

The institute of emptiness and ephemerality

The poetics of Japanese sensibility

Research paper | Explore Lab
Claartje L'Herminez
Technical University Delft

Introduction

- The illusion of progress and spiritual emptiness
- Spirituality | Nature and Architecture
- Japanese philosophy and architecture
 - Main research question
 - Sub-questions
 - Follow-up question

Methods and Parameters

Findings and Discussion | The essence of Japanese architectural space

The relation between man (architecture) and nature

- The *Machiya* | A traditional Japanese townhouse

- + *En* | The transitional space
 - Horizontal orientation
 - The roof
 - The column
 - The corridor and the patio
 - The veranda

- + Thresholds
 - The step
 - A Layered façade
 - The gate

- + Permeability

- + Referencing nature's qualities
 - Transferring elements

Simplicity | Poetics of the ordinary

Ephemerality, Emptiness and Ambivalence

Ephemerality | The impermanence of everything

- + Vitality | Adaptability to natural forces and the weather

- + Impermanence | Natural materials

- + Flexible space | Temporary space

- + Imperfection | Incompleteness

Emptiness | The origin/ end of everything

- + The concept of space

- + The notion of Ma
 - o Ma | The domain of objectivity
 - o Ma | The domain of subjectivity
 - o Ma | the domain of metaphysics

Relativity | The ambivalent nature of everything

- + Ambivalence contributing to an atmosphere of sacredness
 - o (Im)materiality
 - o The Glimpse | perceiving part of a whole
 - o Darkness
 - o Limit/ boundlessness
 - o Timelessness
 - o Perspective illusions

Sequential experience | a sensory experience of space, time and nature

- + Flowing space | sequential experience of spatial layers

- + Enclosing space

- + Time-space experience

- + The art of tea | The example of sequential experience

Reasoning | Balancing between intuition and ratio

- + Orientation | From the ordinary to the sacred
 - o Ke and Hare | The axis from east to west
 - o Oku | The axis from the street to the back of the plot

- + The traditional way of life in Japan

Conclusion | A summary

Reflection

Introduction

Growing up in different countries in Africa I was often confronted with the harsh reality of inequality and inequity in this world. I have therefore developed an interest for philosophizing about the essence of life and how I as an individual can contribute to a possible better world and be part of this. Thus my fascination for the "philosophical" phenomena of emptiness (nothingness, void) and ephemerality (constant change) motivated me to write this research paper. For me these two phenomena form the core essence for the creation of our human values. I am curious what we can learn from attentively observing nature and how architects can influence our awareness and create space for, in my view, a more holistic way of life.

The illusion of progress and spiritual emptiness

According to the Japanese philosopher *Daisetz Teitaro Suzuki*, there is no separation between subject and object; all the existing separation and discrimination are man-made creations and the concept of time is irrelevant. The goal of life is to restore the original inseparability, to return to the original state of purity and transparency into a dimension of emptiness or void where conceptualism should not succeed (Sack, 2006, p.18).

The present developments of political, economic and cultural globalisation have made us more aware of the fact that everything is interrelated; that "the world is constantly in flux" (Sack, 2006, p.20), however we are still acting as if this planet is ours and we keep doing what we want, expecting every thing to just fit in around us. The main forces that dictate the zeitgeist and our social norms today, capitalism and individualism, create an illusion of progress; we believe that things will keep getting better for human kind. However the insatiable needs of the modern human cannot provide the sustainable world that is necessary for a future.

We are mainly focused on the growing economic globalisation, which is determined by market rules of efficiency, supply and demand, however intellectual aspects such as art, religion, ecology and philosophy do not answer to these principles and therefore we see that these are increasingly neglected. In the modern world the rationalistic, objective intellect has gained influence, at the expense of spiritual intuition, on forming our worldviews and creating the basis for western science and aesthetics (Sack, 2006, p.24).

Unfortunately the intrinsic value of nature is not a rational argument for economic progress. Thus we have created an on-going collapse of the natural world and we are all responsible for it by living a certain way. Even sustainable solutions for the ecological crisis and climate change have become products of the economic system as they are created with the same mentality that generated the original problem.

The problem in our society is not technological; it is a cultural, spiritual crisis. We don't know what kind of relationship we want to have with life on earth, with our own desire and greed and with our notion on what we perceive as progress.

This spiritual deficiency is often compensated by for example unlimited consumption, giving many of us not the spiritual satisfaction that many expect but feelings of inadequacy and failure. We are pushed to the ideals of success and prosperity, eternal youth and beauty, which are for most of us impossible to reach (Sack, 2006, p.36). It is increasingly more difficult to understand what the essence is for our happiness. The increasing globalisation and consumption of limited natural resources does not lead to overall increase of wealth but moreover leads to an widening gap of rich and poor (Sack, 2006, p.35). Furthermore on a social level our purely individualistic perception often neglects the weaker in our society, such as the elderly, who are in many societies the important source of history, experience and spirituality. Finally this perception limits our ability to act without egotism.

So I believe the main problem is of a philosophical nature. Today there is no sacred core in our civilization or a sense of something that is greater than us and we don't recognise the divinity of nature. The myth of progress is that we believe in the notion that we are evolving beyond spirituality. The sacred is seen as something "primitive", but I think that a very significant dimension of our culture has gone missing.

I believe we need to learn to live with, accept and respect the environment that we live in. We urgently need address our own inadequacies; "Anyone who can endure solitude and feel at one with his environment has

no reason to feel lonely, because he is not isolated, but will always be connected" (Sack, 2006, p.21). For example, to aim for indestructability is conflicting with our own intellectual and physical natural transformation to illness and death and therefore against our own nature. We need to accept these natural processes that inevitably result in imperfectness, incompleteness, impermanence, transience etc., only then are we able to form a balance with nature.

We need to see that the earth is more than just as a resource for pragmatic use, academic understanding, or aesthetic appreciation. We need to become aware that we are not the centre of everything (god) but part of a greater whole. We need to find some sense in the sacredness of nature itself, recognise its inherent value; learn to love and connect, to see the world beyond. Re-establish not just a theoretical but also an intuitive intense intrinsic relationship with nature (like a child), where there is space for imagination. Dare to experience the mystery of life and hopefully gain some sense of respect, awe and humility for it.

I am not suggesting that we go back in time and try to live in the past. We are living in the here and now; in nature as it is today and we still depend on the qualities of earth.

Spirituality | Nature and Architecture

The concept of this "original state", I mentioned above, has always been present, however slightly different defined within the diverse religions, philosophies and cultures worldwide. Ultimately all religions strive for the mystical experience of this all-encompassing connection; enlightenment. Everything exists at the same time and is connected in a unified manner. Awareness of this; simultaneously creates freedom and security (Sack, 2006, p.20).

In my opinion enlightenment can be experienced by anybody, independently from any faith. As I understand from the theoretical literature, enlightenment takes place when the spirit has space. I would describe it as an existential experience of unity or connection; a "sense of being", mingled with an ultimate sense of calmness, a profound experience of the connection between ourselves, mentally and physically, and limitless time and space. Although this experience is unique for every individual and can originate at any time or in any place it is always essentially the same (Sack, 2006, p.18).

Following this notion, comparable to art, architecture can serve as a means to allow us to intuitively experience this connection, however this can only be achieved when the architecture it self is also connected to and part of our constantly changing environment. The created space should be in harmony with the surrounding nature that we live in, and experience on a daily basis (Sack, 2006, p.20).

For architecture to evoke an atmosphere of sacredness or say poetic profoundness, the mind (spirit) should be activated through physical sensory experiences of a place. This atmosphere is very difficult to understand through rational analysis as it is about more than only architectural elements and characteristics. There is some kind of quality that contributes to this atmosphere (Vink, 2014, p.90).

An essential power of architecture is that it constantly influences our surroundings; it is unavoidable, thereby always influencing our self-awareness. Architecture forms space as an extension of our body and thus it is appreciated by all our senses; it defines the separation of space that we occupy and influences how we feel in that space and about the relationship with ourselves, and our constantly changing surrounding environment. Architecture therefore also has a high social responsibility and as architects we could have a measurable influence on a more positive impact on the environment (Sack, 2006, p.20).

Japanese philosophy and architecture

Within this research paper I would like to reflect on this notion by exploring Japanese philosophy and their traditional architecture. Throughout my study I have been interested in this subject. So I hope to further broaden my knowledge and develop a new perspective. I expect that certain philosophical phenomena and concepts, that form the foundation for this notion, are uniquely represented within Japanese philosophy and therefore implemented in their traditional architecture. Furthermore I experienced that in Japanese culture and architecture the phenomena of, for example emptiness and ephemerality, are subtly translated into tangible things. There is a more poetic, intuitive and sensitive attitude towards architecture.

Through this research process I hope to gain more understanding in the poetics and complex layering of Japanese architectural philosophy, explore the essence of the Japanese characteristics, such as the spatial

conception, their aesthetics, vitality and ambivalent nature. I would like to get more insight in the relationships and dilemmas between these phenomena and lastly gain insight in their methods of creating awareness/ consciousness in regard to our relationship with the environment and therefor the connection between us, and everything around us. I would like to understand how the idea of “universal unity” is reflected in Japanese architecture.

Eventually I hope to be able to design architecture with a new perspective and understand the role of these phenomena in modern architecture and how architects can erase the boundaries or intensify the connection between outside and inside. I hope to broaden my limited spectrum and perception and capture the elusiveness of the phenomena of emptiness and ephemerality, so that these can contribute to a mystical spiritual experience. I believe as architect it is part of my cultural task to represent this connection and try to contribute to some change.

Related to the above it is desirable to strengthen the relation between Architecture and Nature. Architecture can serve as a medium to restore the experience, on as many different levels of our perception as possible, or even ever so slightly, expand our consciousness of this connection. This can create new possibilities and a new perspective on our existence. It can allow us to perceive connections underlying the whole.

This research project aims to identify and describe those qualities that contribute to an architectural response to nature's phenomena, such as time (constant change) and space (*Ma* **), our spatial conception and experience, and our relationship with nature (*En* *). Often these qualities are present in the form of architectural elements and methods, composition of elements. Possibly this research develops tools based on Japanese philosophical and architectural principles and notions in which emptiness and ephemerality play a key role. I hope to ascertain an approach to how architects could possibly contribute to a better acceptance of these human core values. This has resulted in defining the following research questions.

Main research question

How does Japanese philosophy contribute to an architectural response to nature's phenomena, our spatial conception and experience, and our relationship with nature?

Sub-questions

- What qualities; elements or methods (composition of elements) in Japanese architecture express the phenomena of *En* * ?
- What qualities; elements or methods (composition of elements) in Japanese architecture express the phenomena of the aesthetics of time?
- What qualities; elements or methods (composition of elements) in Japanese architecture express the phenomena of *Ma* ** ?

- How do these architectural qualities contribute to an awareness of these phenomena?

* *En* | A Japanese expression for a connection and/or separation simultaneously (for example between us and the environment or in architecture inside and outside or public and private).

** *Ma* | A Japanese expression for emptiness; place, space, void, a spatial conception.

Follow-up question

Which of these architectural qualities could be translated into a new context?

This question will only partly be answered within this research paper. The overarching graduation project consists of this research paper and an architectural design proposal based on the findings in this paper. This question will eventually be answered more in depth at the final graduation presentation, as it is part of the design process to discover if and how these architectural qualities could be translated into a new context. More information on this particular sub-question will be addressed in the reflection.

Architectural principles and philosophical notions cannot be generalized, so implementation of certain ideas as a result from this research have to be done with extreme caution and subtlety in respect of the origin.

Furthermore the development of this new attitude; recognising the all-encompassing connection, in the western society, is something that demands a careful approach and patience.

Methods and Parameters

Originally I did not expect to be delving so detailed into the subject of Japanese philosophy. However my initial interest, in the phenomena of emptiness and ephemerality and architecture, that motivated me to do this research, automatically led me repeatedly in to the challenging literature of Japanese philosophical notions. To be able to elaborate more in depth on these phenomena I utilized three different methods to collect relevant data to be able to answer my research questions.

First to gain knowledge about Japanese philosophy and architecture and to explore the changing and constant phenomena parallel to this, a literature study was necessary. Accordingly the theoretical framework for this research paper consists of the following five concise essays I wrote. These essays are presented in more detail in the appendix.

- 01 | The Ritual, the main Japanese spiritual-philosophical notions.
- 02 | A way of life, the art and architecture of tea (*Sukiya-style*).
- 03 | Japan a unique island, the culture and climate of Japan.
- 04 | The concept of space, *Ma*; space, place, void.
- 05 | The aesthetics of time, impermanence, imperfection, incompleteness.

These five subjects altogether form the theoretical framework that provides the necessary structure to optimize the other components of this research paper and the formulation of the final conclusions.

A second part of the exploration of the influence of Japanese phenomena on their traditional architecture consists of the analysis of traditional Japanese architecture. Thus a plan-analysis was implemented. For this plan-analysis I decided to analyze an "ordinary" traditional Japanese house because the house represents the architecture that reflects the essential philosophies of its society at its best, as it directly reflects the ideals and morals of its inhabitants. Furthermore the traditional Japanese houses were designed and built without an architect, resulting in a more direct translation of the ideas of that time (Engel, 1991, p.221). Identifying and understanding the architectural elements and methods that are related to these philosophical ideals make it possible to create architecture that forms or creates, instead of reflects, a way of life.

I have chosen to only focus on one building (style) for my analysis instead of for example comparing two building typologies. I believe this will result in a more thorough analysis of the different phenomena taking the limited time I had for this research into account. I believe the following augmentation justifies my motive for this choice.

The traditional Japanese dwelling generally consists of single or double- floored, wooden frame structures and fundamentally there are only two distinctive types of layout configuration, each with a respective different relation between building and surroundings (architecture and nature), to be identified. The *ie-niwa*, "house-garden" layout, where the house is located in an enclosed garden and thus more or less hidden from the street and the *ie-mise*, "dwelling-shop", that combines living and working on one plot and is oriented and open towards the street (Nitschke, 1993, p.85).



Japanese traditional buildings were built by craftsmen who functioned as architect and constructor simultaneously, focusing mainly on the practical quality of the creation of indoor space without pre-determined ideas (Chang, 1984, p.2). The elementary human requirement (such as protection), a response to the existing climatic environment and the relevant technical developments probably defined the building design. Only religious (monumental) architecture literally translated the corresponding philosophical ideas to spatial concepts etc. (Engel, 1991, p.234). The Japanese residential architecture in the *Shinden-zukuri* (*zukuri* translates to style) and subsequently *Shoin-zukuri*, originally developed from these religious temples. They served as aristocratic mansions and palaces, built for the upper classes (wealthy samurais, priests, etc.) and are evidently variations of the *ie-niwa* typology (Nitschke, 1993, p.87).

The *Sukiya-zukuri* (style) is also a "well known" traditional Japanese domestic architecture style conform to the *ie-niwa* layout, however this style was built in a period when the profession "architect" had emerged in Japan. Consequently the a priori intellectual concepts of the architect were consciously implemented in the design of the building and garden. Furthermore the *Sukiya-style* architecture clearly reflects philosophical ideals since it literally evolved along with the influential spiritual-philosophical and aesthetic ideals of Zen Buddhism and the art of tea in Japan (Chang, 1984, p.).

However the *machiya*, the Japanese townhouse, has an *ie-mise* type of configuration and these urban dwellings were built by craftsmen and mainly for the common people such as merchants. Thus *machiya*'s are far more humble origins. Additionally the Japanese house does represent the essential philosophies of its society as it directly reflects the ideals and morals of its inhabitants, even though they may have been translated intuitively and possibly unconsciously (Engel, 1991, p.221).

Therefore the choice to only analyse a *machiya* was motivating. I think it reflects a more ordinary way of life (everyday), thus hopefully guiding me to the more essential architectural elements and methods that have been applied. Moreover I find it interesting to discover if and how the philosophical ideals have been translated. The architecture of other traditional Japanese dwellings and tea houses have only been analysed to the extent of their influence on the development of the *machiya* and to be able to form a more comprehensive answer to certain sub-questions of this research paper.

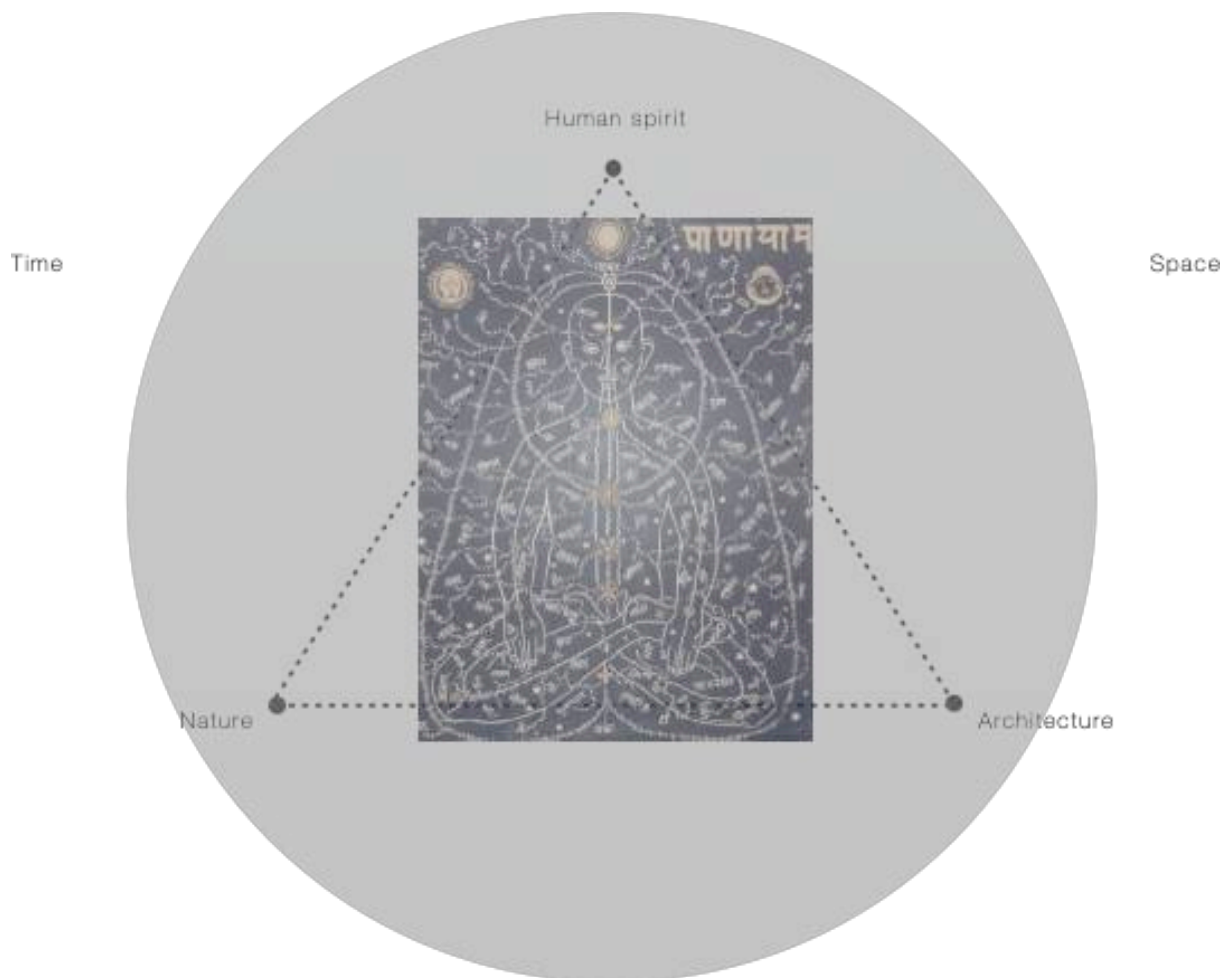
Finally because the topic area; "Japanese philosophy and architecture", is very broad and complex I found it important to critically study a sufficient segment of the existing published body of knowledge through comparison. Thus the third and final part of this study consist of the comparison of my analysis of the case-study to relevant published researches, with the intention to find patterns and connections concerning architectural elements and methods.

Florentine Sack introduces eleven general design criteria in her publication; *Das offene haus, Für eine neue architektur* (2006). She states that when we carefully observe nature we will encounter these concepts. According to Sacks by subtly implementing them as design criteria in an architectural design it is possible to strengthen the relation between architecture and nature (Sack, 2006). These design criteria have been

compared to the building of the plan-analysis of the traditional *machiya* for this research, to determine if the traditional Japanese house possesses these qualities as well, thereby confirming or denying the presence of essential philosophical concepts.

Additionally I attempted to identify the results of an analysis by Günter Nitschke in his book; *From Shinto to Ando* (1993), with the object of my plan-analysis. In his essay "*Passage to a poet's hermitage*", Nitschke describes twelve architectural techniques that manipulate one's sense of time and space. He analysed a traditional Japanese building in the "popular" *Sukiya-style* architecture.

The plan-analysis of the *machiya* and the "comparison"-analysis's are also to be found in the appendix. In the following chapter the findings distilled from these three research methods are presented and discussed.



Findings and Discussion

The synthesis/ essence of Japanese architectural space

The main areas that I have identified to be relevant for the development of many architectural concepts that have manifested in the traditional Japanese architecture are the following: Japanese philosophy and religion, Japanese culture and tradition, Japanese aesthetics and the Japanese climate and geo-location.

During my travels through Japan I learned that Japanese spirituality is not to be perceived as a singular philosophy or say a believing a certain religion opposed to another. Japan has been influenced by multiple philosophies and religions that have embedded themselves in into the cultural heritage of Japan. They are all spiritually interwoven, fused and harmonized with one another and throughout the daily life of Japanese people. Therefore understanding or even grasping some essence of their complex philosophy is almost impossible for an outsider. Only a humble pursuit to this end is imaginable. In Japan Shinto, Buddhism, Taoism, Confucianism and geomancy coexist beside each other or even overlap, for this essay the focus will only be on those elements within these philosophy's or that are part of the doctrine's In relation to Japanese architecture, their spatial conception and their relation with natures phenomena.

A life's worth of studying could be dedicated to this subject. This graduation research however is merely a modest first attempt in understanding a slight fraction of Japanese intriguing philosophy and architecture. As a result of this compact research I have derived seven important philosophical notions that I think are essential to understand the Japanese conception and use of architectural space. Furthermore these philosophical notions cannot be generalized, but I have tried to describe their essence.

I have found that the following seven philosophical notions are the fundamental layer for the many architectural elements and methods that are evident in traditional Japanese architecture and that answer the main research question: **How does Japanese philosophy contribute to an architectural response to nature's phenomena, our spatial conception and experience, and our relationship with nature?**

The traditional Japanese house and especially the Japanese teahouse express these core values. In the conclusion the following seven notions are interrelated to the three sub-questions, concerning the relation with nature, time and space, that where posed for the realization of this research paper. It is important to note that the defined philosophical notions share many qualities; elements or methods (composition of elements). Hence domains are created with vague boundaries. During the process of carrying out this research everything has, at some point, migrated, evolved or become less/more important. I expect that these changes will continue to take place in future developments. Thus these results are only an ephemeral record, a moment in time created through the limitations of my capability and experience, that are part of an endlessly evolving greater whole.

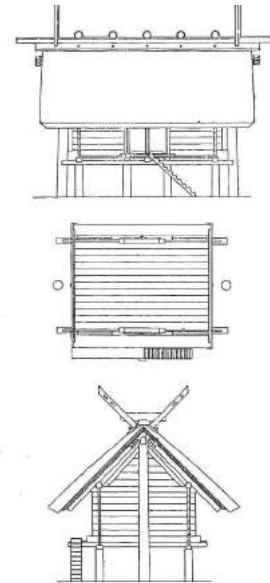
The seven defined philosophical notions:

- **The relation between man (architecture) and nature**
- **Simplicity**
- **Ephemerality | The impermanence of everything**
- **Emptiness | The origin/ end of everything**
- **Relativity | The ambivalent nature of everything**
- **Sequential experience | a sensory experience of nature, time and space**
- **Reasoning | Balancing between intuition and ratio**

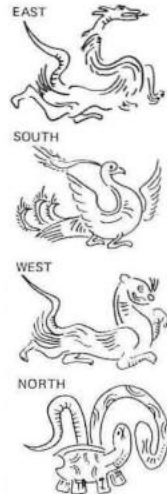
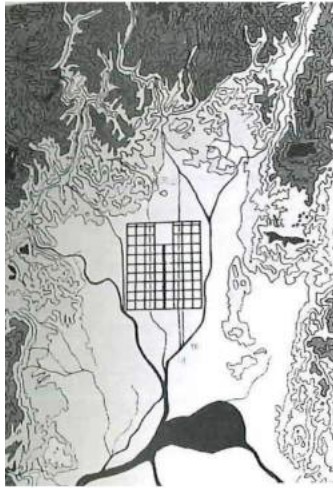
The diagram below shows how the main research question contains the three sub-questions respectively about; **the relation with nature, time and space**, and how the seven defined philosophical notions are related to one another. The domains of "time" and "space" are placed within the domain of "the relation with nature" because time and space are literally elements of nature. The exception in the diagram is the notion "Reasoning", because it represents some debate on certain contradictions that are evident within Japanese cultural and ethical worldview such as **intuition – ratio, equality – hierarchy**. These contradictions will be discussed in more depth in the respective paragraph of the conclusion.

The relation between man (architecture) and nature

Nature is found to be the origin of Japanese spirituality. Shintoism is the indigenous religion of the Japanese people. Its essence is the reverence of nature gods; *Kami*, a singular divinity or sacred essence. These godly spirits manifest themselves in different forms within nature, such as natural elements (rocks, trees, rivers), but also places and living or dead beings. If so they are in possession of 'the nature of *Kami*'. They exist within the same world as us and share its interrelated complexity. This form of polytheism is based on the harmonious cooperation of the *Kami* to realize the functioning of this world, holding great influence on our thoughts and acts, as well as the conditions of nature, like the changing of seasons, etc. (Chang, 1984, p.20). The ancient Japanese myths describe gods descending into the forests and mountains. These spirits and ancestors are believed to dwell in the woods. Naturally the Japanese have adapted a respectful attitude towards nature, as man is only guest on earth.



Besides Shintoism, Geomancy has traditionally been of great influence for architecture in Japan. Geomancy (*Kasō* or *Feng-shui* in Chinese) is a method of divination by means of natural or artificial configurations of earth or astrological bodies. Literally seeking knowledge from nature often by reading the "energy of the earth" thus it is a faith in the foresight and divinity of nature. In Japan this resulted in the development of the principle of four sides, North, East, South, West. Each direction has favourable natural elements such as mountains, lakes, roads or rivers, and is guarded by a mystical creature. Geomancy influenced for example the location of cities, villa's, cemeteries and the design of the garden, as well as its relation to space. Geomancy has become an important method for retaining essential cultural traditional beliefs that have had a profound influence on the making of space (Chang, 1984, p.18-20). Even though critics may have accused this to be a method based on superstition instead of logical reason, this Japanese faith in nature's divinity is still present and widely accepted and applied nowadays.



Furthermore the fundamental Buddhist belief is that the love for nature is not to be attained by appreciating its ephemeral and ambiguous character but by understanding the greater significance of it: us being part of this. Only when we accept nature we can accept our mortality, and ourselves, realizing our existence and contemplate the true permanence, constant change. This "concept of perpetual change within a constant nature" is known as "The law of *Mujo*" (Chang, 1984, p.30).

This 'dynamic nature' is also acknowledged by Lao Tzu and therefore Taoism, like Buddhism has the same principle of achieving enlightenment by being in harmony (one) with nature and the universe. The philosophical ideals of Taoism revolve around the idea of *Tao* (dynamic balance) the way or path of life. *Tao* is considered to be the driving force behind everything that exists; a force that flows through all life forms in the universe and connects everything (Chang, 1984, p.23). Lao Tzu believed that "the true meaning of life is an interchanging and flowing experience, nothing is permanent or absolute" (Chang, 1984, p.42).

Based on this (incomplete) synopsis I can conclude that ultimately one of the core spiritual values derived from the Japanese philosophical universe is their relation with nature. Evidently the Japanese have carefully observed nature's properties and developed an accepting attitude towards nature's inexorable and inevitable aspects. Nevertheless it is important that we are aware that the Japanese worldview is not to be idolised; we have to recognize that Japan has not entirely escaped the human desire to control nature.

By means of the applied research methods I have identified many qualities in the form of elements or methods (composition of elements) within traditional Japanese architecture that strengthen the relationship between man and nature, where architecture can serve as an effective means by connecting our inside world with the outside world. Besides that I have discovered how these qualities can contribute to an awareness of nature's phenomena (time and space), our spatial conception and experience, and our relationship with nature.

Architecture can achieve this connection in two ways. Firstly by creating an space that is orientated outwards, thus enhancing the connection between architecture and nature through all the senses or secondly by creating an introvert, closed space that gives one space for meditation; connecting with the all-encompassing structure (incl. nature) via the spirit. In this part we will mainly discuss the first because the traditional Japanese house has been the starting point for this research. Later on a *Sukiya-style* teahouse will provide a precedent for the other more spiritual method of connection.

