pathway representation]
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Fig.02 Koncarevic Bojan [2012] Katsura Rikyu garden : set of succeeding photo frames
[Photographs] In possession of : The Author : Kyoto

Fig.03 Koncarevic Bojan [2014] Katsura Rikyu garden photo diagrams
[Diagrammatic drawings; diagrams which represent the greenery elements extracted from each of the sub-pathway photos taken at certain stepping points]
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Fig.04 Koncarevic Bojan [2014] Katsura Rikyu garden processed photo diagrams
[Diagrammatic drawings; diagram of greenery elements field of view density distribution along the zero subpathway which became with overlapping of the separate photo extractions]
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Fig.05 Bojan [2014] Katsura Rikyu garden processed photo diagrams
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Created by : The Author

Fig.06 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawing; overall visibility of certain garden formal elements, measured during human walking activity along the tobeishi pattern according to the field of view greenery density progression diagram]
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Fig.07 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawings; distribution of the landscape formal elements, measured during human walking activity along the tobiishi pattern]
Created by : The Author

Fig.08 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawings; diagram representation of the sub-pathway formal elements distribution along the both sides of the walking lane]
Created by : The Author

Fig.09 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawings; distribution of the garden formal elements along the sub-pathway walking lane direction]
Created by : The Author

Fig.10 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawings; left side and right side sub-pathway garden formal elements distribution diagram]
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Fig.11 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawings; colliding diagram of all of the diagram rhythms in relation to the distribution of the garden formal elements in certain parameters along the sub-pathway walking line]
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‘Hillside hidden’ sub-pathway

Fig.01 Koncarevic Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawing; Katsura Rikyu map of the sub-pathway position within the overall pathway representation]
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Fig.02 Koncarevic Bojan [2012] Katsura Rikyu garden : set of succeeding photo frames
[Photographs] In possession of : The Author : Kyoto

Fig.03 Koncarevic Bojan [2014] Katsura Rikyu garden photo diagrams
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Fig.04 Koncarevic Bojan [2014] Katsura Rikyu garden processed photo diagrams
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Fig.05 Bojan [2014] Katsura Rikyu garden processed photo diagrams
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Fig.06 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawing; overall visibility of certain garden formal elements, measured during human walking activity along the tobeishi pattern according to the field of view greenery density progression diagram]
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Fig.07 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawings; distribution of the landscape formal elements, measured during human walking activity along the tobiishi pattern]
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Fig.08 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawings; diagram representation of the sub-pathway formal elements distribution along the both sides of the walking lane]
Created by : The Author

Fig.09 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawings; distribution of the garden formal elements along the sub-pathway walking lane direction]
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Fig.10 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawings; left side and right side sub-pathway garden formal elements distribution diagram]
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Fig.11 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawings; colliding diagram of all of the diagram rhythms in relation to the distribution of the garden formal elements in certain parameters along the sub-pathway walking line]
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‘Shelter’ sub-pathway

Fig.01 Koncarevic Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawing; Katsura Rikyu map of the sub-pathway position within the overall pathway representation]
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Fig.03 Koncarevic Bojan [2014] Katsura Rikyu garden photo diagrams
[Diagrammatic drawings; diagrams which represent the greenery elements extracted from each of the sub-pathway photos taken at certain stepping points]
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Fig.04 Koncarevic Bojan [2014] Katsura Rikyu garden processed photo diagrams
[Diagrammatic drawings; diagram of greenery elements field of view density distribution along the zero subpathway which became with overlapping of the separate photo extractions]
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Fig.05 Bojan [2014] Katsura Rikyu garden processed photo diagrams
[Diagrammatic drawings; diagram of the greenery elements field of view density pixalated distribution simplified according to the posterization process]
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Fig.06 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawing; overall visibility of certain garden formal elements, measured during human walking activity along the tobeishi pattern according to the field of view greenery density progression diagram]

