

6.1. Introduction

How does one solve the problem of redundant space in abandoned buildings? The concept development of the proposed solution to this question, incorporating all previous research, is discussed in this chapter. Preliminary ideas are shown, after which the focus turns to the Site Development and the MINI Space Gallery.

6.2. Initial exploration

At first, the two components of the project were seen as one in that the solution for utilising empty spaces is also the solution for the gallery. In view of the size of the existing structure, a mixed-use development was considered from the beginning (fig.6.1). Other concepts included vehicular

Chapter 6

Development

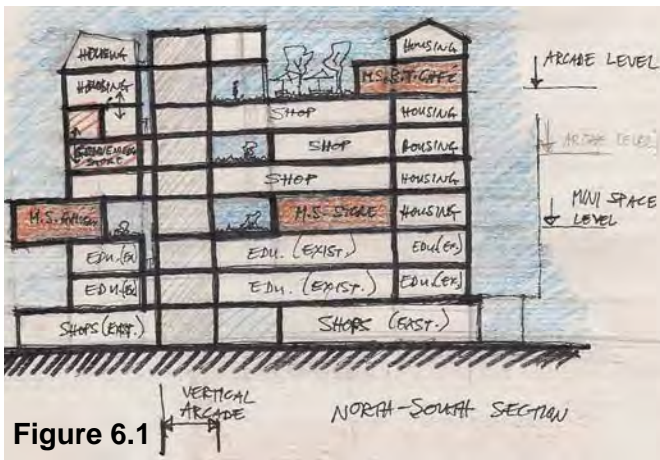


Figure 6.1

exhibition tracks cutting through and wrapping around the building where cars can be displayed as mobile, dynamic works of art (fig.6.3). Different volumes protruding from the façade were explored (figs.6.2 and 6.4), and some included branding elements for the MINI Space Gallery (fig.6.5). The influence of deconstruction on the spatial design was also investigated (figs.6.6-6.7).

6.3. Process toward the Site Development

Redefining the notion of site to include vertical space above the ground plane, new 'sites' are established in abandoned spaces within the City Centre building and Die Meent. Using all three x-y-z axes in this manner is not a new concept. The Rockefeller Centre in New York City, consists of a complex of 'buildings'. Some of the original

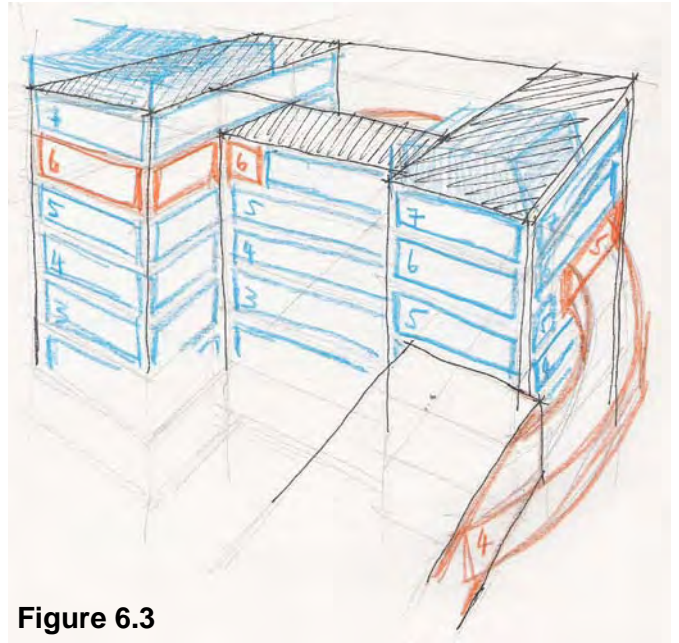


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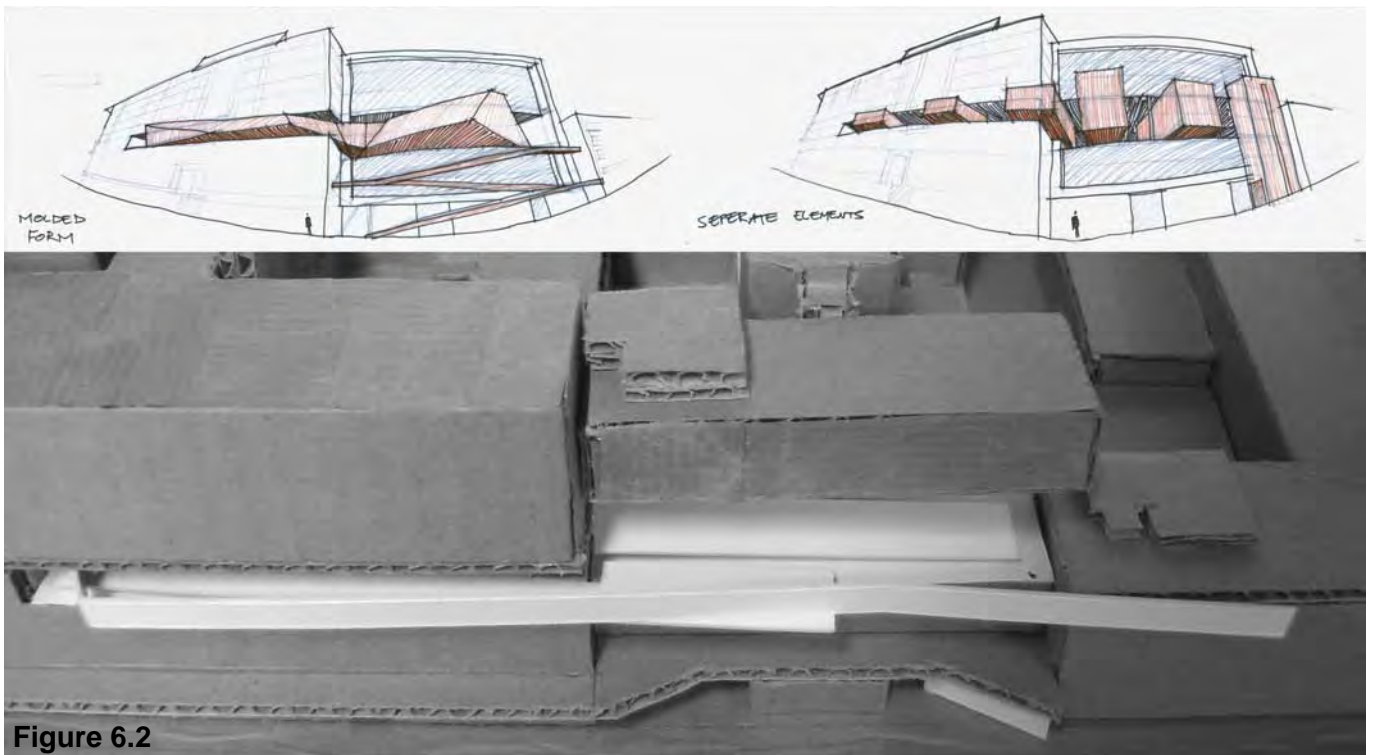


Figure 6.2



Figure 6.4

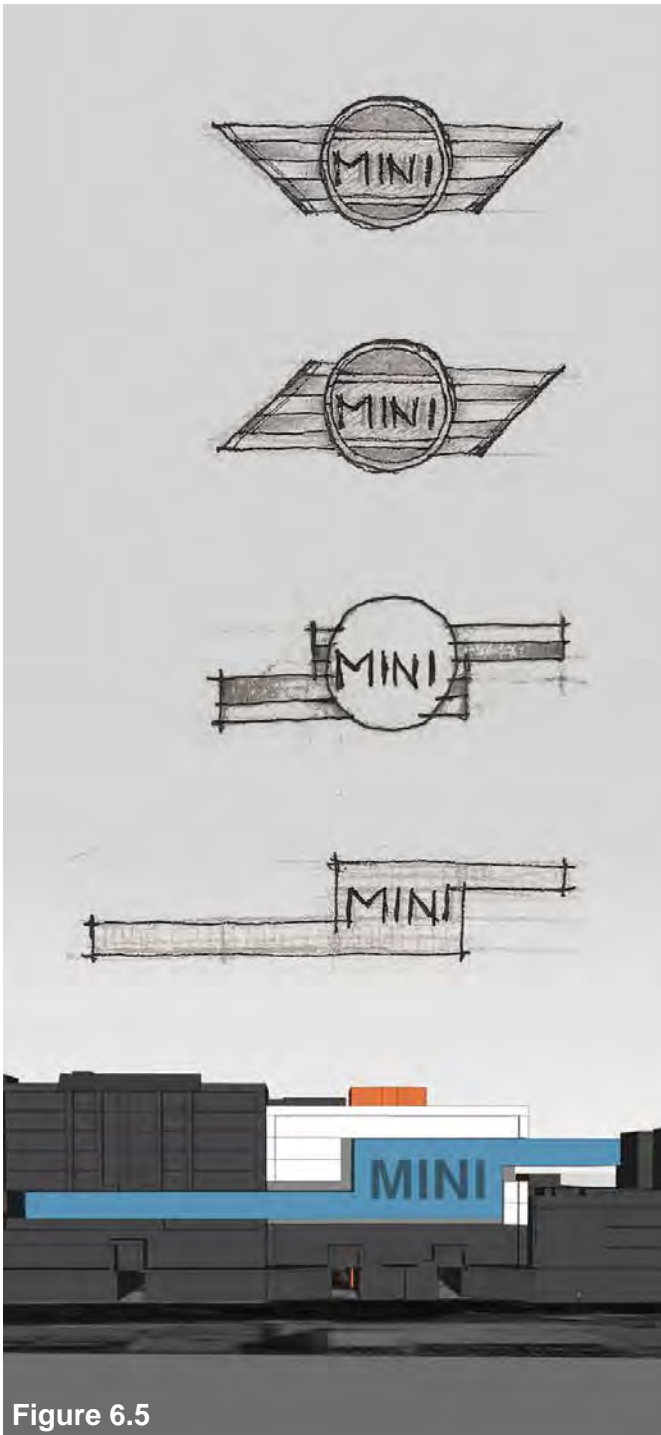


Figure 6.5

Fig.6.1 - Initial sketch of a section through the existing structure, indicating proposed diverse functions.

Fig.6.2 - Exploration of protruding volumes.

Fig.6.3 - Sketch of the existing building with track cutting through (orange).

Fig.6.4 - Sketch of protruding elements shown on multiview of the existing buildings.

Fig.6.5 - Possible branding: the MINI logo transforming into a building.

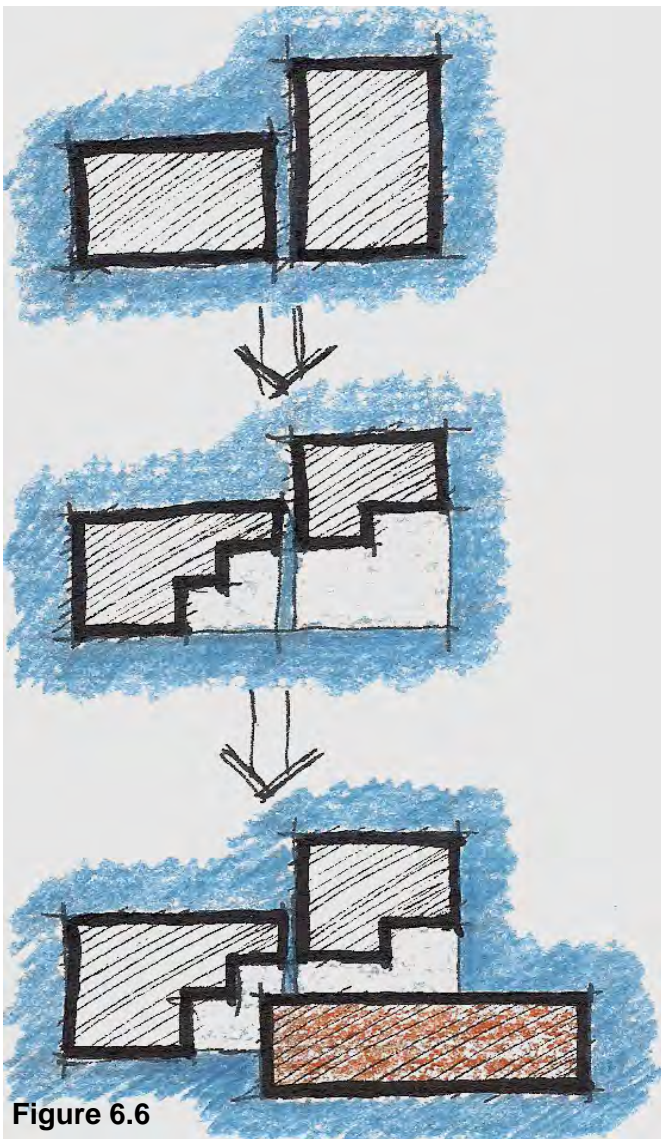


Figure 6.6

design ideas included walkways on higher levels (fig.6.8) and large rooftop gardens; the latter was implemented on some of the structures (fig.6.9). Visions for other parts of New York City illustrate multiple levels for transport (fig.6.10). Many of the recent proposals for the new World Trade Centre also included large gardens and open spaces on higher floors (Czarnecki 2003:35; fig.6.11). Le Corbusier (1931:59-61) suggested that cities should consist of large planes lifted on columns housing residential towers built with social areas on the roofs and connected by bridges; below these decks, all the services would be placed (fig.6.12).