The connection between inside and outside should ensure that the differences and divisions between living space and environment are no longer immediately obvious. Traditional Japanese architecture shows many architectural elements and methods of connecting the inside with the outside. Before I can discuss these findings it is practical to introduce the object of my plan-analysis; the *machiya*, the Japanese townhouse, in short. Or in other words define the context of these findings for a more comprehensible conclusion.

The Machiya | A traditional Japanese townhouse

These vernacular houses are found throughout Japan. In Kyoto, most of the still existing; *Kyo-machiya*, are from late 19th early 20th century as many older ones have been destroyed by several large fires. It is a type of residential merchant townhouse.

Machi | 'town'

Ya | 'shop'

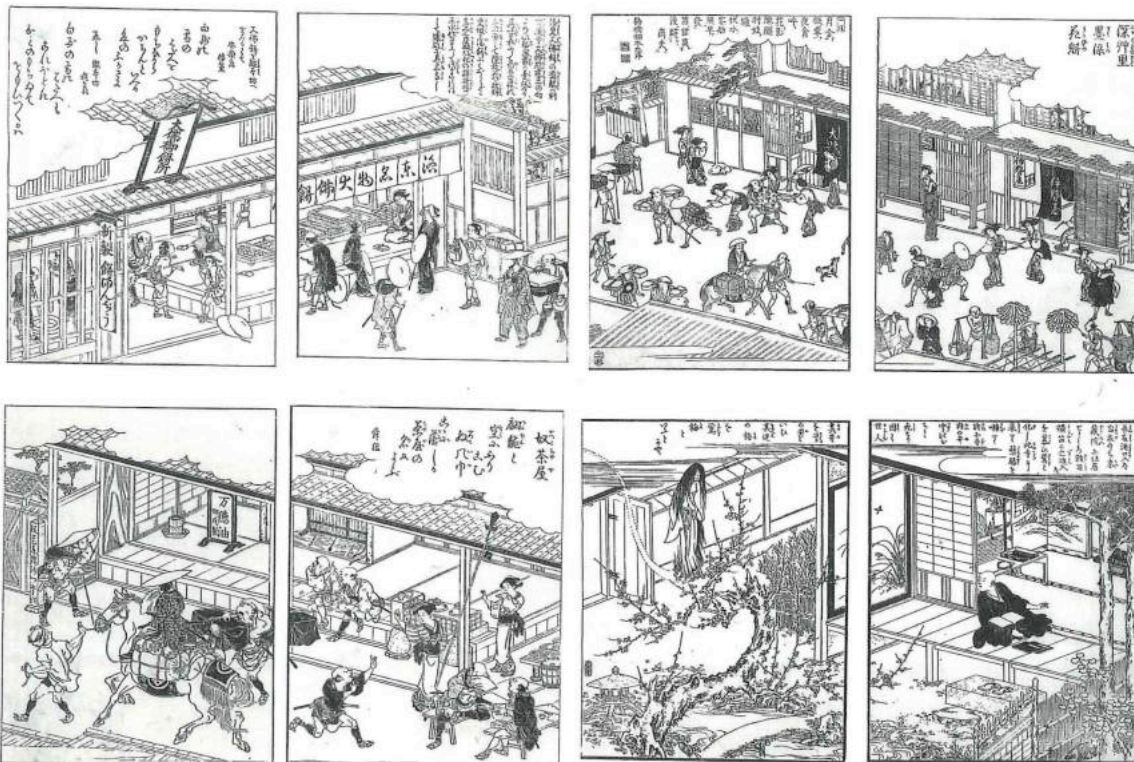
Ma | 'space'

Chi | 'road'

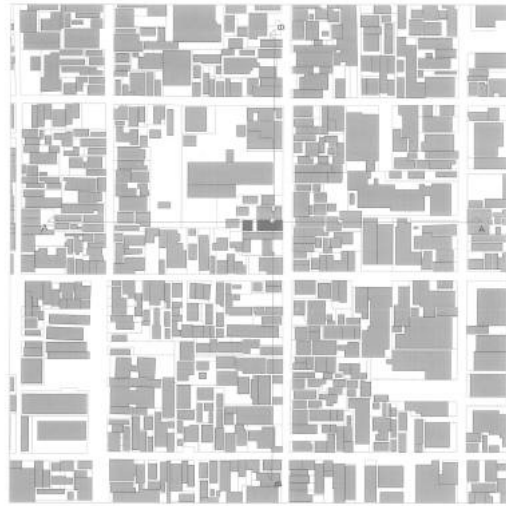
- A space along the road
with a shop in a town -



The layout of all *Kyo-machiya's* is more or less similar, although they can vary according to the size of the building and have slight differences in height and delicacy of façade design. Despite the growing wealth of the merchant classes the façade and urban form of the *machiya* remained deceptively modest to reflect the low status of the merchant. *Machiya's* have in common that the shop spaces or public workplaces are clearly oriented and thus open towards the street and private living spaces are situated at the back of the house (Nitschke, 1993, p.86). The action on the street outside thus becomes part of the life inside, this is visible in the woodcuts from the 19th century.



The building mainly consists of one or two stories (sometimes three). The floor plan form is narrow at the street side and with 20-30 meters extremely deep or long. The façade along the street is only 5,40-10,80 meters wide. Nature is set into the building by means of integrating several courtyard gardens. The entire building is made from a wood construction and has *tatami* flooring. A *tatami* is a rice-mat, approximately 0.90x1.80 m. The entire house-structure is based on these standard measurements.



The Yoshida house is an old *Kyo-machiya* built in 1909 in the centre of Kyoto. It is a monument and the owner, Koujirou Yoshida, has taken care of the house and successfully maintained its traditional authenticity over years. The house has a typical townhouse structure consisting of a shop, a living quarter, a warehouse and courtyards. The owner and his wife (3rd generation of Yoshida's) currently live in the extended *kura's* (storage houses) at the backside of the plot. The rest of the *machiya* today it is part of cultural heritage, which is open for tourists to visit. The plan on the next page shows a clear organization of the different spaces in the house.



En | The transitional space

The Japanese term *En* denotes a connection and/or separation, however *En* is expressed differently within various contexts of Japanese culture. In Buddhism *En* refers to the notion of Karma: the bridge between actions and their effects. In a social context it refers to “the (love) bond” between people. In architecture it denotes a transition from the inside to the outside: from architecture to nature, or from public to private. “Ultimately, the meanings of *En* suggest a deeply ambivalent interpretation of man’s being, his social structures and architectural artefacts as being neither simply independent of nor dependent upon, but as being interdependent among each other, i.e. part of each other” (Nitschke, 1993, p.85).



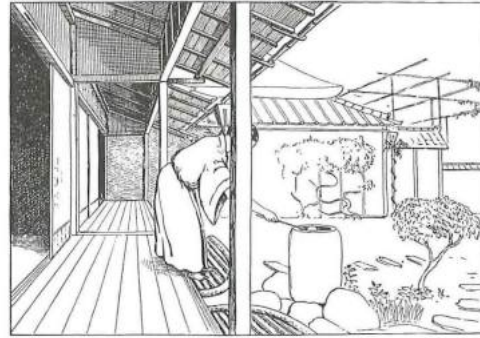
As expected many transitions between outside and inside coincide with the transitions between public and private, thus both will be discussed. However it is essential to note that the transition between public and private is less relevant for the conclusions of this research paper.

Horizontal orientation

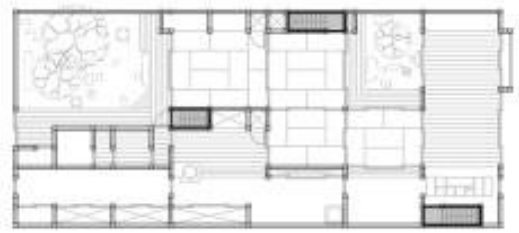
As we have seen the Japanese have a desire to dwell in harmony with nature, because they see themselves as equal and modest elements that are connected to nature. They therefore have developed a preference for a horizontal orientation. The horizontal plane allows the blending of dwellers and environment, without hierarchy (Chang, 1984, p.37). The traditional Japanese dwelling is therefore modest, just big enough to accommodate the essential requirements, it is set close to the ground, “in touch with the earth”, and it is seen as a temporary shelter only to protect its inhabitants from the most extreme weather. The daily Japanese life occurs in a horizontal movement between inside and outside space (Chang, 1984, p.38). Unlike the western development of the staircase (a vertical way of movement) the Japanese stairs originated from the idea of a ladder and in traditional Japanese houses it is often placed out of sight and somewhat difficult to find (Chang, 1984, p.38). Likewise the *machiya* developed in a horizontal plane.

The roof

A crucial architectural element that accentuates the horizontal plain of traditional Japanese housing is the roof, *yane*, under which there is a safe place to live. The Japanese interior emerged from under a parasol; this is how Tanizaki describes the origin of Japanese space. In his theory of shadows he describes how carpenters used to cast a shadow with a big umbrella to determine where to build the house, as darkness is the essence of beauty for a Japanese room according to Tanizaki (Tanizaki, 2001). Moreover the roof is required the primary element necessary to protect us from the weather. In Japan the construction of the roof has therefore developed to be of great importance architecturally and it is often a dominant feature of the building. Characteristic for the Japanese roof is the development of the detached lean-to roofs (*hisashi*) for the loggia spaces, which results in a distinct aerial view of this type of Japanese buildings as the main spaces and the verandas or extensions can be identified by their roofs. The Japanese cityscapes are composed of different rooflines, straight and curved, altogether harmoniously forming low and long horizontal lines amongst the trees (Chang, 1984, p.39). Additionally the roof of the Yoshida house additionally has a straight-line roof tile (*ichimonjigawara*) where the edge of the roof tile is cut off in a straight line to emphasize its horizontal contour. This is very characteristic of *Kyo-machiya*'s and it accentuates that each eave is parallel to the street, giving the streetscape a sense of unity.



These characteristic Japanese overhanging roofs are essential for the creation of *Noki-shita*; the typical atmosphere under the eaves. Here an intermediate area is created which simultaneously defines and blurs the transition from outside to the inside, and from public to private space. Nitschke defines this space “the transactional space”, in his book from Shinto to Ando (1993), because this is the space where climatic, visual and social “transactions” occur. Within the traditional Japanese house (*machiya*) there are many in-between spaces where the outer and inner or the public and private worlds overlap.



Hidden stairs | vertical movement

The column

Another dominant element that is responsible for the distinctive appearance of the traditional Japanese house is the column or post. As expected, also the column is related to the Japanese philosophy and it is considered to have a spiritual value. It is custom to refer to a number of columns when counting *Kami* and to make that amount tangible vertical lines (posts) are drawn, as it is tradition not to depict the Shinto gods. Furthermore the column is said to be a possible dwelling for the *Kami* and so the existence of a column in a space contributes to the sense of the surrounding space as sacred. Thus the architectural space itself also acquires a symbolic value that exists poetically, not logically but nevertheless can be perceived (Chang, 1984, p.36). One could say that the main post or column is symbolic for the existence of the house and it is often placed the most important space. The column is an important load bearing element as one or two main posts form the foundation for the entire house and an important architectural element for organizing the plan of the traditional Japanese house, as the distance between the centrelines of two columns evolved into the Japanese basic structural unit (*ken*). Ultimately the column is an essential element for creating the free space that makes a relation between inside and outside possible.

To avoid confusion due to lack of concise and universal architectural terminology, for this research paper several definitions will be introduced accordingly throughout the conclusion.

Definitions of place *:

- Indoor/inside is a space that is enclosed by four vertical boundaries and a roof.
- Semi-indoor/inside is a space that is enclosed by less than four vertical boundaries and a roof.
- Semi-outdoor/outside is a space only enclosed by four vertical boundaries without a roof.
- Outdoor/outside is a space that is not enclosed.

* For these definitions, walls and sliding screens, with or without openings, are covered by the term “vertical boundary” because it is not a question of accessibility but it is about defining all those elements that create the boundary of a space that protects from nature's elements and forces.

The corridor and the patio

Once one enters the *machiya* through the lattice sliding door of the entrance, a world of transitions and ambiguous spaces will occur. With this first step into the private house you enter the *tōrinawa*, a lower earthed passage/ corridor that functions as a long “street” through the house. Underneath this street lies an open water channel that connects the kitchen of the house to the main system. The corridor runs on one side of the plot, from the street to the rear of the house, because it functions as connecting passage, literally functional and climatic, it is essential for the functioning of the entire house. It is not really a space to sit or stay, and it cannot be defined as a room, but it is more a space of action and meeting. In a way it is a semi-public route, as people traditionally would bring goods for the shop and the private house through here. Its main function is to allow access to the several other spaces and rooms in the house.



The *tōrinawa* is divided into three parts by (flexible) thresholds at the front, middle and a back of the building; a shop part, the *mise-niwa*, consisting of two spaces, the entrance and the *genkan-niwa*, and the residential part, the *hashiri-niwa*, kitchen passage.

The *genkan-niwa* is an extremely ambivalent transitional space as it is an open place, like a courtyard, within the *tōrinawa*. It serves as a more private outdoor entrance foyer as it is located behind the shop. Sometimes there is a bench for guests to sit down and wait for the owner and there can be a plant. You could describe it as a small “garden” of the entryway because in the *genkan-niwa* one has the first contact with nature, visually by seeing the sky and plants and physically by feeling the outside temperature. You will directly experience if it is raining or snowing for example. Similarly in the public-private transition, it is a place of ambiguity as you feel that you are not allowed to go further, but the bench or the contact with outside (nature) invites you to stay there and it tells you that you are welcome.

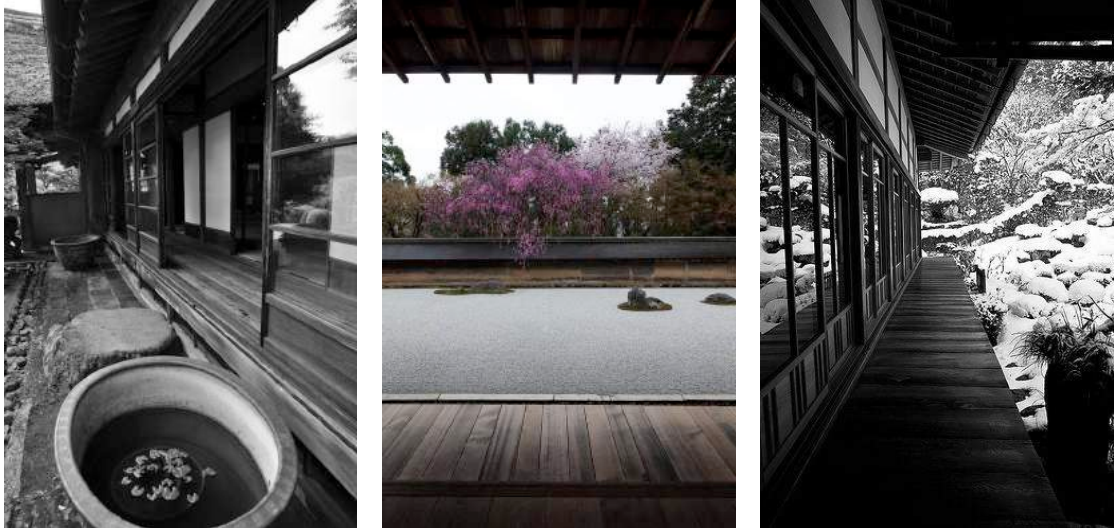


Moreover because the entire length of the *tôrinawa* has an earthen cement like floor in which stepping stones are integrated, that runs from the front outside (the street) through the semi-inside (the entrance), through the semi-outside (the *genkan-niwa*), back to the inside (the *hashiri-niwa*), it could also be seen as an ambivalent transitional space. The corridor is not a climatized part of the house so it is neither inside nor outside.



The veranda

The *engawa* (veranda) is a very characteristic space of traditional Japanese architecture and it is an essential ambivalent transition space that connects the inside space with the (private) outside gardens. As mentioned in a previous chapter the *machiya* has an *ie-mise* type of configuration meaning that the relation between architecture and nature is realized by means of private patio gardens set into the building. These patio-gardens are only semi-outdoor spaces, because the surrounding buildings, which are embedded in the strictly orthogonal grid structure of the urban design, enclose them. In the case of a *Sukiya-style* teahouse, which has an *ie-niwa* layout; meaning that the house is located in and surrounded by an enclosed garden, the circumferential *engawa* with its individual roof is an addition to the main body of the structure thus really connects the indoor to the outdoor. Here the design of the garden determines which parts of the garden are more public or private. The relation between the house and the garden of an *ie-niwa* type layout will be addressed later on in the conclusion.



The *engawa* is the place devoted to contemplation of our connection with nature. When stepping on the *engawa*, firstly the change of the materialization of the floor is perceivable; from a *tatami*-room you cross over the wooden frame, threshold with grooves for sliding doors (*shikii*) to the wooden deck of the *engawa*. However on the veranda you are still protected by a roof and the floor level remains equal, but you are also somewhat outside because you can sense the temperature change and experience the weather more directly. It is a covered space both in and outside the house, a transitional boundary between building and nature, an interspace, one of the ways by which the house creates a dialogue with its surroundings. Ancient Japanese scrolls depict how En historically has always been a way to appreciate the garden, a cool breeze, or to enjoy the full moon in autumn (Nitschke, 1993, p.90).



In the Yoshida house the *tatami*-rooms are connected via the *engawa*, thus you travel from inside via the semi-inside (the veranda) to the inside again. It is imaginable that in winter this can be pretty cold, therefore the *engawa* can be enclosed manually with wooden shutter elements (*amado*), which are stored away when not in use in a box-like structure (*tobukuro*). This storage space is generally constructed at one end of a veranda or against a wall adjacent to sliding screens. All the main routes via the *engawa* have this protective flexibility, thus creating the possibility of including the *engawa* within the indoor space or not.

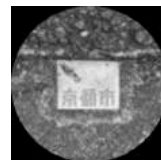
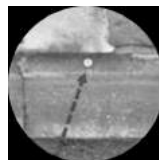
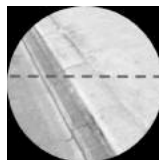
Thresholds

Besides these defined transitional spaces (*En*), there are many architectural qualities and elements that are also essential to create soft boundaries, a degree of separation. They are essential for the layered transition through spaces.

In the plan-analysis, an intermediary zone of ambiguity is marked by subtle architectural elements, borders, between the street and the entrance (and the shop) of the *machiya*. These elements increase the awareness of where you are in relation to the building, the environment, climate and your surroundings.



Firstly there are subtle changes in the pavement in the form of height (steps) and the use of materialization and secondly there generally are visible marks of “private area” on the sidewalk. The first indication of transition is at the edge of the street; there is a small stripe of concrete stones without any change in height. Adjacent to this stripe is a 5 cm higher stipe of small natural stones. Here you will find the official mark from the city indicating the private area. An arrow shows where it begins. From now on the inhabitants are responsible for the care and upkeep of the outside space. Then again a 5 cm higher ridge of natural stones, that is 15 cm broad, defines the first threshold to get into the house. Sometimes there is a stone lying in this zone, usually in one of the corners or next to the entrance, indicating that this is officially a private building and that you are not allowed to come in unless you have been invited.



The step

Traditionally Japanese houses are raised 30 to 80 centimetres above the ground on stilts. They support the wooden floor that is placed on top. The floor is an important Japanese architectural element as it is interconnected to many native cultural behaviours. In Japan it is custom to sit (live) on the floor and therefore, for hygienic reasons, it is tradition to take off shoes before entering this part of a building. As expected this, also this moment is clearly marked by a small difference in height in the floor.

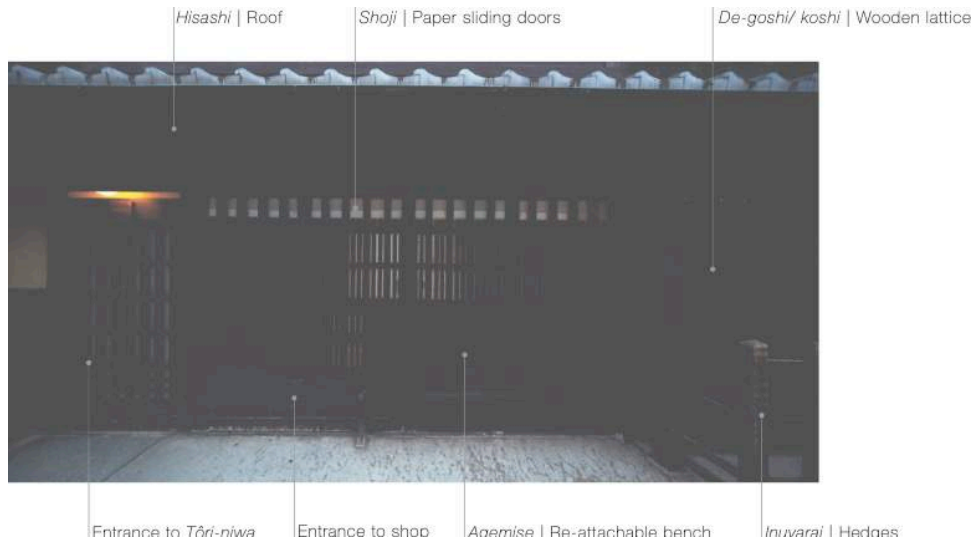
Inside many traditional Japanese buildings one will find this very characteristic architectural element that marks a transition to the true private areas of the house; the *shikidai*, the (wooden) step. In Japan the step up is associated with the Zen Buddhist idea of “being grounded” or being in the moment. It emphasizes the importance of being in the here and now and being conscious of your step. The differences in floor levels mark a functional, spatial and social boundary. In the *machiya* one can enter the *tatami*-rooms via the *tôrinawa* by stepping up from the unfinished cold low, earthed concrete floor onto a wooden step that is aligned to the raised *tatami* flooring in the room. Thus in Japan it is custom to invite guests to ‘step up’ (*agatte kudasa!*) instead of to ‘come in’. The step also indicates that there is a space under and in front of the step indicating the place for the socio-physical ritual of taking off shoes. Then, with bare feet, one can step up onto *tatami* flooring and experience the new sensation of direct contact of the soles with the delicate ripples of the *tatami* mat.



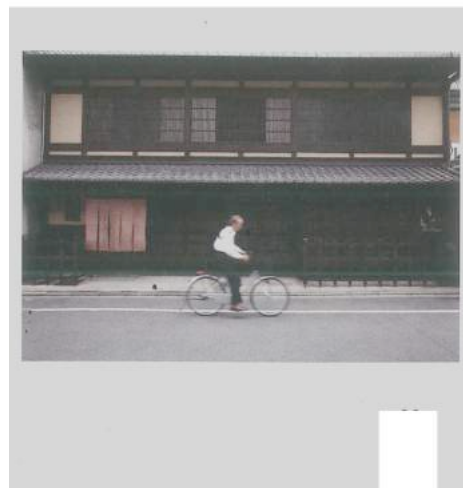
A Layered façade

The composition of the Japanese living space is mainly characterized by its connection between the interior and the exterior. Thanks to the spaces between the posts of the wooden frame construction a free physical circulation and long visual sightlines are enabled. Only the presence of the movable partitions or screens that succeed one another allow the manipulation of this connection.

A very important side of the *machiya* is the street façade, as for a visitor this is the only part of the dwelling that can be seen. The appearance of the façade is made up by lots of different layers and consequently the first impression of the house is a formal and “closed” one as it is almost impossible to see the inside. However due to the layers of façade, transparency and flexibility is permitted. Depending on the situation only the view or also physical access is possible, regulating privacy in relation with the street.

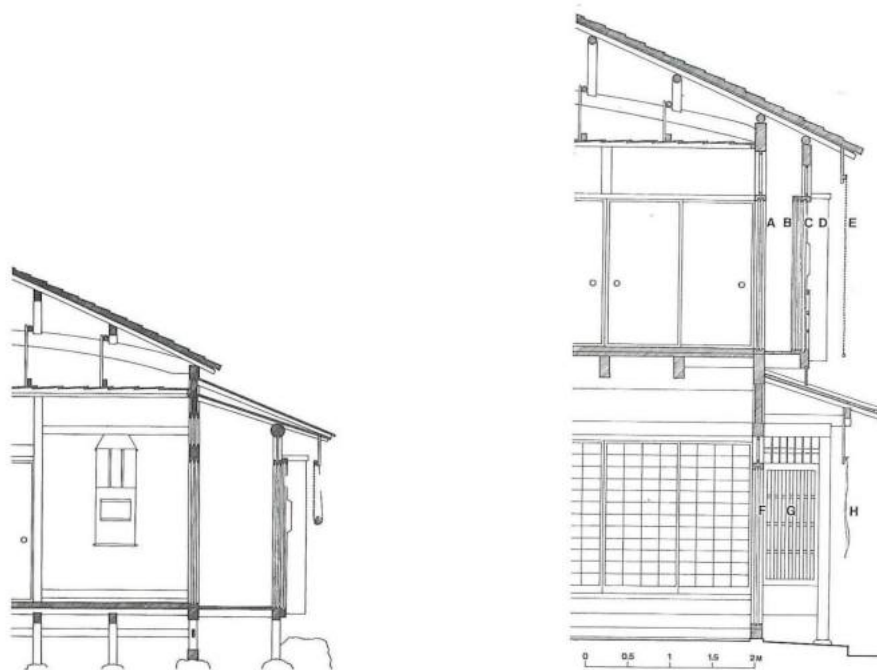


The front of the shop can be opened so that the shop is in direct contact with the street. Often there is a re-attachable bench (*battari-shogi* or *agemise*) for displaying commodities during the day, or sometimes it is used by elderly to rest on during a humid summer evening. When it is not used it can be folded away. When the shop is closed one can only get a glimpse of the inside through the front door because the latticework of the entrance-door is more open and transparent. However the entrance-door has a closed element as well and it depends on the situation whether this second door is open or closed. Additionally this small sliding door (*kuguri-do*) is set into a large sliding door (*oh-do*) creating the small entrance for every day use and the large opening for moving the occasionally large objects or when the store is open towards the street.



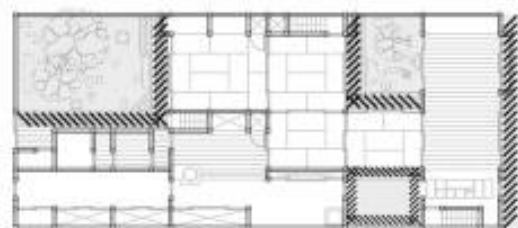
On the horizontal beam, that often runs along the whole façade, a split textile curtain is attached, which is called *noren*. The entrance is very often hidden by *noren*, on which the name of the family and/or the shop owner is printed. The *noren* covers the entrance and functions like a veil does that for a human face. You get a suggestion of the inside, but you cannot see any further. This architectural method will also be discussed later on in the conclusion.

Finally there are a few more elements forming multiple layers that are part of the depth of the façade: The wooden or bamboo hedges (*inuyarai*) in front of the house, which are there for security and to protect the façade from rain and dirt. Additionally there are the wooden lattice (*kōshi*) and protruding lattice (*de-goshi*), the transparent glass sliding door (added in the beginning of the 20th century) and the *shoji* paper screens. On top of that the owner usually has placed extra elements at the boundaries indicating his private property, like ceramics, pots with plants or a pan for water.



I think that together with the eaves of the overhanging roof (*hisashi*), all these layers create another ambiguous transitional space, an intermediate area between outside (street) and inside (shop/ entrance). These elements very subtly indicate the transition from public to private territory. The depth of this transitional space of the façade provides flexibility for its function as it enables the extension of the shop.

Also inside the house we find some of these elements creating even more vague boundaries between the transitions. The blurring becomes even more opaque. There are for example, similarly to the front façade, small roofs that protrude directly over the doors connecting the *genkan-niwa* to the other spaces, thereby providing shade and protection for rain or snow. Sometimes another *noren* hinders the view into the kitchen.



Intermediate space blurs transition with a different floor height and/ or roof covering

The gate

In Japan when you arrive at a temple complex, the gate is the first architectural element you will encounter. The gate divides the outside world from the inner world. It is an exit from our daily life and it marks the entrance to an internal journey. The Japanese gate is often “door-less”, a symbolic barrier since everyone is free to enter the temple complex. Regularly the gate is also covered by a roof structure and there are often a few stone steps going up towards and down from the gateway (Kerr, 2016, p.16-51). The roof and these steps are important architectural elements that help create the transactional space of entrance. Unlike western walls, many vertical structures in Japan are often covered by a roof, creating the impression of something more than just a barrier, possibly a compact building in itself (Kerr, 2016, p.54-87). In Japan it is quite common to come across an isolated gate as a free standing structure. The absence of walls intensifies its symbolic purpose of indicating a sacred place. Besides spiritual symbolism the specific design of a gate can indicate the status of its owner (Kerr, 2016, p.16-51).



