

**An Investigation into the Development of the Spatial Concept of the In-Between**

**Space in the Netherlands and Japan in the 20th Century**

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## **Preface**

During my studies at the Willem de Kooning academy in Rotterdam and Technical University of Delft, I developed a strong interest in alternative ways of living. For me, as a future architect, the users of a building and their needs have priority. To meet users' needs, (I think) it is required to rethink architecture and architectural elements and come up with new spatial concepts and alternative ways of living. I would like to do so.

For this reason, my fascination for Japanese Architecture arose. In Japan, many experimental living concepts are being designed and built. This reinterpretation of living and spaces, creating new typologies and configurations, intrigues me. When I started to analyse more buildings closely, I noticed that many architects use the concept of 'in-between spaces'. After some research, I found out that the notion of 'in-between spaces' is used a lot by different architects, not only in Japan but also in Europe. In this research, I would like to increase my understanding of the different perceptions on the 'in-between spaces' and why this is such an important concept for various architects and the spatial quality.

## 1. Introduction

Non-programmed spaces are found in every building, they help a person orient themselves in and outside a building. These spaces are so called 'in-between spaces'. It is a gradual transition from the public to private, inside and outside, city and building. The in-between concept is based on the bilateral relationship between two contradictory objects. "Every kind of definition has an in-between space, especially if the definitions are two opposites, then the in between space is more rich" argues Japanese architect Sou Fujimoto (2009, p. 20). It is like the silence between notes that make the music. The 'silence between' can be seen as the 'in-between spaces' in buildings, this metaphor shows the possible impact of these gradient spaces within architectural designs. This research reveals the potential of architectural in-between spaces.

The 'in-between space' concept is perceived differently by various architects. The concept is widely used in Japan and the Netherlands. However, renowned Japanese architect Kisho Kurokawa (1997) stated that there is an enormous difference between Western spaces and Japanese spaces. He argued that Western architecture is created to conquer nature, dividing interior from exterior, while Japanese architecture seeks to harmonise architecture and nature. Is this approach to spaces an outcome of the strongly rooted concept 'Ma' from the Japanese culture? The notion of 'Ma', is an ancient Japanese concept of the space between edges, between the beginning and the end (Matsumoto, 2020). This ancient principle of the in-between space has existed for a long time and have survived up to the present day (Klanten & Bolhoefer, 2011, p.6). However, Dutch architects have used this concept for more sociological grounds as a response to the Modernistic attitude towards buildings. Indeed, Herman Hertzberger stated that the space should think more about people (Roodhevel & Raats, 2013).

To divulge the potential of architectural in-between spaces this study investigates the place of in-between space in the discourse of architecture in the Netherlands and Japan. Kisho Kurokawa considers Japan and The Netherlands almost as opposites on how they make use of spaces and think about the role of architecture. This contradiction makes this comparison between the two countries even more relevant. The work of two Dutch and two Japanese architects are investigated. The Dutch architects are Aldo van Eyck (1918-1999) and Herman Hertzberger (1932) and Japanese architects are Kisho Kurokawa (1934-2007) and Sou Fujimoto (1971).

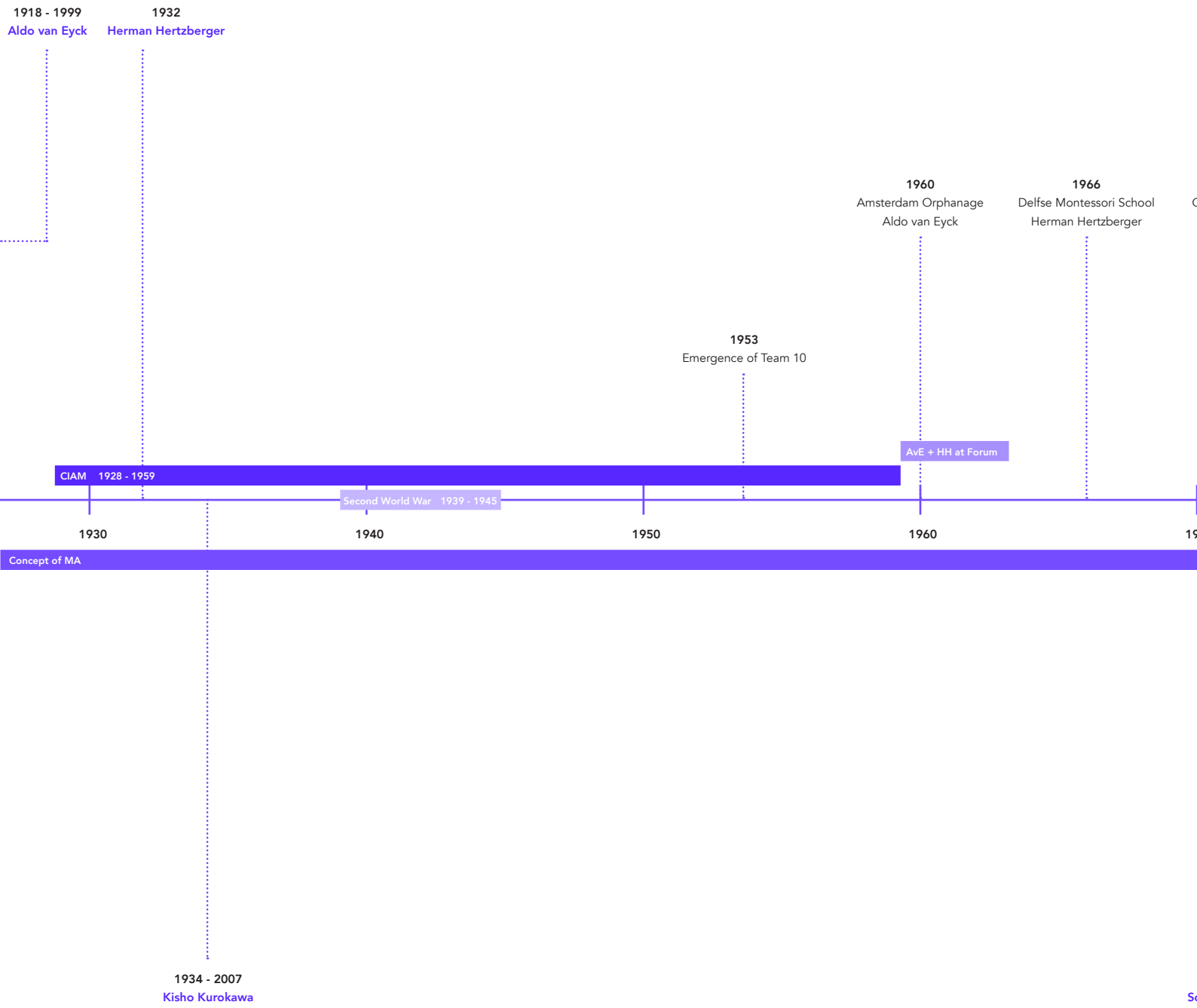
Each of the investigated architects has their own theory and uses their own definitions. The aim of this research is to deduce why the concepts emerged in the first place and how these have been translated spatially. Thereafter, the differences and similarities of the theories and how they emerged, are discussed. Lastly, it is examined whether connections can be distinguished between the Dutch and Japanese concepts. The result of this research is an overview of different interpretations of the in-between space that become more explicit by the case studies. The possibilities and qualities of in-between realms, presented in this study, should inspire fellow designers to also look at voids rather than volumes.