Fig.07 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawings; distribution of the landscape formal elements, measured during human walking activity along the tobiishi pattern]
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Fig.08 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawings; diagram representation of the sub-pathway formal elements distribution along the both sides of the walking lane]
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Fig.09 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawings; distribution of the garden formal elements along the sub-pathway walking lane direction]
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Fig.10 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawings; left side and right side sub-pathway garden formal elements distribution diagram]
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Fig.11 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawings; colliding diagram of all of the diagram rhythms in relation to the distribution of the garden formal elements in certain parameters along the sub-pathway walking line]
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‘Revealing’ sub-pathway

Fig.01 Koncarevic Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawing; Katsura Rikyu map of the sub-pathway position within the overall pathway representation]
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[Photographs] In possession of : The Author : Kyoto

Fig.03 Koncarevic Bojan [2014] Katsura Rikyu garden photo diagrams
[Diagrammatic drawings; diagrams which represent the greenery elements extracted from each of the sub-pathway photos taken at certain stepping points]
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Fig.04 Koncarevic Bojan [2014] Katsura Rikyu garden processed photo diagrams
[Diagrammatic drawings; diagram of greenery elements field of view density distribution along the zero subpathway which became with overlapping of the separate photo extractions]
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Fig.05 Bojan [2014] Katsura Rikyu garden processed photo diagrams
[Diagrammatic drawings; diagram of the greenery elements field of view density pixalated distribution simplified according to the posterization process]
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Fig.06 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawing; overall visibility of certain garden formal elements, measured during human walking activity along the tobeishi pattern according to the field of view greenery density progression diagram]
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Fig.07 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawings; distribution of the landscape formal elements, measured during human walking activity along the tobiishi pattern]
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Fig.08 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawings; diagram representation of the sub-pathway formal elements distribution along the both sides of the walking lane]; Created by : The Author

Fig.09 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawings; distribution of the garden formal elements along the sub-pathway walking lane direction]
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Fig.10 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawings; left side and right side sub-pathway garden formal elements distribution diagram]
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Fig.11 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawings; colliding diagram of all of the diagram rhythms in relation to the distribution of the garden formal elements in certain parameters along the sub-pathway walking line]
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‘Turn and reveal’ sub-pathway

Fig.01 Koncarevic Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawing; Katsura Rikyu map of the sub-pathway position within the overall pathway representation]
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Fig.02 Koncarevic Bojan [2012] Katsura Rikyu garden : set of succeeding photo frames
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Fig.03 Koncarevic Bojan [2014] Katsura Rikyu garden photo diagrams
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Fig.04 Koncarevic Bojan [2014] Katsura Rikyu garden processed photo diagrams
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Fig.07 Bojan [2014] Katsura Rikyu garden plan diagram
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Fig.08 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawings; diagram representation of the sub-pathway formal elements distribution along the both sides of the walking lane]
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Fig.09 Bojan [2014] Katsura Rikyu garden plan diagram
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Fig.10 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawings; left side and right side sub-pathway garden formal elements distribution diagram]
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Fig.11 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawings; colliding diagram of all of the diagram rhythms in relation to the distribution of the garden formal elements in certain parameters along the sub-pathway walking line]
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‘Down the hill and reveal’ sub-pathway

Fig.01 Koncarevic Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawing; Katsura Rikyu map of the sub-pathway position within the overall pathway representation]
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Fig.02 Koncarevic Bojan [2012] Katsura Rikyu garden : set of succeeding photo frames
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Fig.07 Bojan [2014] Katsura Rikyu garden plan diagram
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Fig.08 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawings; diagram representation of the sub-pathway formal elements distribution along the both sides of the walking lane]
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Fig.09 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawings; distribution of the garden formal elements along the sub-pathway walking lane direction]
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Fig.10 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawings; left side and right side sub-pathway garden formal elements distribution diagram]
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Fig.11 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawings; colliding diagram of all of the diagram rhythms in relation to the distribution of the garden formal elements in certain parameters along the sub-pathway walking line]
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‘Green fence’ sub-pathway

Fig.01 Koncarevic Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawing; Katsura Rikyu map of the sub-pathway position within the overall pathway representation]
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[Photographs] In possession of : The Author : Kyoto

Fig.03 Koncarevic Bojan [2014] Katsura Rikyu garden photo diagrams
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Fig.09 Bojan [2014] Katsura Rikyu garden plan diagram
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Fig.11 Bojan [2014] Katsura Rikyu garden plan diagram
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Created by : The Author