Permeability

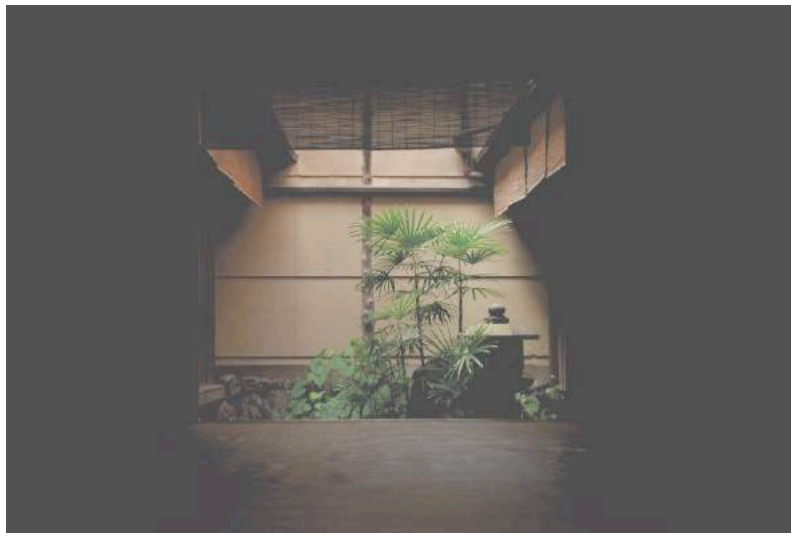
When observing the human body it seems as if it possesses multiple boundaries that protect us from the outside world, however these boundaries do not exist on a microscopic level. When we consider this, the concept of the connection between man and nature becomes more tangible and we can comprehend how the micro- and macro-cosmos are similar and part of a limitless space. From this perspective limits become diffuse and permeable (Sack, 2006, p.144).

When we perceive architecture as an extension of the human body, it can serve as a means of “dissolving” our perception of boundaries, to a certain extent. Designing architectural qualities that correspond with the micro-macro cosmos can achieve this. In both scales the end of “potential optical perception” can be reached. On a large scale as there are no spatial limits, limitlessness and on a small scale as there are no surface limits, immateriality (Sack, 2006, p.144).

The Japanese have understood that clever use of materials can achieve permeability and subsequently possibly trigger intellectual openness allowing one to experience the connection. Permeability allows contact with ones surroundings through all the senses (sight, smell, sound, temperature).

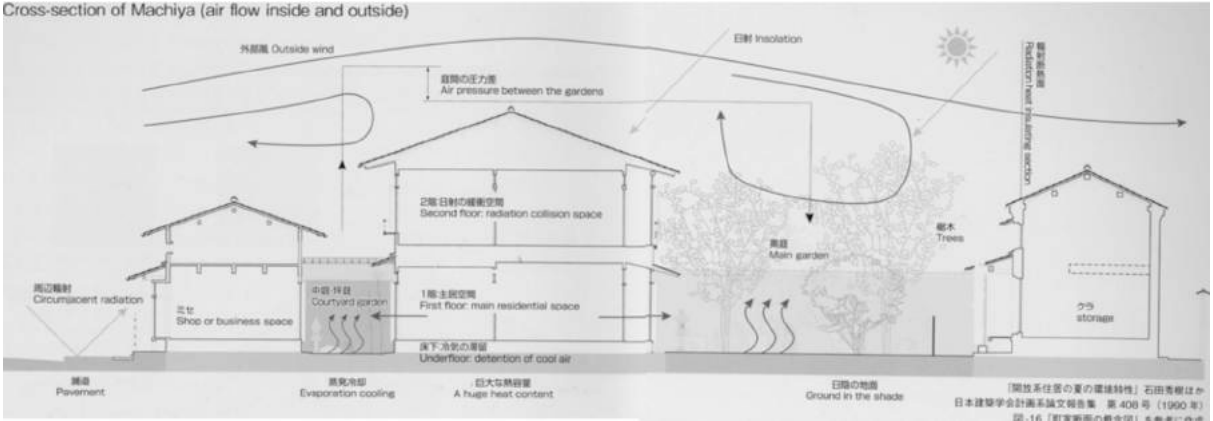
The multi-layered building skin of the traditional Japanese house possesses a subtle and delicate “structure of surface” that creates this illusion of limitlessness that enables us to become aware. The balance of form, capacity and surface creates this diffuse quality. Likewise the natural (weathered) condition of the materials that are applied on the exterior of the Japanese house, create a more diffuse surface.

Characteristic for the *machiya* is that nature is set into the building in the form of two different patio-gardens. These internal gardens and the *genkan-niwa* make direct visual and physical contact with the outside and natures elements (the trees, plants, water and stones) possible. They are essential for the supply of ventilation (air circulation) and sunlight. They give the building its unique “sense of nature” while one can move between inside and outside. It is imaginable that when you live in a *machiya* you can build a strong relationship with the nature even though the house may well be located in the middle of a dense urban centre. Due to the open structure of posts and sliding partitions one can permanently have a view of a patio-garden throughout the house. The close proximity to nature encourages the permanent dialogue that must be held between man and nature. In the heart of a city this direct contact with nature is very extraordinary and it offers unique places of silence and contemplation.

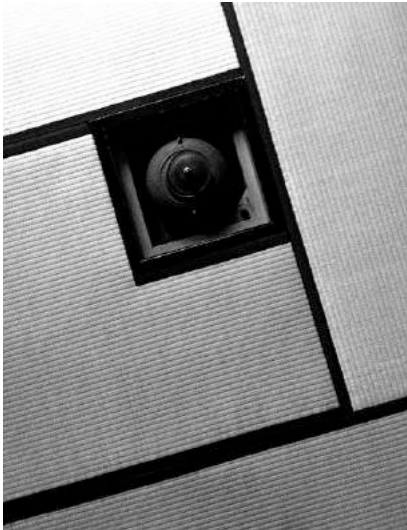


One could say that the multiple layers that are discussed above function as membranes with a varying degree of permeability; degrees of solidity and porousness. The traditional Japanese house has developed unique devices to ease or prevent the transition from the public to the private and the connection between inside and outside in to perfection. Theses elements allow or restrict the filtration of light, sound (noise) and air flow (ventilation) and protect the inhabitants from the weather conditions; precipitation (rain or snow), wind and temperature (heat or cold). They provide security or can control the physical access of people, dirt or animals including insects and enable or obstruct the vision or view.

Due to the permeable layers of the *machiya* the inhabitants are always directly confronted with nature's forces. The close contact with its natural elements strengthens our connection to nature and nature's quality of timelessness. There are a few fixed architectural elements that define the relation between the building and its surroundings. For example the roof, *yane*, with its protruding eaves, *hisashi*, protect the house from precipitation and sun glare (thus also in summer from heat). Indoors rain or snow is acoustically experienced on the tiled roof and physically only when passing over the wet/ cold floorboards of the veranda, *engawa*.



In the traditional Japanese house the light wooden frame skeleton always allows air to flow through the interior spaces. Horizontally the *tatami* flooring of 4-5,5 cm thick mats consisting of compressed layers of rice straw that are covered with *igusa* (rush/ plated cane) with a fabric border, is an essential element for regulating the indoor climate. In the humid summers of Kyoto require air circulation through the building is possible through to the wooden floor construction that is raised on pillars, whereby a ventilation space is created under the house enabling air to flow through the permeable *tatami*. The *tatami* additionally is able to absorb and release moisture therefore helps regulate the humidity of the airflow. Subsequently this airflow is always permitted to continue through the house thanks to the vertical transom openings, *ranma*, in the walls above the (incidentally closed) *fusuma* or the window with vertical/ horizontal wooden/bamboo laths, *renjimado*, above the scarce solid walls. Also the rare wattle and doab walls, a mixture of earth and straw, similarly contribute to the regulation of the humidity of the indoor space functions as a natural air-conditioner. Finally the kitchen space has a double height, specifically for ventilation, so that the smoke can evaporate (smoke shaft, *hi-bukuro*) as this is the space where the only heat source of the house is located. In summer the heat of charcoal brazier (*irori*) that is set in the floor, can rise and escape through the openings with sliding panels higher up on the wall. In this space the grandeur of the crafted wooden roof construction is best visible as the skylights, which allow sunlight to enter the narrow space, emphasized it. The house breathes. This low tech, passive climate-system is also an example of strengthening the connection between the natural surroundings and the indoor space.



In the *machiya*, the rooms are set side by side without dividing corridors; the house is a series of connected (empty) spaces. The separation between rooms is not marked by doors or windows, but by groves in the floor, posts or joists. In-between wooden posts of the fixed structure, non-loadbearing, sliding and detachable screens are inserted. These are flexible elements, adjustable by sliding, rolling up or by removing entirely. The possibility of manually manipulating these layers allows the inhabitants to regulate their relation with outside. The Japanese “sliding door” is a very important architectural element when it comes to blurring the distinction between inside and outside and between the separate rooms, as they can be pushed wide open (Kerr, 2016, p.230-269).

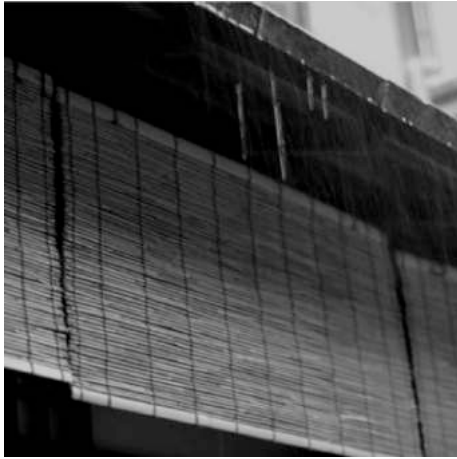
The *shoji* is an openwork wooden sliding panel covered with translucent paper, generally functions as the external walls, separating the outside from the inside. *Shoji* screens were invented as a necessity in case of an earthquake as they cause no harm. Also in the case of a fire there is little to burn. However they are mainly symbolic dividers, as they provide no protection from cold temperatures, wind or noise. They almost seem to be immaterial. Their main function is to let the diffuse daylight in while restricting the visual view, as only vague contours can be distinguished when looking through the *shoji*.



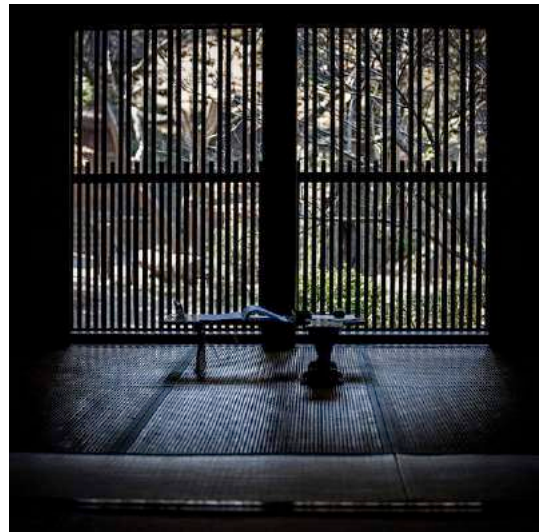
When there is need for more security, privacy or mainly protection against cold air (at night or in winter) and rain or snow, the *amado*, wooden shutter panels with slits for ventilation, can temporarily be placed in a groove on the exterior side of the *engawa*, creating a buffer zone that works as an insulation layer. Unfortunately in exchange for some warmth all the daylight is blocked out of the indoor space. In the beginning of the 20th century transparent glass sliding “doors” were added between the *shoji* and *amado* in the traditional *machiya*. This because the indoor comfort standards became a higher priority as an affect of modernization.



In summer the *sudare*, hanging bamboo or reed blinds that are fixed on the edge of the eaves, protect the interior from sun-glare and heat and they prevent by passers to see inside and protect against insects to come inside. Sometimes *sudare* panels of platted cane replace the *shoji* screens as they provide more ventilation and shade.



The Indoor spaces are mainly separated by *fusuma*, heavier wooden sliding panels with multiple layers of opaque paper. They divide the space into individual “rooms” giving more visual privacy. They also provide acoustic privacy as they have the ability to absorb sound. In the shop one will definitely hear (and smell) the outside because the façade layers lack sound insulation and one can experience being part of the street. However when passing through the connecting *tatami*-rooms to the backside of the house, the spaces become more and more silent.



In the street-façade the *kōshi* and *de-goshi*, wooden lattice windows, enable light and air to pass while at the same time protecting the privacy of the inhabitants too. Looking from the inside towards the street, the wooden slats form a linear rhythm that crosshatches the vision of the exterior. All these layers create a crisscross pattern of a repetition of thick and thin, opaque and translucent and these infinite variations of superimposed wood and paper layers allow seeing without being seen through.

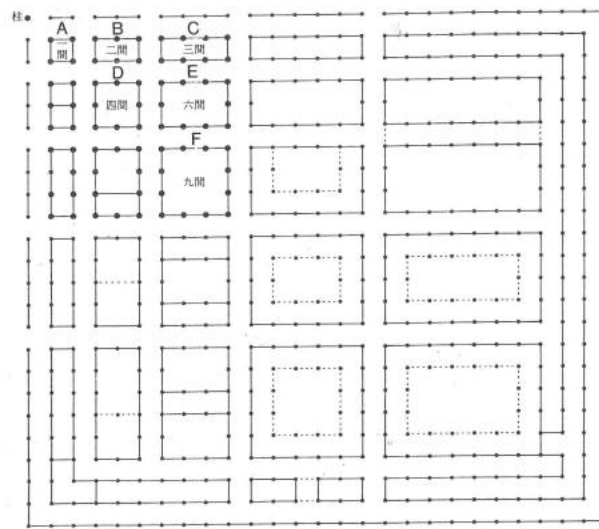


Referencing nature's qualities

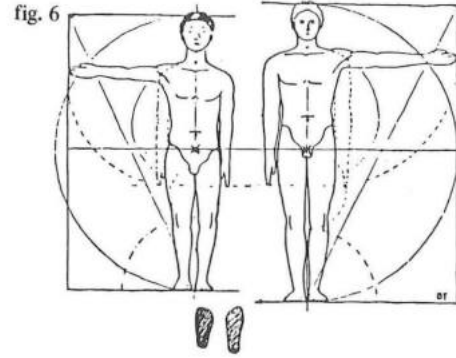
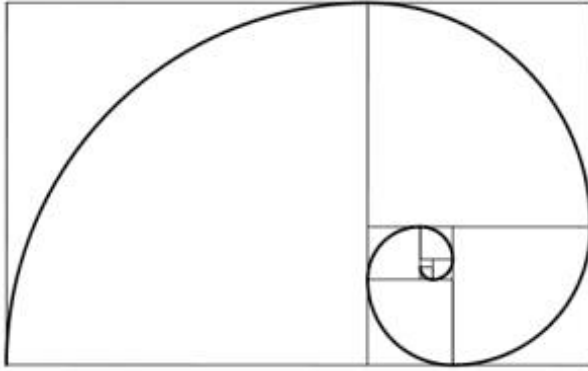
Architecture can also create a relation with nature via reflecting its qualities like its variety of forms, colours materials and dimensions. A multi-layered system of references increases the possibility that an observer will become aware of the unity of nature and experience that one is an integral part of it (Sack, 2006, p.40).

A form (three-dimensional) is created by the combination of two or more elements. In nature forms have an organic shape. Architecture often has geometric, orthogonal forms in contrast to its natural surroundings. Modern developments have however introduced new techniques and materials, liberating the architectural form, thus making it possible to achieve a new closeness to nature through the creation of constructive (organic) parallels (Sack, 2006, p.40).

Creating a harmonious balance between architecture and nature can be realized through the variety in dimension. Scale and proportions that relate to the size of the human body and the proportions of nature create a humble architecture. Moreover precise detailing is essential to relate to nature, as our natural environment possesses multiple layers of depth, from general to detailed. Additionally the use of a variety of surface structures composed of visual and/ or tactile (textures) patterns are elements that hint nature's model. Inherently the use of natural materials in architecture creates a direct relation between body and nature. Furthermore as an architect it is important to be aware of the qualities of colour. The use of certain colours can have two effects in relation to nature; a camouflage effect or a contrasting effect, creating the architecture to blend in or stand out. It is therefore important to be aware of how colour-tones create a certain atmospheres such like light, dark, cool or warm. Finally it is essential to integrate temporal light conditions (daily and seasonal) into a design, as they will always be of influence. For architecture to correspond to nature large surfaces often should be toned down, have discreet colours and smaller surfaces can have more intense colours (Sack, 2006, p.42).



The relation between the traditional Japanese house (exterior & interior) and its surroundings (Japanese garden) is very finely tuned. When first observing the traditional *machiya* the multi-layers system of references to nature's diversity is evident. It turns out that the measurements and dimensions of the *machiya* that are based on Japanese modular system correspond with the western concept of the golden ratio. They are based on the basic structural unit, *ken*, that derived from the measurement of the Japanese equivalent for foot; *shaku*, one *ken* is approximately 6 *shaku*. All the architectural elements, from the decorative to the loadbearing and non-loadbearing constructional elements, are proportionally related to one another. Merely the proportional details are different according to the function of the room. The harmony of the golden ration originally derived from the proportions of the average central European human body. Similarly these proportions match those of the average Japanese body although they may be somewhat smaller. This is not very remarkable because these proportions are actually to be found in all natural life forms. Thus the Japanese house relates to the scale of humans and the natural proportions of its environment. It is a crucial quality for the realization of the desired aesthetic effect.



The Japanese house has clearly embraced the use of a broad spectrum of natural low-key colours, earth tones, and natural (untreated) materials that create a variety in textures, details and patterns (created by proportions). The raw natural materials such as wood (in the form of columns, beams and panels), stone, clay, rice-straw, cane, bamboo, plaster, paper, glass and ceramic roof tiles, are applied to mirror the natural surroundings of Japan. Its modular construction is evidently a compromise between standardisation and uniqueness. All the dimensions and proportions of elements are based on the Japanese modular-system but the use of natural materials with unique individual characteristics reflect nature's diversity. The uneven clay floors, the rough stones and solid supports meet the smooth plastered walls, the delicate wooden window bars and the fragile woven tatami. All these contrasting forms and natural materials create a unique tension. These elements also create different atmospheres in the "separate" spaces and define the transition from outside to inside.

Using natural building materials requires craftsmanship, thus the building is inevitably connected to nature despite being man made. Craftsmanship does however have three important advantages compared to mechanically produced building elements. The transformation from original raw material, for example the tree in the garden, to construction element, the post or beam, and their relation becomes more clearly visible. The carpenter inevitably always leaves his/ hers individual, unique impression on the architectural elements and because these elements are manually fashioned they take on more natural (imperfect) forms. The Japanese house possesses a refined transition of materiality coming from the outside (nature) to the more abstract exterior of the building, through to the more delicate and detailed building parts and connections of the interior.

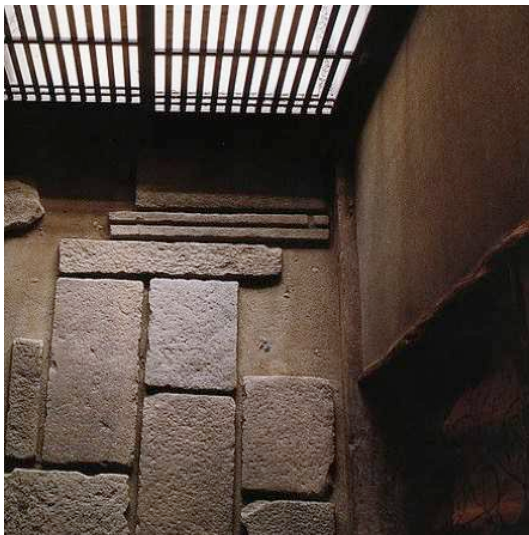
The Japanese garden is "nature mastered" it is designed as a duplicate of nature. It is maintained with sophistication, a composition of crafted and orthogonal forms with hundred-year-old moss, trees, large flat stones tracing a path, a stone lantern and water basin. Often a fence of woven cane and bamboo protects the garden, creating a private place for meditation. A balance is created between the emphasis of the uniqueness of the various contrasting forms and them all being equally part of a greater whole.



The fundamental requirements for our existence are the four natural elements; water, fire, air and earth. The Japanese house and garden have multiple references to these primal elements. In the Japanese garden a natural stone water basin (*chozubachi*) and a stone lantern (*ishidourou*) is never absent. The core of the earliest dwellings in Japan always had a sunken heart, with a heated pit, the soul heat source, which was always surrounded by earthen floors or (blackened) wooden floors. The natural materials such as wood, stone and *tatami* are untreated and thus still resemble their original spirit (state) as tree, rock and grass.

Transferring elements

Meetings between man and nature can not only be initiated via the elements and methods mentioned above but also by transferring elements figuratively or literally from the outside to the inside, or vice versa, enhancing ones awareness of both zones at the same time the simultaneity of humans action and natures origin (Sack, 2006, p.88). Likewise this is true within the Japanese house and garden. For example the orthogonally (manually) shaped stepping-stones (*tobi-ishi*) in the natural surroundings of the garden, the tree trunk in its natural state that functions as column in the tearoom (literal) or the seasonal flowers in the *tokonoma* (niche) and the natural landscapes painted on the *fusuma* screens (figuratively). Even the view out of the window transfers the effect of the garden to the empty room, whose clear right-angled lines construct a picture of the view by framing it.



Simplicity | Poetics of the ordinary

Although Shintoism does not have a philosophy of its own the conscious awareness of the divine has created a life attitude, a sense of morals and values, that has a profound influence on every aspect of daily life. This fundamental attitude emphasises the sincere desire to be truthful, acting without egotism, resulting in a principle of simplicity. The simplicity of the Shinto shrine, house of the *Kami*, emphasizes a sensory experience through mystic rituals and natural phenomena. It is an expression of the respect for nature, where worship unites and harmonises the various types (good and bad) of *Kami*. The Simplicity of their spiritual architecture and the absence of theological images possibly make Japanese perceptive to the more refined and complex aesthetics and the symbolic visualisations of the imagination. This Shinto principle of simplicity coincides with the Zen ideals and is reflected in the character of Japanese literature, art and architecture (Chang, 1984, p.20). According to Zen Buddhist teachings, one can achieve self-enlightenment, *satori*, through meditation and discipline. Besides meditation active participation in daily matters is encouraged opposed to seclusion as *satori* is to be found in the ordinary. The intuitive perception of the truth, beyond any intellectual notion, is the foundation for the philosophy (Chang, 1984, p.29). Likewise Lao Tzu advocates that stillness and tranquillity are essential to put things into order in the universe (Chang, 1984, p.13). Hence the Japanese have developed an attitude of reverence towards, poverty, plainness and the liberation of all superfluous things with the knowledge that in nature there is no abundance either (Sack, 2006, p.120). Material poverty of the individual enables spiritual richness while simplicity increases an appreciation for the minor details of everyday life and gives you insight into the beauty of the inconspicuous and overlooked aspects of nature (Chang, 1984, p.12). It accommodates the freedom necessary for the human intellect to grow, to extend thoughts limitless in all directions (Sachs, 2006, p.30). This fundamental attitude is necessary to be able to see and appreciate Japanese aesthetics.

The Japanese art of tea introduced a new spirit of minimalism or ordinariness. The simple, modest aesthetics of *Wabi-Sabi* are evidently represented in the Japanese teahouse, which is a space without any distraction but the essential (Kerr, 2016, p.216). Nowadays Japan is known for its reserved and refined minimalistic (*So*) aesthetics however it has taken Japan almost a century to recognize "the spirit of the ordinariness" and rediscover the traditional native *So* qualities, their lost identity. The Japanese have found a way to connect aesthetic aspects to the great mysteries of our universe (Kerr, 2016, p.90-121). Therefore I think that finding beauty in the ordinary is one of Japan's greatest achievements.

In Traditional Japanese architecture simplicity implies reduction of form and the use of a limited amount of materials, which are simultaneously unsuspecting without diminishing their quality for being interesting, simple and ordinary things/ materials that are carefully looked after, which enhances their unique qualities. The Japanese house possesses a simplicity that accommodates only the essential requirements, creating the well-known traditional, modest, clean, flexible interiors. The refinement and clarity of this interior emphasizes the character of the exterior of the *machiya* and the natural surroundings, as they are opposites of one another. In such a room a human being obtains a unique presence, as we are part of nature (Sack, 2006, p.88). The walls, mainly comprised of sliding doors (*shoji* and *fusuma*), are almost always white. Not a sterile white but a "complex" off-white with quite some impurities and differences. Naturally white was chosen, as it is traditionally a sacred colour according to Shinto beliefs in Japan (Kerr, 2016, p.230-269). The overall colour palette, shades of brown, black, white and grey, that is applied in the traditional Japanese house is modest and in harmonious balance. Likewise the plainness of the wooden construction, the (apparently) simplified details and the rigid proportion system applied in traditional Japanese architecture create homogeneous spaces, reinforcing the atmosphere of simplicity. Repetition is subtly applied and as a form of abstraction it expresses simplicity. The minimalist ambience of calm creates a poetic impact by means of the simplest of recourses, such as darkness and light. It is clear that the Japanese have understood the art of balance, allowing them to create the essential simplicity.

A life of simplicity is the embodiment of the Japanese belief. Accordingly humans should "tread lightly" on the planet, as we are mere visitors on earth. Thus there is an accepting attitude towards anything that maybe encountered and an overall appreciation for what one has. Within the tea-culture the importance of an egalitarian atmosphere with regard to people and objects is emphasized. Material value (hierarchy) is ignored as the focus is on the intrinsic qualities of objects (Koren, 2008, p.59, 61). Consequently this concept has also been translated quite literally with regard to the traditional Japanese house. Only two main posts form the foundation of the house, all the other posts, that bear the remainder of the structure, simply rest on flat

stones. Thus the building structure has a minimal impact on or contact with the ground and the entire wooden structure is relatively lightweight (Engel, 1964, p.).

Simplicity is a means to become aware and intensify the experience of nature's beauty and the connection between man (spirit) and nature (Sack, 2006, p.120). When architecture is simplified by reduction and restriction to the essential, an atmosphere of stillness and tranquillity can be created. Simplicity solicits the increase of sensory information. For an architect, simplicity is a powerful tool to influence the perception, enabling the observer to the focus on the essential (immaterial), discover value in the inconspicuous and possibly enhance their sensitivity/ consciousness for their being and place. Furthermore getting rid of material possessions and respecting and appreciating the essential enables you to experience a form of lightness, as you are treading more lightly on the planet and wholeness, as you are closer to understanding the all-encompassing and all-inclusive connection (Sack, 2006, p.120). It is comprehensible that Buddhist monks see simplicity to be a vital foundation for their journey towards enlightenment as "Nothingness is the ultimate simplicity". However one can imagine that before and after nothingness simplicity is not so simple. It takes immense dedication and discipline to learn how to find a balance between restraint, acceptance and perfection. Reduce to the essence without eliminating the poetry, the invisible soul that connects it to the whole that is what makes it interesting and significant (Koren, 2008, p.71-72).

Poetics in the Ordinary

I have to come to think
that my desire is to free the space of architecture from several frames.
It is also that I have come to seek a space of freedom that has not yet been seen.
This type of space will release our bodies and spirits from various binds
and make possible its own communication in the world.
This space, however, is not within a special place or special time.
I have come to believe it is a place within the absolute commonness of the everyday

within the continuation of ordinary time.
The space surrounding the body becomes one with our bodies,
forms a place that becomes, though unconceived, an environment.
It becomes a space without any particular objectivation.
This type of space in the everyday forms the frame that aligns
and directs our bodies and spirits unconsciously.
Is it not possible to glimpse another everyday deep within a crack
in the everyday that forms this frame?

I feel that there is an as yet unseen, renewed world of freedom
within a new everyday that develops within the normal, matter-of-fact everyday.
Within an arrangement/composition of something that is ordinary,
without being special or extreme,
or within the relationship of the compositional elements,
or within the modification of their assemblage,
there is a poetry that is rhetoric connected to another everyday.

Within this poetry,
cannot a method be found to relate the space of the everyday to the world?
Would not a new world appear that breaks apart,
that relativizes the framework of the everyday within a new form of space?
In this sense of expectation,
I have come to look for an architecture as a free space
through the achieving of another everyday
within the composition of the residence –
which is the most everyday form of space.

Sakamoto, K.

Ephemerality, Emptiness and Ambivalence

So to recap; the core spiritual values derived from the Japanese philosophical universe is their relation with nature. They acknowledge a necessity of human beings to adapt to nature in order to have a mutually respectful relationship. The focus is on the essential and to get rid of the unnecessary, as simplicity solicits the increase of sensory information therefore enables the existential experience of unity or connection, a “sense of being” resulting in “Material poverty and spiritual richness”. The Japanese have carefully observed nature’s properties and developed an accepting attitude towards nature’s inexorable and inevitable aspects of *constant change, emptiness and ambivalence*.

In Buddhism the fundamental belief is that all is impermanent, reality is impermanent and thus the suffering of men originated from his desires to retain this reality. Man needs to strive to free himself from the reliance of all external influences. This can be achieved through the slow process of strengthening self-discipline aiming at enlightenment. Enlightenment is a state of wisdom or awakening whereby the consciousness is slowly drifting away from analysis and ideation reaching a point of holistic thought (Chang, 1984, p.26).

Besides the elements earth, water, fire and air, Japanese Buddhism acknowledges the elements of space (matter) and consciousness (mind) as an inseparable entity. Rather than intellectual accomplishments, the emphasis is on moral perfection and the endless cycle this is similarly applicable to the Japanese concept of space (Chang, 1984, p.29).

One of the important Tao principles is that void, the state of nothingness is the essential basis of everything. It's a concept of space including a sense of time that is more useful than motion, materialism, etc. “The intangible content of things, though not materially manifested, is regarded as something real”. In the relation to architecture, void or emptiness is the true space, undefined but also completely receptive. Emptiness is the essential precondition of space. It is evident that this notion relates to the concept and use of space in Japan and therefore essential to include emptiness in consideration of Japanese architecture (Chang, 1984, p.23).

