"When you ask me what makes something a church I might say the steeple, cross, altar, priest, or grave yard beside it. None of these things individually are a church but instead are parts of a whole. Everyone perceives this combination of symbols differently, 'there is no objectively correct data of a thing's appearance, only an infinite number of subjective impressions of it."
Jeffries 2010

CHAPTER 3

design discourse

3-1 Theory

Architecture as Play.

Architecture as Play.

According to Rem Koolhaas (Content; 2004), architecture is a fuzzy amalgamation of ancient knowledge and contemporary practice. It is an awkward way to look at the world and an inadequate medium to operate on it. He however acknowledges that the term 'architecture' still carry some respect and admiration. The concept of architecture represents hope, because of what has been achieved through architecture in the past. It has the ability to unravel and understand the wealth of information we are confronted with everyday, it then attempts to shape and form it into buildings (Core 2010).

Rem Koolhaas; core 2010

> **"Architects have always built and will always build, but the survival of the discipline depends on whether the awareness of the invisible knowledge is brought forward to bare responsibility of being publicly intellectual and therefore redefining what others expect of the profession.**

Modernism, according to Koolhaas, was the last dominant system of ideas and ideals to guide designers and give them a platform for legitimizing their designs and give the profession of architecture a perceived value. He also made the statement that in the current climate designs have to be accepted by the mass market. This has changed or rather replaced the concept of ideologies of humanism and totality with market hype. Architects can no longer justify their intentions, because buildings need to be marketable. (Core 2010)

Architecture has reached its endgame. What is desperately needed is the invention of new rules in order to play a new game." (Rem Koolhaas; core 2010)

In order to define new rules, the practice and purpose of architecture needs to be re-investigated.

According to Ernest Adams in his article 'The role of architecture in Video Games' (Gamasutra; 2002) the main reasons humans construct buildings are:

- To protect people, goods and animals from weather.
- To organize human activity efficiently - Factories, Theatres, Offices and Sports.
- To conceal and protect goods and animals from theft - Warehouses and Shops.
- To offer personal privacy - Private houses and Public amenities.
- To protect people from danger or other people - Fortifications and Prisons.
- To impress, commemorate or decorate - Monuments and religious buildings.

New rules could be found in the programme that is to be housed rather than a broad ideology that needs to be applied across all architectural designs. In the case of a youth centre aimed to house facilities for children, the idea of play may serve as inspiration for an ideology.

"Play is older than civilization." Johan Huizinga
"You can learn more about a person in an hour of play, than in a year of conversation." Plato

Architecture has always formed the stage or backdrop for playing. Architecture has been the inspiration or concepts for playing in the past. The most successful computer game of all time (The Sims) was influenced and partly based on the work of an architect, Christopher Alexander and his book: A Pattern Language. (Gamasutra; 2010).

Currently Architecture's main purpose is to define space, inside or outside. Visual qualities are added to provide the required atmosphere (Gamasutra; 2010).
A paradigm shift is needed to where the occupants of a building are encouraged to interact with the architecture. According to Jeffries in his article 'My Own Private Architecture' (2010), enabling a person to actively and personally change their environment is the strongest way to engage them in their surroundings.

The best examples of engaging people in their environment, is found in the virtual world of Video Games. By interacting with the content and the design simultaneously the player is unknowingly actively engaged with, and changing their environment. To an observer a game my seem pointless and boring, but the penny drops when the player has to explain all the levels of inter activity involved with the game. From choosing the correct avatar1 to executing strategic moves in a challenge.
There is still only one field of study outside the virtual world of games that gives people the same opportunities to interact with their surroundings; Architecture (Jeffries; 2010).

The world is evolving. The youth is at the forefront of the wave with their ability to grasp technology and the accompanied user interfaces with relative ease. At the heart of this change lies the Video Game. With the audio-visual language and interactive processes associated with Video Games they have worked their way into societies everyday lives, from cell phone games to more advanced home theatre systems, we enjoy escaping to a virtual reality. (Borries 2007)

Borries (2007) goes on and raises the following question: What do we stand to gain from using games for architectural purposes?

1. Avatar - An avatar is a computer user's representation of himself/herself or alter ego whether in the form of a three-dimensional model used in computer games, a two-dimensional icon or a one-dimensional username (Avatar 2010)

Furthermore, he describes the current architectural profession, which is based on an obsolete concept of technological realities. According to Borries in the current architectural climate, designers are increasingly faced with problems such as: economics, technology and ecological aspects. Add this to the usual problems like the layout and aesthetic challenges and the pressure is on.
In his view architecture still has a predominant mechanistic view of technology. This despite the innovative opportunities architecture can provide the formal and theoretical realms. Architects should therefore develop contemporary interactive schemes. The designs should aim to be more organic and sustainable, but with comparable technological embedding in every respect.
(Borries 2007)

The investigation into the spaces and construction of video games can serve as a paradigm for designing buildings.