6.3.1. New 'sites'

Firstly, the empty floors of the City Centre and Die Meent buildings are stripped of everything except

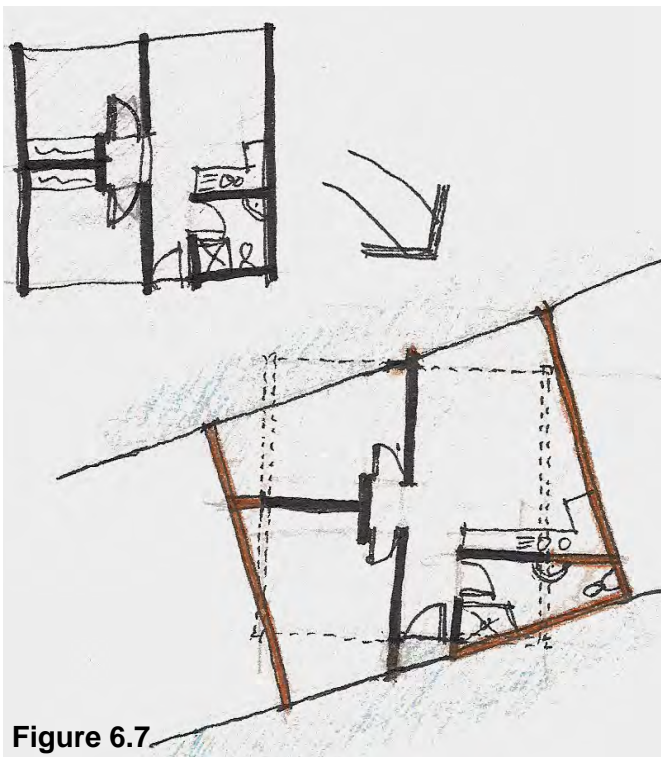


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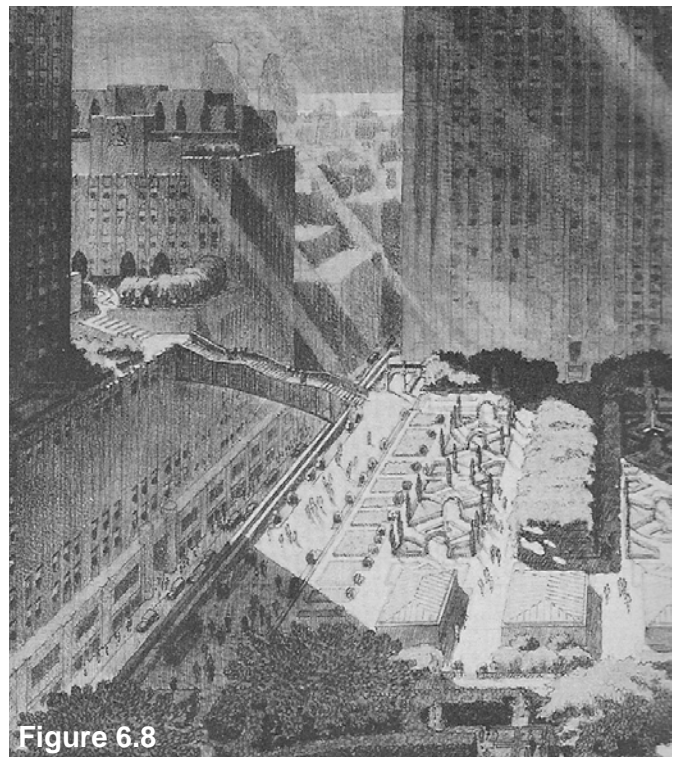


Figure 6.8

Fig.6.6 - Development sketches of the 'new' deconstructing the 'old'.

Fig.6.7 - Development sketches of the 'old' deconstructing the 'new'.

Fig.6.8 - Roof garden proposal for the Rockefeller Center's Radio City Music Hall, 1932, by J. Wenrich.

Fig.6.9 - Roof gardens on some of the buildings of the Rockefeller Center.

Fig.6.10 - Proposed street system for New York City, c.1925-1930, by H.W. Corbett.

Fig.6.11 - View of the sky garden of the proposal for the new World Trade Center by SOM.



Figure 6.9

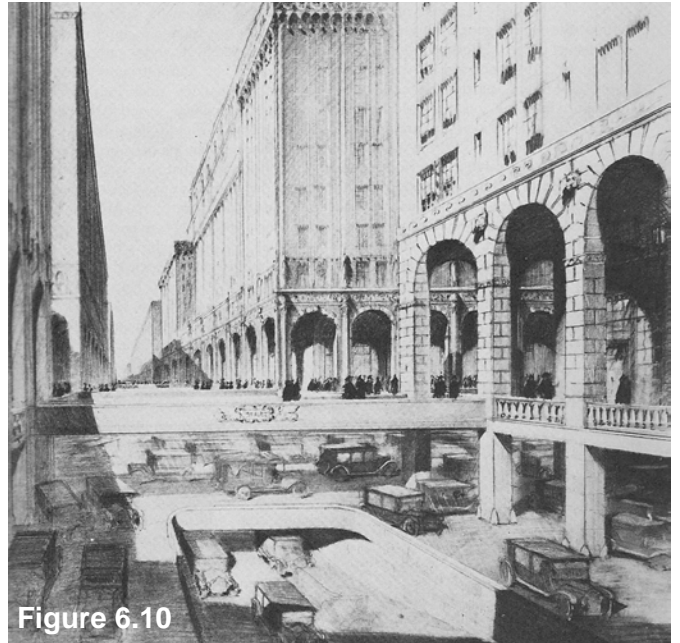


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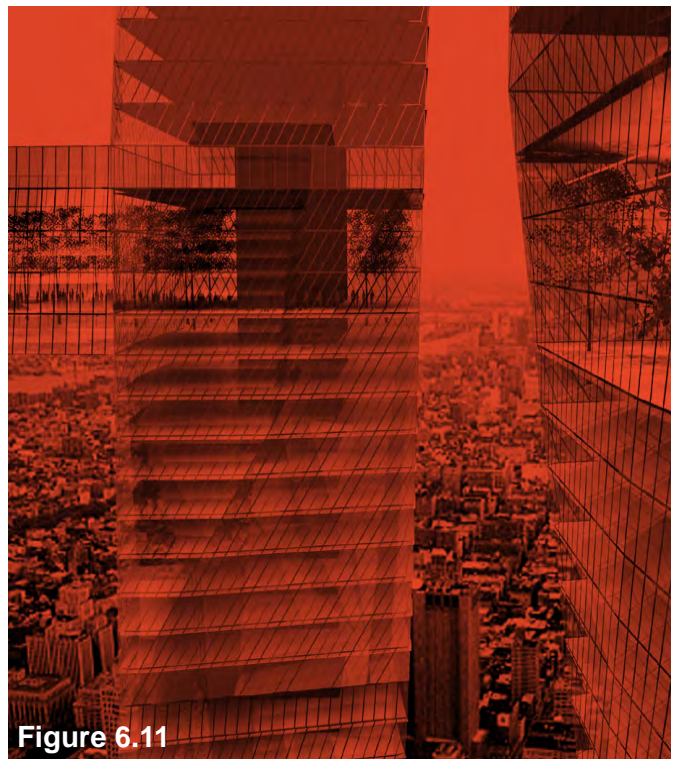


Figure 6.11

Fig.6.12 - Section of Le Corbusier's city on columns.

Fig.6.13 - Sketch showing aspects of the new commercial 'sites', in plan.

Fig.6.14 - Sketch showing aspects of the new residential 'sites', in plan.

Fig.6.15 - Perspective with volumes of space highlighted.