Tao Te Ching - Lao Tzu - chapter 11

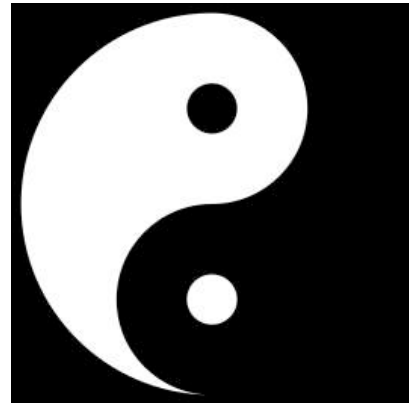
Thirty spokes share the wheel's hub;
It is the centre hole that makes it useful.
Shape clay into a vessel;
It is the space within that makes it useful.
Cut doors and windows for a room;
It is the holes which make it useful.
Therefore profit comes from what is there;
Usefulness from what is not there.

This Tao principle is strongly associated with the Buddhist concept of impermanence, where everything is subject to change; nothing can be permanently held or absolutely known. Together these principles define the main characteristics of space in Japan. The emptiness of space is subject to the process of dynamic changes. Only coming from complete emptiness, void, any motion, materialization can exist, giving space a distinct function and role in time (Chang, 1984, p.23).

These principles link to the Taoism believes that everything is in in balance between two opposite poles. “The way to acquire the positive is to contain the negative”, whereby one should accept both the negative and positive”. Tao means 'balance', and forms the harmony between yin and yang. This principle, that everything is based on relative points of view (relativity), is organic thus to gain and to lose are seen as the same. The interchange and interaction between these polarities, in which nothing is permanent or absolutely known, are seen as the essence of all natural life and human existence (Chang, 1984, p.23).



Paul Klee "Die scene mit der laufenden" | Suggestion of a dynamic experience (movement) of space.



Wood-cut print | A composition of a series of events suggesting independent events in one whole picture. The symbol for *Yin an Yang* | "The essence of one (a point) is always found in its opposite" (Chang 1984, p.24)

Historically the notion of void appeared in ancient Buddhist writings, although it was not an elaborate theory. Gradually the Buddhist theory on polarity of existence and non-existence developed; "there is no real existence, all things are but appearances and are in truth empty". The void became the ultimate reality, as there is nothing to exclude. It becomes clear that that the Buddhist concept is quite similar to the Taoist concept of void (Chang, 1984, p.28). One could define that Taoism is the Japanese aesthetic ideal and Zen Buddhism the practical outcome of Japanese space (Chang, 1984, p.32). Likewise the *Yin-Yang* principle of geomancy, that controls the growth of all existence in the cosmos, is evidently influenced by Taoism (Chang, 1984, p.24).

Also Buddhists believe that ignorance is the opposite of enlightenment. Men has to struggle to contain the ignorance, to try to re-establish the order, completely reversing the ignorance, realizing enlightenment in the end, "no separation between the knower and the known" (Chang, 1984, p.26).

Similarly in Shintoism natures aspects of emptiness, change and relativity are present. The flexibility of the requirements for their traditional rituals maintained the fundamental Shinto attitude and secured stability throughout time within the ancient Japanese society. As the moral criteria are not fixed according to an irreversible standard but can vary accordingly to specific situations. This notion is probably influenced by the ideology of Taoism (Chang, 1984, p.21). The *Kami* live in darkness, invoking the atmosphere of a sacred place. In the darkness is emptiness, the void. Within a Shinto shrine one travels from light to darkness. Spiritually one seeks to find the darkness of the spirit, the personal void, without any distractions where there is space to focus on the *Kami* and the spirit. Out from this darkness a new person can grow (Chang, 1984, p.22).

Ephemerality | The impermanence of everything

So everything is impermanent and is constant evolving towards or devolving from nothingness. All things are imperfect and incomplete. When zooming in and attentively looking it becomes even more evident that everything is imperfect and incomplete because it is constant changing. The moments we describe as 'complete' are nothing more than an illusion of permanence, eventually all things dissolve into oblivion and void (Koren, 2008, p.49).

Subsequently the Japanese have acknowledged that in acceptance of the above, beauty can be found in the moment of change, the ephemeral. Therefore the Japanese aesthetics focus on the subtle and evanescent, that is found in inconspicuous and overlooked details, only visible for those who are willing to see. Contrary to western aesthetics where the sacred and sublime is experienced in the monumental, remarkable and (ever)-lasting, Japanese aesthetics such as Wabi-Sabi are about finding this in the minor and hidden. Furthermore the closer things are to emptiness the more beautiful, evocative and profound they become. To experience the subtlety of these aesthetics one has to slow down, be patient, be conscious of what they are looking at and aware of their mental/ spiritual possibilities: "Only those who can mentally complete the incomplete can discover true beauty" (Koren, 2008, p.50).

Japanese aesthetics are also quite ambivalent; beauty is seen as dynamic event that can suddenly occur at any moment, depending upon the circumstances, context and perspective. You could state that the Japanese see beauty as a changed state of consciousness, that is impartial of the subjective opinion of what is considered beautiful or not (Koren, 2008, p.51).

Japanese aesthetics express the appreciation of the evanescence of life. Japanese art disciplines invite the observer to contemplate their mortality and evoke a feeling of existential loneliness and sadness. All the senses are seen as equally valuable recipients in realizing this mood of ambiguity (Koren, 2008, p.54). These art forms suggest a realm of existence (including its mechanisms and dynamics) that is larger than the perceivable, inviting us to connect with it. In summary, Japanese aesthetics convey their appreciation of the cosmic order: the primordial physical forces and profound structures that underlie our existence (Koren, 2008, p.57).

Often it's about a deep unexplainable inner feeling or consciousness, a sadness of things or a melancholy that connotes the dialogue with nature, which expresses sensitivity to the world. They are delicate, emotional expressions. It's about the beauty of incompleteness, imperfection and impermanence; creating the possibility for asymmetrical growth as it is a fluid process and development of the mind, as it is about participation of the observer. It is typically Japanese to emphasise the dialogue with nature, whose beauty is not solely dependent on sight. Suggesting an eternity beyond, triggering the mind to connect and intellect to grow, capturing *Ma*, emptiness.

Many of the Japanese philosophical notions are based on the more analytical concepts of great thinkers of China. However Japan has adopted a more intuitive worldview, which is focussed on aesthetics, our senses and expression. A profound but wordless philosophy, that is only to be understood and appreciated through experience in an aesthetic context (Kerr, 2016, p.90-121). Thus there are many Japanese expressions that describe a rare beauty and convey a deep emotion: the sadness or gentle melancholy of things. It reveals the *Mujo*, the constant ephemeral character, of human life, equivalent to nature, and our necessity to coexist, as we are born from nature and will return to nature (Chang, 1984, p10).

The Japanese notion of beauty is simple, subtle, unobtrusive and ambiguous. It expresses tranquillity; it is understated and has integrity or authenticity with regard to craftsmanship, materials and design. "It has the quality of chi in Chinese understood as the state of absolute quietness" (Chang, 1984, p.6).

The philosophical notion of constant change, the impermanence of nature and the concept that "life is an interchanging and flowing experience" are imbedded in the Japanese culture and architecture.

Vitality | Adaptability to natural forces and the weather

Architecture in its purest form can be seen as a response to nature's forces and the climatic circumstances over a period of time. The Japanese climate and geographical-location have continuously challenged their ingenuity that was necessary regarding their traditional Japanese architecture. Thus over time a vital architecture has been developed; an architecture that reacts to and interacts with the constantly changing conditions and primary demands.

Japan is an island nation with many different regional climates, due to the variety of topographical, geological and meteorological features, as it is an archipelago of over 3000 islands. Consequently the weather and seasons in Japan are fairly diverse. The winter's can be cold with quite some heavy snowfall in contrast to the summers, which can be very hot and humid. Japan has a lot of annual rainfall, two to three times as much as in Europe.

Japan is a land of forests and mountains; about 67 per cent of the country is covered in forest. Because Japan is surrounded by sea and located on multiple tectonic plates Japan is constantly threatened by destructive natural forces such as typhoons, tsunamis, earthquakes and volcano eruptions, as there are still some active volcanoes and hot springs amongst the mountainous landscape. Nevertheless the variety of Japan's climate and landscape has allowed the development of a diverse (unique) flora and fauna.



The traditional Japanese house embodies the Buddhist ideal of living with nature rather than fighting, conquering or mastering it. Hence the Japanese have developed a unique way of living; constantly adjusting their habits and the interior and exterior of their houses to the changing climatic conditions of each season. Thus enhancing the awareness of nature's forces, the benign as well as the destructive, because they are experienced more directly (Engel, 1991, p.229). The traditional Japanese house is an excellent precedent of the Japanese vitality. Multiple ingenious methods and elements make the house adaptable to nature's forces and the Japanese climate.

The traditional Japanese house only has two main posts that ensure the lateral stability. These are socketed into a hollow stone that is buried deep into the earth; they form the only foundation for the house since all the other posts, that bear the remainder of the structure, merely rest on flat stones. This construction method does however ensure that the house does not collapse in case of an earthquake, as it can sway/ move independently when the earth tremors.

In Japan the carpenter is considered the equal of the architect, as these professionals have mastered the skills and knowledge necessary for the complex, honest art of wood joinery. The construction of the machiya is a "pure" design of wooden posts, beams and joists that are assembled through intricate joints without nails; they are only pinned or bound together, thus accentuating the temporal nature of all connections. Additionally this makes the construction demountable; it is said that in the case of a fire, one could be faster to dismantle the timber roof that to get water. Nevertheless fires have unfortunately demolished many of the traditional buildings in Japan. The degree or high quantity of craftsmanship devoted to every single building

element also reveals a process of change; how the original natural materials are skilfully formed into abstract building components and integrated into the man-made structure.

[Image. Japanese wood joinery]

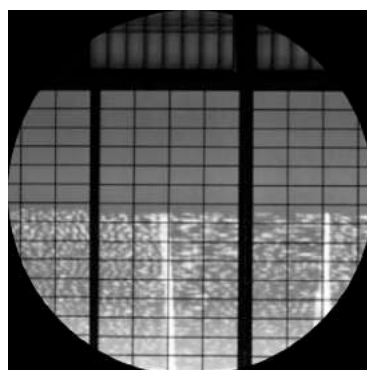
[Image. Construction main columns]

As mentioned above, one can experience the constant change of their surroundings inside the machiya, due to the permeability of the construction. The house has considerably thin protective elements as it consist of an open structure of posts with sliding partitions. Furthermore the relation between inside and outside is suitably adjustable/ adaptable, thus involving the users physically in changing the space as a result of the changing weather.

In winter one will definitely feel that it is cold outside as the singular heating source doesn't have the capacity to warm up the entire house, however the flexible layering elements (*amado*) make adjustments of the façade possible; protecting the inhabitants somewhat from these harsh conditions. The adaptability of the architectural elements is considerably more beneficial during the hot, humid summers of Kyoto and that is why it is imaginable that the traditional Japanese house was originally especially designed for these summer conditions. Nevertheless the extreme temperatures and the fluctuating amounts of precipitation (rain or snow) and wind are definitely predicable in the house because they inevitably will define the room temperature. This certainly will expand ones sensitivity for the perception of natural change and possibly it also increases one's gratitude for the protection that house provides and one's respect for the power of nature. Becoming aware of one's privileges creates new opportunities in restoring our relationship with nature.



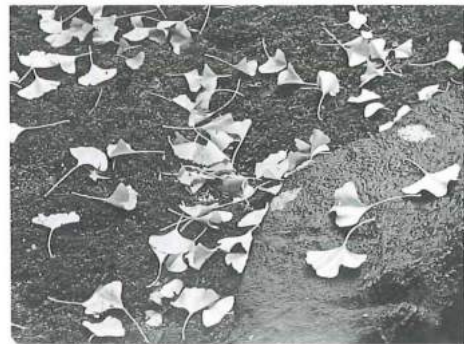
All these senses are addressed. The change from day to night and through all the seasons, summer, autumn, winter, spring, wet and dry can be perceived, as the temperature, sounds, smells and views change accordingly. Visually one can sense nature's seasonally changing forms through the translucent paper of the shoji screens; the changing natural light conditions influence the continuous change of the shadows, the change the colours and thus the atmosphere in the spaces. The simplicity (emptiness) of the interior and the large open façade facing the garden the direct ones attention to nature's transformations.



Impermanence | Natural materials

Wabi-Sabi is an aesthetic expression that comprehends the beauty of imperfection, impermanence and incompleteness of things. It describes a peculiar modest beauty that is simple and effortless. The words Wabi and Sabi are difficult to separate from one another, as their moods of expression overlap. One could state that Sabi refers more to the aesthetic ideal of objects or atmospheres being affected by temporal events, time, age, whereas Wabi refers to a philosophy, an ordinary way of life or intuitive spiritual path, alone in nature, away from society, spatial events (Koren, 2008, p.22).

The expression Wabi-Sabi denotes a state of loneliness, quietness and tranquillity, signifying the void: "a state of complete annihilation or absolute nothingness" that is pursued within Zen Buddhism. Wabi-Sabi also means poverty, a state of being independent of worldly things such as wealth, power and reputation or unaffected by the social demand of a certain time. Wabi-Sabi objects and/ or environments could be described as: rustic (rough) or earthy, simple, unpretentious, organic, irregular and the mainly consist of natural materials and monochrome colours that are generally darker (dim) and murky (Chang, 1984, p.13).



Wabi-sabi objects express a moment in time, "they are made of materials that are visibly vulnerable to the effects of weathering and human treatment", their history of exposure, use and misuse show as traces of detrition. Hence they are irregular exposing the effects of chance. Often wabi-sabi environments are intimate, secluded and inward-oriented. Wabi-sabi objects inspire you to reduce your physical distance to the object, to relate or even touch the object. Over all they are unpretentious things that possibly look inevitable and unattended, effortlessly coexisting in their surroundings, however they always possess a quiet presence, an importance. The Japanese have adopted a unique preference for murky or muddy hues, because when things devolve towards or evolve from nothingness, they tend to exhibit a quality of vagueness or blurriness; "the once-hard edges take on a soft pale glow". An earthy faded colour spectrum of greys, browns and blacks, and sometimes, associated with a recent emergence from nothingness, in off-white pastel shades, is considered wabi-sabi (Koren, 2008, p.62-72).

[Image. Jade stone possesses a wabi-sabi quality with its shadowy surface; a cloudiness (opaqueness) with depth created by the impurities on its surface (Tanizaki, 2001, p.19)]

The use of natural materials is definitely important when it comes to perceiving change. The untreated/ raw natural materials used for constructing the machiya inevitably will show traces of weathering, deterioration and erosion from the natural elements such as water and wind and human usage. Aesthetically the aging process is not only acceptable but especially encouraged in Japan because it emphasizes ephemeral character the material. The use of natural building materials puts into perspective that even things made by man are inevitably subject to change; in life nothing is permanent.



[Image. A repaired shoji screen]

Similarly to human skin natural materials like wood gain a more defined structure over time emphasizing the material's unique character and the traces defining the materials spatial relation to the interior, outside and the inhabitants. The confrontations with the process of aging makes one aware of this quality of change and possibly even create an environment that facilitates the acceptance of man's ephemeral nature.

Ephemeral materials make the natural processes of change comprehensible. Nevertheless necessary maintenance in and around the house, such as repairing the delicate paper *shoji* screens, or oiling and polishing the wooden floors, include the human being in the process of change; the life of the house. Especially during the careful and precise upkeep of the Japanese garden one is constantly confronted with life's natural transformative character, as for example leaves, dirt or snow will once again fall down on the stone path despite the effort of keeping it free.



A good example of a temporary structure that symbolizes nature's quality of change is the Ise Grand Shrine. It is one holiest and most important site for Shinto religion. Every 20 years the shrine is dismantled (death) and newly (renewal) built on an identical adjacent empty plot. Characteristic for Shinto aesthetics and because the building is continuously new, ancient and original, it is simplistic and antique. The renewal process allows the traditional building techniques to be passed on through generations while displaying the acceptance of the impermanence of all things.

Flexible space | Temporary space

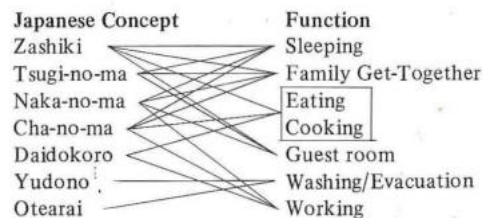
When architecture is designed flexible it can relate to the only constant element of nature; change. Observing and/ or experiencing flexibility or temporality in a space can create the transcendent experience of unity (Sack, 2006, p.74).

Unique for Japan is the flexible use of space. In traditional Japanese dwellings spaces are multifunctional. The Japanese neutral interior is often empty and subsequently with different furniture and belongings the room can be organized for a specific function. Empty space invites the occupants to convert their surrounding enabling the desired activity; a form of "immediacy" is sparked by the presence of emptiness.

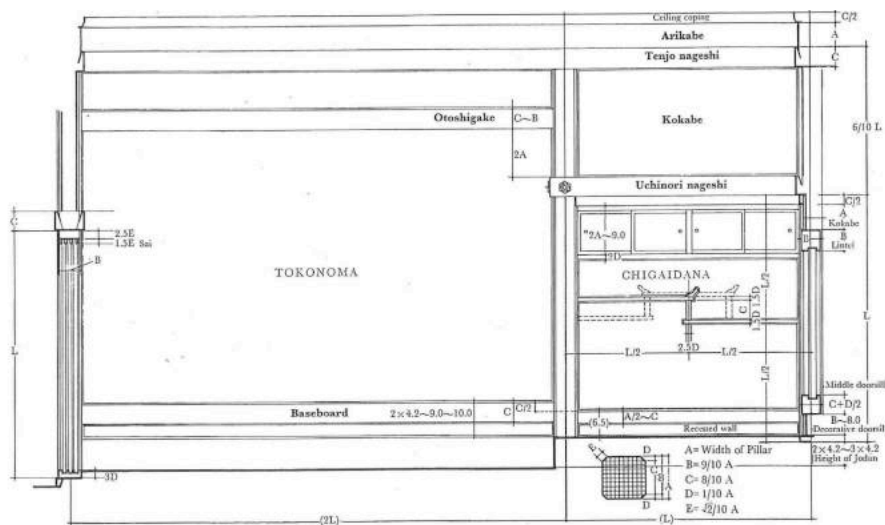
The Kura, the traditional Japanese storehouse at the end of a plot, is an essential space for accommodating this flexible way of life. In this accessible storage-space the family collections their valuable possessions and light, portable furniture (Chang, 1984, p.42). In contrast to the main house, the *kura* does have thick wattle and daub walls to protect the treasured essential and ritual objects from fire.

The tatami mat is a typical Japanese feature that is also applied in the traditional Machiya. Since the 8th century this multifunctional element has evolved from a single mat functioning as a bed or seat to an integrated floor element accommodating countless daily activities such as sleeping, eating, leisure, work, ect. The dimensions, 1800 x 900 mm, of the tatami mat are based on the modular system. Because the tatami mat lends itself for sitting and sleeping, the ceiling heights and design are customized for this purpose and perspective. Tatami is a delicate natural material that needs attending, as it is inevitably susceptible to age. Therefore in Japan specific customs have developed, such as taking off shoe before entering a tatami room and temporary usage of lightweight furniture. Such as a small low table for writing, a low table for dinner and some stools, or a futon mattress for sleeping, only to be placed in the room when needed.

In the house there are (smaller) in-between spaces (*tsugi-no-ma*) for amenities (toilets, bathroom) or to hide the staircase(s), but mainly they function as closets that can serve as a coatroom or as storage for seating cushions, tatami mats, bedding or other paraphernalia. The existence and purpose of these "extra" spaces depend on the connecting rooms. Moreover the removable sliding panels, *shoji* and *tusuma*, are essential in converting the space in such a way that it provides the desired space, atmosphere and spatial relation for the specific activity.



Japanese flexible spaces



However there is an exception to this flexibility; the main space in the machiya does have a permanent element that defines its function and importance; the tokonoma. This is an alcove that is composed of the following elements: the central post of the house, tokobashira, which defines the width of the tokonoma often made of a rare wood type, a small desk for writing, shelves and a small cupboard for displaying ornaments and storing personal belongings and a small recess or cabinet that provides a private altar for the ancestors. Often in the tokonoma there is a scroll with a poem or painting and a seasonal Japanese flower arrangement in a vase. Decoratively the tokonoma is very simplistic, it is often referred to as “the corner of minimalism” however it does clearly define the space.

Beside the daily changing use of the spaces, the Japanese also adapted their spaces to the occasion or the importance of possible guests (Chang, 1984, p.43).

Guest	Family Member Receiving Guest	Space for Receiving Guest
Guest of Shop	Servant	<i>Mise-no-ma</i>
Informal Guest	Family	<i>Daidokoro</i>
Formal Guest	Master of the Family	<i>Zashiki</i>

Spatial relation to guests

Actually if we connect this observation, of flexible space, to the Buddhist philosophical notion of change “Space is used only in association with a defined purpose and for a certain amount of time” thus a space is always temporal. For example the engawa, that connects the indoor with the outdoor, is itself nor indoor, nor outdoor. The ambiguous and flexible engawa thus could be described as a temporal space, as there is no permanent space according to Japanese philosophy (Chang, 1984, p.42). Likewise is the division or connection (depending on your perspective) of indoor spaces by the fusuma or shoji screens are always temporal. The house and its inhabitants are continuously in flux. The foldable bench that is attached to the front-façade works as a collapsible element that can be used in many different ways allowing the adaptation of the relation with the street and natural temporal situations. Traditionally the entire house is considered as a temporal structure, only a place that protects you when you sleep.

Imperfection | Incompleteness

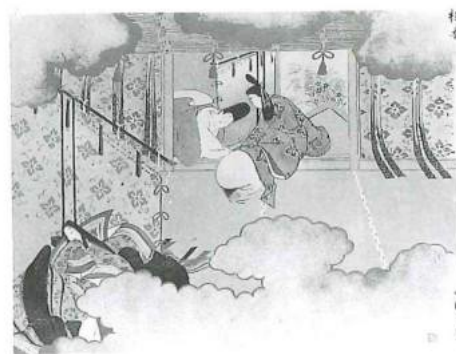
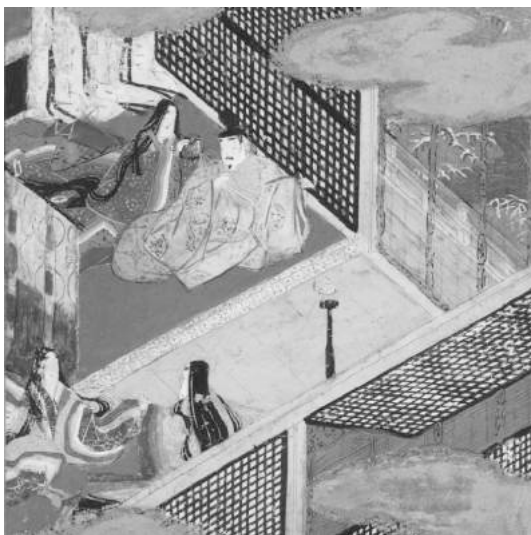
Impermanence is the result of the constant interaction between imperfect and incomplete elements. Consequently these aspects have become essential qualities of the Japanese aesthetic moral. The representation of incompleteness and imperfection/ irregularity provide another possibility for us human beings to connect with, and become part of our environment; namely through the interaction with our intellect (spirit). Architecture can provide endless opportunities that allow us to participate in effort to complete the imperfect and incomplete and subsequently possibly one could momentarily experience perfection (Sack, 2006 p.116). Imperfection allows one to discover this, instead of just accepting it.

Therefore it is not unexpected that the Japanese have a preference for a-symmetry in compositions. Asymmetry corresponds to the Japanese philosophy of constant change, as it recognizes growth and connection or relation. This unique system of asymmetrical order invites the observer to actively participate in the experience, allowing the mind to complete the incomplete. In asymmetry there is space for the imagination, it heightens our consciousness and stimulates the growth of our mind (spirit) (Chang, 1984, p.6).

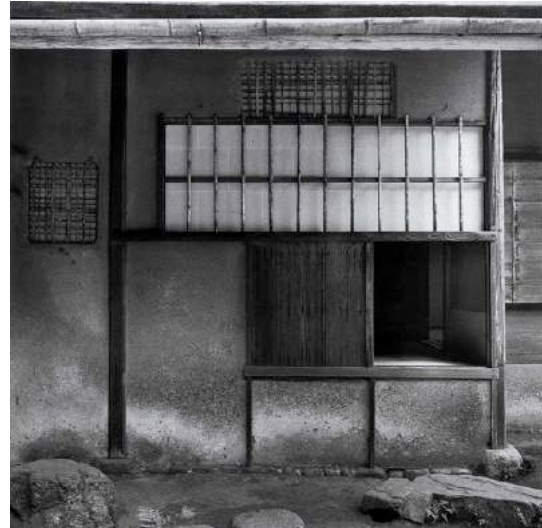
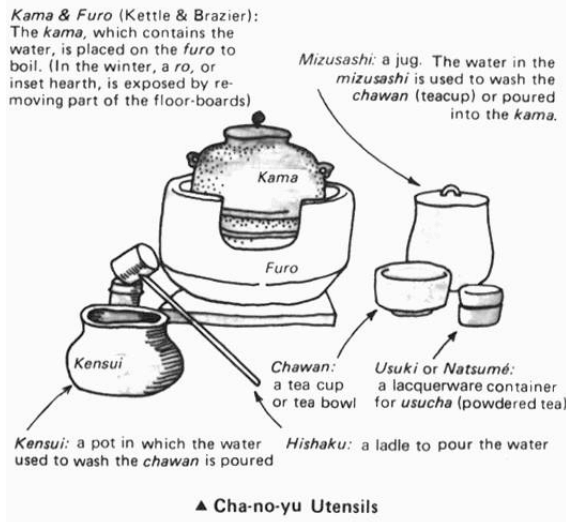
Asymmetry in architecture will also reference nature, as symmetry does not occur in the natural world. Like with permeability everything in the natural world including the human body for example can seem symmetrical but when looking closer the distinct differences will reveal themselves. Natural harmony lies in striving for completion resulting in the dynamic of change; growth (Sack, 2006, p.132). Plants and trees show this process very clearly.

You could say that is about much more than solely an aesthetic expression; allowing us to experience the simple and natural state of completeness, the enlightenment that is sought for in Japanese philosophy. Something that is shibui is innately interesting wherein the viewer can submerge. It looks inevitable and spontaneous, as if it always should have been that way. "It can describe all phases of Japanese life, can be shape, colour, sound and can involve a person's sense or spirit" (Chang, 1984, p.6).

Incompleteness (asymmetry) and imperfection are important aspects that contribute to the informal and approachable quality of Japanese architecture, as we can relate to it being imperfect individuals ourselves. The Japanese have elevated the principle of asymmetry in the design of their traditional architecture. They successfully express literal of psychological growth with a variety of architectural elements and methods based on nature's qualities of incompleteness and imperfection. Perfection is only present in the unity of all the imperfect elements.



The clouded, undetailed areas in this Japanese painting offers the viewer to complete the painting with his own imagination, only then can he see the entire image (Chang, 1984, p.7). The clouded (undefined) area's suggest the eternity or space beyond this world; the emptiness of Taoism (Chang, 1984, p.12).

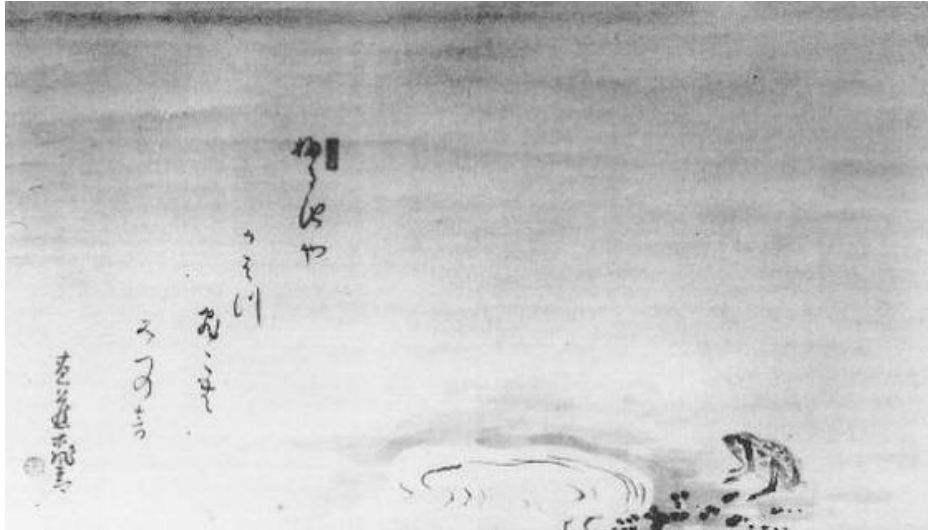


“The art of tea is essentially worship of the imperfect” (Chang, 1984, p.7).