## 1.1 Method

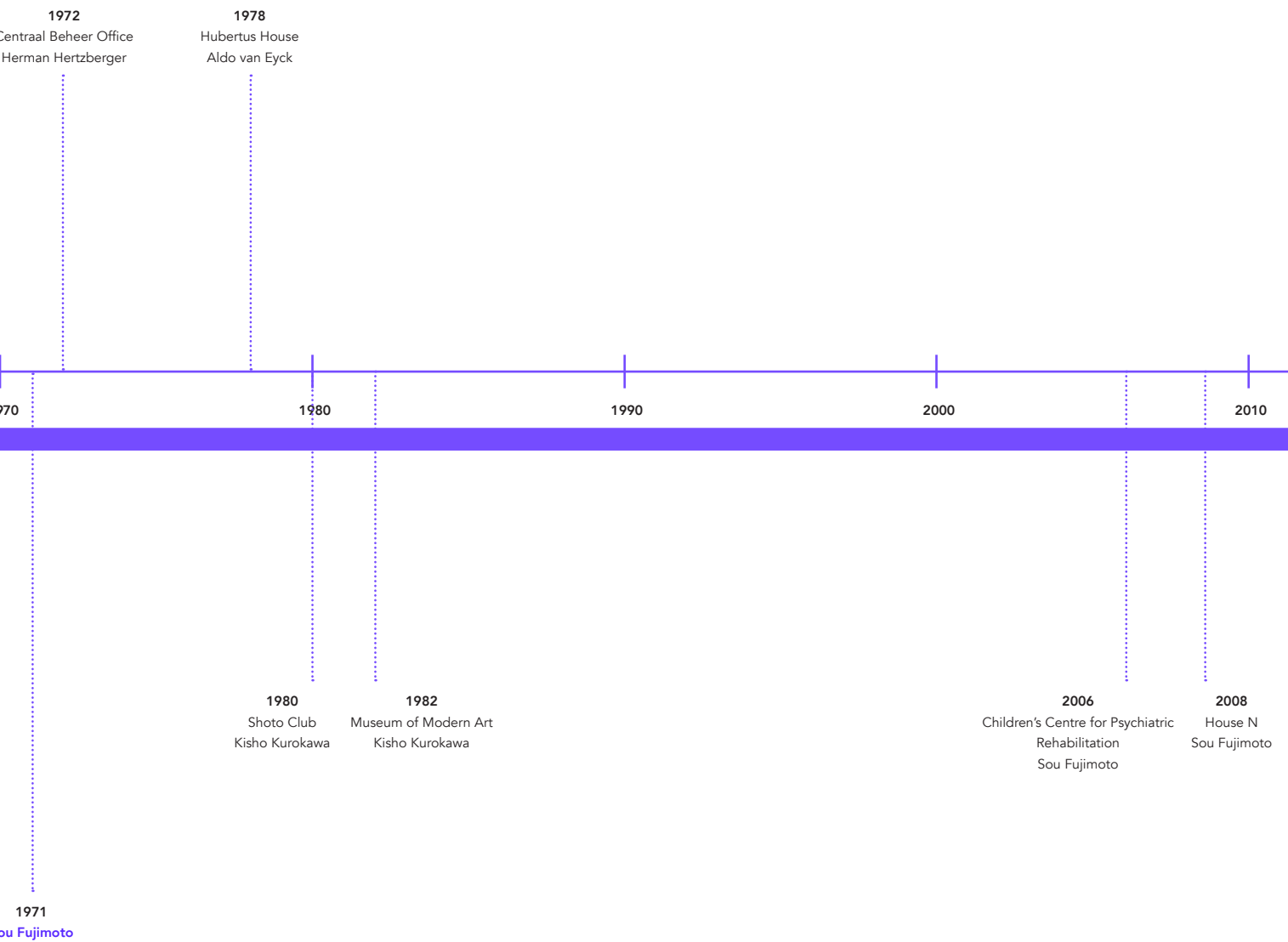
Various methods are used in this research to answer the research question; how did the 'in-between space' concept evolve in the 20th Century until now in Japan and the Netherlands? To structure this research, the two chapters are devoted to the investigation of both countries; 'The conception of the in-between space in the Netherlands' and 'The conception of the in-between space in Japan'. This research starts with a review of literature covering the context and investigating architects' implementation of the (frequently used) 'in-between space' concept. This shows why architects have started to use the concept in the first place. Secondly, the theories written in papers and books by the investigated architects are discussed in the literature review. To make the theories tangible for the reader, case studies are used to expose the concepts spatially. Per architect, two buildings are chosen. The buildings don't contain one common typology, they are chosen according to the clearest elaboration of the concepts. First, a description of the function of the building gives the reader an understanding of the context. Thereafter, the implemented spatial elements according to the theories are described and explained. The aim of this part of the investigation is to ensure that the reader has a thorough understanding of the 'in-between space' concept of each architect. After the literature review and the case studies, the differences and similarities between the concepts of the four architects from two countries are discussed in the third chapter. This chapter is the basis for the conclusion answer is given to the research question.

## 1.2 Timeline

### The Netherlands



### Japan



## **2. The conception of the in-between space in the Netherlands**

This chapter focusses on the implementation of the 'in-between space' concept in the Netherlands throughout the 20th century. Aldo van Eyck and Herman Hertzberger are two influential architects who wrote about the in-between space concept and implemented it in their designs. How did the concept Van Eyck and Hertzberger used emerge? What influenced Van Eyck and Hertzberger? What was the underlying idea? To answer these questions, various influential and fundamental events linked to the in-between space concept are investigated in this chapter. In addition, the theories are further elaborated by analysing case studies

### **2.1 CIAM**

In 1928, *Congres Internationaux d'Architecture Moderne* (CIAM) was formed by European modernist architects to discuss architectural questions and to spread ideas and theories about the modern movement. The members of CIAM strived for functionalism, efficiency and the application of new technologies. The two Dutch architects Jaap Bakema (1914-1981) and Aldo van Eyck (1918-1999) disagreed strongly with the rationalism of postwar functionalism and devoted themselves to developing a richer design approach. Bakema and Van Eyck shared several similar assumptions. One of these assumptions is that the relationship between things is as important as the things themselves (Strauven<sup>1</sup>, 1992, p. 48). During CIAM 9 In Aix-en-Provence in 1953 Van Eyck, Bakema and other young members were critical towards CIAM and shared their vision of the complex problems of postwar urban development, which resulted in the emergence of Team 10.

### **2.2 Team 10**

Team 10 was an architectural group that consisted of young European architects who reacted to the inefficiencies of the CIAM, their inability to respond to growth and change and the shift of focus from functionalism to the human scale. Alison and Peter Smithson (England), Aldo van Eyck (Netherlands), Jaap Bakema (Netherlands), Georges Candilis (France), Shadrach Woods (France) John Voelcker (England) and Jill and William Howell (England) were the founding members of Team 10. Although they did not share the same architectural language or design concepts, they did share 'the willingness to try to invent architectural language appropriate to the evolving present' according to Alison Smithson (Strauven, 1992, p. 54).

Ultimately, CIAM was dissolved by Team 10<sup>2</sup> in 1959 during the conference in Otterlo (Strauven, 1994, p. 279). Two different movements emerged from Team 10; Brutalism by the English members (Alison and Peter Smithson) and the Structuralism by the Dutch members (Aldo van Eyck and Jacob Bakema) (Baía, 2011).

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1 Francis Strauven has written an extensive monograph on Aldo van Eyck. Strauven studied Van Eyck's work and had many interviews with him about his career. Van Eyck's gave Strauven access to his sketches, photo's and written texts. His involvement in the process of makes this book, makes it a primary source.

2 Team 10 continued with their informal gatherings until the death of Bakema in 1981, who was the binding force of the team.

### 2.3 Forum

After CIAM was dissolved in 1959, Aldo van Eyck and Jaap Bakema were asked to become editors of the Dutch architecture magazine *Forum*<sup>3</sup> together with Dick Apon, Gerrit Boon, Joop Hardy and Jurriaan Schrofer. In addition, a newly graduated architect, Herman Hertzberger, also joined in the editorial board to represent the young generation of architects (Strauven, 1994, p. 341). Van Eyck and Bakema used *Forum* as a medium to share the ideas and developments of Team 10's meetings and to criticise decisions made by CIAM in the past (Strauven, 1994, p. 344). The start of the new editorial team who shared their ideas in the issues of this influential magazine, can be considered as the start of the structuralism movement.

The second issue they published, titled "Threshold and Encounter: The form of In-Betweenness" discussed the main problem of the post-war era. Also, the dissociation between individuality and collectivity was investigated and how the physical environment can restore this segregation (Merino del Río, 2019b, p. 212). Hertzberger's contribution to this issue was a reflection on different spatial configurations by repeating the same cell with matchboxes. The model (figure 1) emanates a certain monotony through the repetition. However, the linking boxes represent variation in housing and demands for unexpected encounters among the inhabitants (Merino del Río, 2019a, p. 216).

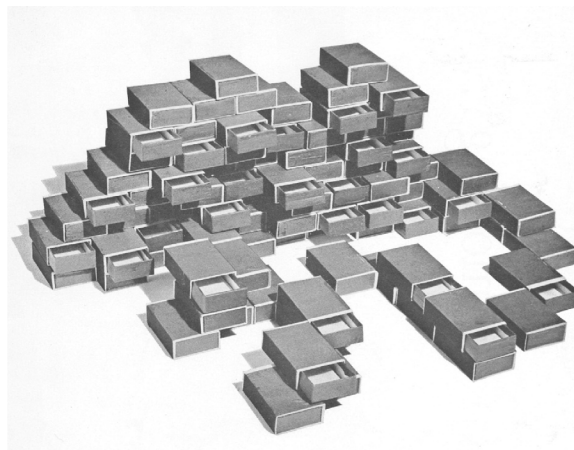


Figure 1. Study of configuration by Herman Hertzberger (Hertzberger, 1959)

Hertzberger was closely involved during the whole process of each publication and had great responsibility. The weekly meetings with the editorial board took place in the attic of his home in Amsterdam, where they edited and assembled the issues of the journal (McCarter<sup>4</sup>, 2015, p. 36). Hertzberger called his experience at *Forum* the equivalent of postgraduate education.

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<sup>3</sup> Forum journal started in 1946 managed by SUN in Nijmegen, thereafter Genootschap Architectura et Amicitia and Bond van Nederlandsche Architecten published the journal until 1998.

<sup>4</sup> Robert McCarter has written a monograph on Herman Hertzberger. He had been friends for 30 years with Herman and Johanna Hertzberger when he published the book in 2015. During this period, he received many 'lessons in architecture' from Hertzberger and therefore knows his buildings and theories almost as good as Hertzberger himself.

## 2.4 Aldo van Eyck

Aldo van Eyck has been an important figure in the post-war architecture discourse. His critique on Modernist architecture that alienated people from their environment made him search for the translation of the notion of relativity to get an understanding of society and a purpose and approach for architecture and urbanism (Lammers, 2012). He started this investigation when he became involved with CIAM in 1947 and it became a lifelong project, in which he also researched other disciplines like arts, science, philosophy, anthropology, history and ethnology (Strauven, 1994, p. 9). The “anthropological experience<sup>5</sup>” he gained during his studies on non-Western cultures and their vernacular architecture helped him to recognise and formulate the alienating problems of modern architecture (McCarter, 2015, p. 37).

Van Eyck struggled with the complexity of the problem. However, he did not want to simplify the model. Therefore the theory Van Eyck developed is considered as highly complex and possibly hard to understand.

## 2.5 Twin phenomena

Aldo van Eyck believed in the concept of relativity, which means, that reality cannot be considered as a whole, but exists of interrelationships of constituent elements (Strauven, 1994, p. 207). In this complex whole, relationships are as important as the elements themselves. Entities on their own have no meaning, but in relation to other entities they do. For instance, there is no small without large and no inside without outside (Lammers, 2012). Aldo van Eyck calls these relationships ‘twin phenomena<sup>6</sup>’.

