

Beyond Dichotomy

An exploration towards a Global Exposition found on common ground

Beyond Dichotomy:

an exploration towards a global exposition found on common ground

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Research report

Explore-lab

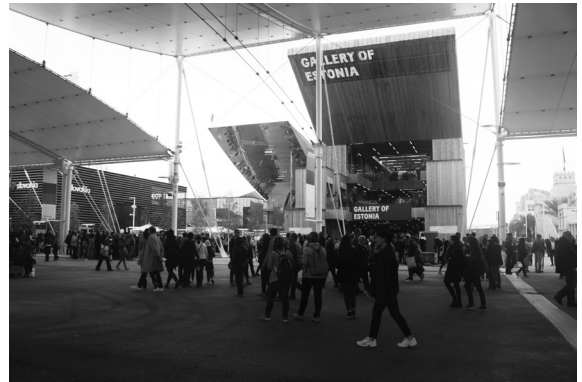
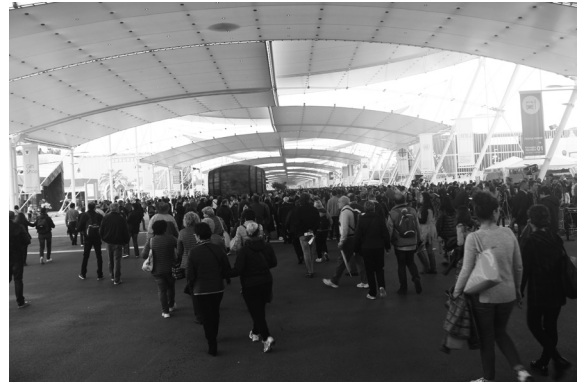
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Photos of the visit of World Expo 2015 in Milan. The images reveal that the pavilions of nations were arranged among a central axis that was covered by a canopy. It was very crowded and some queues for the pavilions took up hours. There was plenty of choice for the consumption of fine food.



It is May as the first visitors are welcomed at the exhibition site of World Expo 2015. The terrain is located at the periphery of Milan, Italy. The following six months the city will be host for more than 20 million people, to engage them with a spectacular representation of the world's diversity related to this year's theme: *Feeding the Planet, Energy for Life*.

I was one of those visitors in Milan, and in that period of time I also participated in the workshop *The Future of the Expo Model*, hosted at The New Institute in Rotterdam. These two opportunities marked the beginning of this exploration. My observations in Milan established the foundation and motivation for a deeper inquiry. My curiosity was encouraged by some news articles that argued that the World Exhibition had become an anachronistic phenomenon, portraying today's appearance as a waste of money and resources.¹ These articles are inseparable linked to images of abandoned Expo terrains. The deserted structure of MVRDV's Dutch pavilion in Hanover performs as an iconic representative of this decay.

I began to wonder what potential such a physical platform has today and how this relates to the architecture that it manifests. The following questions guided me from the start of this research. These were drawn from the experience of being at the World Expo 2015 in Milan:

What understanding of the world does the architecture of World Expo represent? What values does it reflect? Are these still relevant today or is there an opportunity to transform the model?

This investigation is limited and framed by the perspective of a European student.

¹ *The following articles provide a framework of the debate that was sparked by the World Expo 2015 in Milan on the relevance of the World Exhibition today. The critical arguments dealt with the lack of sustainable solutions and the waste of public money, by emphasizing what will be left after Expo, and at what cost it all came. Read more on this topic in The Guardian and in the No. 42 edition of Uncube magazine 'Expotecture' that was totally devoted to the World Exhibition. (Wainwright, 2015) (Heilmeyer, 2015)*

Preface

The knowledge of Science Communication and Architecture that I have gained in the previous years of study at Delft University of Technology have contributed to the formulation of these questions and triggered a critical attitude towards the World Expo. Although it was fun to spend a day at the event in Milan, I had an ambiguous feeling about it.

One of the reasons for this was the observation of a tendency of Expo to simplify information. As a result the world-view that it embodied did not correspond with my perspective on the world, which included an understanding of complexity and ambiguity.

In addition, from the perspective of Science Communication I observed that the Expo was particularly focused on sending information. Some of the contributions were almost shouting at the visitors, but in their overexposure failed to convey knowledge. I wondered what information was actually received by the visitors?

Besides, from an architectural perspective, I observed a temporal built environment that represented a simplified picture of culture and diversity. This did not correspond with the potential I think architecture has as a mean to provoke a deeper understanding or more profound meaning, nor did it make use of the possibility of architectural experiment.

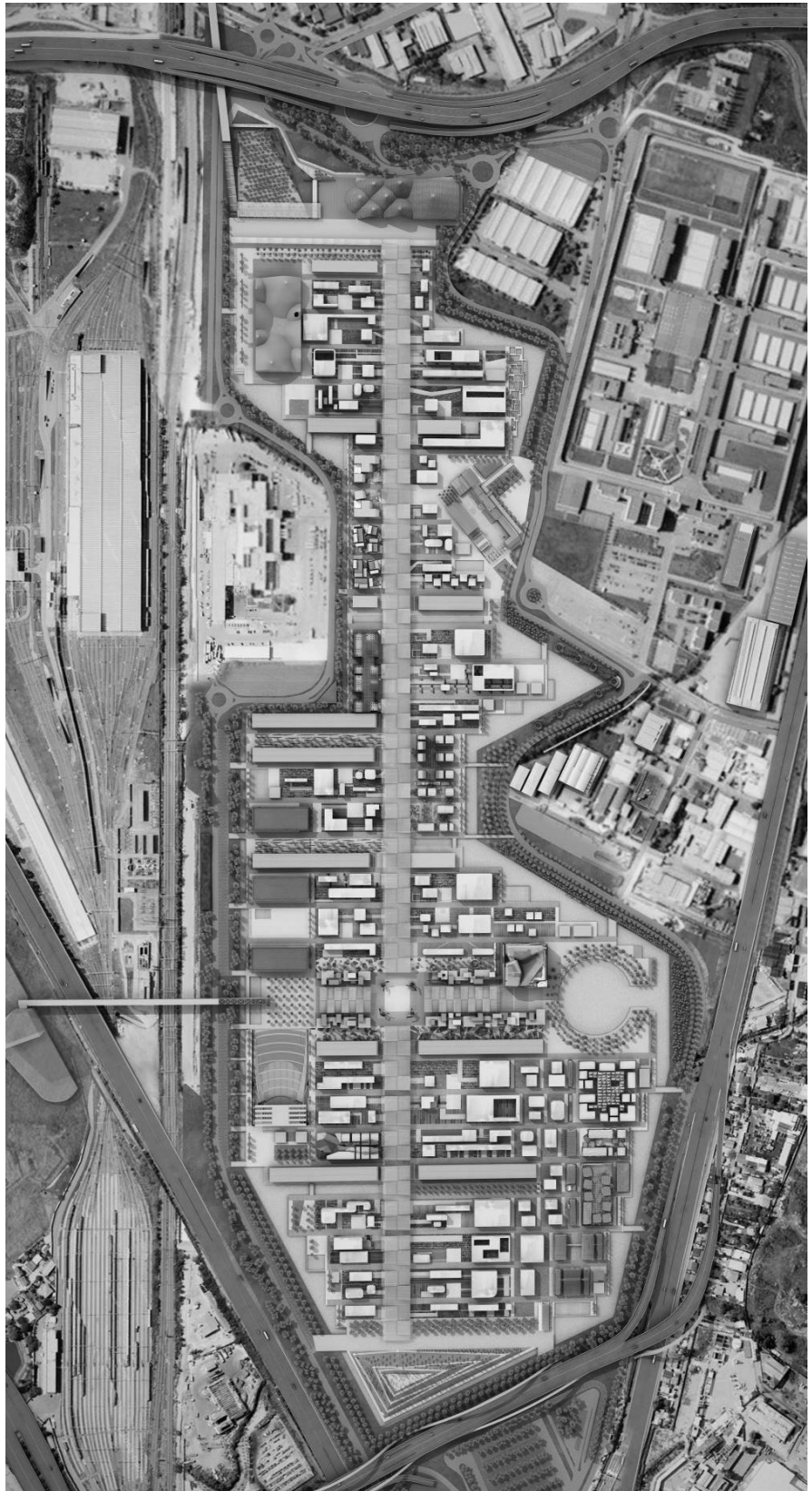
I believe that a platform like World Expo engages visitors with a particular perspective on the world by providing a spatial embodied experience. This graduation project explores the spatial embodiment of a Global Exposition driven by another perspective on the world. In this way the exploration touches upon knowledge of both fields of study, Architecture and Science Communication, and a personal fascination with philosophy.