The interior of the Japanese tearoom is the embodiment of these principles, where symmetry, repetition and uniformity are deliberately avoided so that the mind (spirit) can freely interact. The imperfection of the objects and elements emphasizes their uniqueness. In the tearoom everything and everyone is accepted, implying the appreciation of every single thing present.

The concept of ‘the glimpse’ is a typical Japanese cultural concept that corresponds with the same motive as incompleteness or suggestion. For example a glance, under the right circumstances can evoke the same sense of beauty, “anticipation of the momentary” as imperfection (Chang, 1984, p.8). Hence it is Japanese custom to pay extra attention to the making of an elaborate design on the inside of a kimono for example; its only purpose to grant the observer the possibility of a glimpse of its beauty (Chang, 1984, p.43). A glance through the noren in front of a doorway triggers the imagination and curiosity of what may lie behind.

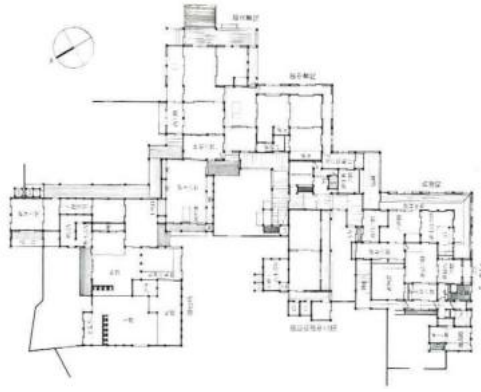


Haiku poetry is an expression of temporal enlightenment, a glimpse of insight. Often the poem depicts the ephemerality of nature such as the seasons (Chang, 1984, p.7).

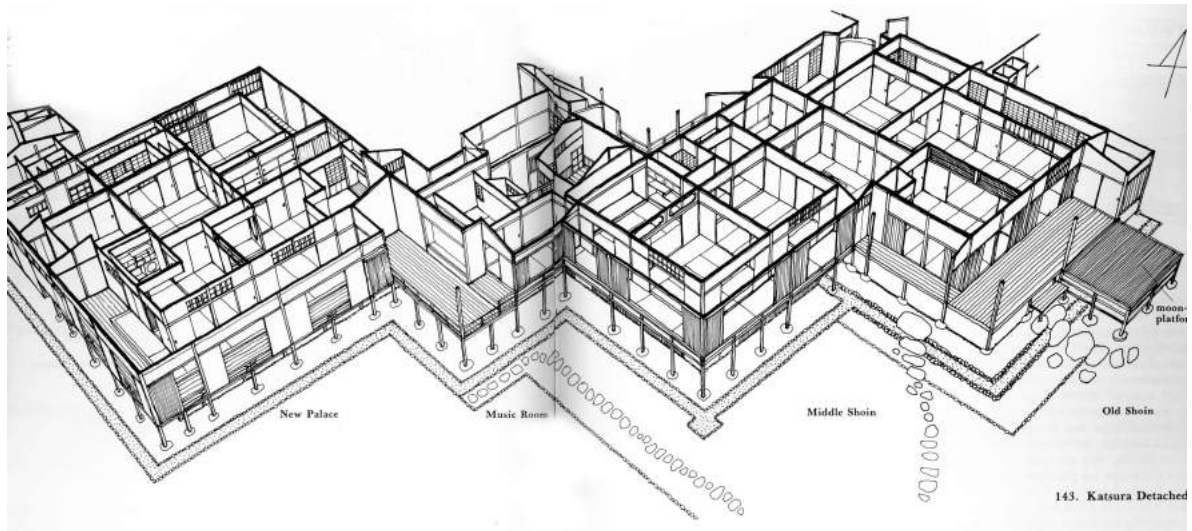


The Japanese garden is designed in such a way that it emphasizes the changing seasons. In Japan incompleteness is found in cultural aspects and the ordinary daily customs. Embracing imperfection | Kintsugi ("golden joinery") the Japanese art of repairing broken objects with gold, so that the objects can be used as long they work. This art form emphasizes the beauty of wear by use (traces of time) and the acceptance of change of its existence, as the repair is literally illuminated.

The imperfections created by human physical interaction with their surroundings and house are visible; the repaired shoji screen.



The asymmetrical layout of the traditional Japanese house qualifies the de possibility of development (growth) in the form of addition or alteration. This freedom of development and change is best observable in the asymmetrical plan of the sukiya-style residence. Anything can be added or removed without destroying the (permeable) inclusive system.



Emptiness | The origin/ end of everything

The concept of space

Japanese traditional buildings were built by craftsmen who functioned as architect and constructor simultaneously, focusing mainly on the practical quality of the creation of indoor space. In Japan the idea of space did not exist at that time, only when the architect as separate profession originated, unfortunately accompanied by the decline of craftsmanship, did Japan join in on the philosophical discussion on space, subsequently defying their conception of space (Chang, 1984, p.2).

It can be argued that the Japanese have never developed a spatial conception, as their traditional houses were never spatially built according to pre-determined ideas, instead they were probably a result of elementary human requirement (such as protection), a response to the existing climatic environment and the relevant technical developments. Only religious (monumental) architecture literally translated the corresponding philosophical ideas to spatial concepts (Engel, 1991, p.234). However the Japanese house does represent the essential philosophies of its society as it directly reflects the ideals and morals of its inhabitants, even though they may have been translated intuitively and possibly unconsciously (Engel, 1991, p.221). Nevertheless when the architect emerged, intellectual spatial concepts a priori were recognised and implemented in the design of Japanese space.

The Japanese concept of space is very complex and ambiguous. The Japanese language is an important means of expression and the expression of the notion of space is complex and very much linked to deep philosophical concepts. However often the link between the language and the concept of space is self-explanatory. There are many words that describe space. *Ma* is an aesthetic expression of both space and time. The use of the Japanese word *ma* has extended to every aspect of Japanese life, because the nature of emptiness or void is strongly present throughout Japanese culture as a concept and motive or purpose.

Unlike our contemporary idea of space, as a measurable area with boundaries, the Japanese conception of space denotes the coincidental conceptualization of space and time (Chang, 1984, p.14). "Time and space are separate dimensions, but two sides of a coin, invisibly coupled. If one is preconditioned by nature or modified by man, the other is affected" (Nitschke, 1993, p.33). This ambivalent relation between *ma* and space and time is not simply linguistic, "It reflects the fact that all experience of space is a time-structured process, and all experience of time is a space-structured process" (Nitschke, 1993, p.54). Furthermore the Japanese spatial concept is always perceived together with its experience and related emotions, as it is impossible to experience space without the introduction of external elements (Chang, 1984, p.15).

In the dictionary the Japanese translation for *ma* is space, but according to Nitschke, *ma* is only translatable to "place", as "Place is the product of lived space and lived time, a reflection of our states of mind and heart." The Japanese sense of space is much more existential and exceeds dimensions. It does not only contain the meaning of a place and the activities that take place within it, but also relates to the experienced emotions (Nitschke, 1993, p.49).

The notion of Ma

The character ma consists of the symbol for 'moon' under the symbol for 'gate'. This ideogram represents a delicate moment of moonlight streaming through a gap in the entryway. It "fully expresses the simultaneous components of a sense of place: the objective, given aspect and the subjective, felt aspect" (Nitschke, 1993, p.49).

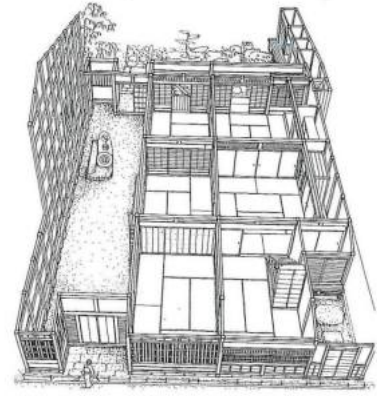
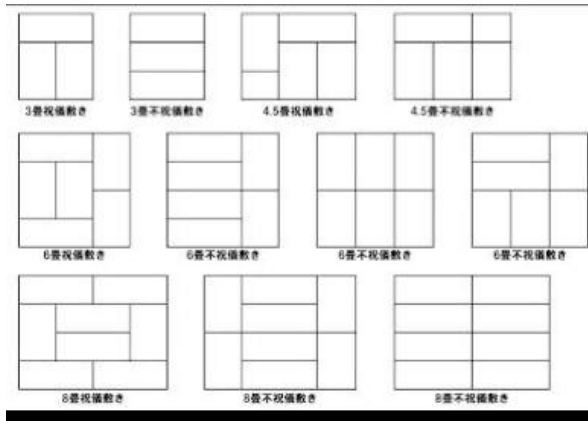


Nitschke has devoted an entire chapter to this notion, emphasizing three domains: the *objective*, the *subjective* and the domain of *metaphysics*. However in the collection of essays "Japanese spatial conception" the Japanese concept of space has been incorporated throughout the entire volume and it is almost always mentioned in relation to the Japanese language. Within this research an impression of the different domains and realms of this complex character are given.

Ma | The domain of objectivity

Within the one-dimensional-realm ma expresses a line in space, a distance between two points, but simultaneously it expresses the awareness of both points as individual entities. Its ambivalent character suggests both distance and relativity or polarity (Nitschke, 1993, p.50). An example of this is seen in the Japanese modular-system of the Machiya. The traditional Japanese house is based on a wooden construction of columns and beams. The distance (interval) between the centrelines of two columns evolved into the basic structural unit, ken, representing a carpentry measurement. Accordingly in traditional Japanese house all timber dimensions are a division or multiple of this unit (Nitschke, 1993, p.50). The traditional measurement system is found in carpentry manuals, which derived the unit ken from the measurement of the Japanese equivalent for foot, shaku one ken is approximately 6 shaku. Besides this manual, earlier ancient Buddhist scripts contain exactly the same rules for measurement for the construction of their buildings (Engel, 1964, p.48-58).

In the two dimensional realm Ma expresses as a number of tatami mats or a one "ken" square measured from the centrelines of the columns, called "tsubo" (a square or an area). Neither are exact measurements, Japan has three different modules of tatami sizes, they vary according to different the region of origin in Japan (Kerr, 2016, p.160). In traditional Japanese buildings, the size of a space is related to the number of tatami mats and associated with a specific function (Nitschke, 1993, p.50). Each multiple tatami (i.e. 3, 6, 8, 10 or 12 tatami-room) creates a new orthogonal composition.



The continuous interior of the Machiya can be separated into single rooms by the fusuma sliding panels, creating individual rooms that are indicated by the tatami patterns.

梁間

hari-ma

Hari-ma | Beam span

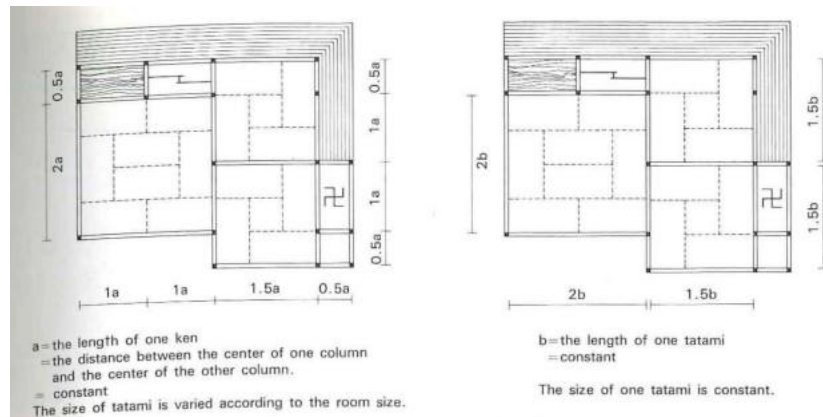
六畳の間

roku jo no ma

Roku jo no ma | Six-tatami room/ area

[Image. Conceptual diagram?]

This dual expression of ma both as a measurement of length and area resulted into two methods for determining the size of a space within an architectural design. It would be interesting to investigate how this interchangeable quality of ma might affect the use of the space. Unfortunately for now this topic must be reserved for future research endeavours (Chang, 1984, p.35).



The three dimensional concept of space is called Kū-kan. This concept for a three dimensional space did not exist in Japan traditionally and was created (influenced by the West) in a later stage. It expresses far more than just the implicit western static conception of a three-dimensional space. It can also convey aesthetic, social and/or functional connotations in line with Japans traditional idea of space (empty place, void). You could say that within the three-dimensional-realm ma expresses 'empty' space that is 'void' like in combination with other characters it defines different spatial descriptions and use (Nitschke, 1993, p.52).

空間

ku-kan

(empty) Space

Ku-kan | Space

Kū: a space between heaven and earth, emptiness within the physical space or the void within Buddhist metaphysics. It is a layered concept referring to a religious sense of the space between heaven and earth, a psychological significance to the meaning of emptiness and a physical one to the void. As needless to say these layers of definition are not absolute or exclusive.

Kan: an interval in time (time between events) or space (quantitative space).

To add even more complexity to these characters, they are both interchangeable. kū is interchangeable with sora, the expression for sky; an elusive space above us with absence of content. Kan can be pronounced as ma or ken, respectively variations that have a subtlety different meaning (Chang, 1984, p.14).

To comprehend the above you could say that within the three-dimensional-realm ma expresses 'empty' space that is 'void' like. In combination with other characters different spatial descriptions are created.

床の間

toko-no-ma

Alcove for display in traditional Japanese room.

This alcove is a spatial and aesthetic concept or a reference to the 'void' in Buddhist metaphysics.

In the Machiya Ma is about leaving space, like the extra space for storage, to give a spacious feeling. These "gaps" (Tsugi-no-ma: gap-space) can serve variety of functions and therefore are important in the design of the layout of the Japanese room and house (Chang, 1984, p.23). Similarly the space that is created under the house as it sits on stilts represent the possibility of continuous flow of space around and through the building. "Suki-ya" from the Japanese Sukiya-style architecture literally means "gap space house" and it refers to the empty space in the house that is intended for the tea ceremony (Chang, 1984, p.15). In the machiya this empty space (sukima) for revelation is located in the heart of the house, it is the most private "room". Furthermore in-between the wooden construction joints, there is always extra space available for play or movement (Asobi), allowing the construction to change with the weather conditions. So the notion of Ma is even implemented into the smallest details of the house.

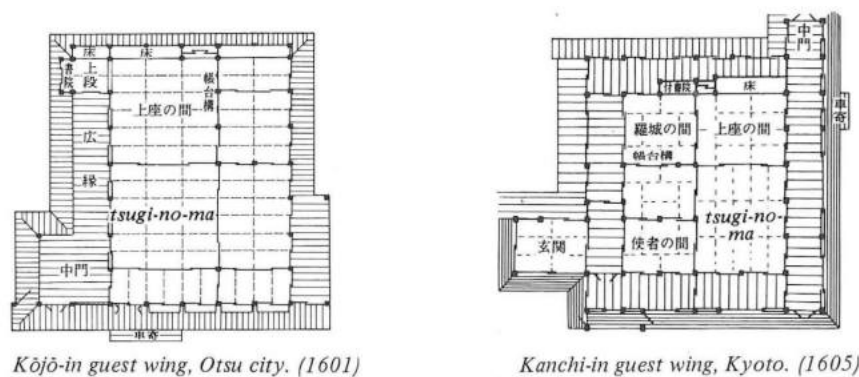


fig. 20 Typical plans show the placement of tsugi-no-ma.

In the four-dimensional-realm Ma (Kan) signifies abstract time without any suggestion of length, beginning or end. Traditionally time is a dimension of space as Japanese time is expressed as 'space in flow'. For our experience of 'place', time is essential (Nitschke, 1993, p.53).

Stretches of time

瞬間

shun-kan

間に合う

ma ni au

間もなく

ma mo naku

A moment (a flicker in time)

To be in time for (to meet the time)

Soon (in no time)

Time is often expressed in space interval. In Japanese, Ma can therefore express a temporal and/ a spatial element. As you see the twofold relation of ma to space and time is not merely semantic. The experience of space is a time-structured process, and the experience of time is a space-structured process (Nitschke, 1993, p.54).

間近い

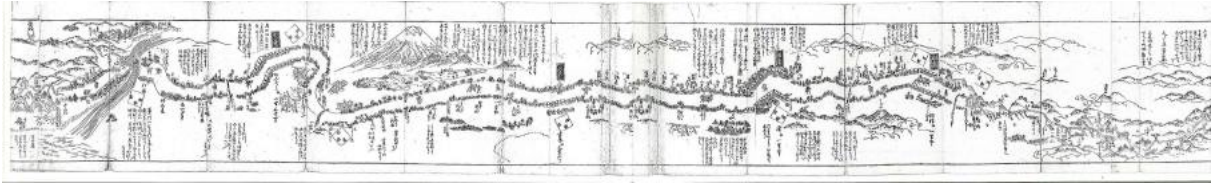
ma-jikai

A close space: close at hand (spatial) & drawing near (temporal)

For me this concept is comparable to Einstein's theory in physics of the four-dimensional structure of 'spacetime'. The corresponding mathematical diagram (Minkowski-diagram) shows how the three dimensions of space fuse with the singular dimension of time into one continuum. It explains how time and space are experienced differently depending on the observers perspective. However this is not the moment to delve deeper into the aspects of the theory of special relativity, but just to show that the concept of Ma can likewise be explained this way.



In traditional Japanese paintings in the fukinuke-yatai ("blown-away rooftop") technique, time becomes part of the spatial experience of the observer as we can only sequentially observe parts of the painting; our eyes move from scene to scene each depicting a different space. An even more literal example of an intended narrative process of viewing is the traditional Japanese scroll. Here one observes a sequence of spatial events while literally moving these 'spaces' by manually unrolling the scroll while time passes. A full simultaneous display of the entire scroll or viewing the painting as a whole at one time can be considered destructive to the understanding of the narrative (Nitschke, 1993, p.54).



Example of a linear presentation of a time-structured experience of space | A tourist manual of Tokaido (from the 18th century) shows how spatial sites, along a scenic route, will unfold over time for an actual traveller. This continuous map (often more than seven meters long) is folded into small booklets (Nitschke, 1993, p.54).

In this case ma is inevitably connected to time so architecturally ma in the fourth dimensional realm can only be experience through a sequential sensory experience of space, time and mood from parts to whole. I will elaborate on this topic in more detail later on in the conclusion because will be helpful to discuss the quality of ambivalence first.



An example of space as a time and mood-structured process; the stepping stones (tobi-ishi) towards and around the main building of Katsura Palace are deliberately placed and spaced to manipulate the speed and direction of your movement. The manipulation of movement influences how you visually perceive the surrounding space. The time-element in your experience of 'place' (Nitschke, 1993, p.55).

Ma | The domain of subjectivity

Often one remembers the mood one experienced when visiting a place much better than the actual details of the place itself. Ma used in the realm of experience expresses that the identity (genius loci) of a place is as much in the mind of the visitor as the physical characteristics. The atmosphere and the energy or spirit of a place, are subjective feelings giving a strong recognition to an experience (Nitschke, 1993, p.55).

木の間
kon-no-ma

波間
nami-ma

岩間
iwa-ma

Among trees | place/ time/ mood of trees

On waves

On rocks

Haiku's regularly commence with a phrase including Ma to create an atmosphere or "energy of the setting" for the narrative of the poem (Nitschke, 1993, p.55).

Another subjective concept of Ma is found in the realm of Art. In this context Ma is often used as an aesthetic judgement of traditional calligraphy. In the judgement of the quality, the balance of form and surrounding non-form, space, is always taken into account. The traditional Japanese calligraphy is seen as a complex combination of poetry, dance and action-painting. Not only the placement of the forms in the space are important components, but also the detailed fine markings that for example define the rhythm and the speed (time) of the brush express the performance and quality (Nitschke, 1993, p.56). When the artist is “empty”, free of thoughts, he can unite with what he wants to depict, then the power of what goes beyond nothingness becomes visible in the ink drawing.



Japanese aesthetics | Calligraphy of an ensō (“circle”) symbolizing ultimate enlightenment, void. According to Zen Buddhist only when an artist is mentally and spiritually complete one can draw a true ensō.

Architecture also falls within the realm of art and experience. In Japan the architect implicitly intends to “create a sense of place” besides designing the structural elements. In architecture “the atmosphere” of a place represents this aspect. In my opinion this can only be experienced when being physically present in the space and because I unfortunately was not able to visit the actual machiya in Kyoto, Japan I can not describe this

間取り ma-dori

Design | Grasp of place

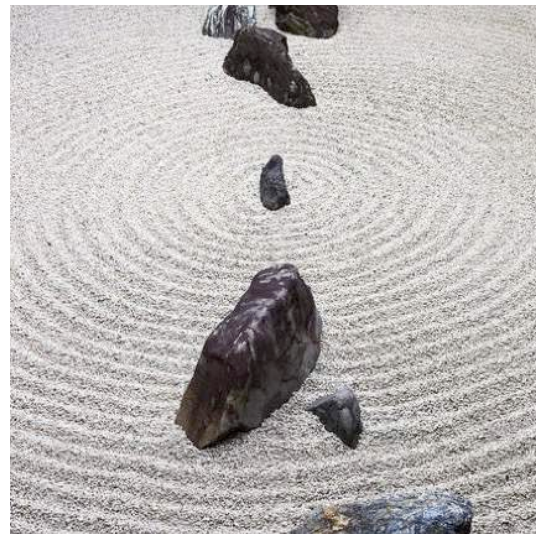
The architect creates the space that is essential for the flexible, temporal lifestyle that is so characteristic in the traditional Japanese house. Creating a house that is adaptable to the changing seasons and social requirements. (Nitschke, 1993, p.57).

The white areas of the walls and fusuma sliding panels in the Machiya do represent Ma, like the white canvas for calligraphy they form the balanced background for the objects and inhabitants. Additionally the vast white surfaces created by the fusuma invited Japanese artist to paint on new scale. Creative solutions were developed to fill the space (canvases). Often panels were painted as sets, or repetition was used as a form of abstraction or the following technique, where the artist becomes “master of the space” by painting a diagonal stroke or slash across the entire wall, was applied. It should be noted that fusuma paintings always include a lot of empty space this is the secret of Japanese paintings (Kerr, 2016, p.230-269).

Ma | the domain of metaphysics

Japanese Buddhism uses Ma to express the notion of emptiness or the void. With the discussion of emptiness we have left the scope of phenomenology, architectural or otherwise. In Buddhism the void is not a concept that can be explained rationally. It is mystical expression of a personal and incommunicable experience / state of consciousness that one can only reach after practicing many years of meditation (Nitschke, 1993, p.59).

This 'state of being'; enlightenment, with its paradoxical nature doesn't make sense for the normal individual in general so the void remains undefined for them. However there are methods whereby messages are communicated in the form of for example of poetry, painting or gardening, which can assist the development towards the experience of this consciousness. Ma used in this context is therefore a notion resulting from a personal experience, "a notion beside and beyond the experience of our physical world" (Nitschke, 1993, p.59). The Zen Buddhist notion of enlightenment is best expressed in the design of the Japanese stone garden. It embodies the essence of Zen, nature's all-encompassing universe and a form of contemplation by freezing nature. The best-known example is the stone garden of Ryōan-ji. This garden is symbolic, a representation of void as oneness.



So according to Japanese philosophical views the ultimate potential of experience lies in emptiness. Everything is constantly evolving towards or devolving from nothingness. Emptiness (Ma) exists in every aspect of Japanese culture (Chang, 1984, p.23). As mentioned before architecture can function as an extension of the human body likewise it functions as an extension of the human mind (spirit). It is imaginable that when architecture is able to express or convey this concept of "emptiness" or "void" an atmosphere is created that transmits the tranquillity and greatness of its intricate and profound value. The emptiness is simultaneously the elusive space as its elusive purpose (Sack, 2006, p.156).

The design of the traditional Japanese house has the most diverse relations with nature however its interior is often literally empty space, "void" like. Possibly the vacancy is a reference to the "void" within "man's inner self". The emptiness that is created in the house is very complex, highly subtle and accurate. "Every aspect in its freedom is an expression of creation" (Sack, 2006, p.159). The Japanese aesthetics are precisely about "the delicate traces or faint evidence of the edges of nothingness" (Koren, 2008, p.42).

As dusk approaches in the hinterlands, a traveller ponders shelter for the night. He notices tall rushes growing everywhere, so he bundles an armful together as they stand in the field, and knots them at the top. Presto, a living grass hut. The next morning, before embarking on another day's journey, he unknots the rushes and presto, the hut de-constructs, disappears, and becomes a virtually indistinguishable part of a larger field of rushes once again. The original wilderness seems restored, but minute traces of the shelter remain. A slight twist or bend in a reed here and there. There is also the memory of the hut in the mind of the traveller – and in the mind of the reader reading this description.

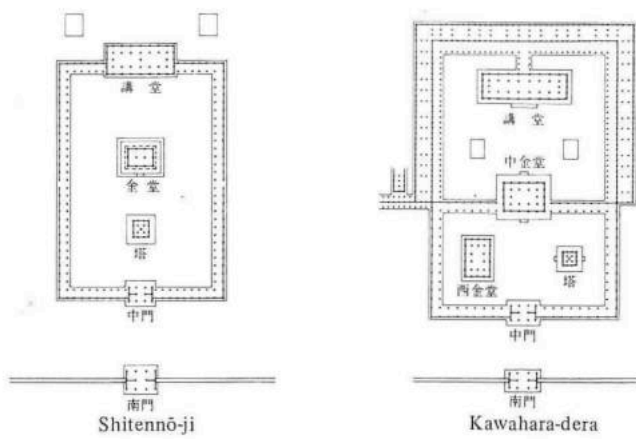
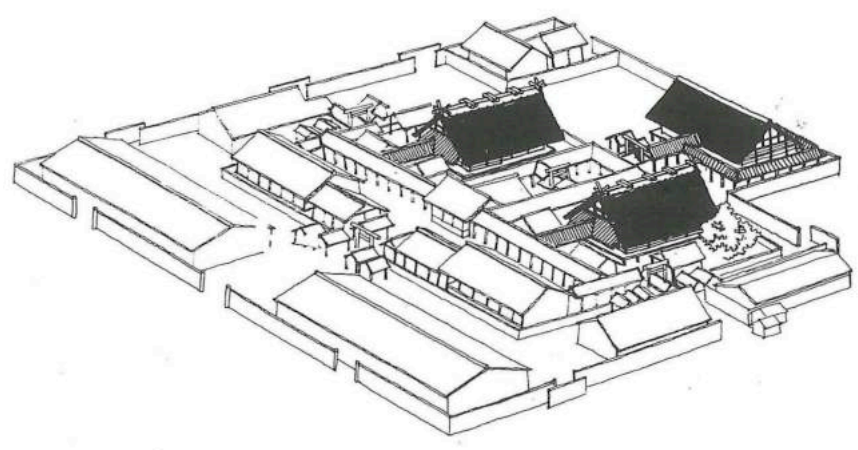


fig. 8
Early layout of temples.



fig. 3
Reconstruction of Ise Shrine. (1709)

In architecture the temporary construction of the Ise shrine is a good example of a delicate trace, as an imprint of the previous building is visible on the neighbouring plot and it is as if its spirit and memory are still there. In the Machiya the living space only becomes a space for living when a functional object is put in it. Total flexibility, is coded by the object, when its objects (Japanese stools, table or stationary cabinet) are stowed away in the kura or closets the function of a room disappears. The space waits without qualification, it is empty.



Emptiness is not necessarily a purpose, it is a means. Absence offers the possibility of creation and interaction. It is difficult to visualize emptiness as a possibility of transcending the limits of individual perception but there are a few more architectural methods and elements present in the traditional Japanese house that enable this, such as darkness, the illusion perspective, limitlessness, timelessness, Immateriality and the concept of "the glimpse". They are however elements that are unescapably part of a duo. This quality of duality will be discussed in the following section. Ma within the metaphysical domain can only be experienced when all the qualities come together.

Relativity | The ambivalent nature of everything

Humans perpetually redefine their position and perspective relative to their direct surroundings and their overall place in the world. We inevitably need to do this in order to construct our self-awareness and - understanding and reassure ourselves of our existence. So everything we perceive is constantly identified and categorised as we look for a connection to a previous experience (memory) or try to define where new things fit in our context. Often we are unconsciously led by expectations that are based on social norms and values and also our daily routines prevent us from seeing ourselves in the wider context (Sack, 2006, p.100).

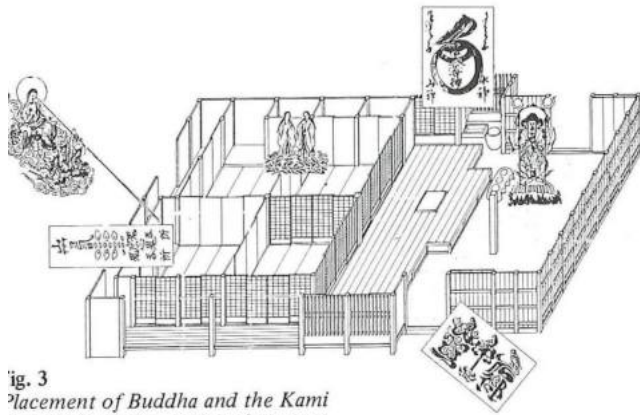
Experiencing ambivalence or ambiguity does however disrupt this process of categorisation and then a superficial observation is undermined. Creating ambivalence, in an architectural design for example, can be a method of subverting ones expectations. Ambivalent spatial situations are strongly and directly experienced and consequently always trigger feelings, of for example curiosity or irritation. Allowing one to look closer, open up and ultimately allow our senses to become more aware. The goal is then to create the possibility of a free and unprejudiced observation so that one could experience true creativity, potential beauty and eventually universal connection (Sack, 2006, p.100). Ambivalence is about experiencing the connection between what at first seems to be obvious contradictions.

