

PRECEDENTS

The projects examined in this section are grouped into three spheres according to the manner in which their design influenced and enhanced the design objectives of this dissertation project.

Theoretical precedents gave insight into the creation and development of the theoretical design principles used in the design of CUBE.

Formulator precedents are those that through a physical form or structure design element or elements, inspired techniques on how the design principles of CUBE can be utilised to achieve the design objectives.

Operational precedents are the projects that have been initiated in other parts of the world with similar objectives with regards to built environment education.

Δ RE ТΙ С т н E 0 F R Ν Ε Ο Т ν S

Provocative and intriguing in form, this design for a vase highlighted for the author a very important aspect in dealing with the perception of an object: movement. At first appearance we are presented with an ambiguous amorphic shape that holds several repetitive characteristics. Indeed it is these repetitive elements that infer a deeper logic than initially anticipated. Through constant visual questioning the logic is revealed to be a single form that seems to fall through space and is frozen at specific moments, these moments combining to

create the final shape of the vase. Our perception of the object has shifted from a singular ambiguous



Fig.8_02.Front vase analysis

shape to an array of smaller standard unit shapes.

This aspect of the object would naturally come to reveal itself a lot quicker were we able to view it in its three dimensionality. Yet the fact that this conclusion can be reached through only the two dimensional representation of the object through the picture underscores the importance of movement in generating perception far greater.

A procedural analysis of the vase shows reasons to the author's mind how this has been achieved. Most significant in generating this reasoning is the object outline. Since colour will not give any insights into the deeper logic of this piece, as neither texture nor overall shape will, the recurring elements are focused upon. The identification of similar units on the surface allows the viewer to reconstruct the hidden dimensions of the base unit in relation to each other so that once the entire object has been examined, it is possible to bring together all these parts and reconstruct the hidden object within the overall body.

This precedent crystallises the role that movement has in developing an understanding of an object. In a similar fashion, the movement of the viewer through any structure must have the ability to, if designed for, extend the viewer's understanding of the form and space.

E S T U D I O S A N C H O -M A D R I D E J O S - C H A P E L

In similar fashion to the vase, this chapel was chosen as a precedent to represent a design principle and form generator due to its clarity of readability in this aspect. Initially, one is intrigued when viewing the external view of the chapel: the geometry of the design together with an appreciation for the construction of the cantilevering roof which excites the viewer. Yet what was taken from this project was the use of perspective in design. Tracing the various edges of the structure, it came to the attention of the author that the geometry contained several points of perspective,

each set altering and skewing the space in and around the chapel and the manner in which one viewed it. Continuous examination of this picture forces one to attempt to consolidate the various perspective shifts into a singular set of perspective planes, yet incongruencies refuse to resolve themselves to the viewer's will. As such, one is left feeling somewhat confused regarding the pictorial representation and hence, definition of the chapel's space.

When considering the internal view of the chapel these aspects are highlighted again from another angle. With two sloping non-rectilinear planes coinciding in relation to the other two wall planes, the two sets of perspective systems clash again and with the addition of an angular cross plane in the glass wall, clarity is evaded further.

Regardless of whether this element in the design remains a delusion of the author in the opinion of the reader or is seemingly justified, an important quality of perspective has been revealed.

"...perspective remains "thinking in painting", a formal apparatus given to the artist similar to that of the sentence in language. For the purposes of the following reflections, we might say, echoing Hubert Damisch and agreeing with Panofsky, that the warping of perspectival space is tantamount to thinking in architecture, a discursive meditation on the place of the subject and the other in space."

Vidler, 2000

Indeed it is a quality that demands attention and thought by the viewer in order to obtain a comforting resolution. This special characteristic lends itself as a design solution to the objectives of CUBE, seeking to develop and impart a critical questioning of designed space.



- Fig.8_03.Chapel internal view (top left), Riley, T, 2006
- Fig.8_04.Chapel view analysis (top right)
- Fig.8_05.Chapel external view (bottom left), Riley, T, 2006
- Fig.8_06.Chapel view analysis (bottom left)



Fig.8_07.High and Low, Esher, M.C., 1947

M.C.ESCHER

World renowned artist and illustrator of the early to mid twentieth century, Escher is most famed for his complex explorations of perspective pictorial space. Through extremely clever manipulation of the rules of perspective, he has created pictures that portray reality in both a stable and conflicting manner.

Most relevant to this project is once again the technique of shifts in viewer-scene relationships that occur with the shifts in perspective. Drawing from the above quote, it is quite obvious that this "thinking in painting' is precisely what Escher was seeking and is the instrument to generate thinking in architecture if applied to the architectural design of the project.

FORMULATORS E.U.PARLIAMENT

Providing alternative interpretations on spaces within buildings is one of the aims of the CUBE facility. With regards to this, the Parliament of the European Union provides an interesting example that was reinterpreted into this projects design.