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The map of World Expo 2015 in Milan shows the pavilions on their individual plots along a central axis.³



Source: <http://www.millestanze.it/ebook/expo-masterplan.pdf>

The Expo 2015 in Milan is the most recent embodiment of the World Exhibition, a six-month lasting event that over the past one and a half century has conveyed an educational construal of the world. The exhibition returns roughly every five years in an ever-changing host country. The participants, mainly nations, promote themselves by the means of a pavilion focused either on technological achievement or cultural display. The following chapter holds an analysis of the history of the World Exhibition in relation to its spatial disposition. There is an opportunity identified to transform the model of World Expo into a Global Exposition² which spatial disposition reflects a system of interdependence. In this way visitors will engage with an interrelated understanding of the world, which is determined to be relevant for the future of the world community. As the title of this exploration reveals there is a dichotomy identified in the current model of World Expo. This means a division between two things that are or are represented as being opposed. The aim is to move beyond this dichotomy that separates humanity, in order to expose an awareness of what people have in common; what is found on common ground.

This alteration will be done by the means of architecture. In order to do so a further understanding is needed of architecture in relation to the notion of interdependence. That will be the aim of this research, which is limited by the perspectives of Mies van der Rohe, Hans van der Laan and Richard Padovan.

The conclusions of this research will result in requirements that will, together with knowledge from the field of Science Communication, be input for the design of the Global Exposition which aims to evoke an interdependent understanding of the world as an unified whole.

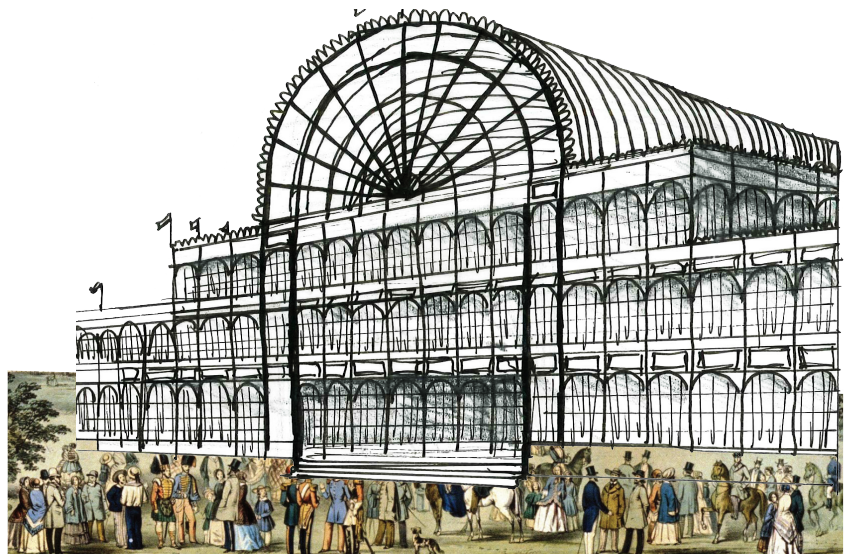
The opportunity to transform the model of World Expo

Introduction

² *The use of the word Global Exposition reveals the tendency of the design proposal to let go of the current model of World Expo.*

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The Great Exhibition in London at the Crystal Palace, 1851



Below

A human zoo at the Exposition Universelle de Liège illustrates the tendency of colonialism to divide into 'us' and 'them', 1905



Source: <http://www.scoop.it/t/afrique-et-culture/p/4050078934/2015/08/25/a-l-epoque-des-zoos-humains-le-journal-cnrs>

The Expo 2015 in Milan continues a tradition of one hundred and sixty four years of World Exhibition, since it came into being at the Great Exhibition in London in 1851.

Developments in transportation and communication.

The driving force at the birth of this phenomenon was the rise of industrialisation, which resulted in multiple inventions and discoveries in the field of transport and communication. Among them were railroad construction, telegraphy, mechanical production and machines, but also consumption goods, weapons and agriculture.³

The Expo thanks its genesis to the developments in modern communication techniques which enabled large amounts of people and goods to travel back and forth relatively cheaply. It allowed the Great Exhibition to be attended by over six million people, an extraordinary number in this period of time.

Over the 20th century the improvement of communication and transportation techniques transformed the world into a globalized one. Particularly internet enabled citizens to be ever-connected, independent of place and time. As a result the exchange of knowledge of cultures and technological innovation became commonplace.

This implies that, paradoxically, the latest developments in the domain of communication and transportation threaten to make the exhibition completely unnecessary: via television and internet, people can obtain or exchange the most up-to-date information, presented in a more accessible and attractive way at a fraction of the man-years and costs that the organization of the World Exhibition demands.³

In addition, the transformation of society into a mass culture has forced the gradual replacement of specialist knowledge and informative narratives of the World Exhibition by generalising, and popularising presentations. In this way, the Expo consists of proportionally more show and it has lost a great deal of educational value. In losing content Expo lost one of its reasons to exist.³

³ *The transformation of the World Exhibition over the past one and a half century due to developments in the field of communication and transportation and its changing attitude towards its educational and entertainment aspects is well-described in the dissertation of Pieter van Wesemael. It includes in-depth case studies of several World Exhibitions and their objectives. (Van Wesemael, 2007)*

A revelation at the roots of the World Exhibition

Orientation

However, assuming that societies will continue to change in the 21st century, there will still be an opportunity for a physical platform to engage visitors with an understanding of the changing values and characteristics of the world society.

Colonialism and technological utopia-

nism. The previous paragraph describes the developments that enabled the World Exhibition to come into being. It allowed visitors to get acquainted with other cultures and technological developments.

It is important to comprehend that the World Exhibition established in the 19th century in Europe. The European society was still divided into a class system. Particularly lower-class visitors were astonished by the arts, cultures and exotic flora that they saw for the first time in their life. Over the decades, the World Exhibition played an influential role as mediator between the uneducated lower-class and the highly educated elite. This mediating role was encouraged by colonialism and the rise of nationalism that characterizes this period of time. The devotion for one's own nation's interests over those of other nations allowed for reconciliation within the countries of the West.³

In the 19th century Europeans were barely acquainted with other cultures, and so the visitors of the World Exhibition were excited to see the different cultures and nationalities that were put on to display. It included the exposition of people of other races.

This way of exposing touches on a crucial characteristic of colonialism: the division of people into two groups: 'us' and 'them'. In the case of the Great Exhibition in London, the 'us' represents the British citizen as being Modern. The 'them' represents, for example, people from Sudan, as being exotic. An essential aspect of this division is that it separates people into two groups and that one of these groups is being superior to the other. An abstract way to understand this power structure is as a binary opposition, in which the object is dominant over the subject.⁴

This understanding gives room to the opportunity to transform the power structure of binary opposition for the sake of being inclusive. In this exploration the transformation will be done by the means of architecture. Therefore, the following chapter explores the relation of marginalization and spatial disposition of the World Exhibition.

The visitors could inspect the primitives that represented the counterbalance to Modern civilisation. This tendency also touches on an ideological aspect of the World Exhibition: the premise that the advances in science and technology of Modern civilization are linearly connected to the improvement of humanity. It was assumed that technological improvement would eventually bring about a utopia, or at least help to fulfil one or another utopian ideal.