An important quality present in nature is the interaction between opposites that coexist, yin and yang, thus architecture that contrasts nature's variety, simultaneously refers to it, which is a paradox. Additionally contrasting architecture, by means of reduction for example, can intensify nature's presence and make its richness more obvious. By only using methods of mirroring and repetition one could realize architecture that is a parallel of nature's standard, however then the contrast between the "perfect" architectural construction and the imperfect individual elements of nature would be missing. Only when the quality of opposition is included can there be interaction and connection (Sack, 2006, p.62). According to the Taoist concept of polarity opposing elements are just parts that complete the whole. They are essential for all of nature's phenomena and "human situations", they are seen as the spiritual ancestors of everything (Chang, 1984, p.24). Essentially there is no separation between the two extremes. Like the aesthetic system of Shin, Gyo and So, the crucial aspect of/ "the secret of Japanese arts" is that they always co-exist (the always present dualism), concealed within one and other (Kerr, 2016, p.90-121). It is important to note that the Japanese do not recognize coexisting opposites as unequal elements for example that one is superior to the other. Their value is acknowledged as equal within the Japanese concept of duality (Chang, 1984, p.34).

Reflecting on Japanese architecture we constantly find preference for the contradiction of opposites, elements of ambiguity or ambivalent spaces. The Japanese have mastered the art of counterbalancing, relating and complementing creating spatial concepts of duality (Chang, 1984, p.24). The ambivalence in the Japanese house is defined directly and instantaneous, not abstract through intellectual or artistic terms, thus very effective. Spatial ambivalence is hard to explain or define as it appeals more to the intuition and ones degree of empathy.

Firstly the plurality of philosophies is quite common in Japan. For the various occasions in life different religious rituals are implemented. Shinto rituals are mainly associated with the 'lighter' events in life such as birth and the purification of a new construction site, whereas death is celebrated by means of more 'darker' Buddhist tradition. At first this seems contradictory but actually the philosophical ideas complement one other and therefore all the Japanese philosophies and religions that have been discussed have had an influence on the Japanese conception and use of space. Plurality of worship has definitely contributed to the flexibility of Japanese space (Chang, 1984, p.43).

The traditional Japanese house often has multiple altars accordingly for Shinto, Buddhist or other worshipping (Chang, 1984, p.44).



ig. 3
Placement of Buddha and the Kami
in traditional domestic architecture.



The machiya has a simple orthogonal structure in compliance to its construction method and materials. This contradicts nature's "free" forms, however because of its simplicity it does form a balance that sensitizes the observer's awareness. The reduction of form and colour of the interior is opposed to that of nature's variety. This dynamic balance between opposites is referred to as Tao; thus it is no surprise that the Japanese have the preference for contrasting (unique) materials, which subsequently enhance each other's qualities. This is clearly evident; the building consists of a variety of natural materials and the application of "natural" dimensions thus the architecture does simultaneously reflect nature's diversity and uniqueness. The Japanese have developed the refined skills for counterbalancing, complementing and relating accordingly it is present within the Japanese house in diverse arrangements. For example the clarity of the architectural structure of the house is balanced out with the intuitive, free paintings in the *tokonoma* and on the *fusuma*, the wealth of the kimonos surrounded by the simplicity of the interior and their fluid shapes silhouetted against the light, the transparency of the light (weight) wooden construction opposed to the heavy shaped roof.

We have come across many ambiguous transitional spaces such as *engawa* and the *genkan-niwa* with a dual purpose, they could be an extension of indoor or an extension of the outdoor, depending on the observer's perspective (Chang, 1984, p.42). The ambiguity of *En* is about "spatial belonging". Visually, the *engawa* for example often becomes part of the garden, as there is nothing separating you from the garden when the *shoji* are open, as if you are floating above the ground. On the other hand you are inside, protected by the roof and you are not wearing any shoes. Furthermore visually the transitional space possesses an ambiguity of light, as one's depth of vision from the house constantly changes. One's line of sight ends at or one's perspective is drawn to either the *shoji*-screen, the *sudare* blinds, an element in the garden, the garden fence or some remote feature in the borrowed scenery (Nitschke, 1993, p.90). Even the *tatami*-rooms are somewhat ambiguous as they serve multiple functions.

All the spaces together form almost some kind of structure of opposites that can be experienced chronologically whilst walking through the machiya. The route from the front to the end of the *tôrinawa* has many contrasting spatial atmospheres. The main-entrance is quite small in comparison with the outdoor space, then the first hallway of the *mise-niwa* is quite dark and compact due to the low ceiling, bordering the elevated more spacious shop area. Through the second door to the *genkan-niwa* is an open area where you can see the sky, then through the *noren* to the *hashiri-niwa* where the double high ceiling giving the space an extra narrow feel. The machiya is like a forest with darker more dense, shaded areas and sudden light clearings. This duality is similar to the traditional ideas of the Japanese spatial conception (Chang, 1984, p.26).

As discussed before intellectual growth is possible through expansion of human perception. By liberating the observer from their habitual patterns their consciousness is expanded. Polarity in architecture introduces new perspectives to the observer (Sack, 2006, p.138). This can be done by altering predictable situations or elements, such as scales, dimensions or proportions, as done in the Japanese Zen garden, or by making spatial boundaries transparent like the permeability of the layers in the machiya. Furthermore obstruction or displacement of perspective by not providing any or false points of orientation, such as we will see in the discussion on the illusion of perspective and sequential experience. In this case a process of irritation in the ambivalent space will encourage participation.

Ambivalence contributing to an atmosphere of sacredness

As I mentioned in the introduction experiencing the all-encompassing connection can be described as a state of being, enlightenment. This happens when the mind (spirit) is activated through physical sensory experiences of a place. When architecture possesses certain qualities, among those that have been discussed, it can evoke an atmosphere of sacredness or say poetic profoundness. However this atmosphere is very difficult to understand solely through rational analysis as it is about more than only architectural elements and characteristics. There is some kind of ephemeral quality that contributes to this atmosphere. An atmosphere, mood of a place, is quite a complex and ambivalent phenomenon and therefore very elusive, again I will (regretfully) have to restrain myself from delving into an analysis of this phenomenon within this research. However there are certain qualities, like the balance between opposites that contribute to an atmosphere of sacredness.

I have found multiple contradictions to be present in the traditional Japanese architecture that are essential to the creation of a poetic place and therefore they should be mentioned. The principle of duality allows us to see the infinite in everything (Chang, 1984, p.35).

The balance should simultaneously appeal to our memory as our imagination, to be able to create a new reality or say to spark the experience of enlightenment (Vink, 2014, p.89). Thus an ambivalent space has a balanced tension. There is an evident and expected quality that relates to our memory and there is an alienating quality that influences our feelings, causing irritation or confusion (a feeling of uncertainty about what is happening, intended or required) that triggers questions and discussion or initiating curiosity (a strong desire to know or learn something) that may spark our imagination (ability of the mind to form new notions, images and thoughts). The right balance allows the observer to feel just comfortable enough to stay and gives one the feeling of being in control of forming the new reality; it is not forced, but evokes inclusiveness.

Ma, in the subjective domain, serves as an exceptional unifying concept of Japanese awareness of the interaction between polarities of form and non-form, object and space, sounds and silence, action and non-action, person and society etc. Ma embodies an all-encompassing connection, a continuum of time and space and our sense of place in it. It comprehends the events and experiences of our external reality and our internal mood (Nitschke, 1993, p.58). Here relativity introduces the possibility to rethink your physical and spiritual orientation in the world.

(Im)materiality

Natural materials also possess an ambivalent quality, as there is always a contradiction between materiality and immateriality, at the same time giving one a sense of reality (space) and ephemerality (time). I feel that natural materials have a unique materiality, as they always show the presence of time. They are experienced through multiple senses; materially visually and tactile but also immaterially through sound, smell and temperature. Therefore natural materials are perceived as less anonymous, as we can experience them more consciously and so their connection to us is enriched.

It is characteristically Japanese to combine the rough texture of rocks with the smooth surface of plaster in one plane. Subdued, natural colours are mainly applied on walls. However the layering of clay and wooden boards combined with weathering creates intriguing surface effects on the plaster, giving the wall depth, a sense of time and an organic feel. Often the lower half of a wall is covered with wood to protect the wall from rain. In Kyoto old stones of the past are reused referring to its layers of history (Kerr, 2016, p.54-87).

Immateriality can also be created by applying patterns, as a structure with continuity can create the expression of endlessness. For example the naturally grown wood grains, of the wooden floors on the engawa, exhibit their history of use and adaptation. Likewise the manmade orthogonal patterns of the walls, floors and ceilings in a Japanese house can evoke this sense of endlessness beyond the boundaries of their surface. Another method of creating the illusion of immateriality is by using reflection. The water in the stone basin in the garden reflects the delicate branches and flowers of the overhanging cherry blossom tree or the shimmer your eye catches when one passes by the golden details in the dark tokonoma at night with candlelight.

The Glimpse | perceiving part of a whole

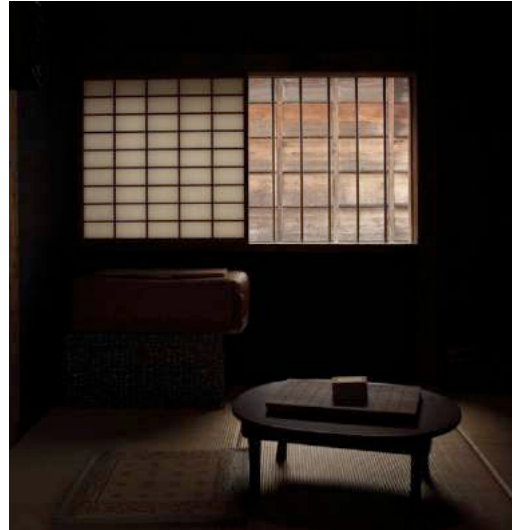
“The glimpse” is an expression that I have encountered several times during this research. It is a means of sparking the imagination, as there is an interesting tension field between disguises and reveal. Fuelled by their philosophy the Japanese have adopted a preference for the aesthetics of “the glimpse”, minimally revealing the reality to provoke the mind to work, to imagine, to look into its memory, and to look beyond this reality.



The traditional Noren that cover the entrance of the Machiya like a veil give the passer-by the ultimate incentive of curiosity. Likewise the fences that enclose Japanese temple complexes are always arranged in such a way that one can always get a glimpse of only a part of inside. Also the layered façade and the opaque shoji only show contours and shadows of the spaces behind, creating a fusion of two realities. In contrast to the spatial “enfilade” configuration of the spaces in the Machiya, where you directly see the centre of the connected space as expected, in the Japanese sukiya architecture style spaces (and gardens) are organised in such a way that the observer’s overview is interrupted. Spaces are shifted relatively to one another or transitional spaces are attached/inserted to create an indirect “zig-zag” route that hides the real destination or goal (if there is one). The roofs seem to float above the ground under which the space moves in and out, but the walkways do not only zig-zag horizontally, they also rise and fall slightly in stepped cascades as you move from one pavilion to the next (Kerr, 2016, 153). In this case the visitor has to surrender to the changes of direction in the architecture or landscape design, giving the mind space to fantasize about what to expect. Again almost needless to say light and darkness can also be a good element to influence the visibility of what the observer can see and guide the direction of their movement.

Darkness

The Kami live in darkness, invoking the atmosphere of a sacred place. In the darkness is emptiness, the void. Within a Shinto shrine one travels from light to darkness. Spiritually one seeks to find the darkness of the spirit, the personal void, without any distractions where there is space to focus on the Kami and the spirit. Out from this darkness a new person can grow (Chang, 1984, p.22). In his book *In Praise of the Shadows* (2001), Tanizaki describes, “the magic of what is hidden in the dark” as a unique quality of traditional Japanese space. This darkness has a profound spiritual presence that could be associated with the discussed notion of void (Sack, 2006, p.117). This concept of void is also otherwise applied to the living space of the Japanese house. As the empty space is only to be defined by the placing of those elements necessary for the function of the space in that particular moment. In this shifting of function, for example from living space to sleeping space, a process of purification takes place. A Japanese room consists of delicate light that is filtered by the darkness of the void. From the shadows new space grows (Chang, 1984, p.22).

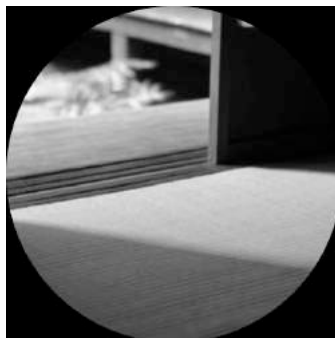


Despite the Japanese progression from darker to lighter dwellings typologies through history, their aesthetic preference for darkness persisted; “Japanese houses are perpetually dark inside” due to the juxtaposition of separate spaces. Contrary to western ideals in Japan it is the shadow that has value and must be managed. Due to this insight I find myself obtaining a new sense of light.

The art in the design of the traditional Japanese house is to counterbalance the darkness. In the machiya the light wells or recesses, like the small gardens, and the translucent paper shoji screens allow diffuse light to enter the interior. The off-white surfaces of the fusuma screens and plastered walls additionally balance out and reflect the delicate light beams. Sometimes gold, the colour of Buddhism is applied on details of a painting or vase in the tokonoma and accordingly illuminates the darkness of this space by reflecting and intensifying the candlelight (Kerr, 2016, p.230-269). The entire house is an illustration of a “Clair-obscur”, a hymn to half-light. The different layers introduce lots of levels of half-shadow and shadow.

Darkness is prerequisite for light. Traditionally the Japanese have always acknowledged the soul of darkness and their traditional architecture is unique in that darkness or shadows are always the starting point for a design. In the Japanese culture shadows are perceived to enhance certain qualities of materials, because darkness has a mysterious character that enhances the susceptibility of your senses and can spark the imagination (give the spirit space).

The experience of a place depends as much on shadow as light; light makes material surfaces visible and shadows allow us to see their shapes. However light and darkness are elusive elements; only to become tangible when they come in contact with something that is materialised. They are a perfect illustration of ambivalence as they are simultaneously material and immaterial, forming a connection between the physical and the metaphysical world. Light and darkness are essential means for creating a certain atmosphere because they co-define (with sound, smell and temperature) how we experience the world.



Light and shadow can make the texture of a material visible and increase its tactility. Furthermore reflection or absorption of light can emphasize the thermal qualities of a material. By manipulating the direction of light an architect can create focal points, elements that ask for a certain concentration, in a space. In the Japanese

house it is the darkness that creates the focal point in the room; the tokonoma. In the Japanese garden, elements give the space an orientation and influence our experience by means of emphasizing the underlying meaning or history of a place. Light and shadow are powerful tools to direct ones movement. As humans naturally move toward light.

In the Machiya the daylight is of such aesthetic value that it is trances from ordinary to sublime creating a surreal ambiance in the interior. The shoji screens become almost immaterial as the focus shifts from the sliding panels to the light that passes through. Light reveals the edges of a space as it illuminates the surfaces of the walls, ceiling and floor. In the Japanese house however the shadows define and accentuate the boundaries and thus the shape of the space. Although because of the depth of shadow this shape is more vague thus the space becomes less logic, possibly appears to be endless. Interrupted by the black borders the juxtaposition of the cane weave surface of the tatami's creates a background for the play of light and shadow. During the day the contrasts reflected on the tatami change very often changing the entire atmosphere of the space (place).



Unity | This image shows how the darkness of the room intensifies the view, nature. Simultaneously the round window refers to the endless circle of connection.

Limit/ boundlessness

A unique quality of darkness is that it limits our field of view (spatial boundary) and at the same time darkness allows us to experience infiniteness (boundless space). The illusion of limitless can be achieved with maximal permeability. Naturally the arrangement of the undefined Japanese "rooms" and the blurred boundaries created in the transitional spaces construct the illusion of spatial flow. A boundary like a wall with a carefully designed opening can direct your view to boundless space. It enables the observer to experience defined and limitless space simultaneously. The Japanese achieved this effect with the Japanese landscape technique of borrowed scenery and framing creates a similar effect; by layering "screens" or framing the perceivably small space seems endless.

It is characteristically Japanese to divide a view vertically in segments. A fusuma painting appears to be a continuous image nevertheless the screens are always framed by its wooden edges, even between the panels of a Japanese portable folding screen a edge is visible as a subtle vertical line, similarly the view of the Japanese garden is divided by the regularly placed vertical columns on the engawa. As mentioned before framing is a typically Japanese aesthetic technique. A Japanese flower arrangement is always placed in the frame of a tokonoma, to be appreciated from on direction and at a specific angle and height. The same goes for the Japanese garden, additionally the Japanese have perfected a technique of layering, treating the garden as flattened sections of space (like a screen) and so creating a whole scene by assembling the layers of the foreground, the garden, and the distant view. This technique of perspective deception is know as, borrowed scenery (Kerr, 2016, p.230-269).



The repetition of elements is also a way to refer to endlessness, in the machiya repetition is found in the details, one could be mesmerised by the intricate structure of the tatami surface. Another form of emphasizing the continuity of space is the appliance of the same material on indoor and outdoor planes, creating the smooth transition that connects inside with outside. The materials applied on the surfaces of the machiya smoothly transfer from inside to the outside. This is only possible and quite natural, as the structure is not effectively thermally insulated.

It is striking that in Japanese architecture endlessness is mainly horizontally with a focus on nature while in western religions architecture emphasizes the limitless of the heavens above, connecting the observer with visually, vertically with the sky.

Timelessness

When time is visible it can spark our memory and imagination at the same time. Humans are naturally attracted to the things that show layers of time because it give us a sense of security, that we are part of a natural timeless continuum, a bigger whole. Confrontation with the references of the natural elements of water, fire, air and earth allow us to have existential experience, as they possess the quality of timelessness, never-ending. They hold the memory of the earth and at the same time the eternal time of everything. Reminding us of a time-span that was before and goes beyond our mortal lives. However the cyclicality of the various succeeding phases of life (completion-inhabitation-destruction-void) does simultaneously give timelessness a measurable dimension that is necessary for us humans to relate to. As discussed earlier when referencing to nature's qualities the machiya possesses many elements and materials that relate to time and timelessness.

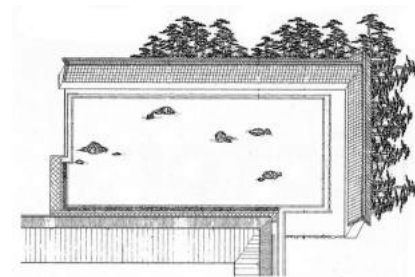


Perspective illusions

Illusions are another method of creating a new reality, in this case the reality of connection to everything (in space and time). It is a way of manipulation ones perception. By hiding the reality logic, manipulating ones perspective.

Like walls, fences are useful architectural elements to create perspective illusions, directing your movement and attention by means of hiding/ cutting of or focusing/ funnelling view. Creating the atmosphere of a secret place or “preparing you for a heightened experience”. Japanese gardens almost always have a fence or wall framing it. Framing a view is typical Japanese as it is a method to direct the angle of the observers view. The Japanese prefer Zen gardens for example, as they are not nature but an ideal presentation of nature, to be framed like a painting so that it can only be viewed from one direction, thus the beauty of the composition can be fully appreciated (Kerr, 2016, p.54-87).

Composing coincidences or elements of synchronicity in a design can also trigger ones consciousness and imagination and possibly contribute to the experience of enlightenment. Of course the occurrence of such an experience depends on the susceptibility or sensitivity of the observer. Creating subtle and unexpected similarities within a building can achieve this sense of wonder, as if there is secret or a profoundness that only those who really look can see.



The skilful use of the laws of perception has greatly influenced the development of the Japanese spatial concept (Chang, 1984, p.31). The Ryoan-ji Zen garden is part of a Buddhist temple in Kyoto. This “dry landscape garden” is an example of a created method, by reduction and perfect aesthetic arrangement, to enter this state of being. It is to be appreciated from fixed vantage points when sitting on the veranda. The designer of the garden is unknown. In the space (of 10 x 30 meters), with a surface of raked white sand, fifteen natural rocks are arranged in such a manner that only fourteen are visible simultaneously, independently from the observers perspective. Only from a moving point one can comprehend total picture. It is said that only in a state of enlightenment one can perceive all the rocks at once. Snow intensifies its character. Everything emerges from it and at the same time recedes into it. As one sits on the wooden engawa and observes the garden, that represents the entire cosmos, one could briefly experience their connection to everything; enlightenment.

Besides a certain configuration of opposites a certain state of mind is necessary for one to experience this harmony or unity. One must require a certain intellectual calmness. Only when the mind and spirit are “open” can one extend the spectrum of perception, and will new experiences and perhaps even knowledge be revealed. One has to prepare the mind through meditation for enlightenment.

Sequential experience | a sensory experience of space, time and nature

The simplicity of the Shinto shrine, house of the Kami, emphasizes a sensory experience through mystic rituals and natural phenomena. It is an expression of the respect for nature, where worship unites and harmonises the various types (good and bad) of kami. The absence of an absolute destination within the complex of a shrine accentuates the importance of every singular experience in preparation of meeting kami. A fundamental element of this ritual is the ceremony of purification. Certain deeds result a ritual impurity that one should want cleansed (with water) for one's own peace of mind and good fortune rather than because impurity is wrong (Chang, 1984, p.21). Buddhism divides all existence into phenomenal and noumenal spheres. All the ordinary experience and knowledge is of this phenomenal world and is consequently only relatively true. The noumenal world or the highest knowledge is reached with enlightenment. Within the Buddhist concept of space and time, time is divided in past, present and future, all interrelated realms, as one cannot exist without the other. The universe co-exists with time in various phases: completion-inhabitation-destruction-void, a never-ending life cycle. The universe is timeless does not have any spatial boundaries, "in time and space it is an infinite universe" (Chang, 1984, p.27). Mainly the hieratical stages of religious consciousness and the sequential experience of Buddhism and Shintoism have influenced the spatial developments in Japan.

Flowing space | sequential experience of spatial layers

Japanese philosophical traditions have influenced their architecture. The Buddhist concept of constant change and the Taoist concept of simplicity coexist within the traditional Japanese building design. Japanese spatial concept is experienced sequentially, "through intervals (ma) of spatial designation". 'Flowing space' extends infinitely in all directions however when an observer engages with the continuous space it is interrupted (Chang, 1984, p.39). With the presence of a person the space becomes human. "The empty space allows the spirit of the person to move freely and enable his thoughts to reach their ultimate possible potential". The Japanese have certainly considered space as an integral element for experiencing life.

The Japanese sequential experience is clearly present in the progression of exterior space that surrounds religious architecture. Subtle elements indicate the hierarchical, spatial arrangement of temple and shrine complexes. The sequential step-by-step experience is closely related to the Shinto purification process, as one progresses gradually from one stage to the next. Because purification like space can only be experienced progressively the Japanese consider the spatial treatment an essential method to this end. Buddhists believe that human life requires movement, "progress", as we are part of nature's impermanence. One could state that the Japanese space is based on a space-time experience; a process of addition as one moves from one place to another place (Chang, 1984, p.44).

The "zig-zag" corridor that connects all the rooms represents "the path of human existence" as it is comparable to life: always receptive to impermanence and never easy and straightforward, there are unexpected turns or changes of circumstances (Chang, 1984, p.39). The layered spaces embody movement and the experience of time. *The multi-layered membranes and the glimpse, the zig-zag and the opposites in the design of traditional Japanese architecture are essential for the experience.* The layering of elements and methods create the complexity that ensures the sensual appreciation of this architecture.

The design of route to the Japanese teahouse similarly encourages one to progress and become aware. For example the garden design of the Katsura Imperial Villa clearly distinguishes places of movement or rest. The paths are intentionally designed to initiate a variety of movement and the places for rest are always related to a unique view of the building. There are spatial obstacles that resemble the irregularity of life that one must overcome to get to the building.

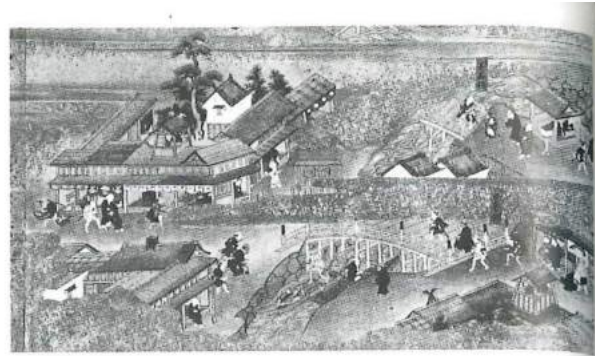


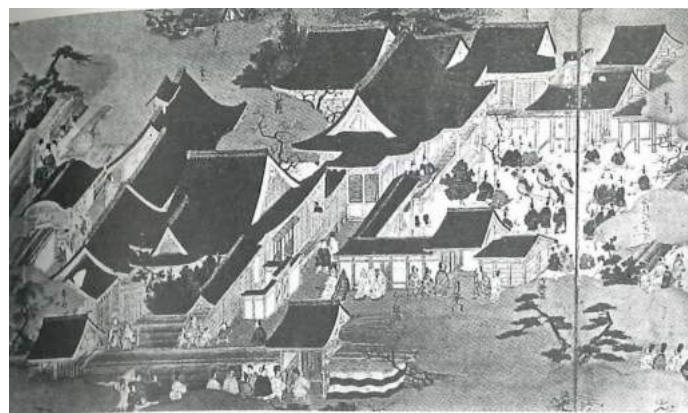
fig. 15
Machiya in Edo period. (1603-1867)
Parts of the painting can be observed independently without
comprehending the entire painting.

This painting shows the narrative of how Buddha sacrifices himself. It is a good example of how Japanese art is to be observed sequentially and not as a whole in one go (Chang, 1984, p.46).

When looking at the a-symmetrical plan of a Japanese temple complex or that of the traditional Japanese house one sees that the placement of buildings and/ or rooms have not been predetermined. Their position is determined by the desired relationship between the two spaces. It becomes clear that the composition of the house has grown “from parts to whole” and the relation can solely be seen in its parts. This also applies to the spaces in the Machiya where the architectural elements in the spaces create their own sub-relationships that contribute to the increasing of depth of the space.

So the space is organized through an additive process that extends two dimensionally in the horizontal plane. The a-symmetrical plan suggests a relationship beyond the defined spaces as if the space is infinitely extendable in numerous directions.

This suggestion of the extension of space is also visible in Japanese paintings without a vanishing point. The perspective is reversed, as the observer becomes the vanishing point, constructing the illusion that the observer is part of the painted scenes, as if the space is extended toward the viewer. In these paintings the unfolding of the horizontally extending space can be perceived. Additionally the different scenes in the painting can similarly to the “sacrifice of Buddha” be observed and understood independently, without knowing the complete painting, as sequential parts. These scenes each have an individual perspective thus triggering the viewer to move around the painting, interact with and become a part of the whole (Chang, 1984, p.47).



This dynamic sequential experience is a reference to the Buddhist universe. The slow process though synecdochic parts to an intangible whole, could be defined as an infinite flow, without beginning, middle or end in time (Chang, 1984, p.47). This structure of progression makes it very hard to see the whole until the end and even then I can imagine that cannot be fully comprehended, because it itself is part of the dynamic flow that is susceptible to change where ones mind (spirit) is allowed to participate and will contribute to growth.

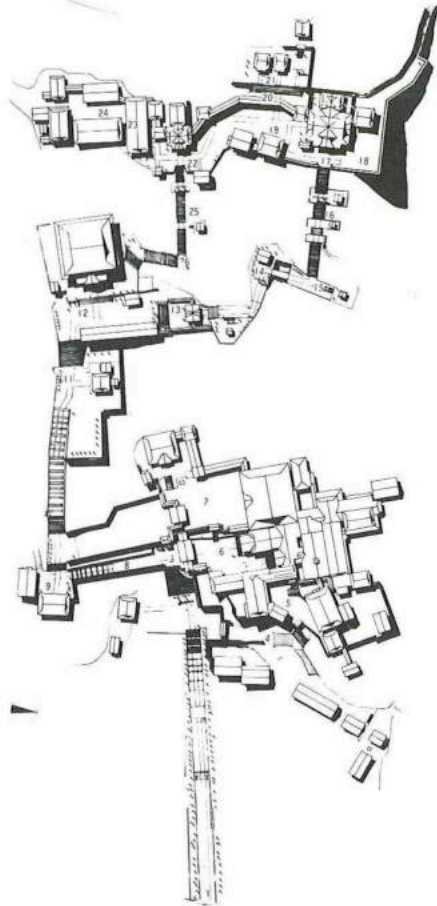


fig. 9
Master plan of Konpira Shrines.

The concept of hierarchy in Japanese temple complexes is similar to that of western religions architecture however the expression of this notion is entirely different. The Ise Shrine is hidden, invisible from a distance only to be discovered sequentially. Similarly in the traditional Japanese house you will never see the whole in one moment, always only a part of it. Buddhists have no desire or need to explain the ultimate cause of all things; the true way of understanding the existence of anything is by tracing its cause back to the next.