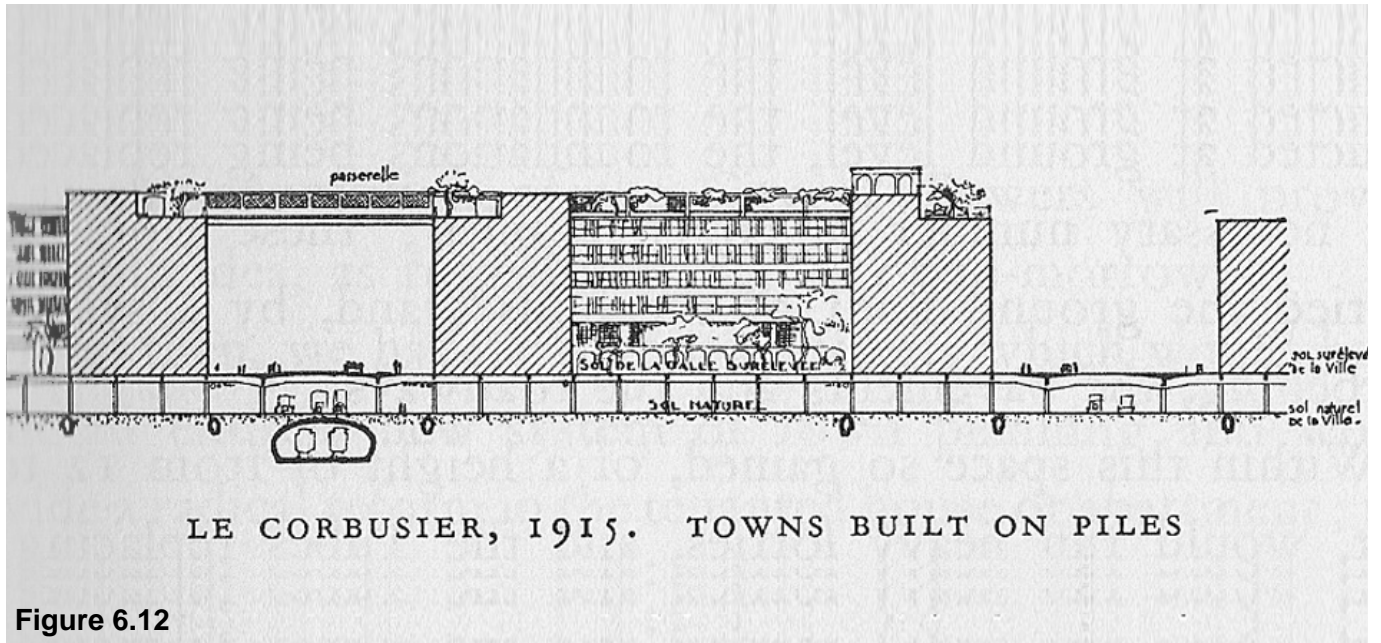


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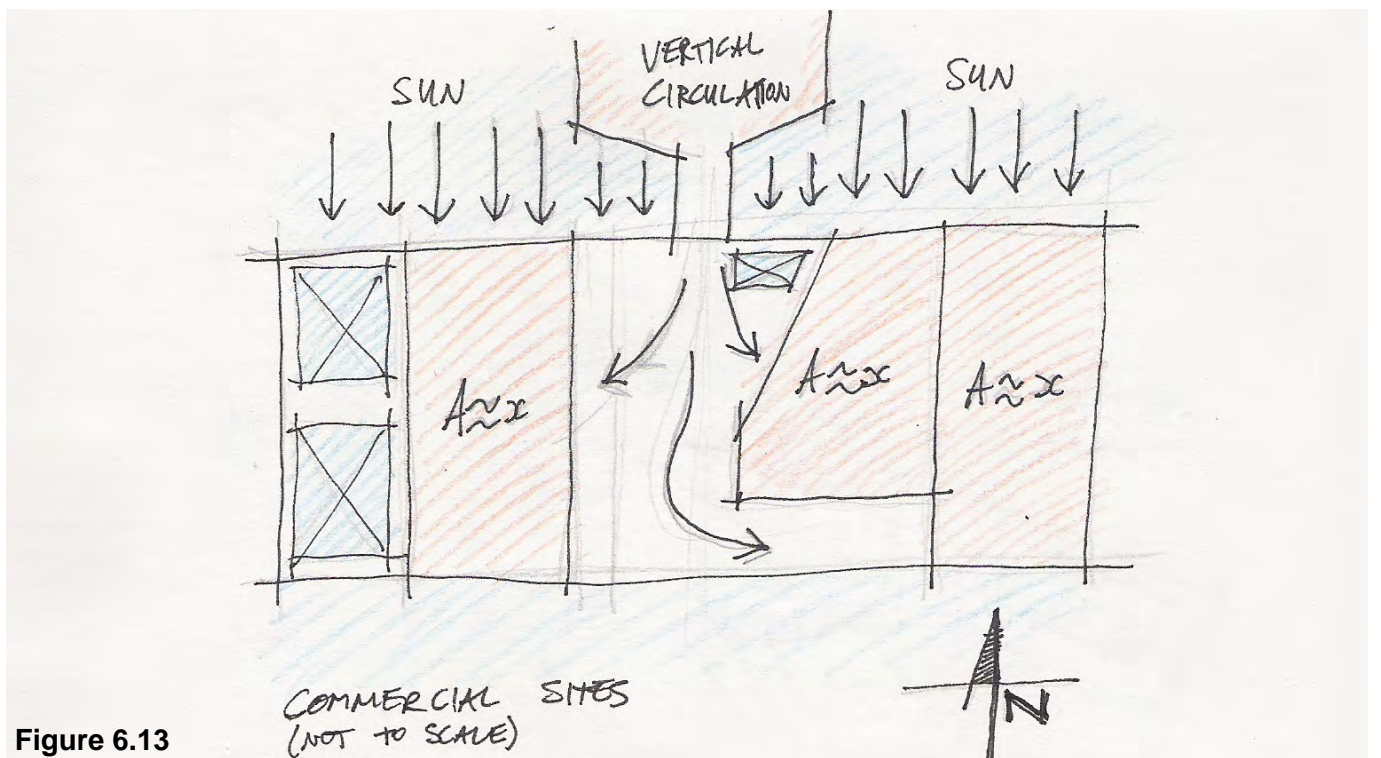


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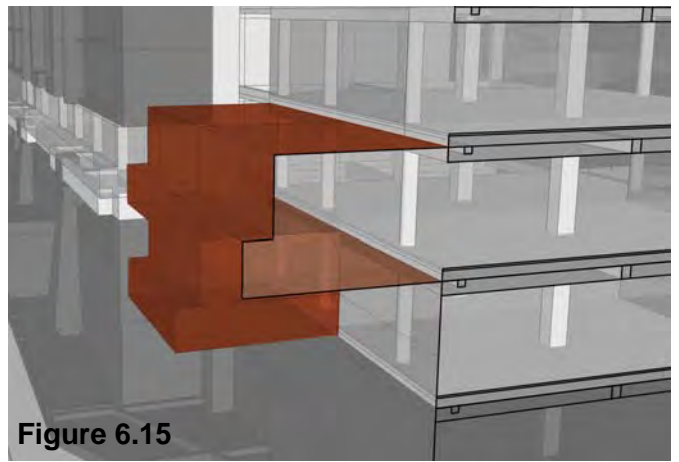


Figure 6.15

structural elements that include concrete columns and slabs, and structural brick walls and then service cores, that consists of vertical circulation spaces, and wet and dry service shafts.

New 'sites' are then established within this cleared space. Their layouts and sizes are governed by (fig.6.13-6.14):

- user movement;
- location of existing and new vertical movement spaces;
- size of the existing floors (relative to the size and amount of 'sites' on each floor);
- the requirement that every site should be directly linked to an open space;
- balconies for walkways should be located on the southern façade where possible;
- walkways should not lead past more than one site;

- access to natural light.

'Sites' on lower levels in the City Centre building are extended up to the erf boundary, to aid in the spatial definition of the urban streetscape of Pretorius Street and to increase the rentable area for commercial space in these sites. A 700 mm balcony, stipulated by the Tshwane Town-planning Scheme (2008:29) has been included. These extensions are currently only volumes of space, which the new owners or tenants can build within in future (fig.6.15).

Floor slabs are also cut open or removed, allowing light to enter into each site and providing more open space. In addition this serves to remove some structural weight, which in turn is replaced by trees and ground cover structural loading in the three main open spaces.

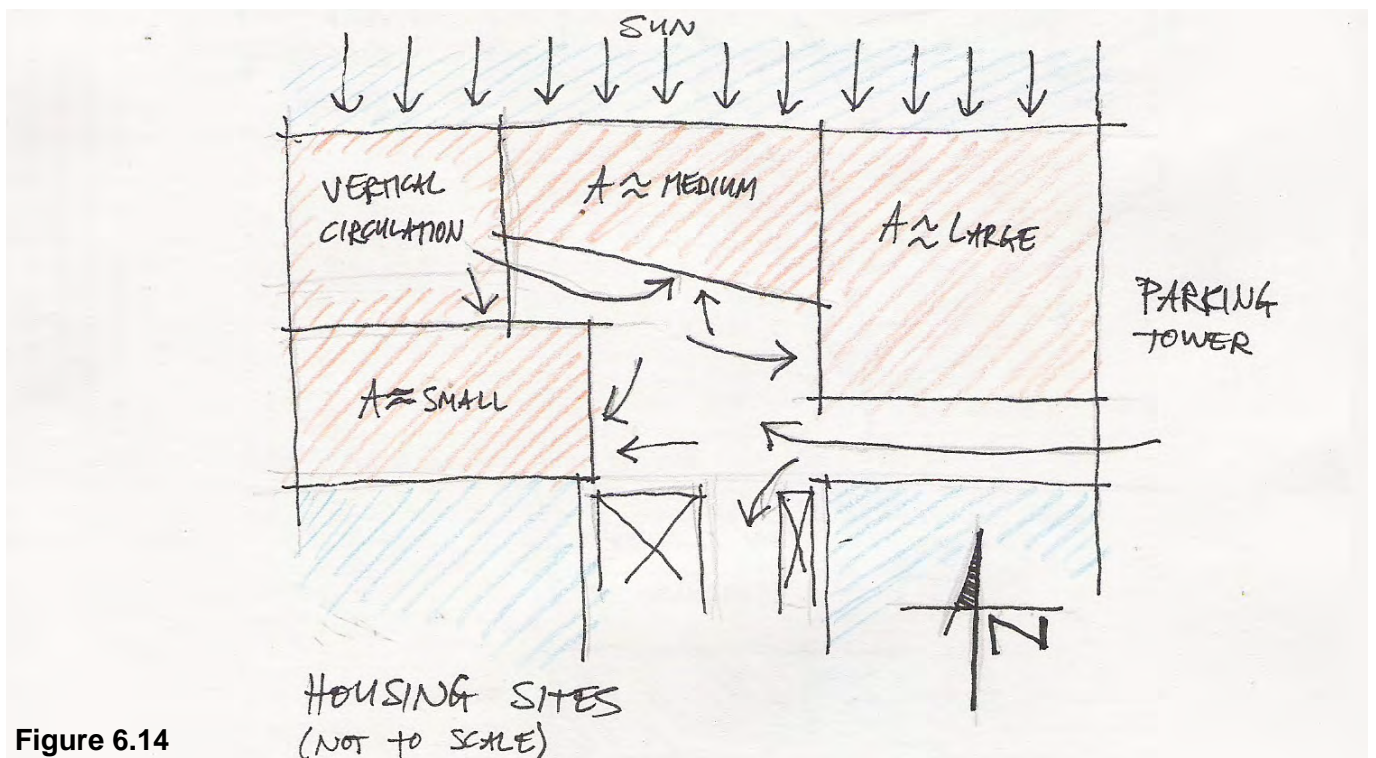


Figure 6.14

Fig.6.16 - Parti-diagram of the Site Development.

Fig.6.17 - Development sketch of the main open space, in plan.

Fig.6.18 - Development sketch of the main open space, indicating movement patterns, in plan.

Fig.6.19 - Development sketch of the main open space, with parti-diagram and movement patterns applied, in plan.

6.3.2. New 'site' principles

Principles were set up according to which the development of empty spaces within the Pretoria CBD should be executed. There are two types: the first set are of a city-wide scale, to be used for future developments in other buildings; the second are specific to the City Centre and Die Meent buildings' Site Development, providing future owners and tenants with rules and regulations about how to develop their own 'sites'. These are listed in tables 6.1 to 6.2.

Change is allowed for, having been derived from the theory of deconstruction. Although some of the vertical circulation spaces and the roof gardens are more permanent additions, the new 'sites' are largely left open, to be adapted to meet the needs of future users. Depending on what these users

do with the spaces, future users are also free to change the 'sites' by simply connecting to existing services. These connection points are provided only at the edge of each 'site', making flexibility within the privately owned or rented areas possible.

6.3.3. Parti-diagram for the Site Development

After sketch plans and design concepts were executed, a parti-diagram was established (fig.6.16). Derived from the theory discourse and concept sketches, the diagram was used to inform the framework according to which the whole Site Development is designed from large-scale to detailed ideas. The deconstructed x-y-z of architecture, as applied in the parti-diagram, are:

- function/programme as the solid block;
- form/beauty as the thin curve;