Thus, the history of World Exhibition shows that it provokes an understanding of Western hegemony. This means that it promotes the social, cultural, ideological and economic values of the West, because they play a dominant part. It is therefore no surprise that the World Exhibition has, until now, only been hosted in Western, or Western-oriented societies.

So, if the history of the World Exhibition reveals an understanding of Western domination, how does this relate to the model of the World Expo today?

Exclusivity and marginalization at the World Expo today. The developments in communication and transportation transformed the World Exhibition in such a way that the visitors of the World's Columbian Exposition held in Chicago in 1893 probably won't have recognized the World Expo of 2015 in Milan as being a World Exhibition. However, underneath these changes in appearance the system of display continues to take on similar forms today. Since the World's Columbian Exposition in 1893 participants represent themselves by the means of a pavilion. This exhibition included pavilions of both colonizers and colonized, and the appearances of the pavilions revealed this binary opposition as well. It casted the exotic, the primitive colonial other, as inferior to the modern, civilized displays of European nations.

These days the spectacular pavilions prioritize the visual

imagery intended to drive consumer desire and eager for a place in the 'top-10' or 'must-see' lists online. For example, the spectacular Dutch pavilion at the World Expo in Shanghai in 2010 received exposure via internet and other media. On site it was located on a prominent spot at the European Square. Meanwhile, the contributions of some African nations, that did not have the money to contribute such a spectacular pavilion as the Dutch one, were gathered in an unspectacular joint pavilion at the African square. These did not appear in must-see lists online and also conceived less exposure while located at the margins of the site.

So, while the formal structure of colonialism ended some decades ago, the model of the World Exhibition still reveals a tendency to exclude and marginalize. This means that the World Exhibition today still excludes those who are not represented, for example stateless people, migrants or refugees. And it stills marginalizes the ones with less spectacular pavilions at less prominent places. The division into binary opposition, as described in the previous paragraph, is essential to the understanding of the notions of marginalization and exclusion. For the sake of the illustration of these notions, imagine a group of people with coloured t-shirts. The people are divided into two groups: one with green and one with red t-shirts. People with red t-shirts are excluded if they, for example, are not allowed to enter a particular room while the people with green t-shirt are. Marginalization happens if someone with a red t-shirt enters the room, while all the others in the room wear a green t-shirt. If these people would wear various colours of t-shirts, marginalization it is out of question.

⁴ *This attitude towards otherness is described in the book Orientalism by Edward Said. He elaborates on the history and nature of the attitude of the West towards Eastern culture, customs and beliefs and the contributions of the Wests to the romantic and exotic picture of the Orient. (Said, 2001)*

Centre and periphery. A link is drawn between the tendency of World Expo to marginalize and exclude and the spatial disposition of the displays at the exhibition.

The analysis of the spatial arrangement of World Exhibitions⁵ reveals that the exhibition always takes place at an enclosed terrain. The site is often located at the periphery of the host city. On the exhibition sites the pavilions are appointed to an individual plot. The pavilions do not have any interaction with each other. The masterplan arranges the plots of the displays. Remarkable is the recurrent use of a symmetrical axis. This entails a particular hierarchy, because it divides the site into a centre and a periphery. The centre is close to the symmetrical axis, and the periphery is at the margins of the site. This division reflects the binary opposition in which one is dominant of the other, in this case is the centre dominant over the periphery. Therefore this division is interpreted as the spatial embodiment of marginalization.

The pavilion typology. The displays of the participants can be interpreted as elite representations of nations. They appear in the shape of a pavilion on individual, neighbouring plots. The pavilion typology is identified by a naturally extrovert character. Spatially, it represents unlimited expansion outwards from a central focal point: the heart. The pavilion's extrovert character is enhanced by the purpose to attract people to the Expo site and into the nation's exhibition. This implies the need for an attractive, spectacular facade. The interior of the pavilions are often subject to the representation techniques of other media.

The clear separation of plots can be interpreted as the apparent boundaries of the territory of nations. This division prevents pavilions to generate a relationship with other pavilions.

Problem statement. The orientation identifies an opportunity to transform the spatial disposition of World Expo for the

A reflection of values in the spatial disposition

Problem statement

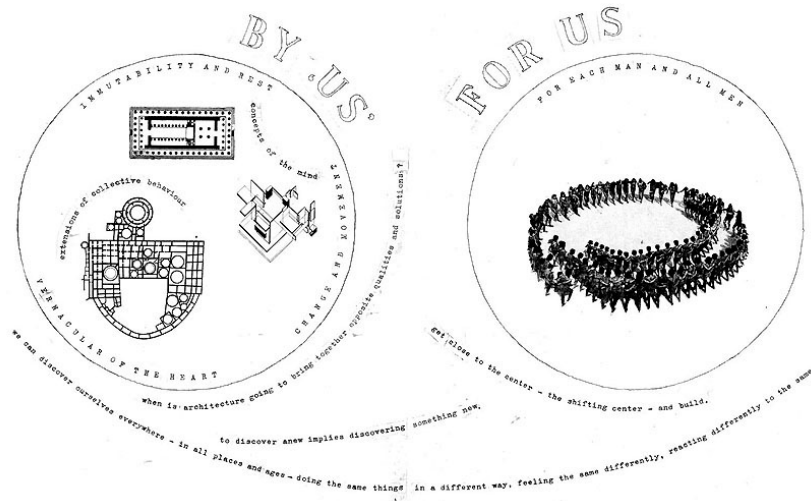
sake of inclusion.⁶ This is based on the assumption that society has changed, while the power structure that determines the spatial disposition of Expo kept unchanged. The following problem statement is formulated: the spatial configuration and implantation of temporary exhibition architecture at World Expo is unable to be inclusive, because it reflects a power structure of marginalization and exclusion.

⁵ Find the analysis of the spatial arrangements of World Exhibitions in the appendix.

⁶ In the light of this discourse there is a broader trend of inclusion identified in society, which relates among others to themes as gender equity and cultural diversity. In particular in the field of curatorship there are experiments with new inclusive perspectives.

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The Otterlo circles by Aldo van Eyck



⁷ The importance of inclusion in the field of architecture is not something new. It was highlighted by Aldo van Eyck at the CIAM meeting in Otterlo in 1959 where he presented the Otterlo circles to the other 10 present members of CIAM. The discussion that followed marked the dissolution of CIAM. (Risselada, Heuvel, & Team, 2005)

⁸ An architect that affirmed the importance of inclusion in life and the relation of inclusion and the mutual dependence of opposites was Aldo van Eyck. His interpretation of opposites becomes clear in the idea of the reciprocity of 'twin phenomena'. This inquiry will not elaborate on the architectural expression of the ideas of Aldo van Eyck, but it takes his interpretation as a starting point for a further investigation.

By reconciling between twin phenomena such as inside and outside, that denied the possibility of easy dialectics, van Eyck sought to identify an in-between realm that would, in the architect's own words, reconcile conflicting polarities.

An inclusive understanding of binary opposition. As explained in the previous paragraph the current power structure, that is reflected in the spatial disposition of the World Expo, is based on a binary opposition in which the object is dominant over the subject.

Here arises the opportunity to transform the model for the sake of inclusion.⁷

Architecture is related to the formal understanding of binary opposition, as it deals with conditions of outside-inside, openness-enclosure, individual-collective and so on. This means that apparent opposite phenomena are depend on each other for their meaning. As is for example illustrated in the opposition large-small.

The idea of bringing apparent polarities into balance can be related to the idea of relativity. Everything is related and therefore has no irreducible fundament; there is no absolute order. This respect the complexity of reality, as it does not try to force it into any sort of reduced order.⁸

These thoughts correspond with the interpretation of opposites by the architect Aldo van Eyck. It implies a particular uncertainty, as if there is no definite answer. There is always doubt; as for example in the question Aldo van Eyck repeated many times: 'If society has no form, can architecture build the counter-form?'⁸

The latter question is really interesting, because it reveals the power of inversion as a tool to understand the values and limitation that underly form.⁹ This tool of inversion is used to understand the values and limitation that underly the spatial disposition of World Expo. This inversion is already apparent in the problem statement described in the previous chapter, which entails the inversion of marginalization and exclusion into a system of inclusion.