Van Eyck dedicated himself to the exploration of relationships between polarities. In his twin phenomenon theory, two polarities that reconcile (e.g., inside and outside; simplicity and complexity; open and closed) result into a so called ‘in-between. Van Eyck defined this ‘in-between’ as a place where different things can meet and unite and argued that it is the common ground where conflicting polarities can again become twin phenomena (Strauven, 2007). The moment that the polarities merge, it constitutes a space filled with ambivalence, which responds to the ambivalent nature of men. The notion of in-between is the translation of the twin phenomena into architecture. It was Van Eyck's attempt to humanise architecture that people can relate to. His search for the relationship between men and the built environment resulted in the ambiguous in-between space. That gives buildings the opportunity to breathe, just like people.

## 2.6 Case studies Aldo van Eyck

The case studies chosen for Aldo van Eyck are the Orphanage and the Hubertus house. Both buildings were built in Amsterdam, the Netherlands.

### 2.6.1 The Orphanage

The Orphanage (figure 2 and 3) is built in 1960 in Amsterdam. The building is a house for approximately 125 children, between a few months and 20 years old. Those who were temporarily unprotected, stayed at the Orphanage for a few weeks, whilst others stayed for a longer period.

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<sup>5</sup> Aldo van Eyck has travelled a number of times with his wife Hannie van Eyck to non-Western countries between 1947 and 1952. He was interested in autarkic cultures that were not influenced by modern Western culture.

<sup>6</sup> Dutch notion: het tweelingfenomeen



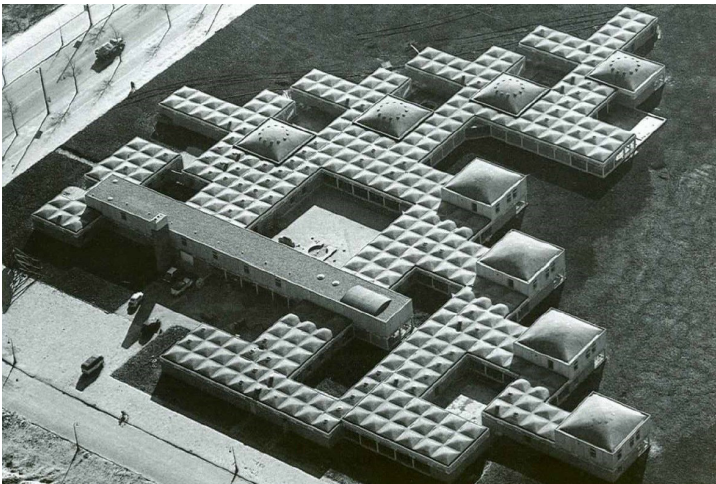


Figure 2. The Orphanage (The Orphanage, n.d.)

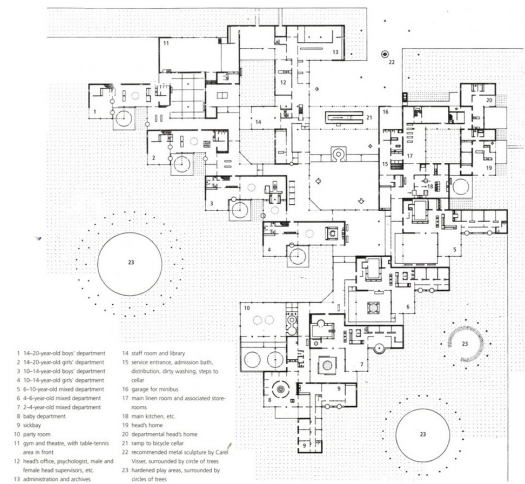


Figure 3. Plan ground floor (Visser, 1960, p. 94)



Figure 4. Play-pool alias seat (van Paridon, n.d., p. 103)



Figure 5. Built in furniture (van Eyck, n.d.-a, p. 106)



Figure 6. Interior street (van der Meyden, n.d., p. 93)

Aldo van Eyck argues that architecture and urbanism are closely related and intertwined and that they should not be split into two disciplines. He claimed that every house should be a small city and every city should be a large house (Strauven, 2007). Furthermore, he claimed that place and occasion imply participation in what exists; if a house lacks places it will cause loss of identity, isolation and frustration (Ligtelijn<sup>7</sup>, 1999, p. 89). The Orphanage is organised according to this thought, a city like house with a cluster of places (figure 4 and 5), that is a homecoming for all.

The building consists out of modules, the small ones are residential spaces and the large ones are community spaces (figure 2 and 3). There are eight large pavilions in total, each houses one department where children live in groups according to their age. This is the only part of the building that is ordered hierarchically. The rest of the building doesn't have a hierarchical order. The pavilions were the 'houses' that were connected by the corridors like 'streets'. Service spaces and rooms for special activities were organised along the large interior street (figure 6). The interior street is an intermediary place where children could move and behave similarly as they would outside (Ligtelijn, 1999, p. 89). Besides, the street also invited children to meet and interact with children from other departments. The pavilions and other functions were interlocked and positioned along the interior street. All together, it is fluidly connected and constitutes one cohesive whole.

Especially for the children who lived in the Orphanage, leaving home and going home are often difficult matters. Architecture cannot stop this feeling. However, it can mitigate it by using spatial configurations. Van Eyck tried to soften the transition between various polarities; inside-outside, individual-collective, house-city, clear-complex (Strauven, 2007). He defined in-between places, the common ground where conflicting polarities are reconciled and become twin phenomena. The interior street is the most obvious in-between realm. The street is connected to a large open square and blurs the boundary between inside and outside. It guides the children gradually and helps to reduce the anxiety that abrupt transition causes (Ligtelijn, 1999, p. 89).

### **2.6.2 Hubertus House**

The Hubertus house (figure 7 and 8) is built in 1978 in Amsterdam. The Hubertus Association is an institution of social rehabilitation that offers a home for single mothers and their children in the Hubertus House (Strauven, 1994, p. 576).

An extension is built between two existing houses that were already in use by the Hubertus association. The two old buildings are merged by the added volume, together they form the Hubertus house (Ligtelijn, 1999, p. 24). Addie van Roijen-Wortmann, former director and construction coordinator of the Hubertus association, gave Van Eyck the instruction to design a house, that is open and protective at the same time.

The space that was previously a divider has now a unifying function (figure 9). The new volume contains a stair house that connects the floor levels of the two existing buildings and the entry is the place where old

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<sup>7</sup> Vincent Ligtelijn has written this book as part of a research programme at the Faculty of Architecture of Delft University of Technology. His work draws much support from the mass of work done by Abel Blom a member of staff at Aldo and Hannie van Eyck's practice. Van Eyck himself has rewritten some of the texts of the book that were not translated. The book therefore is seen as a primary source.





Figure 7. Exterior Hubertus House (van Eyck, n.d.-b, p. 185)

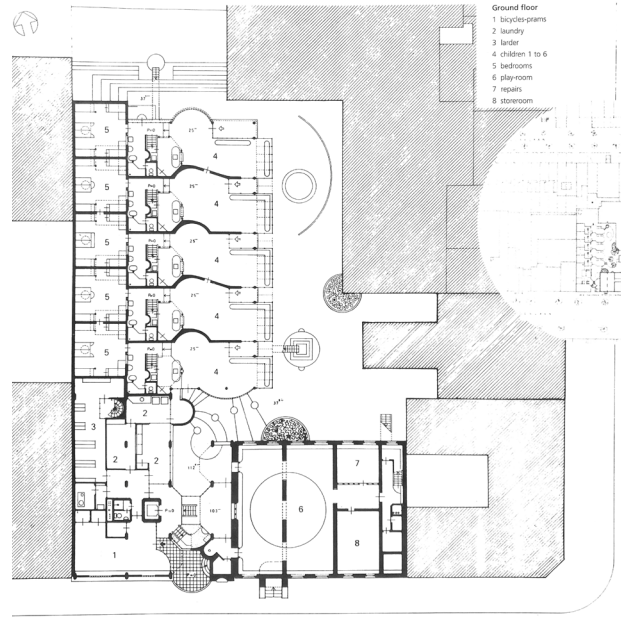


Figure 8. Plan ground floor (van Eyck, n.d.-d, p. 190)



Figure 9. Isometric view staircase (van Eyck, n.d.-c, p. 193)

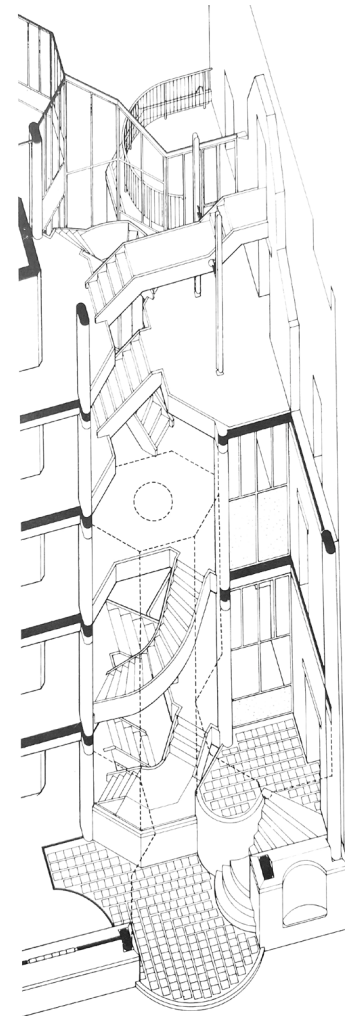


Figure 10. View on the playground from balcony (van Eyck, n.d.-e, p. 195)

and new meet and become twin phenomena. The two buildings were unified by using the same materials and colours. As a response to the importance of creating openness and closeness at the same time, Van Eyck lay attention on the relation between the building and the street by using transparent materials. In addition, a wide range of spatial elements, e.g., terraces, stairs and passages, were used to create a spacious atmosphere that emphasised the duality of the building and makes it attractive for people to stay (figure 10). He combines these spatial elements and shapes in a particular way that releases them from their traditional functionalities and meanings and allows for new interpretations and associations.