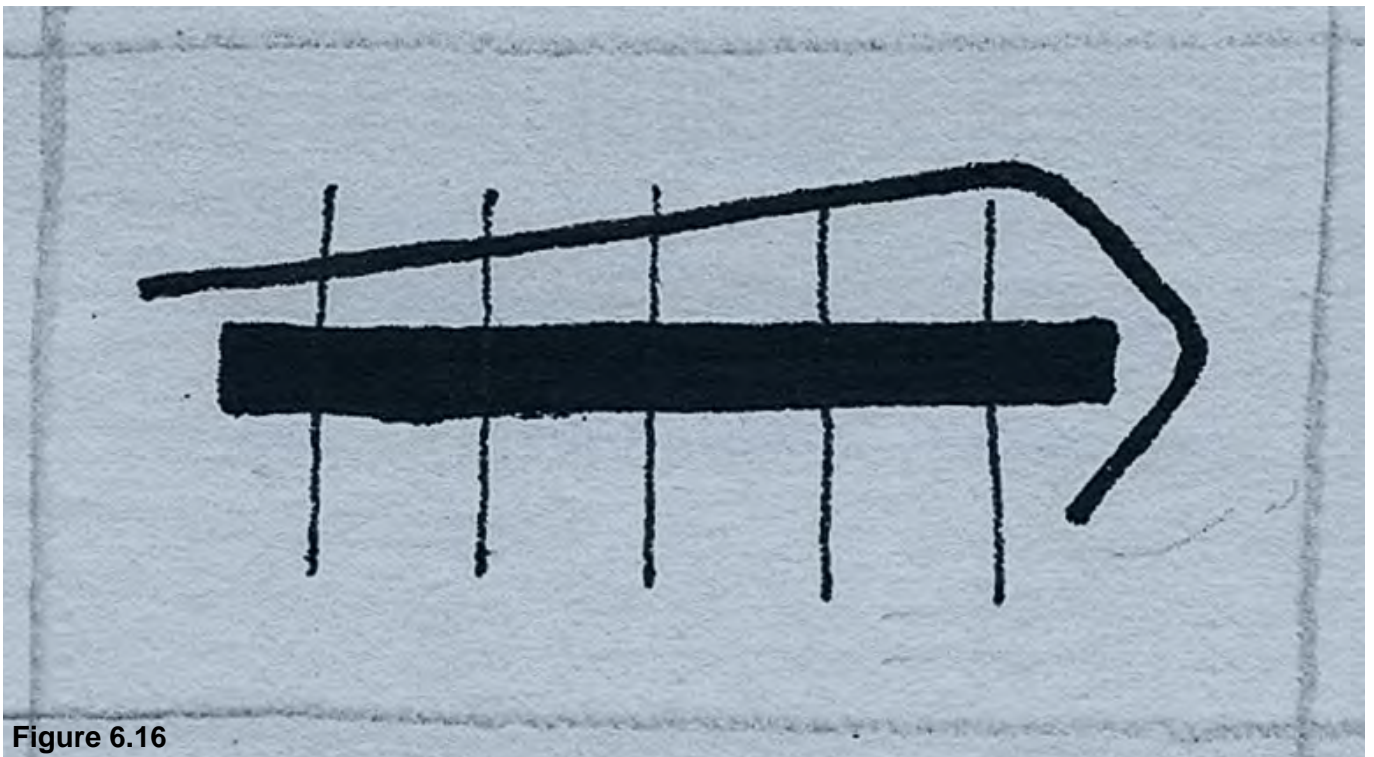


Figure 6.16

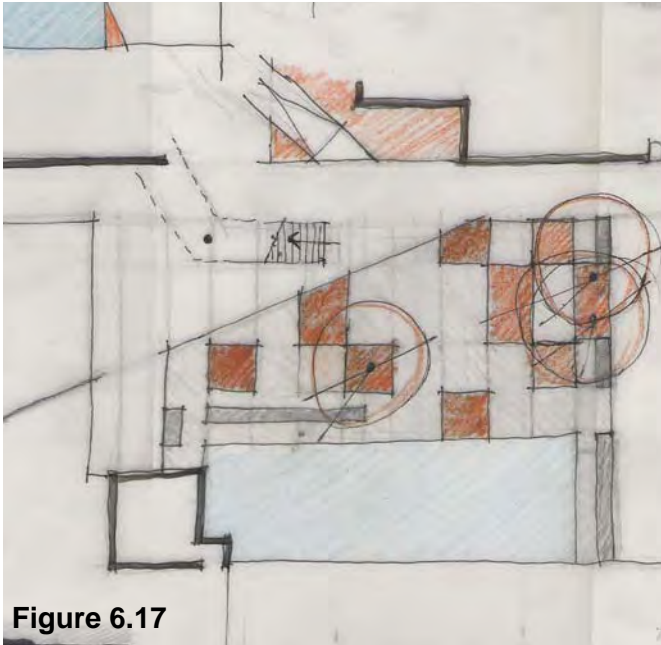


Figure 6.17

- tectonics/structure as lightweight lines between the others.

Thus, the parti-diagram of the Site Development is the tension between form/beauty and function/programme held together and apart by tectonics/structure. Together with this, the module of brickwork, rounded off to 230 x 115 x 85 mm, was used to determine all distances and sizes.

6.3.4. Open spaces

The three main open spaces were designed based on the movement of the users through them. For the main lower commercial open space an initial design was investigated (fig.6.17), but it was too form-driven. Subsequent designs were refined to cater for movement patterns (figs.6.18-6.19) and these were overlaid by a parti-diagram.

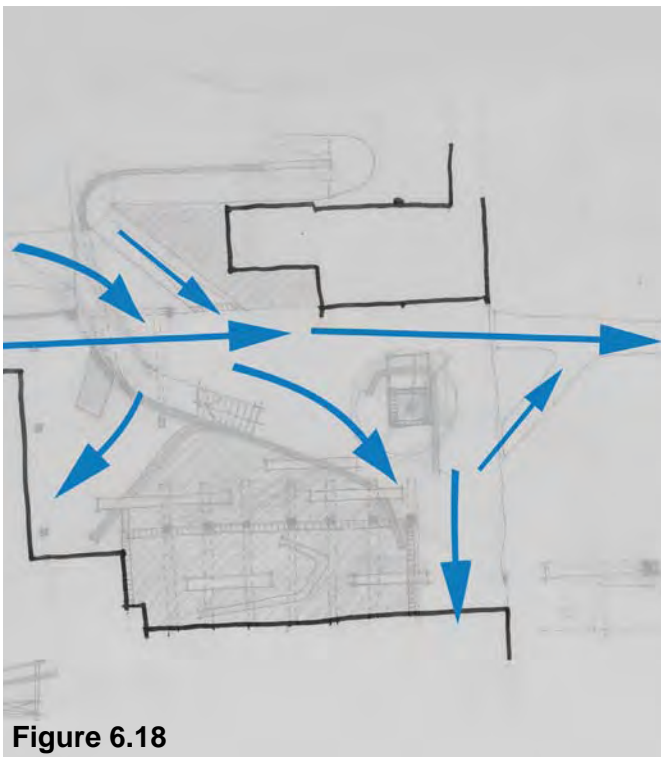


Figure 6.18



Figure 6.19

	No.	Name	Description
City-wide principles	1	Legislation	Legislation and regulations must be changed where necessary. This will include acts affecting sectional title ownership (e.g. how services are distributed and paid for), regulations regarding municipal space above streets (e.g. in the case of proposed pedestrian bridges) and building regulations (e.g. building permission).
	2	Street edge	Any new stands on the first, second, third and/or fourth floor may not protrude more than 700 mm from the ground floor erf boundary between the neighbouring street and the site under question. Any of these protrusions (beyond the ground floor erf boundary) may not be enclosed spaces, i.e. these spaces are restricted to balconies and other similar elements. Stands on higher levels should not protrude beyond the existing structure. It is not allowed to build beyond the other ground floor erf boundaries on any storey.
	3	Costs	Levies must be paid on a monthly basis. This will be used to maintain all shared space, i.e. open space (with finances divided according to the same structure as above), ablutions, vertical circulation areas and other services.
	4	Open space between sites	In the event of one person/company owning two or more stands with a demarcated open space between two or more of them, the owner may construct any structure over this space up to a maximum of 25% of the area on plan, as long as any public pedestrian movement is not restricted in any way (in the case of a thoroughfare). Structures can include walkways (e.g. in double volume open spaces), overhead beams/bulkheads, extensions of interior spaces, etc. Any of these proposals are to be approved by the development's body-corporate.
	5	Horizontal boundaries	New structures may not exceed the given horizontal boundaries (with regard to neighbouring stands below and above); each sites' boundaries with regard to height is restricted from the bottom plane of the structure below and above.
	6	Vertical circulation	New vertical circulation spaces must be provided in such a way that free movement is possible for all users. Where it is possible these spaces should be on the façade of the building, providing direct access at street level. If this is not feasible, existing or new spaces further within the structure should be designed in such a way as to celebrate the connection with the ground plane (e.g. a large open area) and so that these spaces have an open atmosphere (so as not to restrict the movement of users, both physically and psychologically).

Table 6.1

	No.	Name	Description
The City Centre and Die Meent buildings principles	1	Consolidation	Consolidation of sites are allowed up to a maximum of 2000 m ² for all sites.
	2	Services (for all sites)	All services are to be located just below the floor of each site, i.e. within the ceiling void of the site below.
	3	Services (for nonresidential sites)	Existing services (vertical circulation, ablution facilities, fire escapes) should be used by all new occupants of the nonresidential stands, i.e. services should and need not be supplied by the owners.
	4	Private ablutions (for nonresidential sites)	If a nonresidential site exceeds 1000 m ² on one continuous level (including open spaces between sites), the owner may construct its own ablution facilities, if he/she wants to, with all water supply and sewage being connected to the provided systems.
	5	Services (for residential sites)	The owners of residential sites should each provide their own ablution facilities, with services connecting to the provided systems. Private vertical circulation and fire escapes should not be implemented, while other services (grey-water, fire-system, telecommunications, electrical) should connect to existing systems.
	6	Grey-water	The use of grey-water (e.g. for water closets) is mandatory.
	7	Air-handling	The use of air-conditioning units is prohibited for nonresidential sites in the City Centre building; passive cooling is supplied by means of a stack ventilation and evaporative cooling system, with air in- and out-takes provided as indicated on each stand's drawing set. For all other sites (including residential), only two types of air-handling systems are allowed: firstly systems without air-conditioning units (passive ventilation, evaporative cooling and similar systems) are highly recommended; secondly small split air-conditioning units are allowed, with the only regulations being that the external components be located in the provided areas or, in the case of nonresidential sites on the top floor, be located on the roof.
	8	Parking	At least one parking space per stand is provided.
	9	Building character	Owners are allowed total freedom in terms of building style, size (within the site boundaries) and finishes. Functional zoning should be followed and no changes to this will be made. All new spaces should relate actively to the adjacent shared open spaces and, if applicable, to the street.
	10	Cleaning service	A single cleaning service will be used for all the new stands and owners will be obliged to use this service and no other. The costs of this service is included in the monthly levy. There will be a space provided for them within the structure for storage.
	11	Levy	The amount of levy to be paid by an owner is determined by the size of his/her stand in relation to the total development.

Table 6.2

Fig.6.20 - Development sketch of the main upper commercial open space, with parti-diagram and movement patterns applied, in plan (not to scale).

Fig.6.21 - Development sketch of the main residential open space, with parti-diagram and movement patterns applied, in plan (not to scale).

Fig.6.22 - Options for the main open spaces' furniture.

Fig.6.23 - Model of the preliminary design for the bridge.

Fig.6.24 - Elevation of the second design for the bridge.

Fig.6.25 - Perspective of the final design for the bridge.