An inclusive understanding of binary opposition also inverts this power structure and interprets two opposing conditions as being mutual dependent, because for completeness they complement each other. This understanding of binary opposition will be defined as an interdependent system.

Invert the model for the sake of inclusion

Research question

A system of interdependence. The understanding of binary opposition without an absolute order is at the foundation of a system of interdependence. It corresponds with the idea that our society is constantly on the move and that the world no longer has any kind of stability. It is shifting all the time, but not towards a final goal or utopia, as described in the previous chapter.

An understanding of interrelation also corresponds with the complexity of a globalized world, in which there is the ability to be ever-connected with people from all over the world. The accessibility of internet entailed new kinds of relationships and collaborations. As a result apparent boundaries and hierarchies dissolve and in this way the opportunity arises to invert existing power relations. This has implications for the understanding of territory as well. Borders may be still in place, but they do not matter as much as they used to a half-century ago.

So, the Global Exposition will take up the potential to engage visitors with an interdependent view of the world, which is driven by another understanding of progress and finality, the devaluation of territory and an apparent need for a relative balance. It will be able to inspire with a different future as it exposes a more harmonious understanding of the relationship between object and subject.

Research question. The current Expo model manifests the cultural differences of nations and focuses on the distinct technological improvements that are developed within these boundaries. As a result the model causes reconciliation within nations, but on a global level this focus entails to divergence the global community, because it is based on marginalization and exclusion.

⁹ *Diana Agrest describes this process as a Mannerist inversion of the established architectural rules. Each element is used in contradiction to what should be its prevailing ideological function. The concept of the closing and opening of limits introduces the notion of an ideological filtering in the production of design. (Hays, 1998)*

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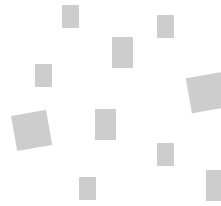
An overview of the inversion of the World Expo model

Location



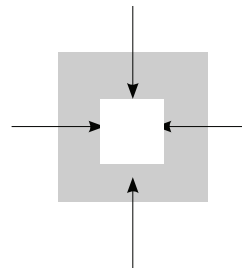
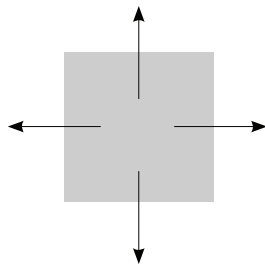
Fixed location → At different places around the world

Focus



Collective memory → Individual awareness

Form



Pavilion: extrinsic → Patio: intrinsic

Communication



Share information → Internalization

Here arises the opportunity for a Global Exposition to be inclusive and to reconcile people on a global level.¹⁰ In order to do so it will engage with an interrelated understanding of the world, which corresponds with essential characteristics of the today's globalized world as described in the previous chapter.

The global exposition will continue on some of the qualities that are recognized in the current model of World Expo. This includes the aim to represent world in all its diversity, the ability to temporarily transform a place, and to marvel with the unknown. But it will focus on the aspects that are neglected by the current Expo, and which are revealed by the inversion.¹² This alteration will be done by the means of architecture. In order to do so a in-depth inquiry is needed of architecture in relation to notions of interrelation and interdependence.¹¹ That will be the aim of the following research, which is limited by the perspective of Mies van der Rohe, Hans van der Laan and Richard Padovan.

The following research question is formulated:

What spatial configuration and implantation of temporary exposition architecture enable a global exposition to articulate an inclusive approach that reflects a system of interrelation between object and subject?

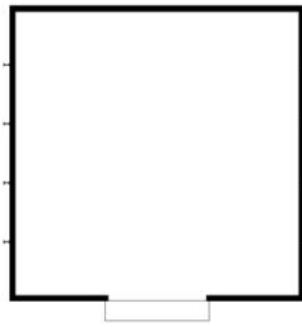
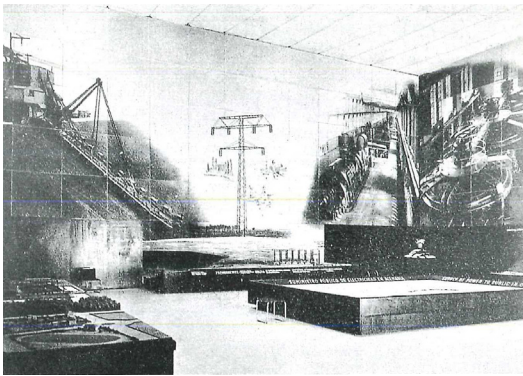
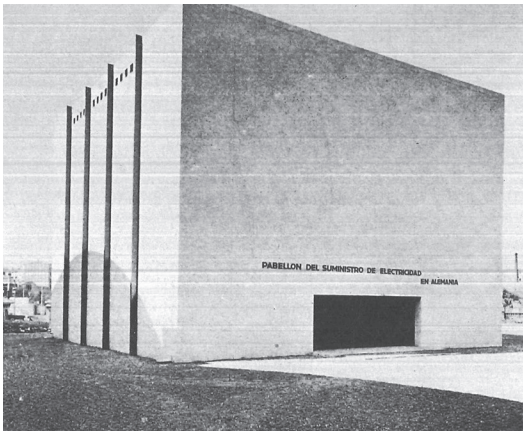
Subquestions:

- *What values limit the current spatial disposition of Expo?*
- *What relation has the architecture of Mies van der Rohe and Hans van der Laan with the notion of interdependence?*
- *Does correspond with their vision on life and in what way does it manifest in their buildings?*
- *How does this relate to the use of proportions and dimensions?*

¹⁰ *This approach corresponds with the theory of bonding and bridging. Here bonding refers to an increase of social capital in social networks of homogenous groups. Bridging refers to an increase of social capital in social networks between socially heterogeneous groups. One kind of social capital may be good in one setting but not necessarily in another setting. The current model of World Expo can be interpreted as a model of bonding. The Global Exposition that will focus on the world community as a whole will refer to bridging social capital.*

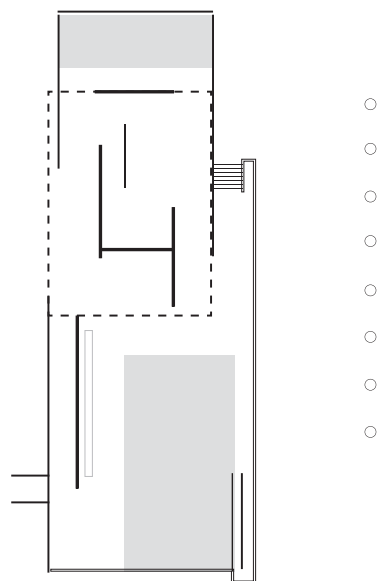
¹¹ *This interpretation of binary opposition corresponds with the theory of yin and yang in Chinese philosophy, which understands that seemingly opposite or contrary forces may actually be complementary, interconnected, and interdependent in the natural world. They do not confront each other, but they are in complementary harmony. They depend on each other for the completeness of all being and all processes. It takes effect not only in all natural phenomena, but also in the affair of man. In this way oppositional thought is totality, to reveal the opposite is to achieve totality. (Blaser & Malms, 1996)*

¹² *This strategy is based on an understanding of dynamic change. The in - yang implies a range of dynamic play, it is not a fixed range. It is therefore interpreted that the world of being arises out of their change and interplay. Thus change is conceived of partly as the continuous transformation of the one force into the other. This principle forms the foundation of the Book of Changes. Within each situation there is a balancing or harmonizing situation. It is a dynamic force, a changing force, because life is not static. I Ching offers strategies to restore balance. (Wilhelm, 1923)*



Above
The Electricity Supply pavilion by Mies van der Rohe. Image of the exterior, interior, elevation and floorplan. (Quetglas, 2001)

Below
The German pavilion by Mies van der Rohe. Image of the exterior, the court, and floorplan. (Quetglas, 2001)



Architecture of interdependence

Research

This inquiry aims for a deeper understanding on architecture in relation to the notion of interdependence. The inquiry is limited and framed by three authors. The authors include Mies van der Rohe, Hans van der Laan and Richard Padovan. The inquiry considers them in relation to each other. It will focus on their understanding of interdependence and its relation to the use of proportion in architecture. These three architects have a different background, but share a common interest in architecture and the interrelatedness of parts and the whole. This resonates with their understanding of the world, and of life, as being interrelated.