‘Closed right open left’ sub-pathway

Fig.01 Koncarevic Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawing; Katsura Rikyu map of the sub-pathway position within the overall pathway representation]
Created by : The Author

Fig.02 Koncarevic Bojan [2012] Katsura Rikyu garden : set of succeeding photo frames
[Photographs] In possession of : The Author : Kyoto

Fig.03 Koncarevic Bojan [2014] Katsura Rikyu garden photo diagrams
[Diagrammatic drawings; diagrams which represent the greenery elements extracted from each of the sub-pathway photos taken at certain stepping points] Created by : The Author

Fig.04 Koncarevic Bojan [2014] Katsura Rikyu garden processed photo diagrams
[Diagrammatic drawings; diagram of greenery elements field of view density distribution along the zero subpathway which became with overlapping of the separate photo extractions]
Created by : The Author

Fig.05 Koncarevic Bojan [2014] Katsura Rikyu garden processed photo diagrams
[Diagrammatic drawings; diagram of the greenery elements field of view density pixalated distribution simplified according to the posterization process]
Created by : The Author

Fig.06 Koncarevic Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawing; overall visibility of certain garden formal elements, measured during human walking activity along the tobeishi pattern according to the field of view greenery density progression diagram]
Created by : The Author

Fig.07 Koncarevic Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawings; distribution of the landscape formal elements, measured during human walking activity along the tobiishi pattern] Created by : The Author
Fig.08 Koncarevic Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawings; diagram representation of the sub-pathway formal elements distribution along the both sides of the walking lane] Created by : The Author

Fig.09 Koncarevic Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawings; distribution of the garden formal elements along the sub-pathway walking lane direction]
Created by : The Author
Fig.10 Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawings; left side and right side sub-pathway garden formal elements distribution diagram]
Created by : The Author

Fig.11 Koncarevic Bojan [2014] Katsura Rikyu garden plan diagram
[Technical drawings; colliding diagram of all of the diagram rhythms in relation to the distribution of the garden formal elements in certain parameters along the sub-pathway walking line]
Created by : The Author

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* List of Table and chart classifications that belong to 7.2.1 chapter

Technical drawings that appear are absolutely investigated with author *in situ* survey.
They are finally updated and redrawn in CAD due to assembled scanned drawings from book:
Publication Committee for Fumitaka Nishizawa's Survey Drawings,
Japanese 9 Traditional Architecture and Historic Gardens, Tokyo,
Chuo-koron Bijutu Shuppan, 5.2006

Fig.01 Koncarevic Bojan [2015] Table on attributes and their measures
Created by : The Author, Tokyo

Fig.02 Koncarevic Bojan [2015] Chart on attributes and their measures
Created by : The Author, Tokyo

Fig.03 Koncarevic Bojan [2015] Diagrams on attributes and their measures
[technical drawing according to author photographies] Katsura Rikyu captions superposition
Created by : The Author, Tokyo

Fig.04 Koncarevic Bojan [2015] Table on attributes and their measures
Created by : The Author, Tokyo

Fig.05 Koncarevic Bojan [2015] Chart on attributes and their measures
Created by : The Author, Tokyo

Fig.06 Koncarevic Bojan [2015] Diagrams on attributes and their measures [technical drawing]
Created by : The Author, Tokyo

Fig.07 Koncarevic Bojan [2015] Table on attributes and their measures
Created by : The Author, Tokyo

Fig.08 Koncarevic Bojan [2015] Chart on attributes and their measures
Created by : The Author, Tokyo

Fig.09 Koncarevic Bojan [2015] Diagrams on attributes and their measures [technical drawing]
Created by : The Author, Tokyo

Fig.10 Koncarevic Bojan [2015] Table on attributes and their measures
Created by : The Author, Tokyo

Fig.11 Koncarevic Bojan [2015] Diagrams on attributes and their measures [technical drawing]
Created by : The Author, Tokyo

Fig.12 Koncarevic Bojan [2015] Chart on attributes and their measures
Created by : The Author, Tokyo