The demand for duality in the design brief fits Van Eyck's design approach completely. Aldo van Eyck's twin phenomena is recurring in various ways in this project. The old houses are facing each other, with a new volume in between. Old and new are not only existing twin phenomena, the new space is an open intermediary realm that connects the more closed spaces with each other. Moreover, the setbacks in the facade plays with the fluidity of public and private domains, the world outside is drawn inward beyond the building line.

## **2.7 Herman Hertzberger**

Herman Hertzberger was one of the youngest members of Team 10 and worked together with Aldo van Eyck on the editorial board of *Forum*, where Van Eyck's ideas about relativity, twin phenomena and in-between spaces were shared. Therefore, it is plausible that Hertzberger was influenced and inspired by Van Eyck's and Team 10's thoughts and theories. Hertzberger argues "Rather than being so much a member or participant in Team 10, I'm much more a product of Team 10" (Heuvel & Risselada, 2005, p. 332).

## **2.8 The threshold**

Herman Hertzberger was not interested in the form as a final product; he rather committed to forming space and materials that contribute to the experience of its users. Architecture according to Hertzberger is where life takes place and the only valid means of evaluating the quality of architecture is by human experience (McCarter, 2015, p. 12). Hertzberger describes the city as a place where mutual inter-relation between the public and private realms exist, this in-between space is what he calls the threshold. It is a space that allows us to feel 'at home' and permits the private to overlap into the public and the other way around (McCarter, 2015, p. 493). The in-between space mediates between various territories, between home and the city, public and private, is variously interpretable by others and forms the primary place for interaction between inhabitants. The ambiguous notion of the threshold provides people privacy but also social contact. In figure 11, a child is sitting on the threshold. The relevance of the in-between space and the threshold is shown in this very simple spatial configuration in the photo with the accompanying quote of Herman Hertzberger. "The child sitting on the step in front of his house is sufficiently far away from his mother to feel independent [...] .Yet at the same time, sitting there on the step which is part of the street as well as the home, he feels secure in the knowledge that his mother is nearby. The child feels at home and at the same time in the outside world. This duality exists thanks to the spatial quality of the threshold as a platform in its own right, a place where two worlds overlap, rather than a sharp demarcation" (Hertzberger, 2005, p. 32).



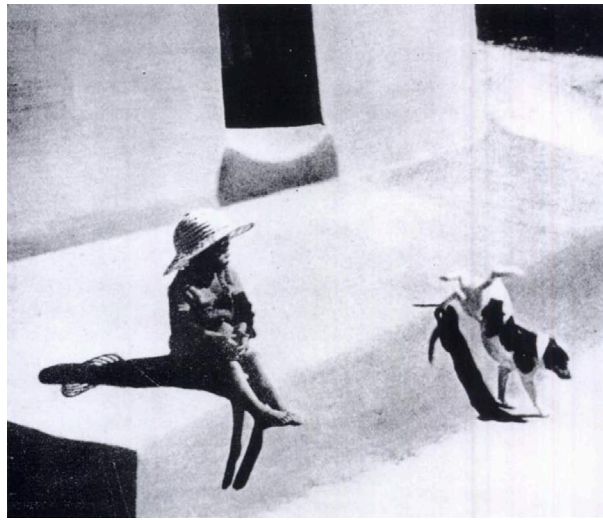


Figure 11. Child on the threshold by Herman Hertzberger (Hertzberger, 2005, p. 32)

## 2.9 Case studies Herman Hertzberger

The case studies chosen for Herman Hertzberger are the Delftse Montessori School and the Centraal Beheer Office.

### 2.9.1 Delftse Montessori School

The Delftse Montessori school (figure 12 and 13) was built in 1966 in Delft. The Montessori method of education focuses on the independent development of children. Therefore the building also requires places for children to work independently.

Rather than taking the archetypal rectangular classroom, Hertzberger designed L-shaped classrooms (figure 13) with many corners, spatial zones and thresholds (McCarter, 2015, p. 137). The classroom is subdivided in different spaces; a large space with windows along the side and a more enclosed space that is sunken into the floor (figure 14) and enclosed by walls of different heights (McCarter, 2015, p.141). The boundary of the classroom is often folded to embed nested places, smaller rooms within a large space (McCarter, 2015, p. 135). Pupils use these sub-spaces within the classroom according to their chosen activity, every space provides a different zone of concentration. The built-in and movable furniture makes the space flexible and can adapt according to the activity. Next to the classroom, the entry threshold is positioned, this in-between realm connects the classrooms with the central hallway. The hallway does not only function as a circulation space, the low walls also create in-between spaces where students can study. It is seen as the communal living room of the school that is part of the classroom and of the school as a whole (Hertzberger, 2005, p. 62).

The interlocked classrooms, together with the shared circulation space, form a spatial cohesion within the school as whole, that is organised like a city (McCarter, 2015, p. 135). The communal spaces are associated with streets and squares shared with others, whereas the classroom is the domain of the pupils of one particular class and can be related to a house (Hertzberger, 2005, p. 62). Also, the playground is conceived as a street. It is not enclosed by a fence. The open playground encourages social cohesion and interaction throughout the day between the pupils and other children from the surrounding neighbourhoods.

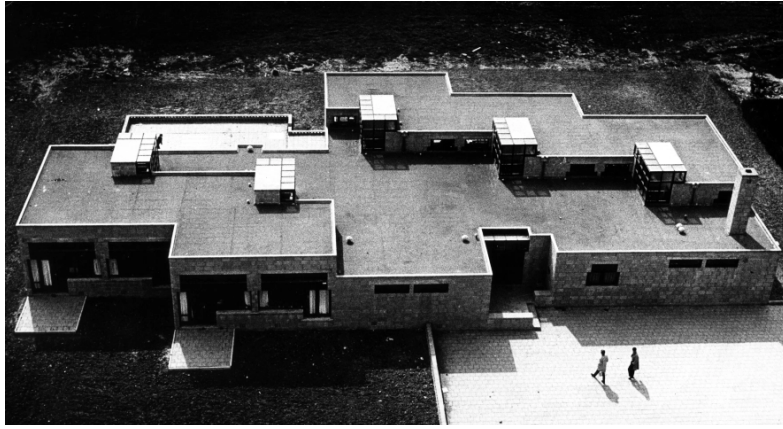


Figure 12. Montessori School Delft (van de Keuken, 1968, p. 136)

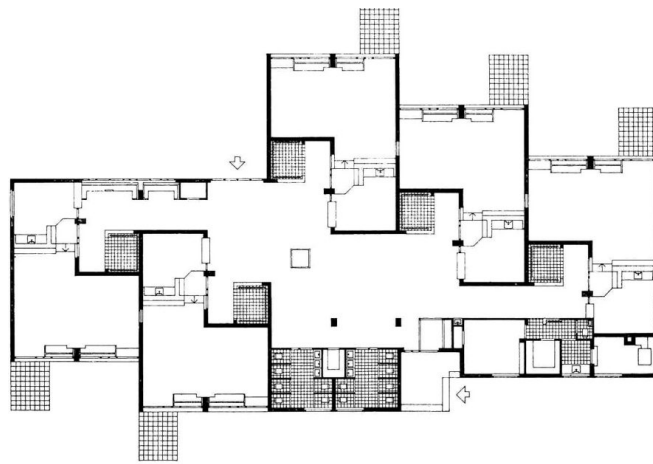


Figure 13. Plan ground floor (Hertzberger, 1960)

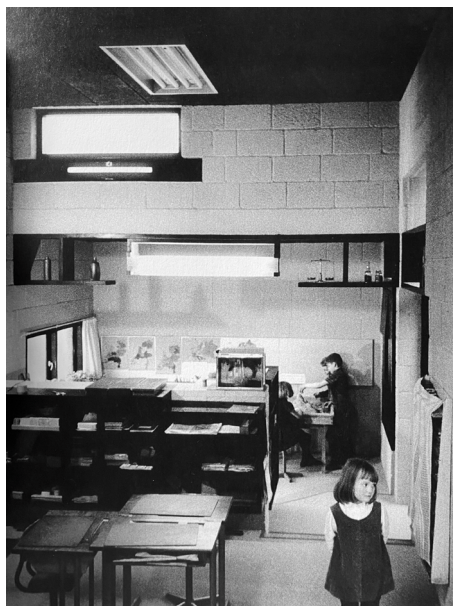


Figure 14. Classroom, looking from the main space to lower work space (van de Keuken, n.d., p. 143)

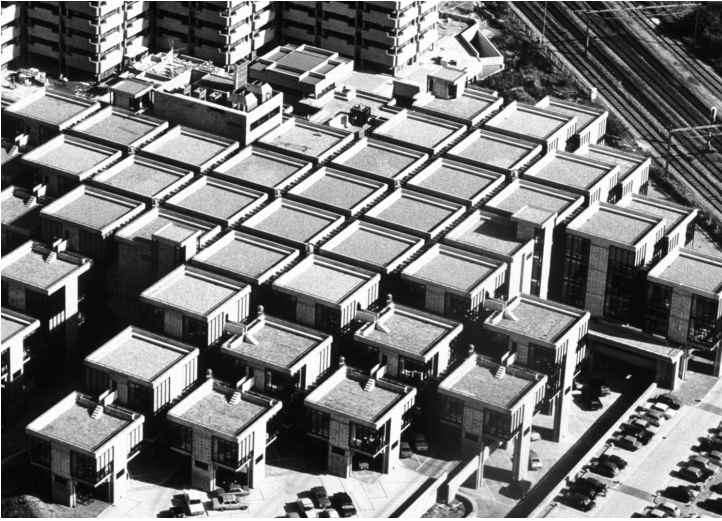


Figure 15. Centraal Beheer Office (Aviodrome, n.d.)