An inquiry of proportions. In order to do so a clear understanding is needed on the notion of proportion. Like the German word ‘verhältnis’ and the French ‘rapport’, the Dutch word ‘verhouding’ means both ‘proportion’ and ‘relation’. However, the meaning of the English word makes a division between proportion and relation. The concept of proportion/relation is enriched when it is understood as a single notion that extends all the way from the relationship between two individuals to the ratio between two numbers. In this inquiry the word proportion is interpreted as being both aspects; a proportional relationship. (Padovan, 2002)

Mies van der Rohe. This inquiry will start to generate a deeper understanding of the architecture of Mies van der Rohe. It focuses on his work in the 1920s. At that time he was living in Berlin, the capital of the Weimar republic and the radiant centre of Weimar culture. From 1933 onwards, after pressure from the Nazi regime changed the political conditions in Germany, Mies left his home-country and continued his career in the United States.¹⁵

Two pavilions at the 1929 Barcelona International Exposition. Mies is linked to the phenomenon of World Expo by the pavilions he made for the World Exhibition 1929 in

Barcelona. One of these contributions is the well-known Barcelona pavilion. In addition, he also made the German Electricity Supply Pavilion and several other exhibits in the Official Section’s buildings. For this purpose he collaborated with the interior designer Lilly Reich. The Electricity Supply

Pavilion remained practically unnoticed in the shadow of the spectacular Barcelona pavilion. (Quetglas, 2001)

The Electricity Supply pavilion is, as seen in the image on the left, a single rectangular building-volume. It has many similarities with an industrial hall, as the interior was conceived as one large area that permitted the greatest possible flexibility and freedom for the exhibition. Mies designed the support-free space in such a way that it gave the illusion of being open on all side. The windowless cube was on the inside completely covered with plates onto which large-scale photos were projected. In the light of binary opposition the building had a clear division between interior-exterior. (Quetglas, 2001)

The other pavilion, the famous German pavilion, was no host for an exhibition. It was the setting for the inauguration of Germany at the exhibition and the place where king Alfonso XIII of Spain could sign the book of ceremony. The aim of the pavilion was to represent Germany and to communicate it’s self-image to the world. In this way it was an embodiment of the values of Germany in the interwar period. (Quetglas, 2001)

The pavilion is no box like the Electricity Supply pavilion; it is rather a free assemblage of horizontals and verticals – lines and planes. The walls are not tectonic, so in this way they can be interpreted as folding screens. They are fixed, but like the movable walls of Japanese houses, they are not structural, and kept very thin and having a flat surface.

Mies had already used the free standing wall, in the sense of an isolated plane in space, in the brick country house proj-

¹⁵ *Mies van der Rohe is known as being a leading figure of the Modern Movement. Though Mies became a famous architect in the course of his career, he was no frequent writer or lecturer. Fritz Neumeyer found handwritten notes in the margin of books in the library of Mies. In this way Neumeyer was able to make a reconstruction of the metaphysical and philosophical inquiry upon which Mies’ based his modernism. The Artless Word aims to present a deeper understanding of Mies’s values, interests, and buildings. (Neumeyer, 1991)*

¹⁴ *In opposition to Plato, Aquinas identifies truth, not with a pre-existing world of eternal ideas above and beyond the visible world, but with the products of human mental action: of a certain mutual relationship achieved between our mind and the world of real things. So for Mies, as for Aquinas, things are not mere appearances or symbols, but real: it is universals that exist only in the mind. Mies’ buildings do not aim at universality in order to symbolize a greater reality lying behind them, but simply in order to be more completely intelligible to ordinary human beings. (Neumeyer, 1991)*

ect; what was new in the Barcelona Pavilion was that the wall stood free of the structure, and that the loads were carried by columns.¹⁵

In the light of binary opposition the Barcelona pavilion embodies the juxtaposition of spatial opposites in one building: openness-enclosure, horizontal-vertical etc. In this way the pavilion reveals an ideal world of in which opposites both exist, and are dependent on each other.¹⁵

This is reflected in the undetermined, but apparent route that guides a visitor through the pavilion. This takes the visitor from the exhibition terrain into the delimited interior of the pavilion, and from there it moves on in order to receive a new view of the outside world, and then back into that world out of which he had come.

The Barcelona pavilion is an enclosed space, because the folding walls on the exterior enclose its space. At the same time it does not have a clear division of interior-exterior. In this way the work can be interpreted as the juxtaposition of two approaches to architecture: on one hand the single, symmetrical block-form and the clear, logically expressed structure of the concrete office project, and on the other the De Stijl-like composition of asymmetrical disposed volumes. (Padovan, 2002)

This could be interpreted as the reflection of the conflict in Mies' work between a sachlich concept of art as concerned with objective, practical realities, and the poetic De Stijl ideal of representing an immaterial world of pure thought. It is as though the concrete office building and the brick country house had been overlaid upon each other as synthesis of scholastic clarity and neoplasticist spatial continuity.

Towards a deeper understanding. In the 1920s Mies identified the freedom that technology gives, but he also became aware that man had to recommit himself to responsibility towards the whole. This, he thought, could only become possible if man relates this responsibility towards the whole to himself.

Mies envisioned a new but not unilateral modernism in which subjective forces were restrained by objective limits. In this understanding, the potentially threatening power inherent in technology were subordinated to the subject, to man

and his life.

His concept of a modernism conscious of the limitation of technology is based on the writings of Guardini that were studied by Mies particularly in that time period that preceded the planning phase of the Barcelona Pavilion and the Tugendhat house.¹⁵

There is a relation identified between the spatial configuration of the pavilion and the thoughts on the limitation of man in Modern times. In this way the open but bounded form of the pavilion provided the ordered, but oppositional reality of freedom and retreat, expansiveness and restraint.¹⁵

The juxtaposition of opposites in the Barcelona pavilion exposes Mies' interpretation that the conflict of opposites was not resolvable by a formula. He understood that life could not be thought of as a synthesis of disparities, nor even as a whole of sides of which are complementary parts. It exists rather as an elemental form, a bound duality that, typical for human life, must be imagined as existing between two death zones.¹⁵

So, the two pavilions at the International Exhibition in Barcelona in 1929 embody two contrasting visions on technology. The Electrical Supply Pavilion represents the freedom and flexibility offered by technology. In the Barcelona pavilion these forces are acknowledged, but restrained by objective limits. The delimitation of space performs here as an order that harnesses the forces of progress. Mies thought that was necessary to guarantee life.

The different aims of the two pavilions also identify another opposition in architecture: one of formalism and functionalism. In this way the Electricity pavilion is a functional building, because it aims to provide an optimal space of freedom for the exhibition. The previous interpretation of the German pavilion reveals that this pavilion is based on a more formal understanding of architecture. Another interesting opposition is the role that the personal interpretation of the visitor plays in these two pavilions.

So, in the German Pavilion Mies allows the outer walls to fold around the corners so as to contain the space. In this way it accepts the classical notion of spatial enclosure. The question arises if spatial enclosure and closed corners are,

then, necessary conditions for space formation and therefore for architecture as a spatial art?

This question resonates with the rediscovery of the primitive beginnings of architecture by the Dutch Benedictine architect Dom Hans van der Laan and this forms the foundation of his interrelated understanding of architecture.