The picture shows a view of one of the internal atriums spaces that sit between the various structural blocks. While this may appear to read as an external outdoor space, it

is in reality within the overall skin of the Parliamentary building. One can imagine the shift in experience of this space as one passes across the bridges, through the atrium, to the other side. Moving out from within the building, a true internal space with little connection to the outside environment, the atrium space expands the awareness of the viewer and re-established a sense of orientation and involvement on a larger scale. This is a regular occurrence experienced when exiting any enclosed built structure but to incorporate this experience into an internal space certainly gives insight into how space can be read in a different manner.

Thus for this project, a hybrid space, an internalexternal space has been developed as the main circulation through the building, connecting the true internal-internal functional spaces of the offices to the true external urban spaces surrounding the facility.

Ν	I	Κ	Κ	Ε	Ν	S	Е	Κ	Κ	Е	Ι-
Μ		U	S		Ε		U		Μ		F
Α		R	Т		,	Е	Н		I	Μ	Е

Two design principles relating to the CUBE facility were extracted from this precedent. Firstly, in formulating the idea of housing the CBE, the six statutory professional councils and other built environment related bodies, the assemblage of these various units together, not only in a hierarchical but also accessible manner, revealed itself to be of great importance. In this regard, the Museum of Art gave inspiration on how this could be achieved.

Whilst one may be able to identify very separate units in the Museum's design, such degrees of isolation between the different councils in this project would not be possible due to significant space restriction. However the method in how this can be achieved; how smaller physical distance is required between units while still remaining readable as singular unit is through the second aspect taken from this precedent: massing.

Massing involves the relationship between solid and void, form and space, of which in the author's opinion, the Museum design communicates extremely well. The structure reads as a set of floating boxes with the use of glass work dominating the ground floor. Considering how this perception could be changed were the solid, encasing first floor walls to be extended to the ground plane, one becomes more conscious of the role that massing and indeed material usage too,



Fig.8_08.E.U. Parliament atrium, Gaston, 2000



Fig.8_09.Museum of Art, Heine, Nacasa and Partners Inc., 2000

Fig.8_10.Composition of units



plays in the design.

Returning to the design of CUBE, this play between solid and void is seen to be the solution to generating an assemblage of functional units for the various council bodies that remain within close proximity to each other yet retain an individual identification as the functional space of a council.

It can further be seen how this form to void play extends into other aspects of the design including the arcade and the internal-external circulation/journey space.

R E L A X A T I O N P A R K A L I C A N T E

Drawing upon to aspects already mentioned in the design, one theoretical and the other physical, this precedent represents the connection of these two parts through design. Shifting perspective from a theoretical side and the arcade as a functional design element, see their product together in the lattice tunnel work built along the shorelines of Alicante's beach.

The interior tunnel picture reveals through examination a series of perspective vanishing points that exist close together but are hidden in part by the curve of the tunnel's path. The effect on the viewer is that of intrigue, seeking to move to the right along the curved pathway to reveal what is hidden beyond. The perspective scaling of the lattice work enhances this desire but is in truth, generated through the over-arching curved main supports that do not cross perpendicularly but move diagonally across the viewer's path, drawing focus to the hidden vanishing points. It is this intrigue in design that encourages movement through space that the arcade design will seek to accomplish in CUBE, to promote the interest in the space and in so doing, generate the most truthful of circulation spaces: a space that obliges the viewer to move through it to an unknown destination of their own free will.

University of Pretoria etd – Sackett, C (2007)



The subtle articulation of this design through elements such as the down stand edge of the overhang, the railing and staircase and the cantilevering side shield does more than merely create addition to built form. It imparts from the built structure, an extremely readable sense of the void surrounding and permeating the design and it is through these elements that this has been done.

Examining the form and void separately and then in connection to one another, it can be seen how the void space receives tangible form through the structure. In addition these two halves seem to have been design in equal but inverse parts, giving a sense of figure-ground or ground-figure, depending on your viewpoint.

The building is seen as a composition of shapes which can slide and shift together to fit and form new larger shapes. The appropriate similar dimensions between masses heighten the sense that the structure could rearrange itself which in turn gives an extremely tangible sense of the spatial void. One can imagine the roof overhang in the picture sliding down to cover the balcony railings due to the similar nature and dimensions of the shape. This characteristic of transformability is what gives the tangible sense of space through the building, as if the space is merely a vacuum awaiting the movement of mass to fill it.

In so doing it echoes the relationships found in much of Escher's figure- ground work.

Combining this idea of figure-ground play between form and space with that of massing previously discussed, the framework is set for generating an interpenetrating and exploratory design approach of spatial dynamics.