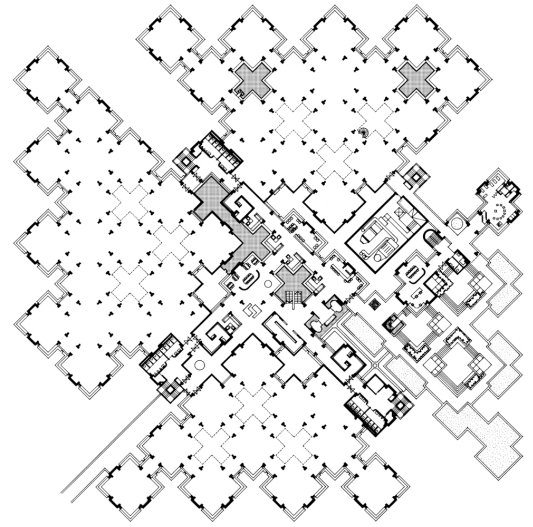


Figure 16. Plan of ground floor (Hertzberger, n.d.-a)



Figure 17. Meeting and coffee places overlooking street-space (Diepraam, n.d., p. 326)

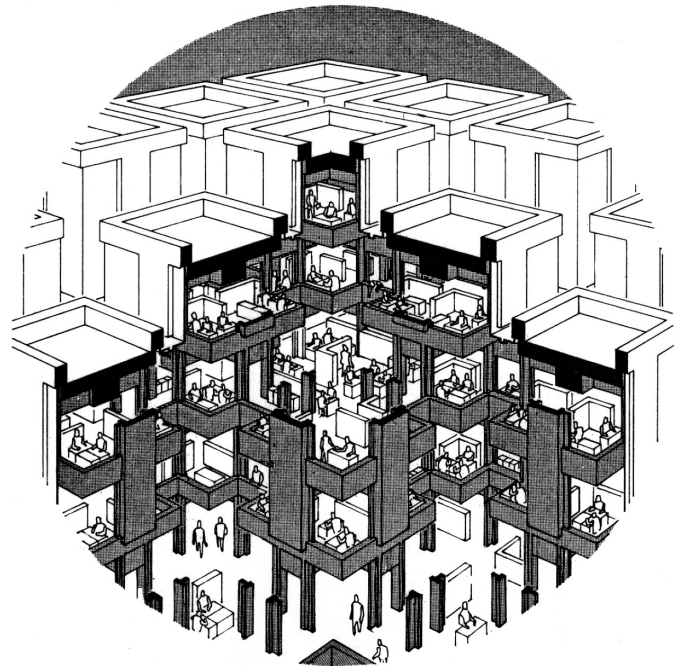


Figure 18. Section-perspective of building and space fabric (Hertzberger, n.d.-b, p. 327)



Hertzberger has created multiple gradual transitions to soften the boundaries between opposing realms, between the city and the building and between the collective and private. These gradual spaces can be used in many ways and offer the opportunity to interact freely with the environment and its users.

### **2.9.2 Centraal Beheer Office**

The Centraal Beheer Office (figure 15 and 16) was built in 1972 in Apeldoorn. The building was designed according to structuralist ordering principles. Hertzberger has always rejected the undifferentiated open office spaces that became the new norm in the modern building. Instead, he designed complex interlocking modules (McCarter, 2015, p. 302).

The building for 1000 office workers exists of 60 9 x 9 metre spatial units that are configured horizontally and vertically. The spatial structure of the modules allows occupants to personalise the space as they want. Hertzberger argued that in this way, the 'users become inhabitants' (Hertzberger, 2005, p. 31). This is something that he found important in architecture, the feeling of 'homecoming'. The module is defined space, and yet open. The low walls allow for social interaction among the workers and creates a sense of belonging to the larger collective group (figure 17). The feeling of homecoming is also visible in the spatial articulation of private workspaces and public common spaces. The private workspaces has carpeted floors, whereas the public spaces are paved with square concrete tiles like a street.

The spatial organisation of the building is organised like a city. The infrastructure of Centraal Beheer exists of streets, bridges and intersections at various levels that are connecting different compartments. The workers can dwell in the building during their break as if they are in a city-centre. Furthermore, the building is a porous whole without a main entrance, the building can be entered from every side (McCarter, 2015, p. 327).

The Centraal Beheer Office, can be conceived as one intermediary space where polarities are fluid and boundaries are blurred. Everyone has their own domain in the stacked units, while they are in one big open space (figure 18). The spaces are balcony-like working platforms, defined spaces but still open. From the workspaces, people can see other modules that are situated around the void (Hertzberger, 2013, p. 90). The urbanised spatial elements and the openness of the building stimulates social interaction among the workers.

### **Conclusion**

In the Netherlands, the in-between space concept emerged as a response to the modern movement. Not all CIAM members agreed on the rationalism of post war functionalism. Therefore, a group of young European architects set up Team 10. They reacted on the inefficiencies of CIAM and strived for more human centred architecture.

When Van Eyck and Bakema became editors of the Dutch architecture magazine *Forum*, they got the opportunity to spread their vision through the platform of the journal. Herman Hertzberger joint the editorial board to represent the younger generation of architects. He was closely involved with each publication and obtained a significant amount of knowledge from the collaboration with Van Eyck and Bakema.

Both Van Eyck and Hertzberger used the in-between concept in their own terms. The notion of relativity is where Van Eycks twin phenomena concept emerged. He believed that reality is not considered as a



coherent whole, it exists of interrelationships of constituent elements. Two polarities that reconcile result into an in-between space, a place where different things can meet and unite. The in between-space is a result of his search for the relation between man and the built environment. The Orphanage and the Hubertus House are both buildings to house children for an indefinite period and have an ambiguous character.

Hertzberger considers himself as a product of Team 10. He focusses on the experience of the users rather than form as a final product. Furthermore, similar to Van Eyck, he uses the city as a metaphor for a building. He named the in-between space 'the threshold,' the overlapping space between public and private domain. The threshold therefore is a realm where one feels 'at home'. The Delftse Montessori School and Centraal Beheer Office are both organised like small cities where one can dwell and have the feeling of homecoming.

### 3. The conception of the in-between space in Japan

In this second chapter in the investigation of the in-between space in the discourse of architecture, the focus shifts from the West to the East. Just like in Dutch architecture, the in-between space concept is used frequently in vernacular and contemporary Japanese architecture, among others by Kisho Kurakowa (1934 - 2007) and Sou Fujimoto (1971). Can the roots of this concept be traced back to Japanese vernacular architecture? Or was it also a critical response to Modernism post-war architecture? This chapter answers these questions by researching the traditional Japanese architecture, the economical and political context and by discussing the theories of the architects. The investigated architects are from different time periods, therefore the focus is first on Kisho Kurokawa and thereafter on Sou Fujimoto. Eventually, the theories are further investigated by analysing case studies of both architects.

#### 3.1 Traditional Japanese architecture

Religion has been of significant influence in Japan, in lifestyle but also in architecture. Buddhism teaches the impermanence of all things. Everything is always changing. Nature; people, animals, plants and the Buddhas are always migrating in on the great chain of life. Therefore, human beings should strive to live as a part of nature, and not to conquer nature or hunt animals (Kurokawa, 1997).

The Japanese house was made of a post-and beam construction, therefore the building did not need walls. Sliding paper doors and outer rain doors were used to define the spaces. Nonetheless, the house could be transformed to a complete open structure when the sliding doors were open. The *engawa* is the architectural space that acts as an intermediate space between the interior and the surrounding nature, as seen in figure 19. Japanese traditional architecture has always respected and coexisted with nature according to the Buddhist values (Kurokawa, 1997).

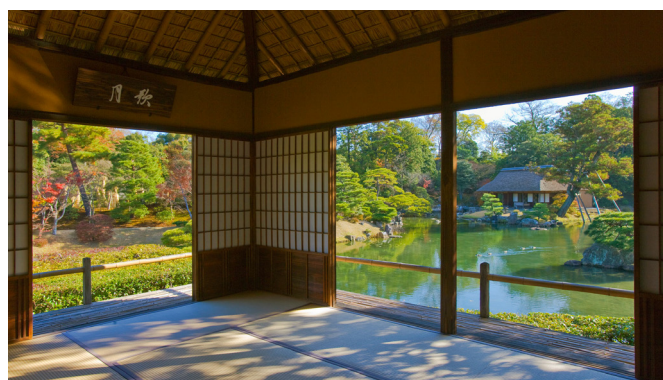


Figure 19. Katsura Imperial Villa (Corbis, n.d.)

Contradicting to Japanese architecture, which coexist with nature, stands European architecture more in opposition to nature. "European cities separated themselves from nature by building castle walls. The stone walls of European homes, too, separate the inside from the outside" argues Kurokawa (1997). This

division of space causes the dualistic opposition of human and nature. On the contrary, in Japan, hedges are used to be surrounded with as a 'fence'. The hedge doesn't completely separate the inside from the outside, as the stone wall. This semi-seclusion is typical for Japanese architecture (Kurokawa, 1997).

The roots of the intermediate space, come from the ancient concept of Ma. Ma is spatial distance and temporal distance, also called a neutral zone and a cooling-off period and can be applied to every aspect in life. For instance, "Those who properly space (Ma) their words are effective speakers who create a deep impression" states Kurokawa (1997). The *engawa* space is seen as a Ma between nature and building, interior and exterior. Ma connects two opposing elements that continues to exist in harmony.

### **3.2 A response to modernism**

After the Second World War, Japan was left with the devastating results of the atomic bomb, having enormous physical and psychological impact. The majority of Japan had to be rebuilt and Japanese architects saw new possibilities for the reconstruction. Japanese architecture has always been influenced by other cultures. Especially by those of neighbouring countries, but also by Western European cultures. Japan has incorporated elements from these cultures and adapted it into their own. Likewise, this appeared to happen with modern architecture in rebuilding Japan.