The concept of sequencing is also apparent in the approach of a temple. Often a series of gates indicate the step-by-step movement from "the lesser to the greater mysteries". From the Buddhist point of view the gate acts as a vague threshold, a moment of ambiguity, in the journey to enlightenment. However Kerr proposes a new perspective in his book, *Another Kyoto*. He suggests that in Japanese architecture thresholds and edges are actually clearly defined. Thus the gates of a temple complex are part of a sequence, defining a beginning, middle or end of a path. A flow of space is created by the architectural elements that indicate a change; "you are in one spot and it's not the same as what preceded it or what follows" (Kerr, 2016, p.16-51). The path towards and through a temple complex is often axial, north to south oriented, when the entire design is systematically planned and implemented. If this is not the case circular meandering routing is more obvious (Kerr, 2016, p.16-51).

Enclosing space

The art of wrapping a package illustrates the ethical dimensions of Shinto; it embraces a ritual of purification and reflects the aesthetic consciousness of simplicity. The sensible care and attention for every detail illustrates the Japanese attitude about the wholeness of life (Chang, 1984, p.21). Wrapping also lends a good example for understanding the Japanese idea of enclosing space. In Japan books may have multiple dust jackets and when purchased the book is first covered by a slipcase before it is finally wrapped up to go.

Unique for Japan is their method of enclosing or say fencing space. This is done with the subtlest of elements. There is a Shinto ritual of allocating a religious space by means of fencing; only four slender bamboo sticks are placed in designated spots in the soil and then horizontally connected with a single cord. These simple elements are adequate in marking a certain "sacred" area (Chang, 1984, p.49). It is evident that lightness is an important aspect in Japan. Many fences are made of bamboo or other natural, evanescent materials creating a less permanent or solid physical barrier. Intriguingly there is a psychological paradox concerning lightness as Kerr notes: "the lighter and more transparent the barrier, the more serious we take it". You could say that boundaries are created in our mind and by a mood or attitude rather than of physical obstacles (Kerr, 2016, p.54-87). The Japanese are clearly aware of this paradox and effectively use it to their advantage in defining spatial territory. Subsequently within the Japanese horizontal spatial notion one's own territory is clearly defined. The space 'inside' is the area of one's own territory, a concept that includes space for a group of people, not solely for an independent individual. This Japanese concept of territory has influenced the development of spatial layering in Japan; such as the physical fencing around temple complexes or the psychological layers one encounters when approaching a Japanese teahouse (Chang, 1984, p.38).

In the Buddhist temples in Shinden-zukuri or Shoin-zukuri the folding-screen (byōbu) functions as a temporal divider thus creating a psychologically enclosed space within the ambiguous main hall of the temples. This method is comparable to the sliding screens that provide flexibility of the Machiya.



fig. 4
Byōbu. (Japanese folden screen.)

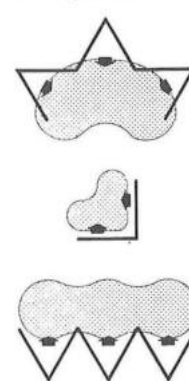


fig. 5
Using folden screen to accommodate various groups of people.

The history of the spatial development of the Japanese teahouse shows how this idea of enclosure has become more prominent. The first tearoom in Shoin-style was design very open towards the garden, orientated outwards, thus enhancing the connection between architecture and nature through all the senses, then with the introduction of the shukō-style the engawa formed the transition space (en) between the interior and the Shukō garden as the En allowed for more control of the relationship. Then Sen no Rikyū introduced the enclosed teahouse (wabi-suki) with restricted view to nature. Thus by creating a space that is orientated inward one has to focus on introspection and contemplation. An introvert and intimate space that gives one space for meditation: connecting with the all-encompassing structure (incl. nature) via the spirit.

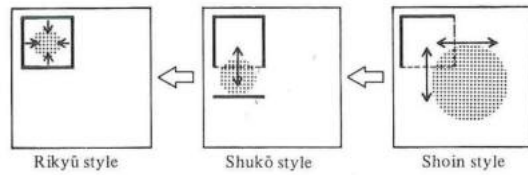


fig. 7
Spatial development of tea room from open to close.

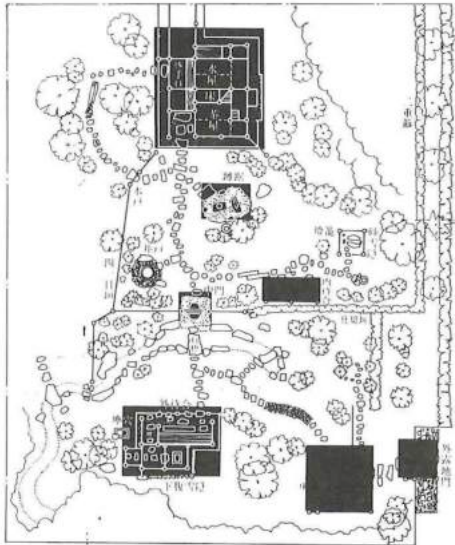


fig. 6
Tea house plan with double layer roji.

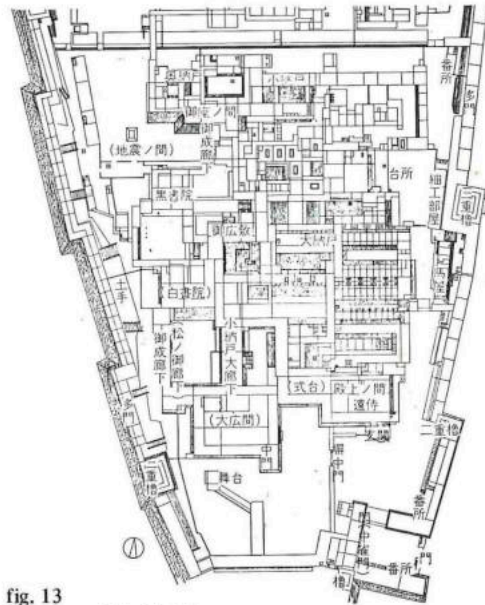


fig. 13
Honmaru, Edo Castle.
Omote (front) and Naka-oku-densha (middle inner rooms). According to Akira Naito.

Within the purely additive system of the layout of spaces the En serves as the corridor and main access to individual rooms in the machiya. The tori-niwa and the engawa are both architectural spaces that enclose (divide) the inner space(s). They function as layers of space that are loaded with symbolic hierarchical value. Is the openness of the Japanese house is only an illusion? There clearly are different boundaries and spatial layers that wrap around the house.

As for Japanese aestheticss "Beauty should not be displayed and pronounced but should be hidden humbly behind the surface of things, to be discovered and brought forth by the beholder himself" (Chang, 1984, p.40). This is also true for the Japanese spatial concept. Japanese architecture is not monumental. Its first impression is humble and invites one to experience, discover the spaces for one self physically and sensually. "Thus a sequential experience is brought to bear in perceiving space and thence in appreciating the beauty of space" (Chang, 1984, p.40).

Time-space experience

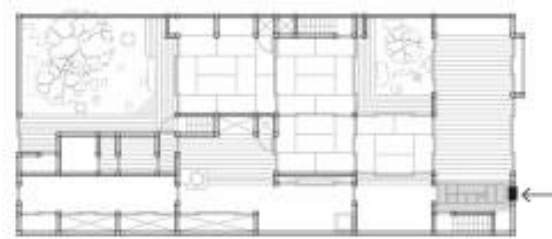
"Time and space are separate dimensions, but two sides of a coin, invisibly coupled. If one is preconditioned by nature or modified by man, the other is affected" (Nitschke, 1993, p.33). As I have mentioned Japan is mainly influenced by eternity philosophies, believing one has many lives, thus an endless amount of time and emphasizing the here and now: rest is a quality of space. In contrast to other philosophies, which consider this to be the only life with limited time and where, the there and then are stressed: movement is a quality of time (Nitschke, 1993, p.34, 35).

"The size of experiential space is not so determined by its physical dimensions, but by our concrete experience of the quality and quantity of the events contained in it". Japanese have developed ingenious techniques for enlarging limited space as they live in a relative small country with a large population. The tendency is to expand space by increasing experiential time through the reduction of speed and the obstruction of movement. Slowing down time creates more space as compressing space creates more time (Nitschke, 1993, p.34, 35).

In his essay "Passage to a poet's hermitage", G. Nitschke describes 12 architectural techniques that manipulate one's sense of time and space. Shisen-do is a Buddhist temple and according to Nitschke the passage from entrance, through garden and house, leads to a sacred place of silence, a place that invites true rest and induces insight. Interestingly enough these elements can all be identified within the machiya will be it on a smaller scale. In short the following architectural methods and their presence in the machiya.

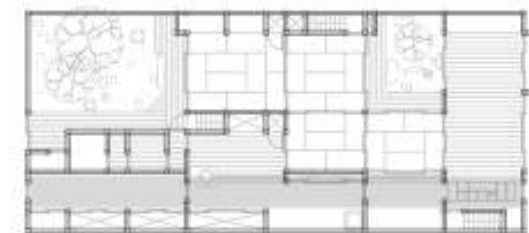
(Nitschke, 1993, p.37-43).

1. **THE ENTRANCE** | The small fragile gate manipulates one's sense of time and space. A conscious technique to enlarge one's concrete experience of an actually small space. What one wants to enlarge, one first reduces experientially. Even though this gate has adequate headroom, its feeling is more that of a nijiri-guchi, the well-known 3-by-3-foot miniature entrances to Japanese teahouses. We feel as if we are bowing to enter Shisen-do. The entrance of the machiya has the same quality and effect.



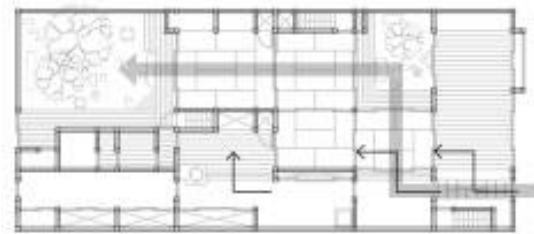
1. THE ENTRANCE

2. **THE STRAIT PATH** | A dark, cool, moist, long narrow path; the transition between public-private. With little visual stimulus from either side and no visible goal. In this "tunnel" we tend to speed up; thus greater speed unconsciously suggests greater distance covered over a given time. Secondly, boredom is experienced; time is perceived to be longer than clock-time. This straight passageway is the shortest, but not necessarily the most pleasurable or most exciting connection between two places. The corridor (tôri-niwa) of the machiya has the somewhat the same effect, as it is high and narrow and neither a visible is goal. However it may not be as monotone as the path that is bordered only by a bamboo hedge, on the right side of the tôri-niwa a variety of spaces are connected, these present options that trigger one to react; change direction, slowdown etc., so the effect of "boredom" is less present here.



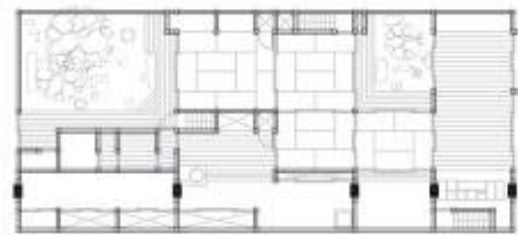
2. THE STRAIGHT PATH

3. THE TURN AND STOP | This turn; a consciously created detour, the beginning and the end of our journey are set experientially farther apart. The turn is sudden; tempting us to move up the steps, there we enter a small, lighter, open space in front of a second gate. A space to stand still as we are slightly tired from the climb. The more stops on our passage, the longer it seems to take. In the machiya the turns are situated between the tori-niwa and the elevated tatami-rooms, both spaces have a different atmosphere due to the adapted dimensions, materials etc. but the turn is not as effective because of the scale of the house. However after turning into the tatami-room one is initiated to stop.



3. THE TURN & A STOP

4. THE REPETITION | On our trip to the Shisen-do building, we actually arrive at our destination several times; we arrive in stages. Finding ourselves suddenly in front of an entrance gate we are experientially taken back to the situation we encountered at the first gate. Now we enter a second time, but in a different spirit. The only architectural elements of repetition that are comparable to the gates of Shisen-do, as thresholds, are the doors (with noren) in the tori-niwa. However I think that more space and a greater contrast in stimuli are necessary for the "repetition" to have this effect on our experience.



4. THE REPETITION

5. THE OPPOSITE | By passing through this second gate, we enter the semi-private realm. Here is a first view of our destination. This empty, dry, front garden, under the open sky, is in great contrast to the passageway. Along the route physical contrasts are alternated in carefully considered doses and proportions: openness and enclosure, length and breadth, light and shade, moisture and dryness. As elaborately discussed there are many opposites present in the machiya that resemble this.



5. THE OPPOSITE

6. THE CURVED PATH | Also the short, open, curved path made of natural steppingstones is in contrast to the previous long, narrowly framed path. Secondly, pace is induced by an abundance of interesting detail and the focus on where to step next. The stepping stones in the first hallway of the tori-niwa have this effect, as do those in the patio-gardens.



6. THE CURVED PATH

7. THE ENTRANCE SPACE (GENKAN) | Next comes the true entry, the actual genkan, literally “dark barrier”. We find ourselves in a very small, dark, cave-like space. Paved by cut stones in a geometric pattern, the surface quality is quite different from the ground in the front garden. Just before arrival our expectations suddenly seem to be physically frustrated. Will we ever get there? The entrance hallway is also very dark and may confuse a visitor but because there is no space between entrance door and the entrance space it does not effect the sense of time and because the *machiya* is located in a dens area one might expect the entrance to be small and dark, due to lack of space.



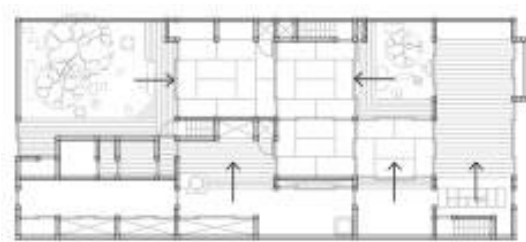
7. THE “GENKAN” THE ENTRANCE SPACE

8. TAKING OFF OUR SHOES | In this space we enact a socio-physical ritual: taking off our shoes, and with bear feet step up onto tatami flooring. The direct contact of our soles with the gentle ripples of the straw mats is a completely new sensation, and therefore an enlargement of our experience of space. As mentioned before the *machiya* also possesses architectural elements the encourage this socio-psychological ritual.



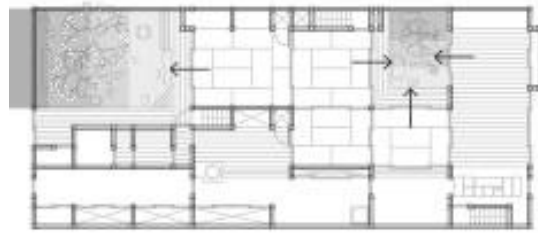
8. TAKING OFF OUR SHOES

9. THE STEP (SHIKIDAI) | A Japanese phrase inviting entrance. To be forced to take one or two steps up on entering the innermost realm is another technique to alter, enrich and thus enlarge our perception of space. It creates a feeling of levitation that stays with us as we enter the sitting area. Walking and perhaps finally sitting inside, perceptually we are floating as if on a magic carpet. Similarly present in the *machiya*.



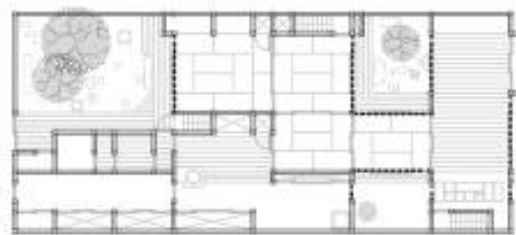
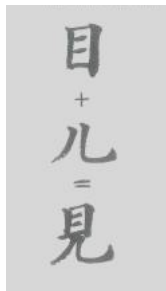
9. THE “SHIKIDAI” | THE STEP “AGATTE KUDASAI” | “STEP UP, PLEASE”

10. THE DESTINATION WITH A VIEW, THE USE OF "BORROWED SCENERY" | After passing through a dim tatami space, we walk into the most private zone. This view is special; we face a magnificent picture painted in three dimensions. A finely raked sand surface in glaring light is bounded by mountain-shaped azalea bushes in the foreground. Real mountain scenery with maple and persimmon trees can be seen in the distance. The use of "borrowed scenery" is a technique to enlarge our experience of space; by delicately framing this vista on top, bottom, sides and in depth, and by "borrowing" distant scenery as the backdrop of the painting, our feeling of the size of the view space is greatly increased. In the machiya the destination with a view is experienced on two levels; less private, special and grand via the reception-room viewing the small patio garden and at the back of the house from the largest and most important and private room one gets the special view of the bigger patio- garden. Nevertheless a borrowed scenery is present in a smaller scale, as layers of garden elements, plants etc. create depth in the confined garden spaces. Unfortunately the location of the machiya in the city-grid of Kyoto does not allow views of distant natural surroundings (like mount Fuji) to be part of the garden.



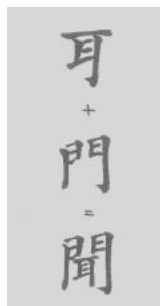
10. THE DESTINATION WITH A VIEW
THE USE OF "SHAKKEI": "BORROWED SCENERY"

11. SIGHT | The size and quality of space is not only visual. It can also be manipulated with sound, as well as by changes in moisture and temperature, texture and smell. When "seeing" space we are active, we move, not only our eyes but often our whole body. Phenomenologically, color or texture or configuration sticks to its physical source. With our eyes we move towards it. In German etymology words about vision are closely related to words about movement. Similarly, the Sino-Japanese ideogram meaning "to see" portrays an eye atop two legs. As we know the visual connection between the machiya and building is definitely present.



11. SIGHT

12. SOUND | When "hearing" space, however we are physically passive. Sound comes towards us, leaving its source to fill space. It presents itself in a temporal succession. Sound has its own activity, it pursues us. German words connected with hearing are etymologically related to words denoting passivity, submission or following. This passivity it equally well pictured by the Sino-Japanese ideogram for "hearing": an ear under a gate. With our eyes we grasp, then conquer space actively and selectively. Through our ears we are grasped or moved by space passively. It is easy to look away, but difficult to plug our ears. Thus aural pollution is more offensive than visual pollution. Similarly the qualities of sound have been identified within the machiya.



12. SOUND

There is an additional technique used in Shisen-do which is not number sequentially because it is an esoteric one. At our destination we are physically induced to pause, to be still, to meditate. The choice is ours to fall asleep or to become more aware. In ordinary life and work, analogous to the approach, awareness is focused on specific objects. But concentration tires, our energies are exhausted. In meditation we do the opposite; we let go, widening our awareness more and more. Meditation implies unlimited or “choice less awareness.” First objects slowly disappear, and with the objects the (perceiving) subject also disappears. We are made aware of awareness, which is empty, the ultimate extension of space. It plugs us into the ultimate layer of “our” energy. As a mystic, Ishikawa Jozan knew that what is to be empty must first be filled. All meditation techniques are based on this principle. Ultimately, only a place inducing such experience (or better, non-experience) is sacred. It gives us a taste of who we are.



MEDITATION | Sitting in Shisen-do, our sense of depth of space is aurally structured. We are invited to return to nature by the constant whispering splashes of a nearby waterfall and the occasional bangs of a distant *shishi-odoshi* (deer scare). With the rhythmical sounds created by the bamboo seesaw hitting a stone and at the same time discharging its water, one is tempted to step down into this garden and be lost in its delights. One is here reminded of an old Zen saying: “Not the stillness in stillness, but the stillness in movement is the true stillness.” I cannot say if I or anybody else could experience this within the *machiya*, as I have never been there. I can only guess that it might be possible, because from what I have found in this research the *machiya* possesses many qualities that create an atmosphere of sacredness.

The art of tea | The example of sequential experience

The Japanese tearoom is quite frequently associated with the traditional Japanese wooden architecture. Although it is often the smallest space, it is considered to be the most significant, as it represents many Japanese philosophical notions and their translation to architectural elements. It is a unique space with an ambiguous atmosphere of tranquillity and simultaneously “a certain spiritual and psychological tension” (Fujimori, 2007, p.7).

The Zen Buddhists introduced the ritual of tea drinking into Japan. As we have previously noted, the Buddhist concept of “viewing all things in ‘one thought’ requires a great mental effort. The Japanese tea ceremony requires the four spiritual elements of harmony, reverence, purity and tranquillity to mentally prepare you to achieve enlightenment (Chang, 1984, p.26). Furthermore the Taoist concept of emptiness together with Buddhist concept of impermanence defined the specific spatial idea of the Japanese tearoom: *suki-ya* (Chang, 1984, p.23). In the tearoom the Confucian principle of equality is present creating the conditions where one is free to engage in a respectful conversation (Chang, 1984, p.32).

Firstly you encounter a small **waiting space**, a lavatory and a gate. All these elements imply impermanence; the changeable weather is perceivable from under the overhanging roof, there is a symbolic reference to the process of the human body and **the entrance** marks the constant passing of visitors (Chang, 1984, p.31).

When passing through the garden over a natural **path of step stones**, the process of purification and seclusion has begun. One passes through two gardens (*Roji*), an outer and an inner, to get to the teahouse. They serve as spatial layers that are part of a progression of spaces that become smaller and more intimate. All the objects in the garden are there to purify oneself physically and mentally in preparation of the tea ceremony. It is a passage and at the same time symbolises the isolation within the essence of nature (Chang, 1984, p.31). Accordingly, the route to the teahouse is never a direct one, the destination seems to be hidden. The movement from one stepping-stone to another requires concentration, the first effort in connecting oneself to nature (Sack, 2006, p.112). The **water basin** symbolises purification and the **stone lanterns** symbolize the mental discipline necessary to realize selflessness. The overall atmosphere of the tea gardens triggers all the senses, generally aiming for a *Wabi* state of tranquil mind. Depending on the garden design, certain sensations, like for example loneliness or tranquillity, are accentuated when one passes through the garden (Chang, 1984, p.31). The route to the teahouse is like "a passage to a house deep inside the mountain" (Chang, 1984, p.50).

Once you have arrived at the **teahouse** the richness of nature is recognizable as the exterior of the house is simple, it almost appears improvised, and the humble entrance (*nijiri-guchi*) is hidden behind a moveable wooden plank (Sack, 2006, p.114). When entering, a symbolic act of humility is suggested, as you bend to enter the tea room through **the low and small entrance**. Inside the atmosphere of **simplicity** and the purity eliminates hierarchical thinking and creates harmony. Everybody and everything inside is equal allowing us to focus on the intrinsic (Koren, 2008, p.61). The spatial elements in the room and the objects of the tea ceremony intend to cleanse your **six senses** so that you can unite mentally with emptiness. The scent of incense and the sensation of the movement of its smoke. The sound of boiling water, the reselling of a kimono and the muffled sounds of the surrounding nature. The visual sense of the *Tokonoma* (an alcove), with a poem or painting that, which are altered depending on the season and the specific guests. The sense of touch by sitting on the soft *tatami* and by handling the tea utensils and the cup.

The unique objects are ordinary and only obtain a state of existence or say *wabi-sabi* aesthetic in the moment of appreciation (Koren, 2008, p.61). Furthermore the interior is plain and simple in function and form, it symbolises absolute emptiness with the exception of the objects that are placed there temporarily. The aesthetics of **asymmetry** is applied as "true beauty is discovered only when one mentally completes the incomplete" (Chang, 1984, p.32). Sometimes there is a simple window opening in the wall that metaphorically can be perceived as "an intellectual breakthrough" (Sack, 2006, p.114). All the individual elements are perfected to a harmonious unity. The focus is on the process through which perfection is pursued not the perfection itself. The **sequential** processes and experiences evolving around the art of tea emphasize the importance of sequential space for the Japanese conception of space (Chang, 1984, p.32). All the elements that are part of the tea ritual embody the Japanese aesthetic way of life. The art of tea aims to connect the natural and spiritual world.

Reasoning | Balancing between intuition and ratio

The Chinese philosopher Confucius created the moral, philosophical system of Confucianism. The Confucian system introduced a rational and social order, which was based on rigorous ethical rules. In combination with the structure of the Japanese society formed a static society that regulated and classified everything. A social hierarchical system and the focus on filial piety; respect for one's parent's, elders and ancestors, was introduced in Japan. As a result the Society was divided in social classes and importance of ancestor worship increased. Since then the Japanese house has a place for ancestor worship (Chang, 1984, p.22).

This Confucian static principle is however opposing to the existing Japanese ways of thought, based on philosophies of impermanence and that things live and exist in harmony and in pulse of nature. Confucians believe that reality exists and that the universe can only be understood through human reason. Buddhism and Taoism however is based on the concept that existence came out of, and returned to, non-existence and that meditation and insight are the path to achieving enlightenment, or say absolute reason. The Confucian pervasive hierarchical system definitely has had influence on the spatial configuration of Japanese architecture (Chang, 1984, p.23).

This is an interesting contradiction among the philosophical worldviews of Japan that has become evident as this research progressed. The hierarchical system created an order in the Japanese social structure that subsequently inevitably influenced the design and definition of space and spatial relations in their architecture.

Orientation | From the ordinary to the sacred

It seems impossible to understand the organization of areas or their hierarchy. Rooms are simply placed side by side, they are not all the same size but there is no furniture to indicate a purpose. The codes for deciphering the areas are radically different because in Japan space is not defined in the same way as in Europe. Japan has a culture of symbolism, "coded language", only when you decipher these codes you can understand the meaning or purpose of what you observe and what to do next (Kerr, 2016, p.187).

Ke and Hare | The axis from east to west

On the east side of the house is the Ke, indicating the ordinary living spaces for everyday functions such as the kitchen and the adjacent area that is used for dining. On the west side of the house is the HARE, indicating the special area's for noble functions such as the reception spaces, the space with the tokonoma or altar for the ancestors or the tea room. These codes derived from Buddhist beliefs that the devil comes from the northeast and that paradise lies westward.

Oku | The axis from the street to the back of the plot

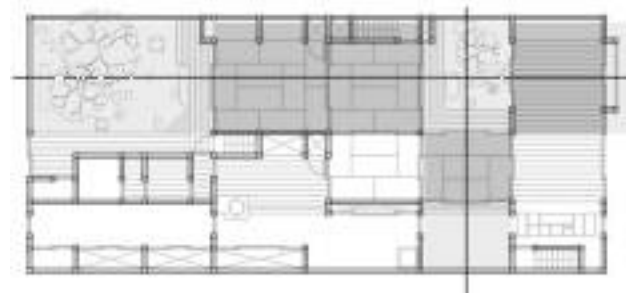
Perpendicular to the east-west axis is an axis of depth Oku; the further away from the street the greater the symbolic value of the place. The concept of oku refers to the transition from public external spaces to private internal spaces within a building. It is a route or direction from the entrance into a deep innermost space, a spatial quality created by the sequential layers with varying boundaries and a sense of continuity, connecting the experience of time to physical space. Comparable with the tearoom, a space where all those who are present are equal and there is an atmosphere of purity (Chang, 1984, p.38). "Somewhere deep inside" as far away from the outer world. Oku does not only express a spatial relation, but also suggests an opinion, as oku also refers to something secret, incomprehensible and unattainable (Chang, 1984, p.14). This axis measures the importance of visitors, from shop costumers to respected important houseguests. According to the distance from the street the area changes its nature, each room crossed, each screen opened and then closed marks a progression. In the machiya the genkan-niwa, the reception tatami room and the small patio-garden (Naka-niwa/ Tsubo-niwa) form a buffer zone that is full of symbolic codes those define the transition between the shop and living quarters. The Kura, storage house, is located at the rear of the plot, the part furthest away from the street and therefore the best protected. Oku suggests a scale of value for rooms that are hardly distinguishable from one another and assign importance to the person that is received. The largest room of the house is for people of the highest rank, it allows for contemplation of the garden. It is the outcome of the progression, the ultimate value.



Oku | transition from public to private

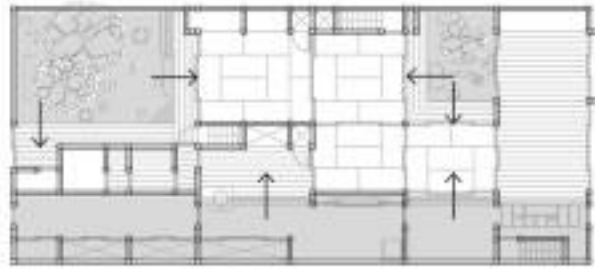
In a Japanese home the principle of Yin-Yang regulates the order of five elements in this system to define certain ideal positions of for example the heart of the house. Likewise directional considerations for the placing of architectural elements (such as walls) were based on sun-earth configurations. However in the process of assimilation some Chinese concepts of Geomancy were adjusted to Japanese philosophies (Chang, 1984, p.19). Geomancy has become an important method for retaining essential cultural traditional beliefs that have had a profound influence on the making of space. The sukiya-style architecture is often designed in relation to the sun orientation. The orientation and the layout of machiya are however confined to the orthogonal grid of the city.