Fig.8_11.Relaxation Park shaded walkway, Riley, T, 2006



Fig.8_12.TBWA entrance, Chan, B, 2000 Fig.8_13.TBWA analysis



O P E R A T I O N A L

C. U. B. E

"If CUBE is to succeed in playing a leading role in improving our built environment it is vital that we develop an inclusive programme, which recognises the complete spectrum of architecture and urban design activity. Only by doing so can CUBE be truly known as an effective centre for the understanding of the built environment and thereby relevant to a wide range of urban constituencies."

Jim Chapman, CUBE Chairman

Founded in Manchester, Great Britain in 1998, C.U.B.E seeks to expand the appreciation and understanding of the people towards their historical and modern built environment. Formed after several white papers were drafted by the government at that time concerning preservation and restoration of historic structures in English cities, C.U.B.E focuses on educating the public through community and culture on architecture.

Thus the C.U.B.E. facility embodies the very ideas which formed this project. In the author's opinion however the facility seems to act more as a gallery for the exhibition of projects and historical buildings – little interaction is afforded with the public in handson education. Aside from the people who actively seek out the C.U.B.E facility with the intention of learning about their city, there is no manner in which the uninformed public can spontaneously interact with the information held with C.U.B.E.

That said, since the creation of C.U.B.E., an independent built environment network has been established throughout England, between all facilities concerned with education of the built environment. "Deliver(ing) some of the most compelling and

innovative programmes in Europe in construction, architecture, housing renewal and urban design. Each centre offers a unique approach to exploring modern architectural practice, for both communities and professions, through programmes of education, exhibition and empowerment."

This idea of establishing a built network between universities and cities in South Africa would translate extremely well from the English model. With the large distances between major cities in this country, architectural regionalism is extremely prevalent. The Cape Dutch architecture of the Cape regions, Pretorian regionalism (Fisher, 1998) and the coastal variations on Indian and Malay styles presents a vast range of architecture within this country. The establishment of built networks between the learning institutes in these cities could open doors to the exploration of South African architecture to the entire population. Indeed this idea of establishing networks in our cities becomes one of the key design methods towards achieving an integrated and useful facility, as will be seen later through the design development.

In addition to this, the C.U.B.E. facility achieves its success through diversification. Not only serving as a gallery and exhibition space, the incorporation of the RIBA bookshop provides the means to attract additional users. Containing over 4000 titles, extensive ranges in all graphical and design related fields and leading contemporary publications, this aspect of the design will ensure a continued and dedicated base of users.

"The RIBA Bookshop is Manchester's best equipped resource for servicing an ever increasing interest in architecture and design."



"CABE, the Commission for Architecture and the Built Environment, is the government's advisor on architecture, urban design and public space.

We work directly with architects, planners, designers, developers and clients, offering them guidance on projects that will shape lives. And parks and open spaces are as important to us as bricks and mortar.

We give clients hands-on advice on ways to get better value through better design, keeping them up to date and encouraging them to take the best approach from the very start. And our design review work shows clients what mistakes to avoid and what opportunities to seize.

Fundamentally, CABE works on behalf of the public. That's why we're determined to inspire people to demand more from buildings and spaces. They, after all, are the people left behind after the planners and architects have moved on.

CABE was set up in 1999 and it is now a statutory body, funded by the Department for Culture, Media and Sport and the Office of the Deputy Prime Minister."

CABE website

In connection with the establishment of C.U.B.E., the formation of CABE sought to create the administrative

body tasked with the protection of the historical and important projects in the cities. In addition however, CABE was given the power of 'future' protection of the cities by becoming a design critical watchdog, evaluating all projects within the city to maintain high levels of architecture. All proposals for development in the city on large urban scales require the approval of the CABE committee prior to development permission can be obtained from the city planning council.

This brings to light an extremely debatable issue. The power of an individual building or project within the city is capable of doing significant alteration to the manner in which that part of the city operates. When does this influence present a large enough problem that requires city planners to step in to ensure a better built environment for the public at large?

At present there is no design review committee in place to critique the developments in the city. The revised TICP SDF promotes such review procedures during the design phases of projects in the inner city in order to achieve a recognisable identity between the buildings in the city. This dissertation project presents itself as an ideal place for such a review committee to be established and work together with the Public Works Department on the integration of design and technical matters concerning the city. This aspect will however remain a future proposal which can further enhance the functionality of CUBE.

N.A

"The Netherlands Architecture Institute (NAI) is more than a museum of architecture. It is above all a cultural institute which is open to the public and which uses a variety of methods for communicating about the shaping of human space."