Kisho Kurokawa has always remained true to his cultural origin and did therefore not agree on the vision of the modern movement. Modernism developed into purism and exclusivism, rejecting the traditions and human concerns. Besides that, the Western architecture was based on selection and division through rational dualism; town or countryside, reason or feeling, inside or outside. These clear dualities were consistently avoided in oriental architecture, where they rather mediated between two opposites (Schmal et al., 2005, pp. 11-12).

### **3.3 Destruction and experimentation**

Japanese cities have been, and are still being destroyed and developed at the same time. Many earthquakes, floods and typhoons have destructed the natural and built environment. And even if they are not destroyed by natural disasters, Japanese cities are constantly changing. There appears to be a tendency within Japanese architecture to rebuild homes every 30 years, changing entire cities every few decades. Nuijsink<sup>1</sup> calls this 'The Great Invisible Earthquake' (2012, p. 21). There are various constraints that have also influenced the built environment in Japan. Limited building budgets, extremely dense urban settings, the extraordinary living requirements of families, excessive amounts of building regulations and the relatively short lifespan of the structures make Japanese architecture a perfect testing ground to experiment and refine the definition of architecture (Nuijsink, 2012, p. 24).

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<sup>1</sup> Cathelijne Nuijsink is a Dutch academic. From 2005 to 2011 she intensively interviewed Japanese architects as part of her research at the Manabu Chiba laboratory of the University of Tokyo, which resulted in the monograph *How to Make a Japanese House*.

### 3.4 Kisho Kurokawa

Kisho Kurokawa has been an important theoretician, philosopher and architect and he was greatly influenced by Buddhism. In Buddhism, one believes in the transmigration of souls of all living beings and therefore, nothing is seen as permanent. Nature, man and even architecture are all part of the cycle of transmigration (Kurokawa, 1988, p. 11). In Metabolism, this means that the structure is broken and divided in different elements, parts could be replaced when the lifespan was expired. Besides the metabolism, Kurokawa also came up with another notion, the notion of symbiosis. Kurokawa focusses on the symbiosis of interior and exterior, creating intermediate zones, the symbiosis of past and present and the symbiosis of different cultures, resulting in intercultural exchanges. In regard to the subject of this thesis, only the notion of symbiosis of interior and exterior is explored in the following paragraph.

### 3.5 Symbiosis

Homogeneity of modern architecture resulted in the separation of human activities. This unpleasant living environment raised the awareness of Kisho Kurokawa. He was seeking to reintroduce a space that allows communication among people, unobstructed by the dualistic division between inside and outside. In 1997, Kisho Kurokawa wrote the manifest: *Each One a Hero. The philosophy of Symbiosis*. The key principle is 'symbiosis'. Kurokawa describes it as follows: "The philosophy of symbiosis creates a relationship between the two elements while allowing them to remain in opposition. That relationship must be a dynamic, ever-changing one. To create a relationship between two opposing elements, is usually effective to place spatial distance or temporal distance between them. [...] The nature of intermediate space is its ambiguity and multivalency. It does not force opposing elements into compromise or harmony; it is the key to their living and dynamic symbiosis" (1997). Kurokawa argued that the notion of symbiosis can be applied to all aspects of life, whether in architecture, town planning or daily life (Farhady & Nam, 2009).

### 3.6 Case studies Kisho Kurokawa<sup>2</sup>

The case studies chosen for Kisho Kurokawa are the Shoto Club in Tokyo and the Museum of Modern Art in Saitama, Japan.

#### 3.6.1 Shoto Club

Shoto Club (figure 20 and 21) is a private house of a couple and their child in Tokyo, Japan that is completed in 1980. Kurokawa argues that traditional Japanese spaces such as the *engawa*, an enclosed veranda that is neither interior nor exterior, the *nokishita*, a roofed, semi-outdoor passageway and the *rogi*, a narrow alley between houses in the same block, accentuate the symbiosis of indoor and outdoor, or private and public space (Kurokawa, 1988, p. 21). Kurokawa tried to reintroduce these traditional Japanese spaces in the Shoto Club to offer the inhabitants a continuous living space between inside and outside.

The building exists of three floors. The ground floor has an entrance hall, a living room, a dining room

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<sup>2</sup> Van Eyck, Hertzberger and Fujimoto have written more extensively about their designs than Kisho Kurokawa. The analysis is based on the descriptions by the architect and on the available visual documentation. Therefore the case studies of Kisho Kurokawa are less comprehensive.





Figure 20. Exterior Shoto Club (Ohashi, 1988, p. 29)

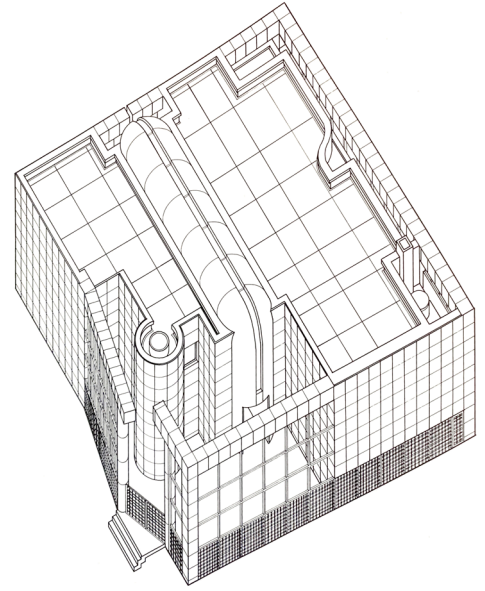


Figure 21. Isometric view (Kurokawa, 1988, p. 24)



Figure 22. Exterior Museum of Modern Art (T.D.R., n.d., p. 30)

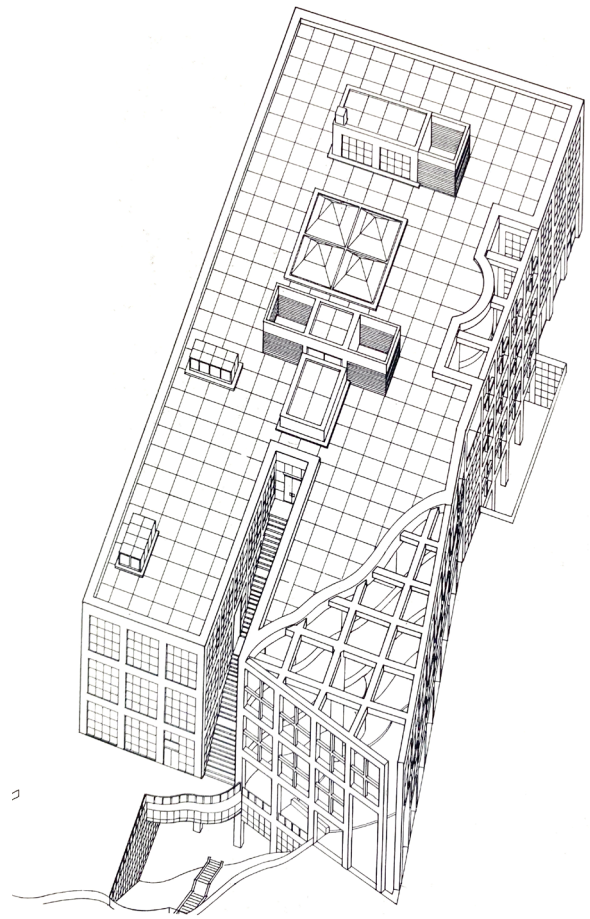


Figure 23. Isometric view (Kurokawa, 1988b, p. 32)

and the first floor has four rooms. In addition, there is a basement with a large room meant for social occasions (Kurokawa, 1988, p. 26). The building consists of rectangular forms. Some parts of the mass are cut away, however, the structure's profile remains visible. A grid structure defines intermediate zones that can take on different functions. These structures created a *roji* (garden) in front of the entrance and terraces are adjoining several rooms (Kurokawa, 1988, p. 26). These transition zones provide a spatial continuity between the house and the environment and allows the inhabitants to enjoy the surroundings on their own territory. Indoor and outdoor and private and public space meet in symbiosis.

### 3.6.2 Museum of Modern Art Saitama

The Museum of Modern Art (figure 22 and 23), known as MOMAS, is located in Saitama, Japan and is completed in 1982. MOMAS is the first art museum that Kurokawa has designed, after which many more followed. The museum displays work of modern Western and Japanese artists.

The shape of the building is a rectangle. One side of the building has a deep opening. Some parts of the walls are recessed, while others are projected outwards. The placement of these walls creates intermediate spaces between the grid structured wall and the entryway (Schmal<sup>3</sup> et al., 2005, p. 74). Before the main entrance two grid structured walls in an angled configuration, enclose a spacious garden that looks like a traditional Japanese garden that is located in front of a Japanese tea ceremony house. The permeable structure creates a semi-enclosed space that emphasises the changing level of privacy. The gradual transition between inside and outside invites pedestrians to take a closer look and to visit the museum. Here, architecture and nature and inside and outside meet in symbiosis. It serves an intermediary space and evokes a sense of transition and continuity between the building and its environment (Kurokawa, 1988, pp. 30).

### 3.7 Sou Fujimoto

Sou Fujimoto is part of the younger generation architects in Japan. Unlike most architects of his generation, Fujimoto has not been apprenticed in the offices of an established master. Instead, he spent the years after his graduation in 1994 'thinking about architecture'. He tested and developed his ideas before he started his own practice in 2000 (Itō & Worrall, 2009, p. 10). His work is known to the wider world and questions the meaning of architecture; what is architecture? How should architecture relate to nature? His experimental designs are directed towards the human relationship with space, and the restoration of primitive relationships between people and nature (Itō & Worrall, 2009, p. 4). He makes use of in-between solutions and plays with boundaries to enrich the architectural experience (Márquez Cecilia & Levene<sup>4</sup>, 2010, p. 18).