Figure 3-1. Collage of principal that video games serve as inspiration for architecture
Source - Author

Architecture as a Game.

Game:

1. An activity that you do for fun, that has rules, and that you can win or lose.
2. An activity or type of work that is like a game, for example: it has rules that you must follow. (Macmillian: 582)

According to Elliot Avedon (1971) all games have four common key components. These components are also evident in architecture.
Key Components: **Goals - Rules - Challenges - Interaction.**

Goals can be defined as what we wish to achieve.
In terms of games this is the accumulation of points. In architectural terms the goal can be defined as the main purpose of the structure being designed.

In both Games and Architecture, rules define the parameters that guide the progression. **Rules** are statements explaining what actions are allowed and which are not, they may dictate the order of progression, as well as the rights and responsibilities bestowed upon the parties involved.

Challenges. In games, the challenge normally consists of the desire to beat an opponent, by using tactical moves. Architects face a variety of challenges that need to be addressed and overcome while designing buildings.

Games rely on **interaction** between players and opponents to facilitate the playing of a game, whether the interaction is physical or just social. A game normally consists of Pawns or Avatars that can be moved about with a set of defined rules.
All games require a stage or space to be played upon. Architecture forms the stage where interaction can take place. The programme housed, and the arrangement of different types of spaces, guide the kind of interaction that will take place.

Space as defined by Video Games:

The development of Video Games are centered around the representation of space, whether, one, two or three dimensional

The development of three dimensional graphics represents a revolution in artistic and technical development with regards to the history of the video game. It is possible that this development started the overall transformation of games as meaningless entertainment into the media we are used to today.

The experience of space has become a key element of how we understand games and how we play them. (Nitsche 2009)

Video games range form one dimensional text based games like Zork, and the modern day MixIT, to the first visual representations of two dimensional worlds like the mazes found in Ping Pong and Pacman.
The biggest development in game design was the virtual representation of three dimensional space. Today this extends to the fourth dimension consisting of online social communities and the new ways of interaction between the virtual space and physical space. (Borries 2007: 11)

The virtual spaces that are visited by gamers have changed and are changing our understanding of space and time at an ever increasing rate, taking over form the work done by the film and television industry in early parts of the 20th century. (Borries 2007: 11)

Yet our concept of space is grounded in architectural terms. If there was none, there would be no place at which, in which or even based on which a game can take place. (Borries 2007: 11)

According to Ernest Adams all games that attempt to create a sense of community and belonging, uses architecture to define how the environment will be perceived. (Gamasutra; 2010)

Ernest Adams:

> "Architecture is what turns the bare grid of the chessboard into the living world of the computer game. Character design tells you who you are; architecture tells you where you are. But more than that, it also tells you what might happen to you there, and even sometimes what you ought to be doing." (Gamasutra)

The Primary functions of Architecture in Games are the following:

- Constraint

Architecture establishes boundaries that limit the freedom of movement of avatars, or units

- Concealment

Architecture is used to hide valuable objects from the player; it's also used to conceal players from one another or their enemies.

- Obstacle

Buildings or structures are used as obstacles to test the skill of the player and their ability to master the challenge.

- Exploration

Challenges the player to understand the shape of the space he's moving through, to know what leads where. (Gamasutra)

"An adaptable building is a magical stage that would allow dramatically different activities to occur within the same, but changing space". Kronenburg 2007: 14

The creation of interesting and interactive spaces are certainly not the single answer to the problems we face, but it provides a departure point from where architects and designers can start. Even in the virtual world spacial design precedes the narrative of a story as well as the actual playing.
When playing a game the gamer learns how to deal with the space around him before he is introduced to the stories or the actual game. (Jenkins 2009)

Pioneering games like Super Mario Brothers developed space from something that only passed by while playing into an entity that needed to be understood in order to control it and ultimately to be defeated (Laurie; 2001)
The idea that virtual spaces can be more than just mere images to be observed like the ones found in films, paintings and photography, but spaces to be experienced was a revelation in the world of video games and architecture (Laurie; 2001).

Since architecture was, and still is, the only tangible precedent of space that can be experienced, it was quickly adapted as the template and backdrop to support game-play. If spatial arrangements are the only requirement architecture needs to fulfill in games, as well as, reality, all structures could be replaced by bare grey concrete walls and floors. Architecture however performs other functions while establishing space. It needs to inform and entertain people in it own right.
It does this in the following ways:

- Familiarity

Locations offer clues to the functions and actions that needs to be performed there

- Allusion

Reference to real buildings to get their emotions

- New design

New virtual worlds and new technology needs new architecture.