Fig.13 Koncarevic Bojan [2015] Chart on attributes and their measures
Created by : The Author, Tokyo
Fig.14 Koncarevic Bojan [2015] Table on attributes and their measures
Created by : The Author, Tokyo

Fig.15 Koncarevic Bojan [2015] Diagrams on attributes and their measures [technical drawing]
Created by : The Author, Tokyo

Fig.16 Koncarevic Bojan [2015] Chart on attributes and their measures
Created by : The Author, Tokyo

Fig.17 Koncarevic Bojan [2015] Chart on attributes and their measures
Created by : The Author, Tokyo

Fig.18 Koncarevic Bojan [2015] Table on attributes and their measures
Created by : The Author, Tokyo

Fig.19 Koncarevic Bojan [2015] Chart on attributes and their measures
Created by : The Author, Tokyo

Fig.20 Koncarevic Bojan [2015] Diagrams on attributes and their measures [technical drawing of 3d diagrams and sections]
Created by : The Author, Tokyo

Fig.21 Koncarevic Bojan [2015] Table on attributes and their measures
Created by : The Author, Tokyo

Fig.22 Koncarevic Bojan [2015] Chart on attributes and their measures
Created by : The Author, Tokyo

Fig.23 Koncarevic Bojan [2015] Diagrams on attributes and their measures
[technical drawing of 3d diagrams and sections]
Created by : The Author, Tokyo

Fig.24 Koncarevic Bojan [2015] Table on attributes and their measures
Created by : The Author, Tokyo

Fig.25 Koncarevic Bojan [2015] Diagrams on attributes and their measures
[technical drawing of 3d diagrams and sections]
Created by : The Author, Tokyo

Fig.26 Koncarevic Bojan [2015] Chart on attributes and their measures
Created by : The Author, Tokyo

Fig.27 Koncarevic Bojan [2015] Chart on attributes and their measures
Created by : The Author, Tokyo

Fig.28 Koncarevic Bojan [2015] Table on attributes and their measures
Created by : The Author, Tokyo

Fig.29 Koncarevic Bojan [2015] Diagrams on attributes and their measures
[technical drawing of tobiishi plans]
Created by : The Author, Tokyo

Fig.32 Koncarevic Bojan [2015] Chart on attributes and their measures
Created by : The Author, Tokyo

Fig.32 Koncarevic Bojan [2012, 2015] Katsura Rikyu captions and plans of separate tobiishi samples
[photographies, technical drawing of tobiishi plans]
Created by : The Author, Tokyo
Fig.33 Koncarevic Bojan [2015] Chart on attributes and their measures
Created by : The Author, Tokyo

Fig.34 Koncarevic Bojan [2015] Katsura Rikyu :
Plan of tobiishi lane and its environment
[technical drawing]
Created by : The Author, Tokyo

Fig.35 Koncarevic Bojan [2015] Katsura Rikyu :
Field of view caption
[photography] Owner : The Author, Tokyo

Fig. 36-38 Koncarevic Bojan [2012, 2015] Katsura Rikyu :
captions and plans of separate tobiishi stones
[photographies, technical drawing of tobiishi plans]
Created by : The Author, Tokyo

Fig.39 Koncarevic Bojan [2015] Table on attributes and their measures
Created by : The Author, Tokyo

Fig.40 Koncarevic Bojan [2015] Katsura Rikyu :
Explanation on separate plans of tobiishi paths
Created by : The Author, Tokyo

Fig. 41-44 Koncarevic Bojan [2015] Katsura Rikyu
Separate plans of tobiishi paths
[technical drawing]
Created by : The Author, Tokyo

Fig.45 Koncarevic Bojan [2015] Chart on attributes and their measures
Created by : The Author, Tokyo

Fig.46 Koncarevic Bojan [2015] Chart on attributes and their measures
Created by : The Author, Tokyo

Fig.47 Koncarevic Bojan [2015] Diagrams on attributes and their measures
Tobiishi plan in analysis of its direction
[technical drawing]
Created by : The Author, Tokyo

Fig. 48 Koncarevic Bojan [2012, 2015] Katsura Rikyu :
Close site plan of tobiishi path and its environment
[photographies, technical drawing of tobiishi plans]
Created by : The Author, Tokyo