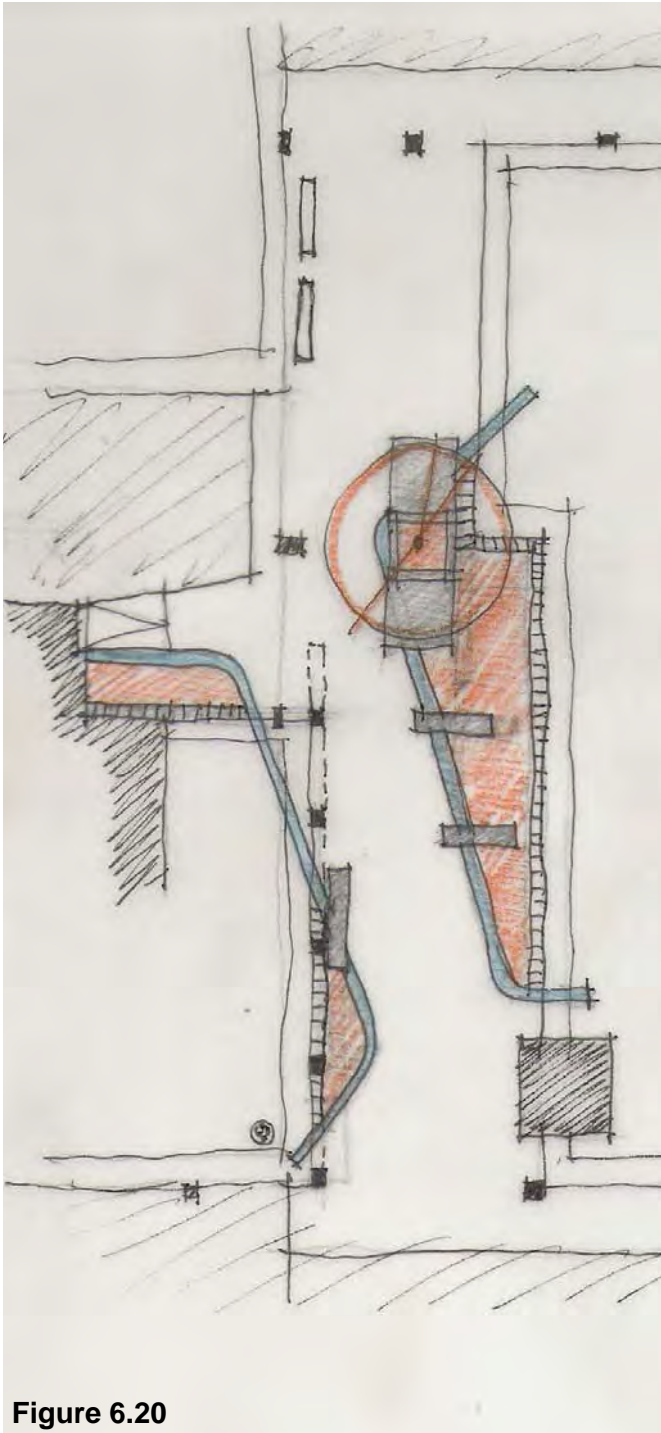


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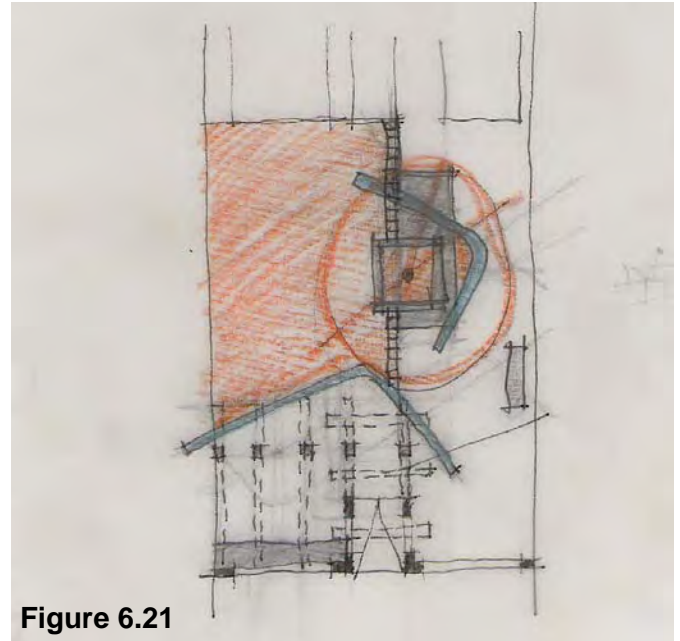


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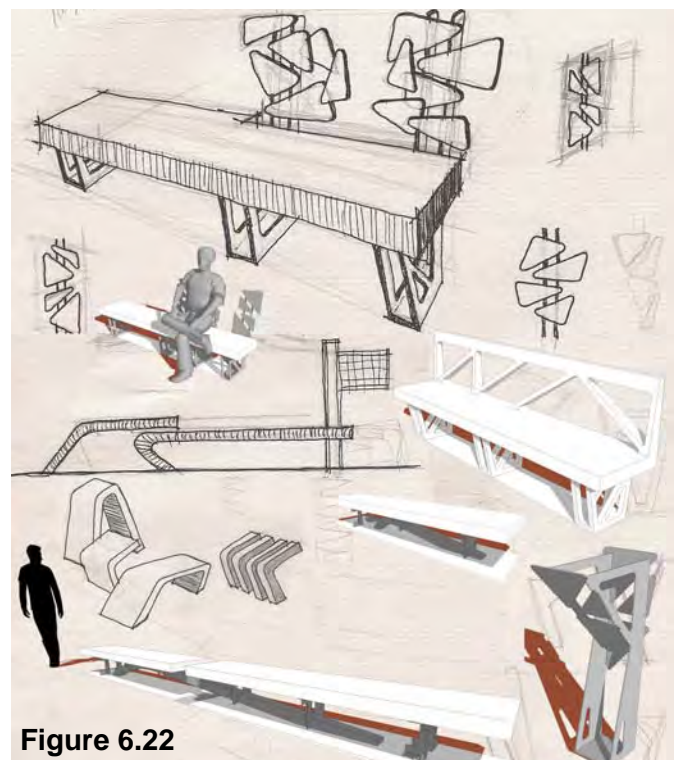


Figure 6.22

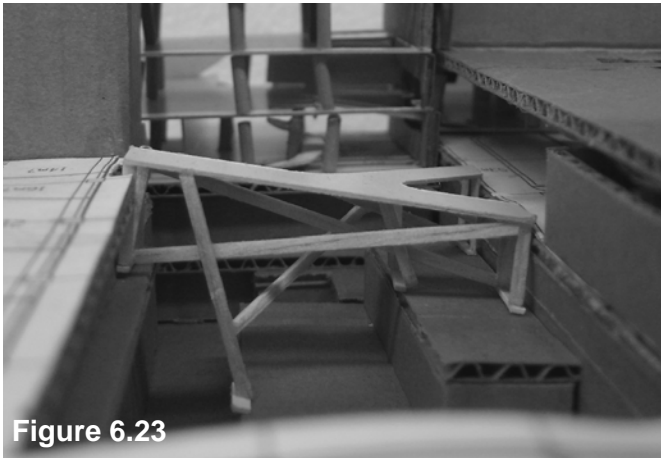


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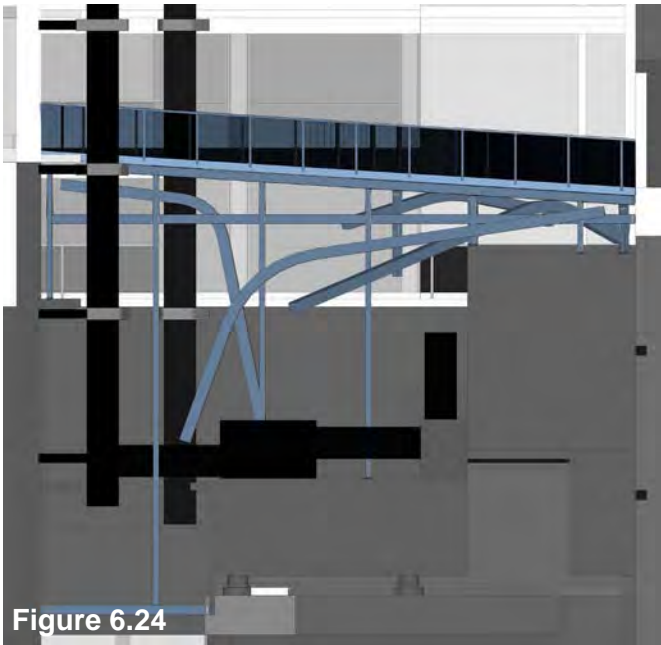


Figure 6.24

The development of the other main open spaces followed similar routes (figs.6.20-6.21).

Furniture, used throughout the main open spaces, is also incorporated with options being shown in fig.6.22.

The bridge that connects the City Centre building with the main lower commercial open space has two components: the plane on which people walk and the structure that carries it. In the former, the design is based on movement patterns of the users (fig.6.18). The latter began with foreign shapes (figs.6.23-6.24) and was gradually adjusted to fit in with the parti-diagram (6.25).

6.3.5. Circulation

One of the main concerns in the design development of this phase of the project, is the

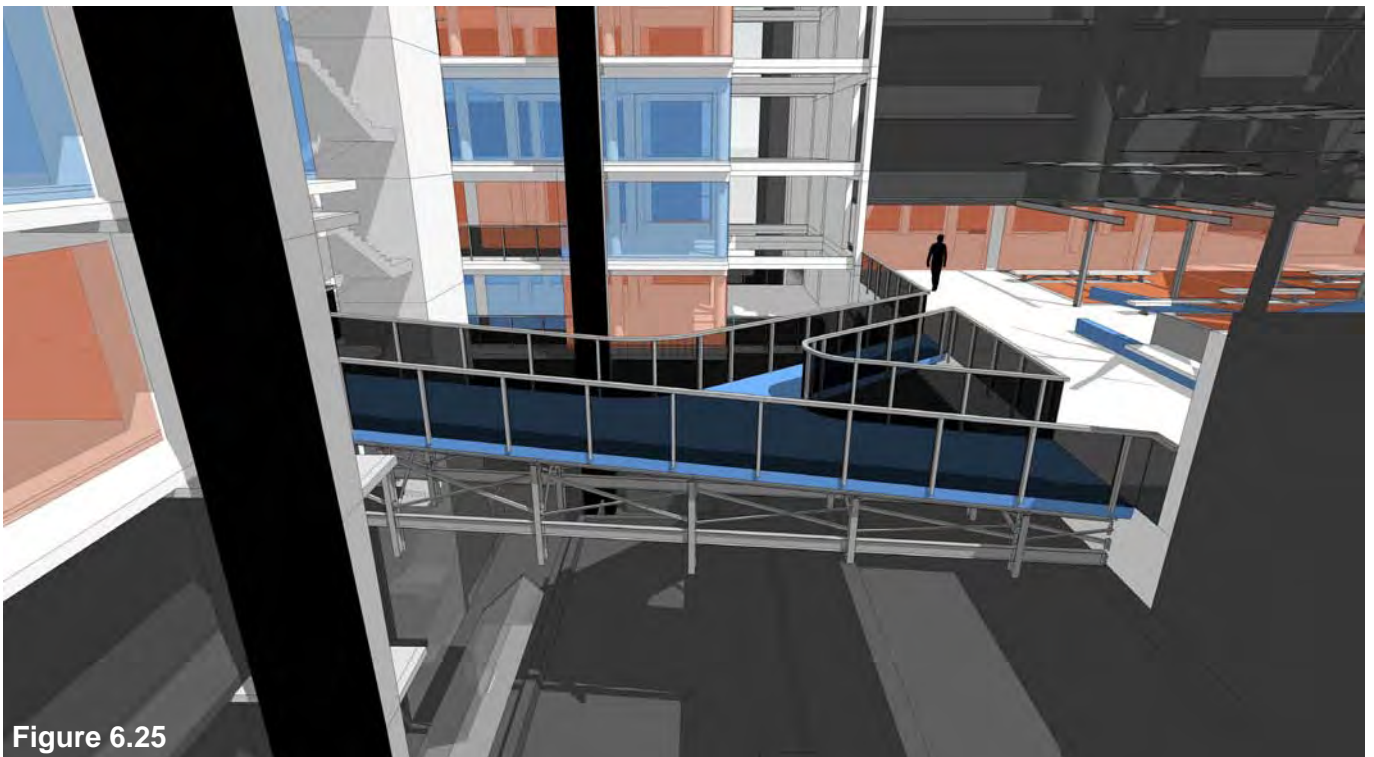


Figure 6.25

- Fig.6.26 - Different escalator configurations.
- Fig.6.27 - Different roof configurations for the new vertical circulation system.
- Fig.6.28 - Diagram indicating existing access and parking behind Central House, in plan.
- Fig.6.29 - Sketch indicating vehicular movement in the proposed parking tower.
- Fig.6.30 - Perspective with new service shafts indicated, viewed from the northeast.