NAI website

L

Dutch architecture has a rich and diverse history with some of the world's greatest designers originating here. In response to this, the NAI was established to document this history for its people with excellent results. In 1993 the new premises began their occupation, located at the edge of Museum Park in Rotterdam, hosting a range of facilities such as:

Collections of prominent architect's works Archives and reading areas Library with over 35 000 books related to design fields Exhibitions and symposium spaces Guided tours Lecture and Conference facilities Educational classes

Educational programmes target schools and families with children to develop understanding of design and construction from a young age. The building also comprises various lecture halls and auditoriums which can be rented by individuals, institutions and companies. Complete with pool-side terrace and foyers, this allows the NAI building to host even dinners with ease.

On another level, the Friends of the NAI are an association through membership which supports the NAI and organises lectures and excursions to promote architectural knowledge. Membership will ensure that one is kept abreast of the latest news and publications in the world and free access to the facilities provided. This money goes towards the continued operation of the NAI which only receives money from government, grant-giving bodies and the business community.

Thus, catering from small scale activities such as children's parties to large scale business conferencing,

the NAI has developed a diverse relationship with the people it serves, ensuring multiple ways in which the public can engage with the facility. It is this characteristic which is most admired and a similar approach will be adopted into the design of this project.

The NAI represents the most successful example of a precedent which this project seeks to develop and fosters an appreciation in its people of their proud heritage found in their cities.



Fig.8_14. Various views of the NAI, NAI website

L O C A L MUSEUMOFSTRUGGLE PORTELIZABETH

Located at a national site of struggle during apartheid, this museum speaks to the memory of the people who resisted the laws of that time. Situated in Red Location, the first settled black township in the area, the museum is designed to intentionally involve the viewer as "active participants".

The creation of twelve rusted corrugated "memory boxes" each rising four storeys in height, contain artifacts from the days of the struggle and more importantly, a "total" experience of what took place. These boxes are anonymous from the outside, each identical to the other yet contain completely different environments inside.

Two design ideas spring from this project as a precedent.

Firstly, the process of moving between these boxes lends itself to the notion of exploration of space. The design is revealed over time to the viewer through restricting visual connections. The spaces between the boxes become meditatory whilst moving from one experience to another. This concept of 'revealing' over time in an exploratory nature will be embedded within this project.

Secondly, the play on the internal-external relationship. Moving into the 'memory' boxes one is aware of the enclosed nature of the space yet upon exiting into the space of the larger structure, one connects with an internal space on a larger scale, still internal. Only moving out of the structure sees the true emergence into external space. This internal-external space that acts as the medium between true internal and true external spaces provides an interesting aspect towards experiencing a building.

University of Pretoria etd – Sackett, C (2007)



Fig.8_15.Museum of Struggle, internal view

UNIVERSITYOFTHEFREESTATE S Т U DEN Т С E Ν Т R F В E Μ Ν Ν L 0 F 0 т E

Suitably described as a "bridge building", the new student centre on the university's campus extends the western axis across the DF Malherbe Drive, connecting the main campus with the outer-lying western buildings. The building acts as a functional bridge, comprising restaurants, commercial facilities,

conference rooms and student centre offices on the top floor. In doing so it also connects the library with the rest of the main campus and provides a secure and safe pathway across the road.

The focus on this project as a precedent examines the spatial connections the building generates and especially the manner in which these connections are utilised. One of the main concerns presented in the development of the CUBE facility on the chosen site was that the site remains utilised as a passage way through the city fabric, even though occupied by a built structure. The UFS student centre tackles this concept with a similar idea in mind, utilising the site and structure to not only provide functional spaces but permit movement on a larger scale through the surrounding urban fabric.

Indeed the student centre is compared to the famous historical model of a habitable bridge, namely the Ponte Vecchio in Florence. This historic example indeed scores at the root of the design concept of providing a usable 'bridge' through its surroundings.



Fig.8_16.UFS studen centre plan



Fig.8_17.UFS student centre photo

Returning to the student centre however, one notes how the problem of urban continuity is addressed. Rather than creating an enclosed passage from one side to the other, which personifies much of the design thinking in shopping malls and their subsequent "blindness" to their surroundings, the student centre is created as an "intrinsically interesting object". This avoidance of "mall fatigue" has been achieved through openings to the outside and external views of the activity within the building.

Interestingly, this echoes similar thoughts on the design of CUBE. In order to remain a passage way for users and pedestrians alike, visual connections between spaces must be made to identify progress along a route. These routes then become the pathways and bridges through an urban fabric on a large scale and through functional spaces within the context of the site.

PRECEDENTSUMMATION

In conclusion to this precedent study, it remains of significant importance that ideas taken from various designs are indeed utilised and embedded within the design of this project. To revise, the following design concepts have been identified as embodying the author's intentions with respect to site and structure, function and space.

- 01_Movement
- 02_Perspective
- 03_Internal-External relationships/environments
- 04_Composition of units
- 05_Tangible space
- 06_Interlocking relationship of void and mass
- 07_Urban Pathways
- 08_Diversification of functions
- 09_Administrative and practical roles
- 10_Establish multiple networks of access to services