- Surrealism

Lateral thinking

- Atmosphere
Dangerous
Light hearted
- Architectural clichés
Stereotypical representations of buildings and spaces to create the desired responses.
(Gamasutra; 2010)

"Abstraction and Perfection transport us into the world of ideas, whereas; matter, weathering and decay strengthen the experience of time and reality." (Pallasma 2000: 79)

The original issue still remains. How do we define new rules for Architects?

The challenge lies in approaching the architectural problem from a new perspective. Much like a tactical decision in a game of chess.
In games of perfect information like chess a strategic move of performance is made by rearranging the given data in a new way. The new insight is usually achieved by combining collections of data that was previously independent (Core 2010).

Game developers are constantly struggling with the same problem and have done a lot of studies. Currently they are on the cutting edge of creating new ideas. In the process they have opened up a wide range of different approaches to address the issue of creating space in a virtual world. By combining different fields such as Architecture, film, drama and literature studies, the information can be transplanted across the disciplines (Jenkins 2009).

In Video Games space are experienced in three basic ways:
- As part of the game design
The fictional virtual architecture and mediated spaces created by game, as well as the imagination of the player.
- As part of the personal space
The physical space the gamer occupies while playing the game.
- As a hybrid of the two.
Outside influences can alter the gaming experience, and a gamer immersed in the narrative may experience his physical environment differently.
(Jeffries 2010 and Jenkins 2009)

The Gaming experiences are becoming about more than just the virtual spaces. The places where games are played are becoming more important. This space varies form very private in front of a personal computer to semi-private in the living room in front of a television, as well as, public spaces like a game centre (Borries 2007: 12).

Video Game rules are evolving and extending form the original 'rules of play' to the 'rules of place.' (Borries 2007: 12). Because Video Game players experience space differently, both virtual and physical, they are starting to use it differently. Newer input possibilities like gesture and substantial physical movement, found in interfaces such as the Wii remote and the X-box 360's project Natal, are making this hybridization of virtual and real space available for the mass market.
(Borries 2007: 12).

This new type of interface places more emphasis on the physical world in front of the screen (Jenkins 2009). The change of physical location may even influence the difficulty level and perception of the game in future, migrating the real world into the virtual one (Borries 2007: 13).

According to an article on Wikia Science (2010) there are 3 ways of merging the real world with the virtual one.

1. The player see only a simulated world, while being in the virtual world.
   - This is achieved by replacing all the senses with inputs from the virtual world. The most popular method is using virtual reality goggles and movement tracking sensors.
2. The player stay in the real world, but see simulated objects.
   - Currently this is achieved by viewing simulated objects on screens and receiving feedback via the input controls.
   - It is used by film makers in the use of green/blue screens where the backdrop can be replaced with a digital image.
   - Future developments, as seen in video games, involve holograms of elements created by the virtual world
3. The player stay in real world, but experience the virtual world.
   - The virtual world have control over elements in the real world. The lights, movement of air and sound. It may even involve the use of robotics.

The influence the two realms impose on one another leads to another question asked by Borries (2007: 13): What is the 'next level' of architecture and game design?

Perhaps the solution could be found in the result from super imposing the spaces and social interaction of computer games over the physical space. Both these creative worlds could benefit from a mutual exchange. The merging should consist of the strongest elements of both realms. Architecture should contribute its complexity and realism of space, as well as, design opportunities. Games should extend to provide their modeling expertise and their social interaction studies. The ability to immerse oneself in a game and the sense of fun should be incorporated (Borries 2007: 13).

This intervention opens the possibility where Architects and game designers can determine and create the future of recreational play space as a new form of interactive space. The possibilities extent to both the virtual play space and the real world environment - Could this be the next set of rules to guide design through the future? (Borries 2007: 13).

The attempt to merge the two realms of Video Games and Architecture has been touched on in the past, but was dismissed by many architects as amateur, because the benefits were not properly presented. Yet through these games, palpably effective methods and technologies for more complex and dynamic systems of modelling, control and interaction were developed; these can achieve far more than what is currently possible in architectural practice.

The interesting study lies not in the discourse of thrilling phenomenon, but in the search for mutually beneficial interfaces through which fundamental architectural structures can be linked to a game's modelling, production and interaction patterns. Unlike the focus of the majority of the discourse, these interfaces are geared towards everyday usage and do not demand an unusual amount of labour and practice to be understood.

Figure 3-2. Virtual Reality Goggles. (thewanderlust; 2010)

Figure 3-3. Image of movie Avatar, where the principal of merging the virtual and real world applies. (avatar; 2009)

3-2 Design Approach

The majority of users in the building are in a constant state of change. They are children growing up. The facility needs be adaptable to meet the current, as well as, the future requirements they may have.