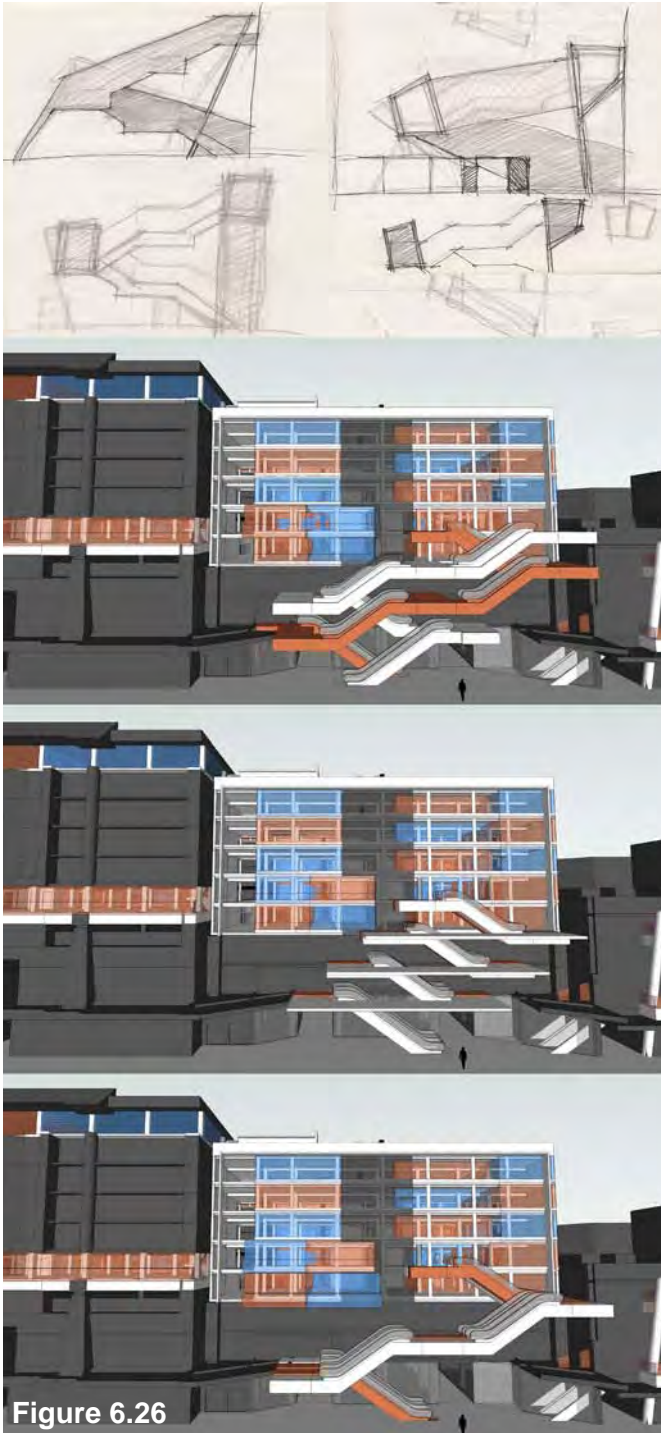


Figure 6.26



Figure 6.27

connection of the new 'sites' with the street. A solution is achieved by the addition of an escalator system to the façade of the City Centre building. This form of vertical movement was chosen because of its ease of use and because of the open and free movement one experiences when travelling along its vertical route. Many different configurations were tested (fig.6.26) together with different roof shapes (fig.6.27). The final resolution provides enough circulation space at the entry and exit points of each escalator.

The vehicular lift's location is determined by its proximity to the housing 'sites' as well as available open space and vehicular access. The neighbouring stand, on which Central House is located, has an existing parking area at the back of the building, thus access and space is sufficient to meet the accommodation requirements (fig.6.28). A vertical

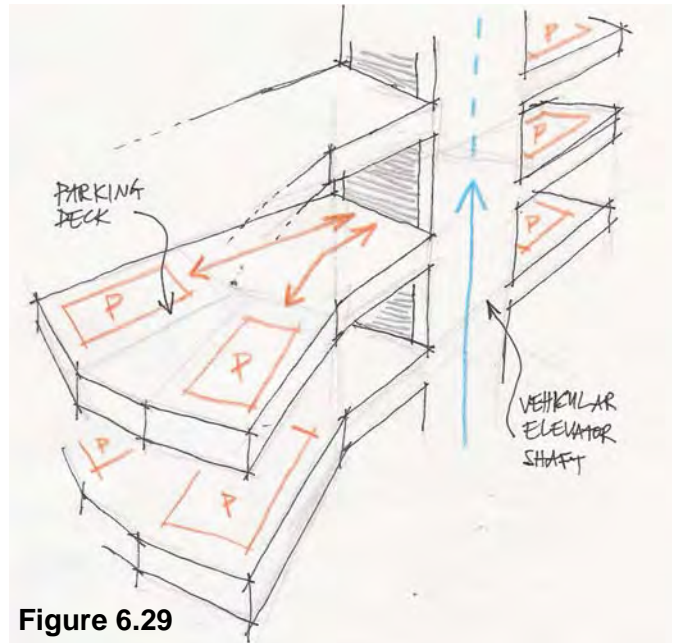


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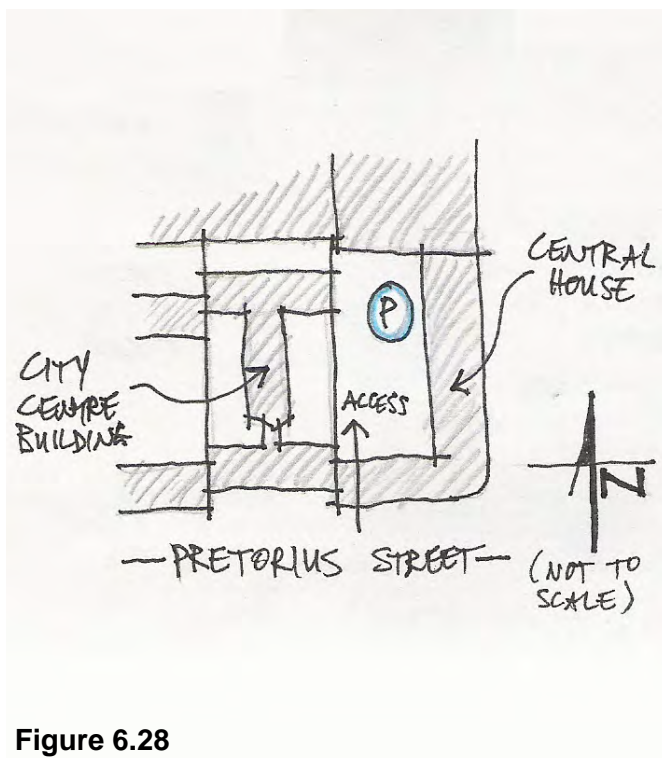


Figure 6.28



Figure 6.30

Fig.6.31 - Diagrammatic plan indicating locations of the fire escapes.

Fig.6.32 - Parti-diagram of the MINI Space Gallery.

Fig.6.33 - The standard 2009 MINI Cooper, with dimensions shown.

shaft is necessary for the lift and parking decks to be arranged in such a way that cars can easily manoeuvre in and out of the lift and parking spaces (fig.6.29).

6.3.6. Services

External service ducts are added to the existing building (fig.6.30). There are three types of ducts:

- the first contains all services necessary for the commercial 'sites' to function such as water supply, grey-water system, telecommunications, fire-system, stack ventilation and evaporative cooling system;
- the second contains the same as above, but are used for the commercial 'sites' in Die Meent building; because only two floors contain new 'sites', the stack ventilation and

evaporative cooling system is not applied in this type of duct (which only works when it serves multiple storeys);

- the third contains all necessary services for residential units including water supply, grey-water system, sewage-system, fire-system and telecommunications. Once again the stack ventilation and evaporative cooling systems are not applied, because the residential units will have closed, compartmentalized spaces, hindering natural ventilation throughout the 'sites'.

Existing electrical services, available at each floor, are to be re-used and adapted. This will include new connection points for each new 'site' and also conduits for additional cabling.

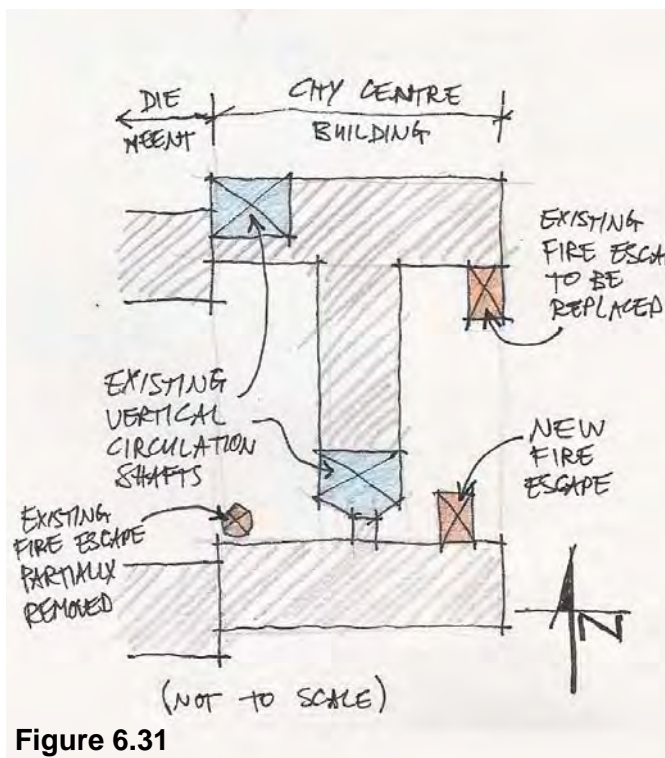


Figure 6.31

The module used for dimensioning the MINI Space Gallery (all in mm)						
Aspect	Original	Multiples				
		1/2	1/4	1/10	1/20	1/40
Length	3699	1850	925	370	185	93
Width	1683	842	421	168	84	42
Height	1407	704	352	141	70	35

Table 6.3

6.3.7. Fire escapes

One new fire escape staircase is added, to provide a second route of escape and also to replace an existing one, which is removed because of the cutting open of floor slabs. A second new fire escape staircase replaces an existing one on floors where new 'sites' are located and complies with current fire escape regulations. See fig.6.31 for a location diagram of these.

6.4. Development of the MINI Space Gallery

The parti-diagram (fig.6.32) for this phase of the project is again derived from the x-y-z of architectural design development, as well as the preliminary theoretical ideas. The elements are:

- function/programme as compartmentalized



Figure 6.33

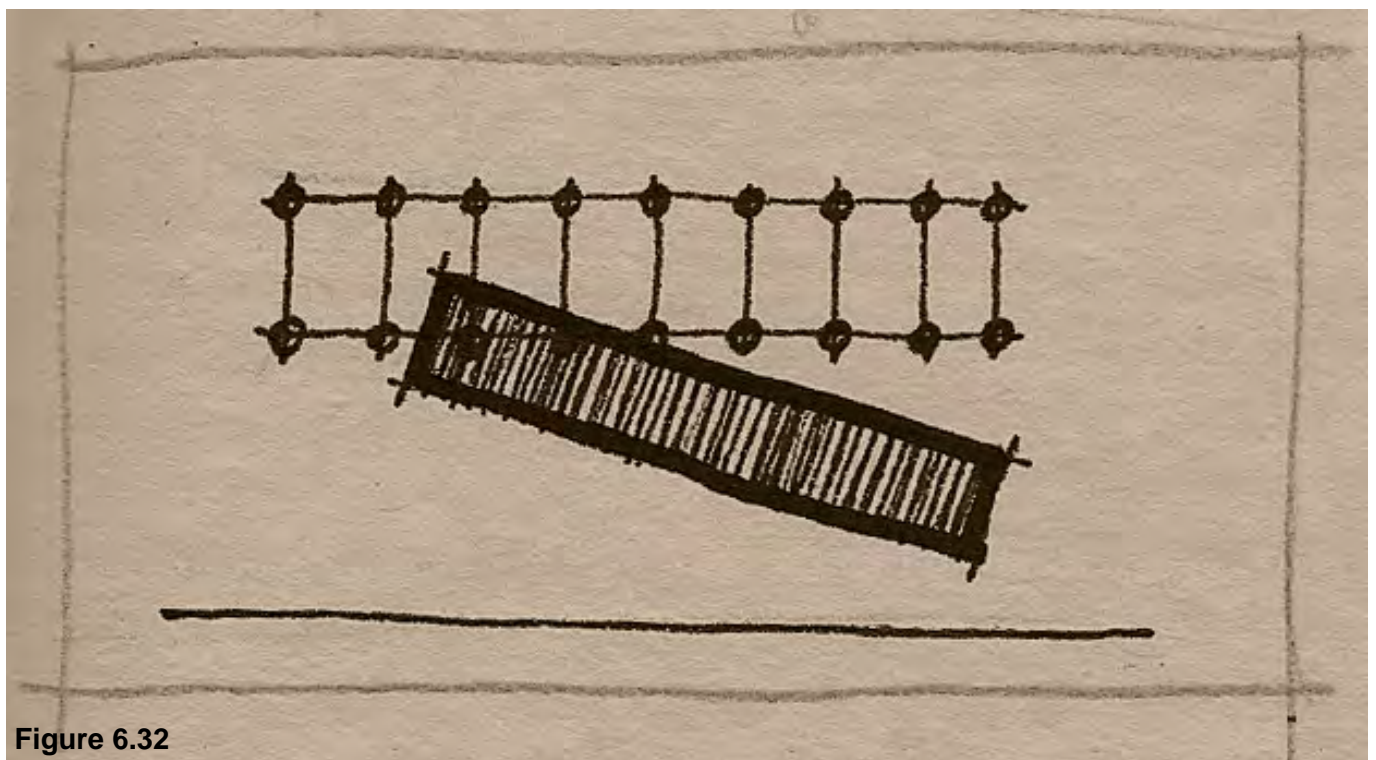


Figure 6.32

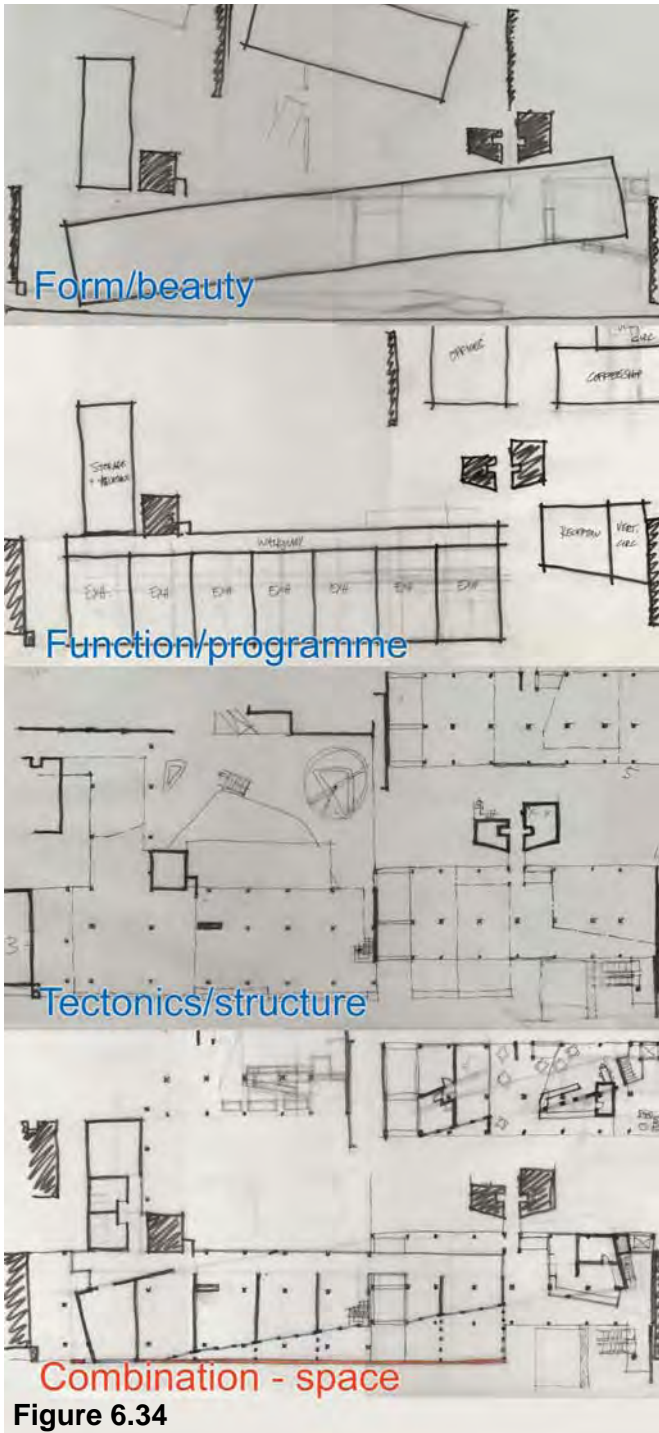
Fig.6.34 - Illustration of overlaying of the x-y-z of architecture.

Fig.6.35 - Perspective of the 'box' (orange) in the gallery.

Fig.6.36 - Perspective of the initial 'skin', viewed from the southwest.

Fig.6.37 - Perspective of the plain 'skin', viewed from the southwest.

Fig.6.38 - Model of a preliminary gallery design, with advertisement space highlighted.



- block;
- form/beauty as a diagonal, stereotomic 'box' and thin, tectonic 'skin';
- tectonics/structure as black dots or columns at the corners of the function or programme's compartments.

The parti-diagram for the gallery can be summarized as tectonics/structure determining function/programme; these are intersected by the stereotomic form/beauty, set apart from the tectonic form/beauty. The standard new MINI Cooper (2009 model; fig.6.33) was used as guiding principle to determine sizes, each dimension being divided by two, four, ten and combinations thereof (see table 6.1).

To generate the spaces each element in the x-y-z of architecture, was designed separately and then overlaid on each other, each consequently

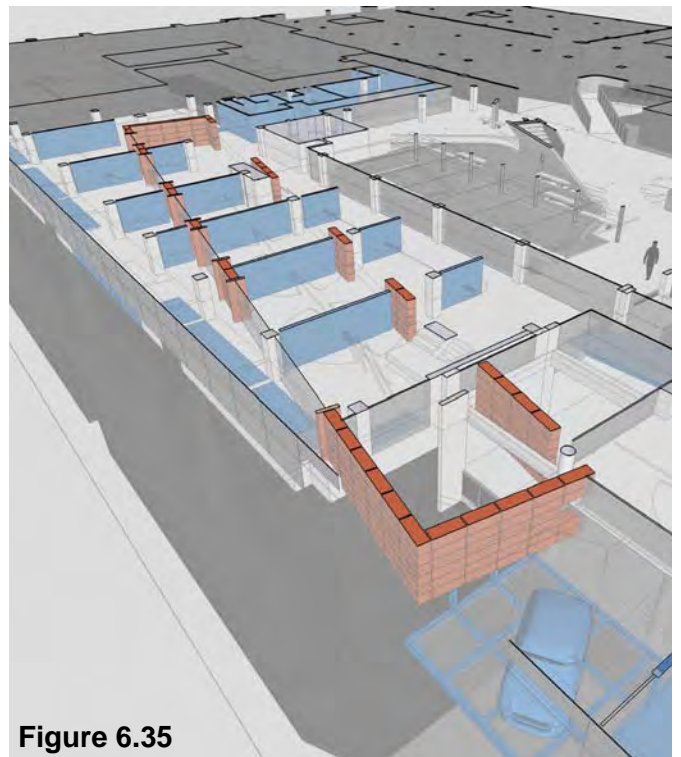


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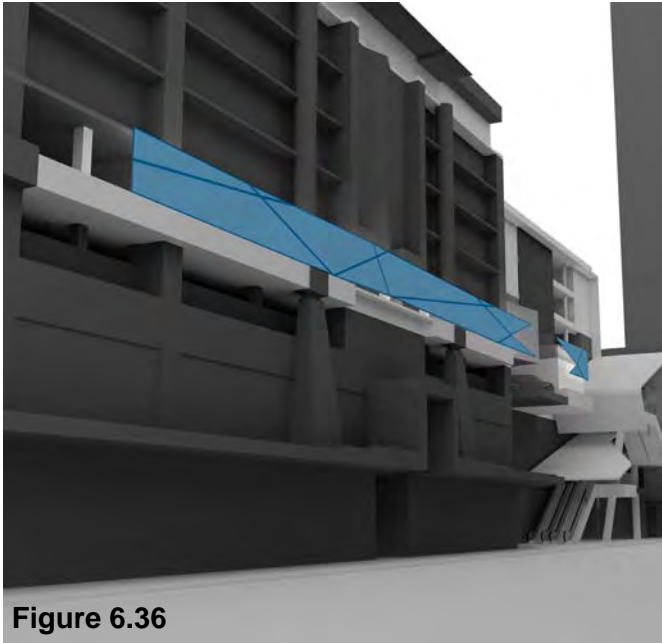


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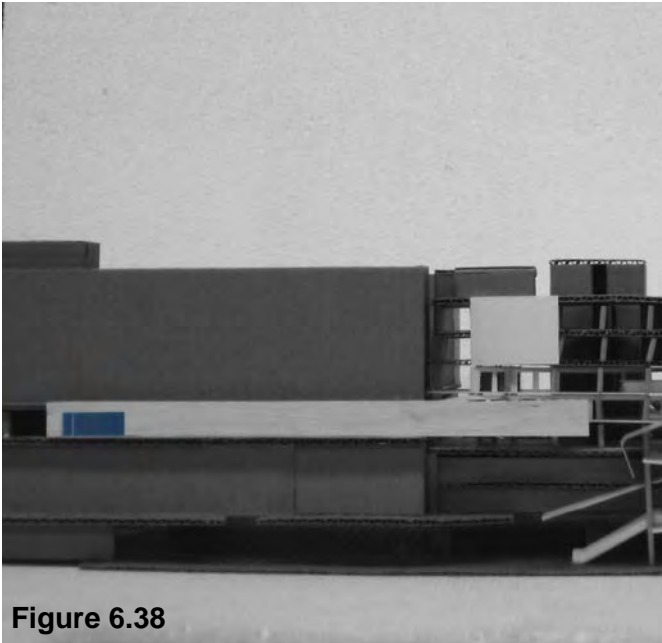


Figure 6.38



Figure 6.37



Figure 6.41



Figure 6.39



Figure 6.40

- Fig.6.39 - Perspective of the gallery viewed from Pretorius Street, with advertisement space highlighted.
- Fig.6.40 - Simplified interior rendering of the gallery bridge (blue) viewed from the main entrance.
- Fig.6.41 - Development model exploring functional layouts for the gallery and ancillary spaces.
- Fig.6.42 - Model of a preliminary gallery design.
- Fig.6.43 - Model of a preliminary gallery design.
- Fig.6.44 - Sketch with possible vertical circulation between MINI Space areas, in plan.

being adapted to create the gallery space (fig.6.34).

Large open spaces are provided abundantly as exhibition areas, allowing free movement of visitors and any object of art. Glass is used extensively to surround these spaces, providing passers-by with views towards the inside. The 'box' is therefore also a large, linear object within the gallery (fig.6.35). This object serves as the stereotomic mass juxtaposed against the tectonic 'skin', a principle derived from the precedent study by Piano (see figs.4.2 and 4.4).

The 'skin' communicates with the street, thus exposing the gallery to pedestrians and people in vehicles. Initial ideas (fig.6.36) involved complex panels, but this cluttered the existing façade. It was decided therefore to create a plain 'skin' (fig.6.37), its simplicity contrasting with the complexity of the existing buildings. This element will also seem to glow at night, attracting even more visitors.

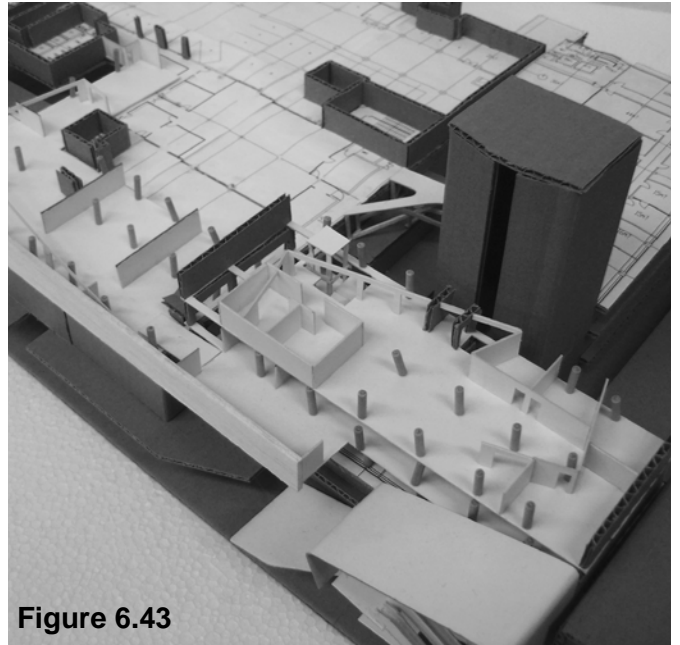


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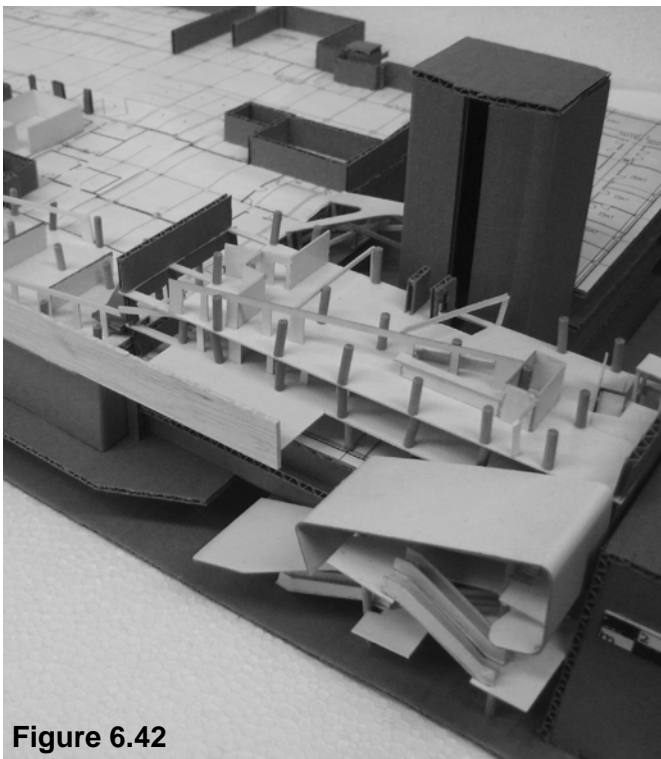