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<sup>3</sup> The authors of this book are architecture specialists and critics in the field of Metabolism, Buddhism and Japanese architecture. Kisho Kurokawa has also contributed to this book.

<sup>4</sup> Fernando Márquez Cecilia and Richard Levene are the editors of the architectural magazine *El Croquis*. Ryue Nishizawa has interviewed Sou Fujimoto for this issue. The information obtained from this source comes from Sou Fujimoto's answers of the interview.

### 3.8 Primitive future

In his book 'Primitive Future', Sou Fujimoto makes the distinction between the nest and the cave. A nest is a functional space, assembled with a certain purpose. A cave, is something that is already there. Fujimoto states that the cave space is richer and has more possibilities for use (Nuijsink, 2012, p. 146). He tries to translate these artificial caves in architectural forms. He perceives Le Corbusiers Dom-Inó house as a nest and his Primitive Future house as a cave. In Le Corbusiers Dom-Inó House (figure 25), all spatial elements are clearly distinguishable, they have their own function and are placed logically. Fujimoto does the contrary with his Primitive Future House (figure 24), he conceived the Primitive Future house as a series of local relationships generated by stacking evenly spaced slabs on top of each other (Pollock<sup>5</sup>, 2016, p. 11). The undefined structure can be used as tables, chairs, steps and shelves, depending on the body's position. This also relates to the traditional use of the floor in Japan compared to the West. The Japanese did not use the floor to only walk on, but also to sleep, cook, eat and so on. The multiplicity of an architectural element has been common in Japanese vernacular architecture, it is likely that his culture is an important frame of reference. Sou Fujimoto has explained his thoughts on the Primitive Future house in an interview with Nuijsink: "The function only becomes clear after people respond to the space. My structure invites and inspires people to behave freely. Because every person responds in a different way, the function or meaning will always be different. Modernist thinking is too simple. If you rigidly divide inside and outside, you completely miss out on the richness of all gradations in between" (2012, p. 146). He works continuously with dualities like public and private, interior and exterior, house and the city, city and nature and he concentrates on the realm mediating opposed ideas, where the ambiguity is the fundamental quality in the in-between space. This resulted in designs with boundaries that are convoluted, folded, blurred or multiplied, to emphasise the indistinct division and to render its ambiguity with clarity (Itō & Worrall<sup>6</sup>, 2009, p. 12).

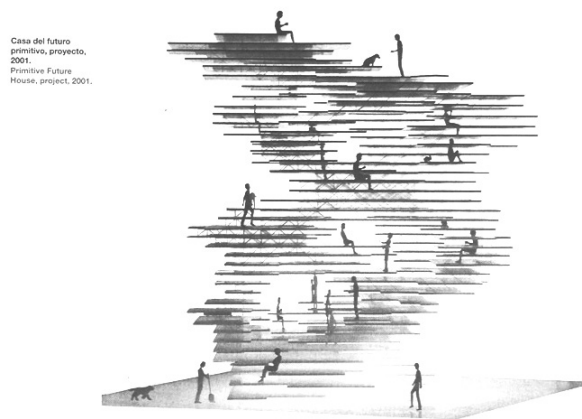


Figure 24. Primitive Future house by Sou Fujimoto (Fujimoto, 2001, p. 139)

<sup>5</sup> Naomi Pollock is an American architect who lives in Tokyo, Japan. She writes about Japanese architecture and has published a significant number of books, among other things a monograph on Sou Fujimoto.

<sup>6</sup> Toyo Itō and Julian Worrall are the writers of the texts in the Sou Fujimoto issue of International Architecture Magazine: 2G. Itō is a Japanese architect, founder of Toyo Ito & Associates and knows Sou Fujimoto very well. Worrall is an Australian architect and writer based in Japan.



Casa Dom-Inó,  
estructura estándar,  
Le Corbusier,  
1914-1915.  
Dom-Inó House,  
standard structure,  
Le Corbusier,  
1914-1915.  
© Fondation Le  
Corbusier/VEGAP  
Barcelona, 2009

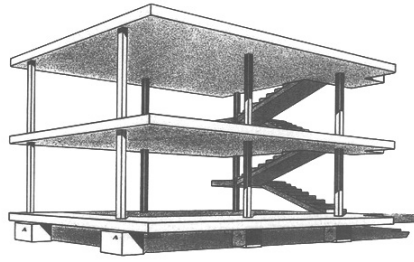


Figure 25. Dom-Inó House by Le Corbusier (Foundation Le Corbusier, 1914, p. 138)

### 3.9 Case studies Sou Fujimoto

The case studies chosen for Sou Fujimoto are the Children's Centre for Psychiatric Rehabilitation in Hokkaido and House N in Oita.

#### 3.9.1 Children's Centre for Psychiatric Rehabilitation

The Children's Centre for Psychiatric Rehabilitation (figure 26 and 27) is completed in 2006 in Hokkaido, Japan. The centre is the residential facility, that is part of a large mental-health complex. Fifty mentally disturbed children could be housed in the centre and work on their mental health for an average period of two years (Itō & Worrall, 2009, p. 28). To promote the healing of the young patients, the client asked Fujimoto to design a place that balanced enclosure with exposure (Pollock, 2016, p. 26). Other than that, the population is ever-changing, therefore flexibility was also very important.

Fujimoto believes that a mental-health facility should be like a private house as well as a city (Pollock, 2016, p. 12). He incorporated both in one building, having the intimacy of a house and the variety of a city (Itō & Worrall, 2009, p. 2008). The Children's Centre consists of a cluster of twenty-four cubes linked by glass walls. The boxes are 6,3 meters in height, width and depth, are divided into two floors and have various functions. It seems that the volumes appear to be randomly placed. However, Fujimoto placed the boxes carefully to create the right balance of open and closed spaces (figure 28). He created relationships between the spaces by rotating each cube 15, 30, 45 or 60 degrees compared to its neighbour. The negative spaces around the boxes create a space in-between, that functions as a communal area (figure 29). He compares small-scaled town like squares and oddly shaped crevices that looks like Tokyo's urban fabric (Pollock, 2016, p. 12). Additionally, based on his own wandering around in Tokyo, he created a web of pathways that invites exploration and discovery, just like how he experiences the city (Pollock, 2016, p. 26).

The void around the boxes is one big space. Yet, the boxes divide the large spaces into smaller spaces. Some spaces are bigger and more open and function as a gathering place for the children. Other spaces are more intimate and therefore perfect for a single child to withdraw from the group. Spaces flow effortlessly from one to the next. The places in between the boxes can be discovered and interpreted freely by the children and used how they like. The interaction between building and body is a recurring theme in Fujimoto's designs.





Figure 26. Exterior view (Ano, n.d., p. 27)



Figure 27. Plan ground floor (Sou Fujimoto Architects, n.d.-c, p. 30)



Figure 28. Configuration study (Sou Fujimoto Architects, n.d.-a, p. 28)



Figure 29. Interior view (Sou Fujimoto Architects, 2006)



Figure 30. Exterior House N (Baan, 2008b)



Figure 31. Plan (Sou Fujimoto Architects, n.d.-b, p. 110)



Figure 32. Garden (Baan, 2008a)



Figure 33. Interior House N (Baan, 2008c)

### 3.9.2 House N

House N (figure 30 and 31) is a private house of a retired couple in Oita, Japan, that is completed in 2008. Fujimoto proposed the whole house to function as an *engawa*, creating an intermediate space between the interior and the surroundings. Because many Japanese people wish to have a garden with their houses, Fujimoto proposed a new prototype with such a house with garden in the city (Nuijsink, 2012, p. 147).

House N consists of three permeable boxes, one placed inside the other (figure 31). The biggest box covers a garden with trees along the street side (figure 32). Whilst on the other side of the box, furthest from the street, the kitchen, toilet and bath are located. The middle box contains the sleeping area and a tatami-floored guest area. Lastly, the living and dining area are located in the smallest box (Pollock, 2016, p. 108). The forty-four openings among the walls, ceiling and roof are voids in solids, neither doors nor windows. The quantity and sizes of the openings differ per box, except for outer wall located furthest from the street. As the size of the box decreases, the spaces become more enclosed and private.

Because of the permeable structure (figure 33), House N can be seen as a one-room space, explains Fujimoto in a conversation with Ryue Nishizawa<sup>7</sup>. "I explore how density and pulsations can be distributed in a one-room space. Then, I conduct the process of engendering forms to such things as the transformation of densities. I am certain this is my spatial archetype or point of origination. I am interested in the infinite conditions between connectedness and detachedness; to be connected while separated" (Márquez Cecilia & Levene, 2010, p. 17).

Again, Fujimoto aimed for ambiguity between opposites like the house and the city, nature and architecture, inside and outside, public and private. The voids in the wall create a porous structure that create a continuity between inside and out and opens up the house to the passer-by. The size, shape and position of each opening are studied closely, they invite to take a look inside without compromising the owners' privacy. The simple absence of a solid surface enables an unexpectedly intimate engagement with the surrounded environment (Pollock, 2016, pp. 106-108). Fujimoto argues that he has always had doubts about streets and houses being separated by a single wall, and wondered if a graduated domain between the street and the house might be a possibility. With this design, his intention was simply about expressing the richness of what is in between the house and the street (Itō & Worrall, 2009, p. 70).

### Conclusion

In Japan, the in-between concept did not emerge last century. The concept is traced back to the Buddhism of Japan. Buddhism teaches the impermanence of all things. Therefore, one should live as a part of nature and not to conquer nature. Hence, the traditional Japanese house has a *Ma*, the *engawa*, an intermediate space between the interior and the surrounded nature that coexist.