According to Kronenburg (2007: 7) flexible architecture consist of buildings that are designed to respond easily to change throughout their lifetime. Buildings should adapt to their changing environments in terms of their use, operation or location.

"Flexible Architecture is a design form that is, by its very essence, cross-disciplinary and multi-functional; consequently it is frequently innovative and expressive of contemporary design issues" (Kronenburg 2007: 11)

Designing a building for change, clearly pose benefits in the life cycle of architecture:
- The building will remains in use longer;
- It will fit its purpose better because it can adapt;
- The building allows the users to intervene and develop their own experience of the spaces
- Flexible design normally makes better use of new technical developments more often;
- In the life cycle of the building it is economically and ecologically more viable to design for adaptability. (Kronenburg 2007: 7)

By adding transformable elements in the building's design, it allows the user to adapt the spaces for it to be used by a variety of facilities. Ceilings can be lowered to give different acoustic conditions and define different spaces. Platforms can be extended to form stages or broken up to become seating. The seating itself can be removed or rearranged and the user should have control over the amount of natural lighting and ventilation (Smook 2007:29/3).

The design should focus on the aesthetic component very strongly, creating interest for the users as well as the passer-by.

The Architecture should actively encourage people to have a look, perhaps even make the effort to go in and see what is happening. Once inside the building the occupant should be encouraged to use the facility in many different ways (Kronenburg 2007: 87)

Element of admiration should be placed strategically throughout the movement routes. By controlling the moment what is revealed and when it is revealed becomes important. This can be done in a variety of simple ways.
- Distracting the observer's attention
- Obscuring the view until the last moment
- Manipulating the movement patterns through the structure.

All these principles have been utilized successfully in Video Games, and may serve as precedent (Jeffries 2010).

Using Video Games as inspiration for spatial design, they have to be analyzed. Most Video Games have a problem portraying outside spaces. The visual limitation of looking at a monitor prevent game designers from the evoking the same feeling as looking at a sweeping vista or panoramic. The same problem can be found in a city context. The feeling of being 8 stories up have no meaning if the buildings around you are the same height and block the view. (Gamasutra; 2010)

Certain design principals apply to designing space in Video Games. As a general rule in three dimensional games, designs that contain only straight lines are cheaper and easier to create, while the use of curves are considered expensive. The result is that designers tend to avoid curves. Resulting in three dimensional spaces that can feel rather sparse and sterile (Gamasutra; 2010)

Buildings designed for use in Video Games normally consist of main spaces that need to be explored. These spaces are designed with great attention to detail, but the remainder of the building is almost undefined. The buildings may be compared to a movie set. Architecture forms a false front that acts as a container tor the main programme. (Gamasutra; 2010)
Game type design of architecture is predominantly designed to be experienced and explored, not necessarily used. The facilities inside are there, primarily to support the narrative (Gamasutra; 2010)

Creating a huge variety of unique spaces and elements in video games are expensive
and places a lot of strain on the game console's resources. The repetition of stages and design elements with only minor changes was developed by game designers to save resources and give the player a sense of familiarity (Laurie 2001).
The same principal could be applied in the design of real world architecture. The developing of certain key elements that are repeated-, could ease the construction process as well as contribute to lower construction costs.

The development of games, also lead to the assignment of hierarchy to spaces or levels in the narrative of the game. In most games there are three levels of developing one's skill and then a fourth where a big challenge needs to be faced. In the physical space, level one could be interpreted as public space where a person may use the spaces freely and becomes accustomed to the building with little obstruction. As the person moves higher up into the building towards the more private portion, the building changes and provides more resistance in the form of security to protect the core. In the case of the youth centre the indoor entertainment area would be considered the private area, where security is paramount.

This prohibition of movement can help with the experience of the building to a visitor. The principal is based on a useful design aspect encountered in Game Architecture. The phenomenon is known as the 'closed chest' conundrum. It is based on the general psychological theme, that there will always be more things in a closed box or closet, than in an open box or closet. This phenomenon explains why places that we never go to, or can't enter seem larger than ones that we do visit. (Jeffries; 2010)

Other techniques could be employed to enhance the experience of the building. The principal of 'deprivation is what gives meaning to abundance' could be employed, by small gestures, like not providing seating throughout the design, but providing plenty of seating only in a few select places of interest that may offer a view or something of interest to observe. (Jeffries; 2010)

Lastly the structure and construction of the building should be utilized. The materials and surfaces of a building have a rich and complex language that evolve and change over time together with the programme.

Caution should be taken to design flat surfaces, like concrete roofs and gutters, properly. If these surfaces are badly detailed they are incapable of dealing with time and weather like several examples of the modern movement (Pallasmaa J. 2000).