Fig. 49 Koncarevic Bojan [2012, 2015] Katsura Rikyu :
Site plan of tobiishi path and its environment
[photographies, technical drawing of tobiishi plans]
Created by : The Author, Tokyo

Fig. 50 Koncarevic Bojan [2012, 2015] Katsura Rikyu :
Separate tobiishi analysis plan
[photographies, technical drawing of tobiishi plans]
Created by : The Author, Tokyo

Fig. 51 Koncarevic Bojan [2012, 2015] Katsura Rikyu :
Array of tobiishi recorded visual experiences
[photographies] Owner : The Author
Created by : The Author, Tokyo

Fig.52 Koncarevic Bojan [2015] Table on attributes and their measures
Created by : The Author, Tokyo

Fig.53 Koncarevic Bojan [2015] Katsura Rikyu :
Diagrams on separate tobiishi plans
[technical drawing] Created by : The Author, Tokyo

Fig.54 Koncarevic Bojan [2015] Chart on attributes and their measures
Created by : The Author, Tokyo

Fig.55 Koncarevic Bojan [2015] Chart on attributes and their measures
Created by : The Author, Tokyo

Fig.55 Koncarevic Bojan [2012] Katsura Rikyu :
Patched array of field of view captions,
[photographies, technical drawing] Owner : The Author
Created by : The Author, Tokyo

Fig.56,57 Koncarevic Bojan [2012] Katsura Rikyu :
Close and far site plan of IDI method applied in tobiishi path
[technical drawing] Owner : The Author
Created by : The Author, Tokyo

Fig.58 Koncarevic Bojan [2012] Katsura Rikyu :
Patched array of field of view captions,
[photographies, technical drawing] Owner : The Author
Created by : The Author, Tokyo

Fig.59,60 Koncarevic Bojan [2012] Katsura Rikyu :
Close and far site plan of IDI method applied in tobiishi path
[technical drawing] Owner : The Author
Created by : The Author, Tokyo

Fig.61 Koncarevic Bojan [2015] Table on attributes and their measures
Created by : The Author, Tokyo

Fig.62 Koncarevic Bojan [2015] Diagrams on attributes and their measures
[technical drawing]
Created by : The Author, Tokyo

Fig.64 Koncarevic Bojan [2015] Chart on attributes and their measures
Created by : The Author, Tokyo

Fig.65 Koncarevic Bojan [2015] Chart on attributes and their measures
Created by : The Author, Tokyo

Fig.66 Koncarevic Bojan [2012] Katsura Rikyu :
Array of field of view captions,
[photographies, technical drawing] Owner : The Author
Created by : The Author, Tokyo

Fig. 67 Koncarevic Bojan [2012, 2015] Katsura Rikyu :
Close site plan of tobiishi path and its environment
[photographies, technical drawing of tobiishi plans]
Created by : The Author, Tokyo

Fig.68 Koncarevic Bojan [2015] Table on attributes and their measures
Created by : The Author, Tokyo

Fig.69 Koncarevic Bojan [2015] Diagrams on attributes and their measures
[technical drawing]
Created by : The Author, Tokyo

Fig.70 Koncarevic Bojan [2015] Chart on attributes and their measures
Created by : The Author, Tokyo

Fig.71 Koncarevic Bojan [2015] Chart on attributes and their measures
Created by : The Author, Tokyo

Fig.72 Koncarevic Bojan [2015] Katsura Rikyu garden :
Array of field of view succeeding captions
{photographies] Owned by : The Author
Created by : The Author, Tokyo

Fig.73 Koncarevic Bojan [2015] Diagrams DIDIDI measure application in plans
[technical drawings in forms of diagrams]
Created by : The Author, Tokyo

Fig. 74 Koncarevic Bojan [2012, 2015] Katsura Rikyu :
Close site plan of tobiishi path and its environment applied with DIDIDI mesure
[technical drawing]
Created by : The Author, Tokyo

Fig. 75 Koncarevic Bojan [2012, 2015] Katsura Rikyu :
Site plan of tobiishi path and its environment applied with DIDIDI mesure
[technical drawing]
Created by : The Author, Tokyo