Various reasons, have caused Japanese architecture to be always demolishing and building. The atomic bomb in the Second World War has destroyed a significant part of Japan that had to be rebuilt. Then, in the 1960s, Japan experienced economic growth and technical development. The effect of this was that buildings got demolished after a short lifespan and new and better buildings replaced them. Also the destructive power of natural disasters have had an enormous impact on the built environment. Nowadays,

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7 Ryue Nishizawa is one of the founders of architectural office SANAA in Japan



constraints have influenced the built environment even further. All these motives, makes Japan a perfect testing ground experiment and to refine the definition of architecture.

Kisho Kurokawa has searched for a space that allows communication among people, instead of the human separation caused by modernist architecture. He developed a concept called symbiosis. The philosophy of symbiosis creates a relationship between two elements while allowing them to remain in opposition. An intermediary space allows the opposing elements to exist in harmony. Shoto Club and the Museum of Modern Art Saitama both have a grid structured wall. Here, indoor and outdoor, public and private meet in symbiosis. The intermediary space evokes a sense of transition and continuity between the building and its environment.

Where Kurokawa is greatly influenced by the Buddhism principles of life, Sou Fujimoto has forced himself to rethink architecture after his studies. In 'Primitive Future' Fujimoto makes the distinction between the nest and the cave. His designs can be compared to cave-like structures, that invites people to behave freely. His aim is to restore the primitive relationship between people, space and nature. He uses in-between solutions to enrich the spatial experience. Children's Centre for Psychiatric Rehabilitation and House N are two projects where volumes are positioned around or in each other. The void that remains, is the in-between space that leaves room for interpretation and allows people to behave how they like.



#### **4. Differences and similarities**

In the first two chapters of this architectural history thesis, it has become clear that voids are as important as volumes and intangibles as important as tangibles. In the third and last chapter, the different approaches of the in-between space concepts of the four described architects are compared with each other. First, the concepts of Dutch architects Aldo van Eyck and Herman Hertzberger are compared. Next, the differences and similarities of the approaches of Japanese architects Sou Fujimoto and Kisho Kurokawa's are discussed. Finally, the architecture within the two countries are compared. Is Kurokawa's statement of the Netherlands and Japan, being opposites, true?

##### **4.1 Comparison between Aldo van Eyck and Herman Hertzberger**

It is not surprising that Van Eyck and Hertzberger's approaches are similar as they have worked closely together in the editorial board of *Forum*. Besides that, both of them were pioneers of the structuralism movement that emerged during their period in Team 10. This is visible in the Orphanage and the Centraal Beheer Office building. Both exists out of a repetition of modules, that is a clear structuralist principle.

Van Eyck argued that architecture and urbanism are closely related and intertwined, and should not be split in two disciplines. He claimed that every house should be a small city and every city should be a large house. Both architects have used urban configurations, for example indoor streets, to organise their buildings as a small city that allows people to interpret the space freely and dwell around. Also, Van Eyck and Hertzberger both create 'places'. Places where people can meet and interaction among the users of the building can take place. For example, van Eyck's play-pool seat or Hertzberger's built-in furniture. Eventually, these places allow the feeling of homecoming for all.

##### **4.2 Comparison between Kisho Kurokawa en Sou Fujimoto**

Kisho Kurokawa and Sou Fujimoto are each from a different generation of architects. This has intelligibly influenced their design approach. Kurokawa lived in an era of reconstruction and tried to avoid the modernist approach. He stayed true to his believe in Buddhism and incorporated those values in his approach symbiosis. Fujimoto goes even further back in time. He searches for the primitive relationship between man and its environment. It almost seems that he tries to design a new version of the 'Primitive Hut' by Marc-Antoine Laugier with his Primitive Future House.

Although Kurokawa and Fujimoto are architects with different motives, traces of the ancient Japanese culture are found in both of their designs. They both force the user to engage with their surroundings by creating a gradient between inside and outside. The *engawa* principle is occurring in the buildings of Kurokawa and also in Fujimoto's House N. The *engawa* is an architectural space between nature and building, interior and exterior. According to the Japanese ancient culture, this is necessary to exist in harmony with nature.

### **4.3 Comparison between the Netherlands and Japan**

The Netherlands and Japan are not as different as Kurokawa argues. Perhaps it used to be like that in the past. However, during this research proces, it became noticeable that there are some connections between the architects of Japan and the Netherlands.

Kurokawa stated that the European division of space causes the dualistic opposition of human and its surroundings (Kurokawa, 1997). Semi-seclusion is typical for Japan. Nonetheless, the Delftse Montessori School by Hertzberger is not secluded at all. The playground of the school is conceived as a street and is not enclosed by a fence. The open playground encourages social cohesion and interaction throughout the day between pupils and children from the surrounding neighbourhoods. Also, the Orphanage of van Eyck has a gradual transition from outside to inside. The interior street is connected to a large open square outside, that blurs the boundary between inside and outside.

In many ways, the concepts and execution of Sou Fujimoto and Herman Hertzberger are similar. Fujimoto creates nested spaces in the Children's Rehabilitation's centre. The boxes divide the large spaces into the smaller space. The large spaces are gathering places, while the others are more intimate. The Delftse Montessori School of Hertzberger contains similarities. The classroom is often folded to embed nested places, smaller rooms within a large space. The pupils can use these sub-spaces according to their chosen activity. The interaction between body and building is very present in Hertzberger's and Fujimoto's designs. Furthermore, the Centraal Beheer Office and the Children's Centre are both one-room-spaces that can be conceived as one big intermediary space where polarities are fluid and boundaries are blurred.

The last big similarity is that both the Dutch architects, as well as Sou Fujimoto reference buildings as cities. They use urban elements like plaza's, indoor streets and bridges. At the same time, they also want to embrace the explorative, interpretative, diverse and free character a city has to offer and incorporate this into their buildings.

### **Conclusion**

The Dutch architects seem to share more similarities with each other than the Japanese architects share. However, after this comparison, it can be stated that the investigated architects have similar thoughts about how an in-between space should work. The in-between spaces are voids, that offers people to allow their own interpretation of how to use the space. The Dutch architects emphasise the human relationship with each other slightly more, whereas the Japanese architects emphasise the relationship between humans and their environment more. Van Eyck and Fujimoto both argue that architecture should breathe and pulsate. In other words, architecture should accommodate room to live and transform.

## 5. Conclusion

The aim of this research, was to understand the motives and the implementation of the in-between space concept in architecture and to emphasise the value of these transitional spaces. The theoretical investigation is undertaken to trace back the emergence of the in-between space principle. To visualise the implementation of the principle, the theoretical investigation was followed by case studies of four architects. Finally, the interrelations between the different architects and countries are discussed. After this extensive research, we will now focus on answering the research question; How did the 'in-between space' concept evolve in the 20th Century until now in Japan and the Netherlands?

The research started with an investigation to the conception of the in-between space in the Netherlands. The in-between space concept emerged as a response to the modern movement. Young European architects formed Team 10 and strived for more human centred architecture. Aldo van Eyck was a prominent member of Team 10 and had a clear vision on architecture. When Van Eyck became one of the editors of the Dutch architecture magazine *Forum*, he spread his vision on architecture and his theory on twin phenomena through the platform of *Forum*. Herman Hertzberger also joined the editorial board and worked closely with Van Eyck.

Van Eyck's theory on the in-between space is called 'twin phenomena' and Hertzberger uses the term 'threshold'. Van Eyck's twin phenomena concept emerged from his strong belief in relativity. Reality is not considered as a coherent whole, it exists of interrelationships of constituent elements. Two polarities that reconcile result into an in-between space, a place where different things can meet and unite. Hertzberger's aim is to focus on the experience of the user rather than the form as a final product. The threshold is the overlapping space between public and private domain. The gradual transition comforts people and allows them to feel 'at home'. Hertzberger considers himself as a product of Team 10, as he has formed his vision on architecture while being closely connected to the members of Team 10.

The second chapter investigated into the concept of in-between space in the Japan. Different characteristics of the culture have influenced the thinking of Kisho Kurokawa and Sou Fujimoto. In Japan, the in-between space concept is traced back to the Buddhism origin of the country. Buddhism teaches the impermanence of all things. One should live as if it is part of nature, and not to conquer nature. This is visible in the *engawa*, an intermediary space between the interior and the surrounded nature, of the traditional Japanese house. Furthermore, various reasons have caused Japan to be always demolishing and building, from natural disasters to strict building regulations. These motives make Japan a perfect testing ground to experiment and refine the definition of architecture.

Kisho Kurokawa is mostly influenced by the Buddhist character of Japan. He developed the concept called symbiosis. The philosophy of symbiosis creates a relationship between two elements, while allowing them to remain in opposition. An intermediary space allows the opposing elements to exist in harmony and evokes a sense of transition and continuity. Whereas Kurokawa is greatly influenced by the Buddhism principles of life, Sou Fujimoto has forced himself to rethink architecture after his studies. In his theory 'Primitive Future' Fujimoto makes the distinction between the nest and the cave. His designs



can be compared to cave-like structures, that invites people to behave freely. His aim is to restore the primitive relationship between people, space and nature. He uses in-between solutions to enrich the spatial experience.

In the last chapter, the connections between the architects and the countries became distinct. The investigated architects share similar thoughts on how an in-between space should work. The in-between spaces are voids, that offers people to allow their own interpretation of how to use the space. The Dutch architects emphasise the human relationship with each other slightly more, whereas the Japanese architects emphasise the relationship between humans and their environment more.

To conclude, the in-between space is as other spaces, a space in its own right. These spaces should therefore be designed in the same manner as the spaces with a clear function. The ambiguous character of an in-between space leaves room for interpretation and allows people to behave how they like. The layering of the space provides new perceptions and creates a different spatial experience that influences human behaviour.

Solids to divide and voids to unite.

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