Hans van der Laan. In the 1940s Dom Hans van der Laan sets out this rediscovery. He begins by identifying two ways in which architectural space can come about: by digging materials out of the ground in order to build them up to enclose a habitable space, or conversely, to throw the excavated material away and live in the resulting cave.

These two ways of creating space can be illustrated by a theory of the Gestalt psychologist Edgar Rubin that was published in 1921 the book *Visuell warhgenommene Figure*. It involves figure-ground perception, of which the Rubin vase is taken as relevant for the comparison with architecture.

One recognizes the drawing as a picture of a black vase; one can also perceive it, however, as two white faces turned towards each other, against a black ground. It is not possible to see both the vase and the faces simultaneously. To destroy the figure-ground relation completely, it is necessary that the contours be reduced to black lines against a continuous white ground. This can be seen in the images at the bottom of the page.¹⁵

When this principle would be applied to three dimensions, as is needed for a spatial interpretation, these lines can be compared to planes which separate spatial volumes: the areas above, between and below the lines now represent both

the exterior space and the interior space.

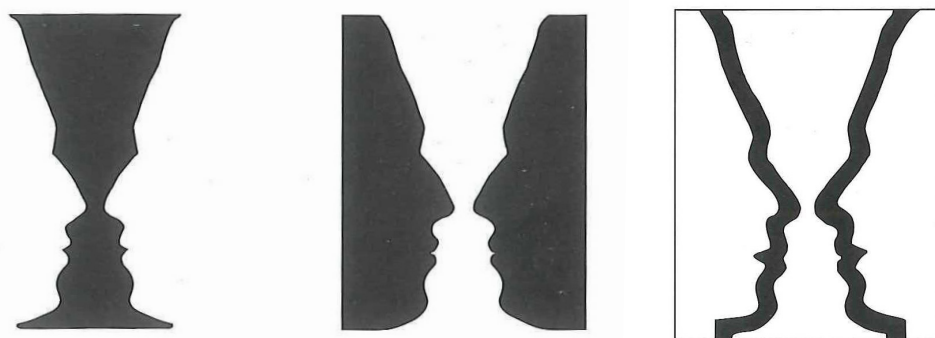
Van der Laan argues that an architectonic space is distinct from both the hollowed-out cave and the free-standing sculptural form. He points out that the surface of a free-standing mass needs to clearly belong to the form that it delimits. In this way the spatial form is not constituted by a surface, but by the mutual neighbourhood of its opposite walls.

He elaborates that the nearness of walls, is a proportion between the thickness of the walls and their distance apart: walls twice as thick appear to be in each other's neighbourhood at twice the distance apart. Therefore one could say that four dimensions are needed to define the form of the space: its lengths, height, and width, together with the wall thickness.

Van der Laan argues that the correct proportion of the wall thickness to the width of the space is crucial to the spatial form: the walls must be neither too thick nor too thin for the space. If they are too thick the space appears hollowed out, like a cave; it borrows the surface from the wall, destroying its form. Conversely, if the wall thickness is negligible in proportion to the width of the space, the walls appear, as formless membranes wrapped around a space-bubble.

The downside to this theory is that it is only applicable to very simple spaces, such as a room or a gallery contained between two parallel walls. Van der Laan argues that on a large scale all spaces wider than the seven times the wall thickness must derive their form either directly or indirectly by way of a proportion between their width and that of basic gallery space formed between walls.

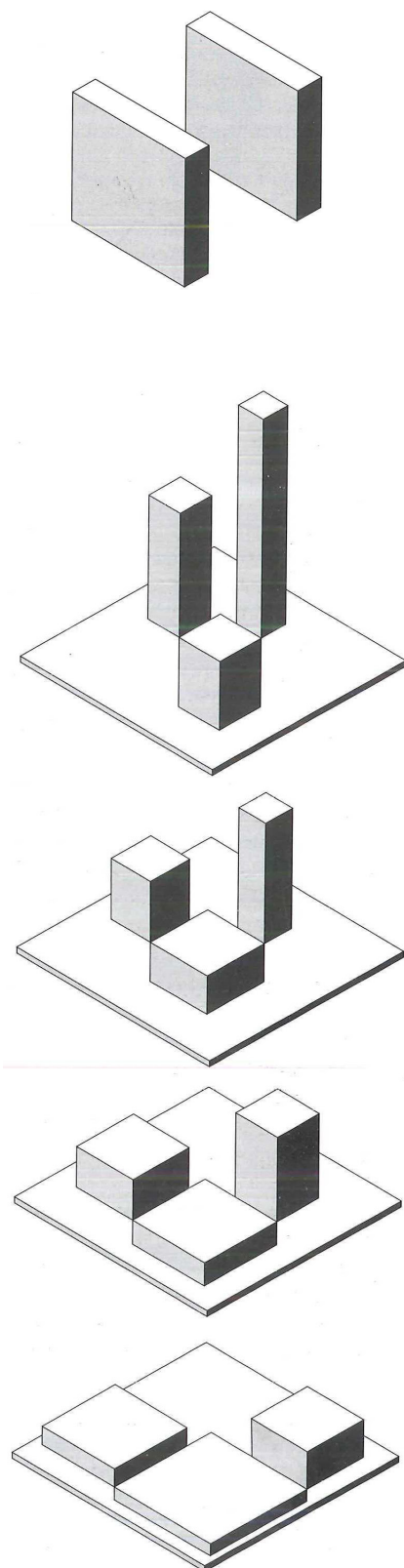
However, it is very difficult to measure such proportional



Above

Figure-ground principle illustrated by the Rubins vase. The version with the contour of the vase allows to see both the vase and the faces simultaneously. (Padovan, 2002)

¹⁵ *The Danish architect Rasmussen draws the link between architecture and the Gestalt theory. He interpretes the image of the Rubins vase as being 3D in order to illustrate the figure - ground principle of space. As seen at the images on the left. (Padovan, 2002)*



Above

Dom Hans van der Laan: examples of spaces generated by arrangements of three forms in varying proportions. (Padovan, 2002)

relations. Therefore Hans proposes at the end of his life another perspective on architectonic space, in which complete building volumes are placed directly in relation to each other within continues natural space.

A deeper perspective. In this new perspective, which Van der Laan called a deeper perspective, space is no longer cut out from natural space and separated from it by a wall, but becomes itself part of that space, momentarily halted and held in suspension within a field of forces set up by the interrelation of solid volumes. The volumes are differentiated, no longer merely by the contrasting scale of their horizontal dimensions, but also by their posture. The volumes are distinguished as standing, sitting or lying forms.

In this understanding of space, the external architectonic space (urban) is continuous with natural space, but it is brought into being by building volumes. Within these volumes the internal spaces are contained in the traditional way.

In the first interpretation of van der Laan vertical walls had created a separate shell-space, a formed inside, divided off from the spatial continuum of nature. In this deeper perspective, the continuum itself is made visible by the placing of forms within it. It now becomes a question, not of enclosing a separate space within the space of nature, but of arranging objects within that space, by means of which it is revealed in its own right.

In order to illustrate this understanding of space, as happening simultaneously on the interior and urban level, another look at the figure-ground image is needed on the previous page. In this understanding of the figure-ground there is no dominant side, but these oppositions are interrelated.

Before this interpretation of Van der Laan can be related to the Barcelona Pavilion of Mies van der Rohe it is important to comprehend that in Van der Laan's deeper perspective the exterior (urban) space and interior space our bound to remain separate.

However, the Barcelona pavilion shows that this separation does not have to be so apparent. Within the U-shaped walls with their enclosed corners the free play of wall-planes and flowing space is possible. Externally, the buildings as a whole

becomes in turn a potential element in the corresponding play of masses at an urban scale, by which, as Van der Laan says, natural space is made visible, by a certain play of its dimensions, between these volumes. At a still larger scale, the city as a whole can be conceived as a figure set against the surrounding countryside.