Figure 6.42

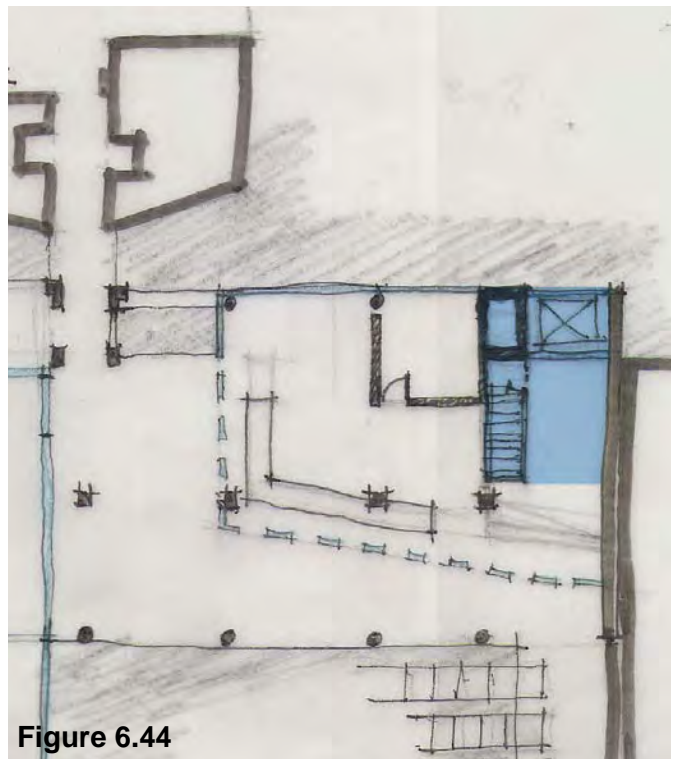


Figure 6.44

Areas of the open spaces after adjustment of the MINI Space owned 'site' boundaries					
Open space location	Original size in m ²	Area used in m ²	Area gained in m ²	Difference in m ² (used minus gained)	Total lost open space (max. 25%)
Lower level	53,1	0,7	0	0,7	1,3%
Main level (City Centre building)	99,7	32,4	14,2	18,2	18,3%
Upper level	102,7	39,1	18,1	21	20,4%

Table 6.4

A cantilevering display floor serves as advertising to the public on the street, showing off the events occurring inside. Different areas for the positioning of this space was looked at (fig.6.38), the final location chosen, is close to the escalator structure, and seems to break through the 'skin' (fig.6.39).

To connect the 'sites' in the City Centre building with those in Die Meent building, a new bridge is inserted (fig.6.40). This walkway is covered and also serves as a ramp between the floors of the two existing buildings.

The design of the MINI store and coffee shop was based on the same principles as above. Different locations of these spaces within the 'site' were investigated by means of concept models (figs.6.41-6.43). A vertical connection between these two spaces was also explored. A direct connection, including an elevator and staircase

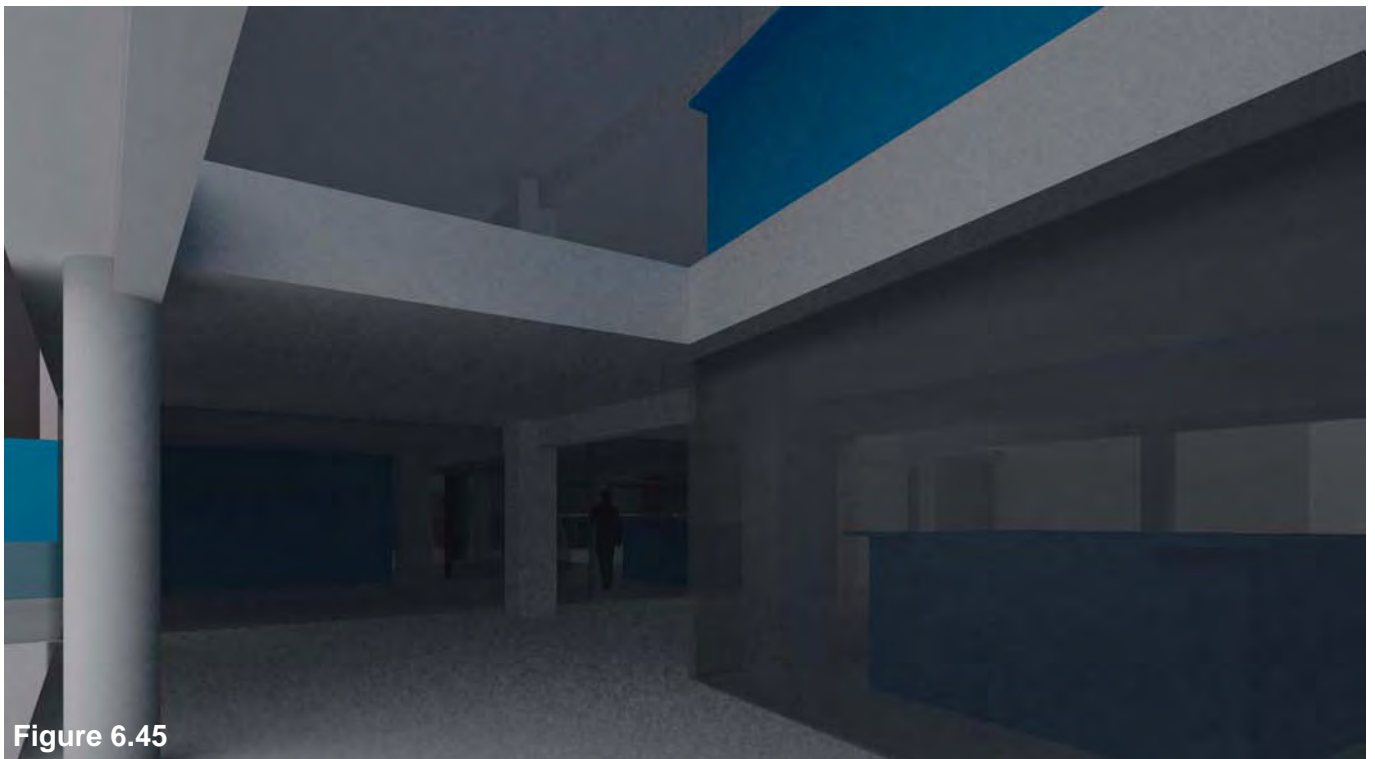


Figure 6.45

Fig.6.45 - Initial interior rendering of the new double volume, viewed from the escalators.

Fig.6.46 - Sketch explaining adjustment of the MINI Space owned 'sites', in plan.

(fig.6.44) was discarded due to the proximity of the entrances to the existing vertical circulation shaft. Thus three bays of the concrete floor in-between these spaces were removed (fig.6.45) to create a spatial link between the gallery, store, coffee shop and the shared open space. This double volume also accentuates the presence of these spaces as one exits the top escalator.

The existing site boundaries were adjusted according to the principles set out in the design guidelines, forming part of the first phase of the project. Open spaces between 'sites' owned by MINI Space can be built upon up to a maximum of 25% of the area on plan. To simplify the spaces, boundaries were thus extended and set back (fig.6.46). Table 6.2 summarises these effects on the open spaces.

Change is designed for, following the applied

theory. All new components are fixed to the existing structure with chemical bolts, allowing everything to be easily removed and set up elsewhere. The scars that remain will become part of the history of the 'sites'.

6.5. Conclusion

Many ideas and possible applications were investigated to solve the design problems. This process serves as the basis for final decisions regarding the design of the Site Development and the MINI Space Gallery.

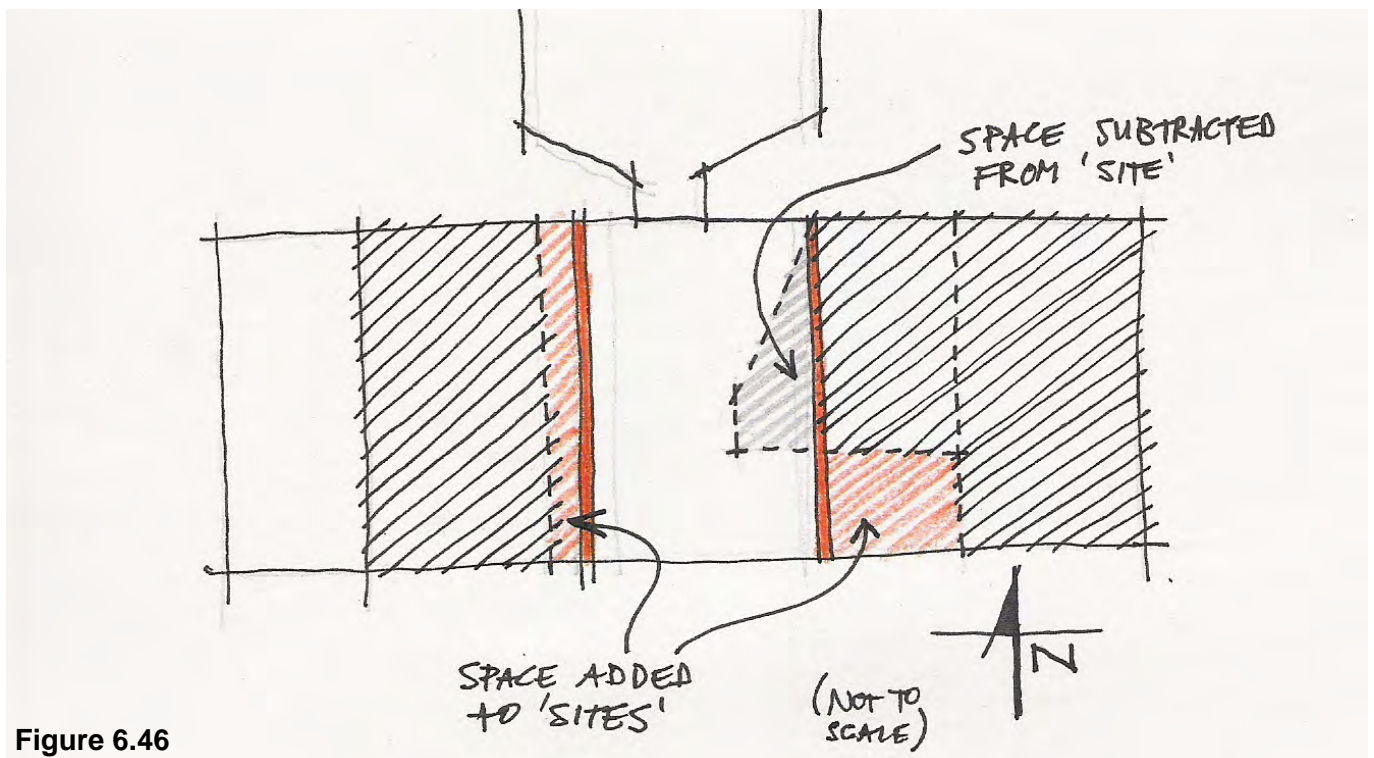


Figure 6.46