Additionally in the layout of the Japanese house clear boundaries or thresholds between times and spaces are defined by architectural elements and the Japanese people have grown to follow the accompanying rules. The genkan (foyer) for example are always present in a Japanese house, even if there is very little space to spare, as its distinct function is to store shoes. There is always a reception room as there is a high esteem for guests. Also the hallway, the engawa (veranda) and the tokonoma are always evidently delineating spaces (Kerr, 2016, p.124-187). The focus on filial piety ensured that there is always an extra space for the retired parents or grandparents in the traditional Japanese house.



It is placed in linear sequence, becoming part of the building

Additionally there are subtle indications i.e. the floor, ceiling and other elements that define the hierarchy of the space. Once tatami was introduced the Japanese social order definitely transformed; tatami enabled the design of rooms with a lower and higher or raised part, distinguishing the different hierarchical seats. The height difference is subtle, about 10 centimetres, but it has had an unmistakable influence on the senses creating a certain mystique. In a space with a flat floor other architectural elements define the hierarchy of the room. The tokonoma, or in absence, the equivalent, the window connected to the outdoors, defines the "upper" seat in a room and the entrance the "lower" seat. The height of the ceiling usually goes up when the floor goes up, however if the floor is level the height variation of the ceiling will always indicate the order of the space. Also the textile tatami edges define clear boundaries in a space and their different patterns indicate the status. The Japanese have mastered the psychological manipulation of power through the use of simple means. Unlike a boundless wooden floor, the tatami with clearly marked edges immediately tells you the measurements and proportions of the room and the hierarchical subdivision; "there's an exact sense of space" and the tatami borders determines "compulsory" behavioural routines (Kerr, 2016, p.124-187).



A step up | transition from tōri-niwa/ niwa (with high ceiling or non) to tatami spaces (with low ceiling)

The traditional way of life in Japan

Besides this there are also certain architectural principles that originate specifically from traditional Japanese culture and tradition and therefore extra care should be taken in deciding whether they are applicable in or translatable to a new context. Firstly the moral principle that affects the way of life of the Japanese family that is worth mentioning in relation to the conception of space of the traditional Japanese house (machiya) is the disregard of the individual.

Referring back to the subjective realm of Ma. Here ma can also indicate the importance in the overall society this is best revealed in the common terms of "human being" and "the world". The literal translation of Human Being is "person-place" or "person-in-relationship". This is also valid for the word "world" which is literally translated to "world-place" or "world-in-relationship". Mankind only exists in the context of 'place'. We are only a component of a bigger whole, part of an environment (nature). Accordingly, to Buddhist belief, the Japanese suggest this 'whole' is the measure for everything (instead of us, humans). Traditionally there was no Japanese word corresponding with the western sense of 'individuality' or 'privacy' (Nitschke, 1993, p.57).

The importance of collectiveness in Japan is additionally reinforced by the notion that everybody needs a social 'place' and that one's identity is determined by their relation to other humans and nature and not by their individual characteristics. The traditional thought is that a person is only a separate fragment of a larger whole thus the Japanese society developed characteristics of self-denial and harmony, with a strong identity for the group and a common purpose. This in contrast to the Western Society's self-assertion, expressing one's own importance, wishes, needs, opinions etcetera, resulting in an endless conflict of individual interests (Nitschke, 1993, p.58).

The Buddhist believe that ultimate salvation is to be realized through self-annihilation and since the Japanese recognize us humans being part of a whole; collective living is regarded a standard in Japan. The sliding doors in the traditional Japanese house restrict the amount of privacy for the individual family members. Naturally "a strict system of etiquette and unusual tidiness" developed to sustain a comfortable living environment (Engel, 1991, p.230).

Intriguingly enough the Japanese have mastered the ability to manipulate nature within the limits of the existing technology. So although they have this general notion of collectively and respect for nature they have not restrained themselves or say entirely escaped the human desire to control nature. The examples shown before such as the technique of borrowed scenery, the art of flower arrangement (ikebana) visible in the tokonoma and the art of bonsai or the "tiny box gardens", where a garden is compressed in a (portable) space, show that the Japanese have become very skilled in controlling and representing nature. The control is also evident expressed through the technique of framing, as it controls the direction and specific angle and height that one should look at a view (garden) or composition (flower arrangement in the tokonoma). Contrary to western customs, where a flower vase is often placed in the centre of a table to be viewed from all directions, heights and angles, thus giving the observer the freedom of choice.



Secondly is the Japanese custom of living on floor level. The floor is an important Japanese architectural element, as it is interconnected to many, native cultural behaviours. In Japan it is custom to sit and sleep (live) on the floor and therefore, for hygienic reasons, it is also tradition to take off shoes before entering this part of a building. Architecturally this custom has had interesting consequences; first of all when life mainly takes place on the floor there is one prevailing eye-level, resulting in specific dimensions of the space and all interior elements are orientated for a sitting posture on the floor. Spatially the dimensions of the room are not experienced as “comfortable” when standing, so sitting is encourage by these dimensions. Furthermore this habit contributed to the development of tatami, as a sustainable and comfortable material to sit and lie down on and the unique lightweight movable Japanese furniture. The scarcity of furniture and the multi-functionality of the Japanese room permit the room size to be smaller and the development of the necessary and deep (90mm) storage spaces/ closets that are present in every traditional Japanese house. Possibly the Japanese have developed a different perspective on the act of walking, because walking on bare feet or socks is much more tactile and you have to be careful not to slide. Moreover seated on the floor the eyes are closer to the (passing) feet, giving again another perspective on the subtle movements of the feet (Kerr, 2016, p.124-187). I can imagine that particularly the sense of sound has more emphasis with in the traditional Japanese house resulting in habitual patterns such as walking and moving slowly, and treading lightly and quietly.



Conclusion | A summary

The idea of universal unity is reflected in traditional Japanese architecture in complex way of layering. Because of the complexity I have noticed that is impossible for me at this stage in my life to fully comprehend the discussed elusive and profound notions let alone explain is clearly. That is why the architectural qualities (elements and methods) that I have found related to nature's phenomena (ephemerality, emptiness and ambivalence) often overlap or are repeated, as it is not always clear for me in which specific realm the findings lie. I can imagine that really comprehending these notions requires intense studying but essentially should be experienced. Unfortunately that is not something I have been able to enforce or influence for the purpose of writing this research conclusion. However here is a humble attempt in presenting the findings on **how Japanese philosophy contributes to an architectural response to nature's phenomena, our spatial conception and experience, and our relationship with nature.**

The relation between man (architecture) and nature

I can conclude that ultimately one of the core spiritual values derived from the Japanese philosophical universe is their relation with nature. By means of the applied research methods I have identified many qualities in the form of elements or methods (composition of elements) within traditional Japanese architecture that strengthen the relationship between man and nature, where architecture can serve as an effective means by connecting our inside world with the outside world. Traditional Japanese architecture achieves this connection in two ways. Firstly by creating a space that is orientated outwards, thus enhancing the connection between architecture and nature through all the senses a good example of this is the *machiya*. Or secondly by creating an introvert, closed space that gives one space for meditation; connecting with the all-encompassing structure (incl. nature) via the spirit, a good example of this in the *Sukiyā-style* teahouse. **I have identified the following architectural qualities (existing of elements and methods) within the traditional Japanese architecture that express the phenomena of *En*, or say connect man or architecture with nature, since architecture is an extension of the human body.**

Transitional spaces (*En*) and carefully designed **thresholds** create soft boundaries between inside and outside. They define the degree of separation and/ or connection. The following spaces are sufficient transactional spaces: the **corridor**, the **patio**, the **veranda** and the **entrance space**. I have discovered that the following architectural methods and elements are important in creating these spaces: building a lightweight wooden frame skeleton of **columns** in a **horizontal orientation**, with emphasis on the **roof** and its eaves, a **multiple-layered façade** with movable partitions or screens that succeed one another allowing the (manual) manipulation of this connection and thresholds such as height differences (**steps**) in floor level and doors (with *noren*) or gates.

Permeable layers can to a certain extent serve as a means of "dissolving" our perception of boundaries. A **low tech, passive climate-system** for example strengthens the connection between the natural surroundings and the indoor space. **Multiple façade layers** function as membranes with a varying degree of permeability, degrees of solidity and porousness. These elements allow or restrict the filtration of light, sound (noise) and air flow (ventilation) and protect the inhabitants from the weather conditions; precipitation (rain or snow), wind and temperature (heat or cold). They provide security or can control the physical access of people, dirt or animals including insects and enable or obstruct the vision or view.

Architecture can also create a relation with nature via a **multi-layered system of references to nature's diversity**. By reflecting its qualities such as variety of forms, surface structures composed of visual and/ or tactile (textures) patterns, natural materials, colours, dimensions with scales and proportions that relate to the size of the human body and the proportions of nature and nature's layers of depth, from general to detailed. Meetings between man and nature can also be initiated by **transferring elements** figuratively or literally from the outside to the inside, or vice versa, enhancing one's awareness of both zones at the same time.

Simplicity | Poetics of the ordinary

Finally when architecture is simplified by reduction and restriction to the essential it solicits the increase of sensory information and therefore it enables the existential experience of unity or connection, a “sense of being”. A minimalistic (empty) interior emphasizes the character of the exterior and the natural surroundings. It can intensify nature's presence and make its richness more obvious. Repetition is a method of abstraction that expresses simplicity. A life of **simplicity** also translates to the notion that humans should “tread lightly” on the planet this translates to a lightweight building structure that has a minimal impact on or contact with the ground.

Evidently The Japanese have carefully observed nature's properties and developed an accepting attitude towards nature's inexorable and inevitable aspects of constant change (ephemerality), emptiness and ambivalence. Awareness these phenomena increases the possibility that an observer will experience the unity of nature and that one is an integral part of it.

Ephemerality | The impermanence of everything

Everything is impermanent and is constant evolving towards or devolving from nothingness. All things are imperfect and incomplete because they are constantly changing: “life is an interchanging and flowing experience”. Impermanence, imperfection and incompleteness are aesthetics of time. **I have identified the following qualities (existing of elements and methods) within the traditional Japanese architecture that express the phenomena of the aesthetics of time.**

Living with nature rather than fighting, conquering or mastering it is realized when architecture is vital. This means that a building can **adapt to nature's forces and the climatic circumstances**, that the interior and exterior are adjustable to the changing weather conditions. When addressing all the senses change from day to night and through all the seasons, (summer, autumn, winter, spring, wet and dry) can be perceived, as the temperature, sounds, smells and views change accordingly. This enhances the awareness of nature's forces, the benign as well as the destructive, because they are experienced more directly. Additionally this may expand one's sensitivity for the perception of natural change and possibly it also increases one's gratitude for the protection that architecture provides and one's respect for the power of nature. Becoming aware of one's privileges creates new opportunities in restoring our relationship with nature.

The use of **natural materials** is definitely important when it comes to perceiving change. Ephemeral untreated/ raw natural materials make the natural processes of change comprehensible, as they will show traces of weathering, deterioration and erosion from the natural elements such as water and wind and human usage. When architecture is designed flexible it can also relate to change. This translates to the design of flexible multifunctional and/ or temporal spaces.

Impermanence is the result of the constant interaction between imperfect and incomplete elements. The representation of incompleteness and **imperfection/ irregularity** provide another possibility for us human beings to connect with, and become part of our environment; namely through the interaction with our intellect (spirit). Natural harmony lies in striving for completion/ perfection resulting in the dynamic of change; **growth**. Anything can be added or removed without destroying the inclusive system. Symmetry does not occur in the natural world so **a-symmetry** in architecture recognizes growth and connection or relation. An a-symmetrical plan, organization of spaces, allows a building to grow “from parts to whole”. Then the position of spaces is determined by the desired relationship between the two spaces. Imperfect and incomplete (asymmetrical) elements invite the observer to actively participate in the experience, allowing the mind to complete the incomplete (psychological growth) and subsequently possibly one could momentarily experience “perfection”. The concept of ‘**the glimpse**’ also corresponds with this as a suggestion, minimally revealing the reality to provoke the mind to work, to imagine, to look into its memory, and to look beyond this reality. Imperfect and

incomplete elements contribute to an informal and approachable architecture because we can relate to it being imperfect individuals ourselves.

Emptiness | The origin/ end of everything

The Japanese concept of space is very complex and ambiguous. *Ma* is an aesthetic expression of both space and time. "Time and space are separate dimensions, but two sides of a coin, invisibly coupled. If one is preconditioned by nature or modified by man, the other is affected". The Japanese sense of space is much more existential and exceeds dimensions. It does not only contain the meaning of a place and the activities that take place within it, but also relates to the experienced emotions. *Ma* is A Japanese expression for emptiness; place, space, void, a spatial conception. **I have identified the following qualities (existing of elements and methods) within the traditional Japanese architecture that express the phenomena of *Ma*.**

Space can be expressed as a measurement of length (one-dimensional) or an area (two-dimensional) thus there are two methods for determining the size of a space within an architectural design. Three-dimensionally *Ma* expresses 'empty' space that is 'void' like. **Leaving space** in the layout of a design or between building and surrounding allows a continuous flow of space through and around the building. Furthermore empty space in a room or extra space within construction joints, allow change.

In the four-dimensional-realm *Ma* signifies abstract time without any suggestion of length, beginning or end. Here time is seen as a dimension of space: 'space in flow'. For our experience of 'place', time is essential. For me this concept is comparable to Einstein's theory in physics of the four-dimensional structure of 'spacetime'. The corresponding mathematical diagram (Minkowski-diagram) shows how the three dimensions of space fuse with the singular dimension of time into one continuum. It explains how time and space are experienced differently depending on the observers perspective. Architecture that enables a **sequential experience is a method of a time-structured experience of space.**

Often one remembers the mood one experienced when visiting a place much better than the actual details of the place itself. *Ma* used in the realm of experience expresses that the identity (*genius loci*) of a place is as much in the mind of the visitor as the physical characteristics. **The atmosphere** and the energy or spirit of a place, are subjective feelings giving a strong recognition to an experience. Architecture also falls within the realm of experience. The architect should implicitly intend to "**create a sense of place**" besides designing the structural elements. In architecture "the atmosphere" of a place represents this aspect.

Relativity | The ambivalent nature of everything

An important quality present in nature is the interaction between **opposites** that coexist, *yin* and *yang*, thus architecture that contrasts nature's variety, simultaneously refers to it, which is a paradox. Essentially there is no separation between two extremes and the coexisting opposites are equal.

Humans perpetually redefine their position and perspective relative to their direct surroundings and their overall place in the world. We inevitably need to do this in order to construct our self-awareness and - understanding and reassure ourselves of our existence. So everything we perceive is constantly identified and categorised as we look for a connection to a previous experience (memory) or try to define where new things fit in our context. Often we are unconsciously led by expectations that are based on social norms and values and also our daily routines prevent us from seeing ourselves in the wider context.

Experiencing **ambivalence or ambiguity** does however disrupt this process of categorisation and then a superficial observation is undermined. Creating ambivalence, in an architectural design can be a method of subverting ones expectations. Ambivalent spatial situations are strongly and directly experienced and consequently always trigger feelings, of for example curiosity or irritation. Allowing one to look closer, open up and ultimately allow our senses to become more aware. The goal is then to create the possibility of a free and unprejudiced observation so that one could experience true creativity, potential beauty and eventually universal connection. Ambivalence is about experiencing the connection between what at first seems to be obvious contradictions. As discussed before intellectual growth is possible through expansion of human perception. By liberating the observer from their habitual patterns their consciousness is expanded.

Japanese Buddhism uses *Ma* to express the notion of emptiness or the void. In Buddhism the void is not a concept that can be explained rationally. It is mystical expression of a personal and incommunicable experience or state of consciousness that one can only reach after practicing many years of meditation. This **'state of being': enlightenment**, with its paradoxical nature doesn't make sense for the normal individual in general so the void remains undefined for them. However there are methods that can assist the development towards the experience of this consciousness. *Ma* used in this context is therefore a notion resulting from a personal experience, "a notion beside and beyond the experience of our physical world".

As I mentioned in the introduction experiencing **the all-encompassing connection can be described as a state of being enlightened**. This happens when the mind (spirit) is activated through physical sensory experiences of a place. When architecture possesses certain qualities, among those that have been discussed, it can evoke an atmosphere of sacredness or say poetic profoundness.

As mentioned before architecture can function as an extension of the human body likewise it functions as an extension of the human mind (spirit). It is imaginable that when architecture is able to express or convey this concept of "emptiness" or "void" an atmosphere is created that transmits the tranquillity and greatness of its intricate and profound value. The emptiness is simultaneously the elusive space as its elusive purpose. Symbolically this can be realized within the design with literal empty space or the physical or psychological (memory) imprint of enclosed space that used to be: a delicate trace or faint evidence of the edges of nothingness. Here the emptiness is not necessarily a purpose but a means. Absence offers the possibility of creation and interaction. It is difficult to visualize emptiness as a possibility of transcending the limits of individual perception.

Although the atmosphere is also very difficult to understand solely through rational analysis as it is about more than only architectural elements and characteristics, there is some kind of **ephemeral quality** that contributes to this atmosphere. I believe that a general quality that contributes to an atmosphere of sacredness is ambivalence or in other words the balance between opposites because the principle of duality allows us to see the infinite in everything. I have found multiple contradictions to be present in the traditional Japanese architecture that are essential to the creation of a poetic place.

To be able to create a new reality or say to spark the experience of enlightenment the **balance** should simultaneously appeal to our **memory** as our **imagination**. Thus an ambivalent space has a balanced tension. There is an evident and expected quality that relates to our memory and there is an alienating quality that influences our feelings, causing irritation or confusion, a feeling of uncertainty about what is happening, intended or required, that triggers questions and discussion or initiates curiosity, a strong desire to know or learn something, that may spark our imagination, the ability of the mind to form new notions, images and thoughts. The right balance allows the observer to feel just comfortable enough to stay and gives one the feeling of being in control of forming the new reality. It is not forced, but evokes **inclusiveness**.

So *Ma*, in the subjective domain, serves as an exceptional unifying concept of Japanese awareness of the interaction between polarities of form and non-form, object and space, sounds and silence, action and non-action, person and society etc. ***Ma* embodies an all-encompassing connection, a continuum of time and space and our sense of place in it. It comprehends the events and experiences of our external reality and our internal mood. Here relativity introduces the possibility to rethink your physical and spiritual orientation in the world.**

Duality in architecture is realized by designing with contradictive **opposites**, altering predictable situations or elements with **elements of ambiguity** or **ambivalent spaces**. In transactional spaces (En) the ambiguity of "spatial belonging". It is about counterbalancing, relating and complementing. Spatial ambivalence is hard to explain or define as it appeals more to the intuition and ones degree of empathy.

Natural materials also possess an ambivalent quality, as there is always a contradiction between **materiality and immateriality**, at the same time giving one a sense of reality (space) and ephemerality (time). Immateriality can also be created by applying patterns, as a structure with continuity can create the expression of endlessness. Another method of creating the illusion of immateriality is by using reflection.

Perceiving only **part of a whole** can also provoke the mind to work, to imagine, to look into its memory, and to look beyond this reality. This can be done with the concept of the "the glimpse", by deliberately positioning

architectural layers, by shifting spaces relatively to one another or by attaching/inserting transitional spaces to create an indirect “zig-zag” route or sight-line.

Analysing traditional Japanese architecture has given me a surprising insight namely a new sense of light. I have discovered a new perspective: to design with **darkness**, instead of light and to see the value of shadow and understand how it can be managed (counterbalanced). Darkness can have a profound spiritual presence that could be associated with the discussed notion of void. The experience of a place depends as much on shadow as light; light makes material surfaces visible and shadows allow us to see their shapes. However light and darkness are elusive elements; only to become tangible when they come in contact with something that is materialised. They are a perfect illustration of ambivalence as they are simultaneously material and immaterial, forming a connection between the physical and the metaphysical world. Light and darkness are essential means for creating a certain atmosphere because they co-define with other **senses** such as, sound, smell and temperature, how we experience the world.

Light and shadow can make the texture of a material visible and increase its tactility. Furthermore reflection or absorption of light can emphasize the thermal qualities of a material. By manipulating the direction of light an architect can create focal points, elements that ask for a certain concentration, in a space, however this research has shown me that one can also create these focal points with darkness. Light and shadow are powerful tools to direct one's movement. As humans naturally move toward light, but this research has shown me that the value of darkness should not be underestimated. Light reveals the edges of a space as it illuminates the surfaces of the walls, ceiling and floor, however the shadows define and accentuate the boundaries and thus the shape of the space. Because of the depth of shadow this shape is more vague thus the space becomes less logic, possibly appears to be endless.

A unique quality of darkness is that it limits our field of view (spatial boundary) and at the same time darkness allows us to experience **infiniteness: boundless/ limitless space**. The illusion of limitless can be achieved with maximal permeability. With the arrangement of the undefined spaces and transitional spaces that create blurred boundaries the illusion of spatial flow is constructed. A boundary like a wall with a carefully designed opening (frame) can direct your view to boundless space. It enables the observer to experience defined and limitless space simultaneously. The repetition of elements is also a way to refer to endlessness and another form of emphasizing the continuity of space is the appliance of the same material on indoor and outdoor planes.

When **time** is visible it can spark our memory and imagination at the same time. Humans are naturally attracted to the things that show layers of time because it gives us a sense of security, that we are part of a natural timeless continuum, a bigger whole. Confrontation with the references of the natural elements of water, fire, air and earth allow us to have existential experience, as they possess the quality of timelessness, never-ending. They hold the memory of the earth and at the same time the eternal time of everything. Reminding us of a time-span that was before and goes beyond our mortal lives. However the cyclicity of the various succeeding phases of life (completion-inhabitation-destruction-void) does simultaneously give **timelessness** a measurable dimension that is necessary for us humans to relate to.

The design of Illusions is another method of creating a new reality, in this case the reality of connection to everything (in space and time). By hiding the reality logic, **manipulating one's perspective**. Like walls, fences are useful architectural elements to create perspective illusions, directing your movement and attention by means of hiding/ cutting off or focusing/ funnelling view. Creating the atmosphere of a secret place or “preparing you for a heightened experience”. Composing coincidences or elements of **synchronicity** in a design can also trigger one's consciousness and imagination and possibly contribute to the experience of enlightenment. Of course the occurrence of such an experience depends on the susceptibility or sensitivity of the observer. Creating subtle and unexpected similarities within a building can achieve this sense of wonder, as if there is a secret or a profoundness that only those who really look can see.

Sequential experience | a sensory experience of space, time and nature

Besides a certain configuration of opposites a certain **state of mind** is necessary for one to experience this harmony or unity. One must require a certain intellectual calmness. Only when the mind and spirit are “open” can one extend the spectrum of perception, and will new experiences and perhaps even knowledge be revealed. One has to prepare the mind through meditation for enlightenment.

Architecturally this can be realized by designing a **sequential step-by-step experience of spatial layers** “through intervals (ma) of spatial designation”. This means one has to clearly distinguish **places for movement or rest** and intentionally design elements that initiate a variety of movement and places for rest that are related to a unique view. For example by designing spatial obstacles that resemble the irregularity of life that one must overcome to get to another space.

It's about creating a design that is based on a **space-time experience**: a process of addition as one moves from one place to another place. Here the relation between spaces can solely be seen in its parts. When space is organized through an additive process it extends two-dimensionally in the horizontal plane and probably an a-symmetrical plan grows, suggesting a relationship beyond the defined spaces, as if the space is infinitely extendable in numerous directions. The slow process through synecdochic parts to an intangible whole, could be defined as an infinite flow, without beginning, middle or end in time. This structure of progression makes it very hard to see the whole until the end and even then I can imagine that cannot be fully comprehended, because it itself is part of the dynamic flow that is susceptible to change where one's mind (spirit) is allowed to participate and will contribute to growth. A flow of space is created by the architectural elements that indicate a change; “you are in one spot and it's not the same as what preceded it or what follows”. **The layering of all the mentioned elements and methods create the complexity that ensures the sensual experience of architecture.**

Spatial layering is eventually about **physically or physiologically enclosing or fencing space** (defining spatial territory). This can be done with the subtlest of elements because there is a psychological paradox concerning the lightness of boundaries. When a physical barrier is less permanent or solid (more transparent) and made of evanescent materials, the more serious we take it. You could say that boundaries are created in our mind and by a mood or attitude rather than with physical obstacles.

A humble and hidden architecture invites one to experience, discover the spaces for one self physically and sensually. “Thus a sequential experience is brought to bear in perceiving space and thence in appreciating the beauty of space”. This method allows one to create a core-space, **a destination** of the sequential experience. This centre can be an enclosed space, orientated inward where one can focus on introspection and contemplation. An introvert and intimate space that gives one space for meditation: connecting with the all-encompassing structure (incl. nature) can be realized via the spirit.

Finally I have identified several methods how one can influence this sequential time-space experience in an architectural design. “The size of experiential space is not so determined by its physical dimensions, but by our concrete experience of the quality and quantity of the events contained in it”. The tendency is to expand space by increasing experiential time through the reduction of speed and the obstruction of movement. Slowing down time creates more space as compressing space creates more time.

- What one wants to enlarge, one first reduces experientially. This is a conscious technique to enlarge one's concrete experience of an actually small space.
- **Little visual stimulus** from either side of a route and **no visible goal** simulates us to speed up. Greater speed unconsciously suggests greater distance covered over a given time. Secondly, boredom is experienced, time is perceived to be longer than clock-time.
- **Turns** (zig-zag's) in a route are consciously created detours, the beginning and the end of our journey are set experientially further apart.
- The more **stops** (places to rest) on a route, the longer it seems to take.
- **Repetition of thresholds** creates the illusion of arriving at a destination several times, in stages. Experientially one is taken back to the first situation that was encountered and in this second (similar) situation one is in a different spirit.
- **Physical contrasts** along the route that are alternated in carefully considered doses and proportions create the illusion that one continuously arrives at a destination but in reality there is a next space.
- **A curved path** made of natural steppingstones influences the speed of movement, pace is induced by an abundance of interesting detail and the focus on where to step next.

- Designing **the true entry**, as a literally “**dark barrier**” creates irritation. Just before arrival our expectations suddenly seem to be physically frustrated, will we ever get there?
- **A socio-physical ritual** such as taking off your shoes, and then with bare feet stepping up onto a different type of flooring generates a completely new sensation, and therefore an enlargement of our experience of space.
- Also to be forced to take one or two **steps up** on entering a space is another technique to alter, enrich and thus enlarge our perception of space.
- Finally after this sequential experience our mind is prepared for **a destination with a view**. With the use of “**borrowed scenery**” a technique to enlarge our experience of space by delicately **framing** this vista on top, bottom, sides and in depth, and by “borrowing” distant scenery as the backdrop **layers** of the view, our feeling of the size of the view space is greatly increased. At our destination we are physically induced to pause, to be still, maybe to meditate. The choice is ours to fall asleep or to become more aware.
- Designing with **balanced sensory elements** such as visual focal points and acoustic elements or barriers. The size and quality of space is not only visual. It can also be manipulated with **sound**, as well as by changes in moisture and **temperature**, **texture** and **smell**. When “seeing” space we are active, we move, not only our eyes but often our whole body. Phenomenologically, color or texture or configuration sticks to its physical source. When “hearing” space, however we are physically passive. Sound comes towards us, leaving its source to fill space. It presents itself in a temporal succession. Sound has its own activity, it pursues us. With our eyes we grasp, then conquer space actively and selectively. Through our ears we are grasped or moved by space passively. It is easy to look away, but difficult to plug our ears. The sense of depth of the space is visually and aurally structured. **We are invited to return to nature.**



Stage of Kiyomizu-dera Temple | Ultimate intimacy with nature

Reasoning | Balancing between intuition and ratio

Finally I have identified certain **architectural qualities that in my opinion can not be translated into a new context**, as they originate specifically from traditional Japanese culture and tradition. As stated in the introduction this question will eventually be answered more in depth at the final graduation presentation, as it is part of the design process to discover if and how these architectural qualities could be translated into a new context.

The interesting contradiction that I have found among the philosophical worldviews The Confucian hierarchical system and the human desire to control nature have inevitably influenced the design and definition of space and spatial relations in Traditional Japanese architecture. I wonder if a hierarchical division is relevant for the connection between man (architecture) and nature. Possibly it is even conflicting as an egalitarian atmosphere emphasizes that all things, including humans and nature, are equally and part of the same all-encompassing connection. Similarly the manipulation,

simulation and control of nature does not contribute to this end. Respect for nature starts with accepting its quality of uncontrollability.

The unique Japanese customs of living on floor level and removing their shoes before entering a space are interesting because they do enhance the sensitivity for new senses and enable more closeness to the earth (literally): nature. These rituals are a socio-psychological extension of the horizontal orientation of their architecture. So the question is whether specific rules and symbolic codes are translatable to a new context or maybe a new parallel should be developed.

Sensitivity for the essential

Possibly the Japanese have a predisposition when it comes to the awareness of nature's beauty. There is a focus within their cultural and philosophical heritage on the ephemerality of nature and its beauty is often noted. For example the Japanese have many terms for rain depending on the season. They naturally, possibly unconsciously, connect sentiments to aspects of daily life and have developed a sensitivity for the "essential" (Chang, 1984, p.7). The Japanese continuously make a conscious effort to capture the sense of beauty in the ordinary to avoid it becoming simply a routine. This is why I think researching the Japanese philosophy and Japanese traditional architecture was relevant. I think that in Japanese architecture one can experience sacredness without a monumental scale, because of the nature of *shibui*.