As Christian Norberg-Schulz writes in *Existence, space and architecture* (1971): 'In general, the levels form a hierarchy. The house, for instance, is essentially interior space but, in relation to the urban level, it functions as a private or public landmark. Its properties as a mass become relevant. The same holds true for the town itself, which although easily characterized as public interior space, in relation to the landscape comes a concentrated form'. (Padovan, 2002)

The concept of simultaneity. Mies van der Rohe and Hans van der Laan both emphasise an understanding of interrelation, which is related to an understanding of apparent (formal) opposition that can happen simultaneously. In the case of Van der Laan this means that urban space and interior space are defined by the delimitation of space simultaneously, as illustrated by the contour of the Rubins vase.

Mies van der Rohe emphasizes that in the Barcelona pavilion apparent oppositional characters of space can take part in one building simultaneously. It reflects a deeper understanding of the interrelated nature of life.

Richard Padovan identifies a strength in the coexistence of apparent oppositions and the concept of simultaneity today. He argues that architecture is in need of an approach of coexistence of apparent oppositions as universal-individual, and permanent-transitory. In architecture, as well as in art, the universal cannot exist without the individual, the simple without the complex. In this way not one side must be chosen, but both together. (Padovan, 2002)

Understanding as a purpose of architecture. The inquiry reveals that architecture has a purpose as a mean to evoke an understanding of the world, because it reflects particular values that are articulated by the delimitation of space. This interpretation of architecture as the embodiment of a particular understanding of

the world is especially relevant in the context of exposition architecture that wants to provide a particular understanding of the world. In the light of this understanding it is interesting to revise the spatial disposition of Expo, to see what values its spatial delimitation reflects. In the following chapter this will be done and put into an historical perspective.

In the light of the concept of simultaneity it is possible to critically reflect on the architecture of Mies van der Rohe and Hans van der Laan. The Barcelona reflects a particular understanding of interrelation, but its permanent appearance provides a static interpretation of it. This does not correspond with the Chinese understanding of temporarily and changeability of the same notion. Moreover, the permanent character of the pavilion is notable, because it was opposed to the temporary nature of the exhibition architecture. The permanent character of the pavilion can be interpreted as a prelude of persistent Nazi Germany that was on the rise. (Quetglas, 2001)

Beyond formalism

In the 1920s in Germany there were several architects that were, as Mies van der Rohe, concerned with architecture of an unified whole.¹⁶ Among them was Bruno Taut. He writes a book on his trip to Japan in which he describes the habits of the people and their houses. Taut finds that the architecture in Japan can be interpreted as an architecture of relationships (with the landscape, between interior and exterior, between people). Its temporarily and changeability corresponds with the habits and customs of the people, and the way they perceive life. In this way it reflects their understanding of the world, and of apparent oppositions in a way that moves beyond formalism. Central to this is the harmoniousness relationship of man and its architecture with nature. The buildings are an expression of the human relation to nature, with materials as unadorned and ephemeral as the world around it.¹⁷

¹⁷ Bruno Taut describes the houses and people of Japan in his book. In the light of temporality the precedent of the shrine buildings at Naikū and Gekū, as well as the Uji Bridge, are really interesting. They are rebuilt every 20 years as a part of the Shinto belief of the death and renewal. (Taut et al., 1958)

¹⁶ Adolf Behne introduced the idea that form is an eminently social matter, as an attempt to rescue the concept of form from what he saw as the ultimate dissolution of form by the functionalists. If each building were considered not individually but as part of the collective sum of total of all buildings, it must conform to certain generally valid principles. It was the consciousness of these general principles that Behne described as form. Behne's idea, particularly in its binary opposition between the pursuit of individuality and of a socialized whole. Behne proposed that form in architecture corresponded to forms in society. (Forty, 2000)

Below left

The primitive hut Marc-Antoine Laugier, 1755 (Rykwert, 1972)

Centre top

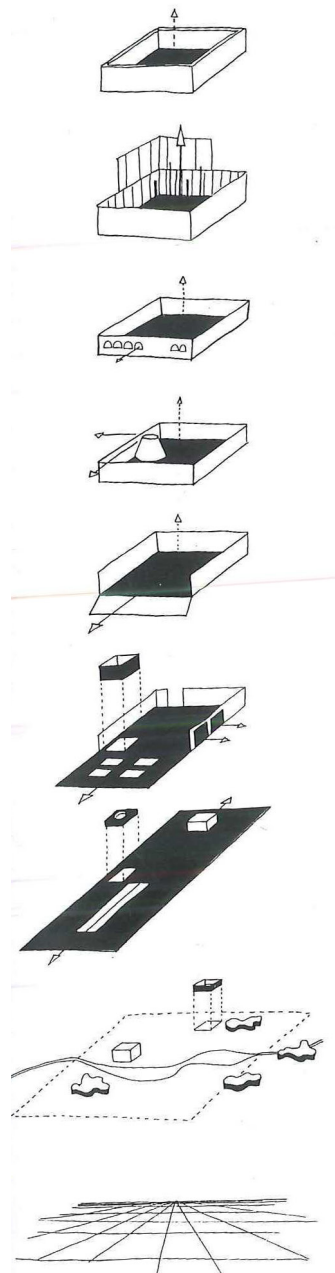
Suburban sprawl (Mark Strozier, 2016)

Centre bottom

Aerial photo World Expo Milan (<http://www.expo2015.org/>)

Right

Transformation of the enclosed garden (Aben, Wit, & Kirkpatrick, 1999)



The ideal of freedom and independence: a link to the idea of the primitive hut. A wider perspective on the relation between the formation of space and an understanding of particular values of society is provided by a study on the primitive hut and the transforma-

tion of the enclosed garden. Both of these studies show that there is a potential relation between this. There arises the assumption that the current spatial disposition of World Expo, individual pavilions free in space on equal sized plots, reveals an ideal of freedom and independence. This runs counter to an understanding of interrelation, which is based on the interdependence of unequal parts.

The pavilion typology is related to the romantic ideal of personal freedom and romantic love, which can be traced back to the idea of the primitive hut defined by Marc-Antoine Laugier in 1755. In *Essai sur l'architecture* he defines the primitive hut as the essence of architecture.' This ideal later transformed into the picturesque suburban villa, and has remained the dream and often the reality of the modern house throughout the world. (Padovan, 2002) The spatial disposition of the displays at World Expo shows many similarities with suburban villas. The picturesque suburban villa is characterized by free-standing houses in unbounded space. This spatial disposition belongs to the ideal of a democratic society. It is therefore not surprising that this corresponds with the place where this spatial arrangement is found, take for example the United States.

The idea of the primitive hut can be interpreted as a utopian ideal, but than in the past. Like a utopia, the interpretation says more about the time that the idea is formulated than about real the beginning of architecture. This is reinforced by the portrayal of the idea of the primitive hut in the book *On Adam's House in Paradise*, as Rykwert writes, 'it is a promise as well as a memory'. It is also supported by the interpretation of the origin of architecture by Viollet-le-Duc. In his book *The Habitation of Men in All Ages* he writes on the developments of houses through the ages. This interpretation of Viollet-le-Duc reflect some characteristics of this period of time. These include an understanding of duality and the belief in progress. (Viollet-le-Duc, 1876)

A reflection of particular formal conditions and the values

Additional findings

Research

of society is also emphasized in the book *The Enclosed Garden*. (Aben, Wit, & Kirkpatrick, 1999) Over time there is a transformation identified from centripetal, enclosed gardens, towards centrifugal open gardens. The dominant use of free, open space in the typology of the garden has caused that the gaze of its guests is fixated on the horizontal, not on the vertical. A link is identified between the deterioration of religion and the increase of ratio and reason, and the replacement of vertical vista of the centripetal enclosed garden by the horizontal centrifugal vistas of an open park. In addition, the book emphasizes the need to return the typology of the enclosed garden to the cityscape as a place for quietness and contemplation. (Aben, Wit, & Kirkpatrick, 1999)

However, the links that are identified with this studies need to be considered carefully, because there is a danger of falling into generalizations. One of the reasons for this the understanding of multiplicity, as described in the following paragraph. In order to overcome simplification of the arguments and the historical perspective no conclusion is drawn, but there is made an opening for further investigation.

Multiplicity

This inquiry has brought the architects Mies van der Rohe, Hans van der Laan and Aldo van Eyck in relation to each other. Their backgrounds indicate that they are architects of a totally different time and vision. Mies van der Rohe is seen as a leading figure of the (early) Modern movement. Aldo van Eyck took the lead in the break of TEAM X from CIAM in Otterlo in 1959. However, the inquiry reveals that they actually has an equivalent understanding of apparent opposing forces as being complementary and interdependent.

By this finding, a need for multiplicity is identified. This means the acknowledgment that things consist of many elements in a complex relationship. And therefore are not that black and white. The notion of multiplicity is exemplified by the pixels of a printed image. The eye sees one point as having one colour, for example red. By zooming in with a lens you can see that this particular point actually consists of many pixels in various colours.¹⁸

¹⁸ Another argument for the need of multiplicity is found in the book *Houses and People of Japan*. In this book farmhouses in Europe and in Japan are compared that emerged without ever exchanging knowledge. The farmhouses reveal striking similarities. (Taut, Shinoda, & Balk, 1958)



Above

A collage that reflects an interpretation of the spatial disposition of the World Expo in relation to values of independence and freedom

This chapter describes what spatial configuration and implantation of temporary exposition architecture would enable a global exposition to articulate an inclusive approach that reflects a system of interconnectedness between object and subject.

The inquiry reveals that the architectural act to delimit space reflects a spatial interpretation of values with regard to apparent (formal) oppositions. An example of this in the case of the Barcelona pavilion is openness and enclosure; expansiveness and retreat; restraint and freedom. In the light of interrelation the Barcelona pavilion shows a coexistence of the apparent oppositions.

This interpretation of architecture as the embodiment of values, and thus the abstraction of an understanding of the world, is especially relevant in the context of World Expo, because the values that are reflected in its spatial disposition represent the foundation of the understanding of the world.

The discovery of Hans van der Laan on the existence of space provides an understanding of spatial interrelation as the coexistence of apparent (formal) oppositions as well. He addresses that space comes into being when there is a particular nearness in it the delimitation of it. This applies to both sides of a wall or volume: on the inside (the interior space) as well as on the outside (urban space). This understanding is illustrated by the image of the contours of the Rubins vase, which allows the viewer to see both figure and ground simultaneously.

This understanding of coexistence is deepened by the concept of simultaneity, which emphasizes that apparent oppositions exist simultaneously. This is characterized by an understanding of both/and instead of either/or.

So, in order to articulate a system of interdependence the architecture of a global exposition should be inclusive to the space that is delimited at both sides of a wall or a mass, simultaneous. The current model of World Expo is a collection of pavilions which delimit space dominant to one side: the interior. The urban side is not determined. This is the result of the tabula rasa approach on site and the division of the pavilions on individual plots. In this way the pavilions act like they are all standing in free, open space, independent of each other.

This interpretation of the current spatial disposition of World Expo in relation to the values of freedom and independence is especially interesting, because it runs counter to the ideal of mutual dependence as advocated by an understanding of interrelation.

So, the spatial disposition of the World Expo reveals that some

Conclusions and recommendation

(formal) oppositions play a dominant to their counterpart. For example, the interior space is dominant over urban and the individual over the collective, the particular over the universal, and the specific over the general.

For the sake of inclusion, and to evoke an understanding of interdependence, two strategies of simultaneity are identified. On the one hand, the spatial disposition can take into account the inclusion of both of the apparent (formal) oppositions in one design. On the other hand, a strategy of inversion, addition and connection is identified. In this way apparent dominant notions are connected by the addition of their inverted form. In the case of the current spatial disposition of World Expo this could include the design of the exterior space, the void, that exists in between the pavilions. In this way the figure-ground model becomes relative. Another strategy to avoid the independence of context is to implant the exposition architecture in an existing context.

In order to overcome the centre-periphery dichotomy of the current format of World Expo, the spatial disposition should transform into a decentralized model.

Further recommendation

The interpretation of the spatial disposition of the World Expo as a reflection of values of freedom and independence is linked to the romantic ideal of the pavilion typology and subsequently to the idea of the primitive hut as envisioned by Marc-Antoine Laugier in 1755. In this way the spatial disposition of World Expo can also be linked to the spatial disposition of suburban villas, as they both reflect an ideal that is related to the pavilion typology.

In order to draw substantiated conclusions from this link of Laugier's primitive hut, the ideals of freedom and independence, and the spatial arrangement of the World Expo, a further historical inquiry is required. It is suggested, in order to avoid simplified generalizations, to compare similar spatial arrangements in a historical perspective.

Requirements of the design

The design for the Global Exposition will be based on a strategy of inversion, addition and connection. This means that it will invert the strategy of the current model of the World Expo, and it will exist as an addition to the current model of Expo. It focuses on the aspects that are now underexposed, which are inclusion and the internalization of knowledge for understanding.

The exposition will take place over the world (decentralized) and be implanted in an existing environment.

This exploration provided a deeper understanding of the relationship between the interdependence of apparent oppositions and (formal) opposition in architecture. In addition to the conclusions that are drawn for the design of the Global Exposition in the previous chapter, I want to include a part on how this interpretations influenced my perspective on the world and subsequently on architecture.

The inquiry provided a deeper understanding of oppositions, in which the understanding of the colonial division into 'us' and 'them' marked an important start. This division is interpreted as being too simplistic and therefore, as described in the previous chapter, there is a need identified for multiplicity. I propose that a deeper understanding of multiplicity is found in oneself, as opposed to the need to understand another. This because it does reveal, more than anything, how complex, multiple and ambiguous being is. Acceptance become than self-evident.

As described in the preface, at the beginning of the research my perspective on the world includes an understanding of complexity and ambiguity. However, the beginning of the research provoked a clash with an understanding of progress and truth. The understanding of the interdependent relationship of oppositions entailed a perspective of dynamic change, this means that there is a constant shift in balance between the oppositions and therefore they do not strive to an ultimate state. This understanding, which is closely related to relativity, has influenced my understanding of the future, as well as the understanding of truth. In this way truth is always a perception, no matter how dominant this perception is.

I think it is really interesting to reveal the dominant structures and narratives. In this way it becomes possible to think about additional, different strategies. I use the word additional instead of counterforce or counterbalance, because the understanding of interrelation of opposition entails that they can exist both simultaneously. In this way a more harmonious or balanced order can be formulated. The strategy that is used to invert the World Exhibition to reveal its limitations and the values beyond was really useful. This will be a tool to carry with me.

The field of architecture is in need of both/and thinking, instead of either/or. This also relates to the rapid changing conditions of needs of people and subsequently the rapid changing requirements for a proper built environment. It includes an understanding that both the generic and specific, temporary and permanent, determined and undetermined, go hand in hand.

An understanding of life, a vision as architect

Reflection

This understanding of architecture is also linked to an idea of Aldo Rossi. He argues that architecture needs to be specific in terms of location and architect, but it also needs to built further on a (generic) foundation that architecture has. In this way a design relates both to the tradition of building, as well as the specificity of place and time.

If this understanding that is provides in this research is the one truth, if off course again debatable. I think at this moment it is a truth, but the interpretation will be open for other perspectives and therefore open to change.

Glossary

Dichotomy a division or contrast between two things that are or are represented as being opposed or entirely different

Inclusion the action or state of including or of being included within a group or structure

Interconnectedness a dynamic pattern of relationships of interacting parts that can not be understand separateble and in wich the whole is more than the sum of its parts

Interdependence the mutual dependence of apparant oppositions

Internalization an individual's acceptance of a set of norms and values (established by others) through socialisation

Marginalization to put someone in a unimportant position within a society or group

Multiplicity a semi-lattice understanding of identity which acknowledges diversity and plurality, and which is characterized by overlap and ambiguity.

Proportion proportional relationship

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Images

The images are made by the author, unless stated otherwise