CHAPTER 5

design Process

Figure 5-1. Aerial view of site as form generator
Aerial photo - Geography Department UP; 2010

5-1 Site as Form Generator

The Louis Pasteur hospital frames the site on the western edge, providing protection from the western sun.
The curved corner of the new additions to the Louis Pasteur Hospital draws the viewer into the site over the existing 3 story building next to the hospital.

The Colosseum Hotel across the road is a prominent landmark in Schoeman Street. Currently the low buildings on the street allow the observer to view the hotel from a fair distance down Schoeman Street. The new building should respect this lack of intrusion and be stepped back from the street or remain low on the street facade.

By connecting these curved structures a twisted geometry is generated at approximately 10 degrees. As seen in figure 5-1.

The proposed pedestrian corridor behind Louis Pasteur hospital, as discussed in the urban framework divides the site into a small northern and a large southern portion. This partition corresponds well with the ideal location to enter the basement parking from Du Toit Street.

The existing buildings consist of commercial activity on ground floor. There is very limited vegetation on the site. By connecting the existing trees on site, a division is created isolating the south western corner.

These divisions create different zones on the site and the appropriate facilities should be located in these zones.

Louis Pasteur Hospital **Colosseum Hotel**

Figure 5-2. Photos of New Additions to the Louis Pasteur Hospital and the Colosseum hotel accross the road. Source - Author

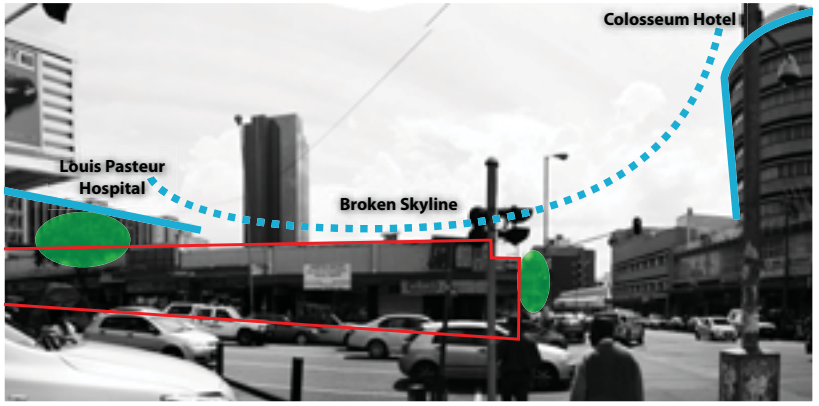


Figure 5-3. Photo of Southern facade of site illustrating the hole in the city skyline
Source - Author

5-2 Site Zoning

Due to the proposed function of the building, the building is divided into different zones. Each zone contains a different facility and has a different purpose. The users may move about across the various zones.
The users can be differentiated on age as discussed earlier and their required needs. Different age groups have unique times during the day when they will be using the building.

Zone 1 - Transport
The basement consists of parking and various auxiliary facilities. The parking should be enough to accommodate not only the vehicles of the people working in the building, but also to alleviate some of the parking problems found in the area. The eastern street edge integrates with the existing municipal bus routes moving through Du Toit Street by adding bus-stops on the street. The existing on-street parking is enlarged to be utilized by mini bus taxi as a drop-off and collection transportation node.

Zone 2 - Commercial
The most important zone of the building for a pedestrian would be the ground floor and street interface. The ground floor should therefore consist of commercial enterprises. These facilities are to replace the existing commercial street edge that is found on site. This commercial zone moves through the site along the newly introduced pedestrian corridors of the urban framework.
The service infrastructure should be adaptable to enable the occupant to change the spaces in order for it to be used as retail shops or restaurants.

Zone 3 - Day-care
The Northern edge is framed by a Day-care facility. The building forms a barrier that protects the open space on the northern edge. This forms a safe and open courtyard for the small children to play. This space will not be accessible to all visitors on the site. The building itself is accessible from the parking facility and the public transportation nodes to aid parents with dropping off their children.
Furthermore, the building houses classrooms, play spaces and the basic amenities required by a day-care facility.

Zone 4 - Multi-purpose space
On top of the commercial zone found on the southern and eastern edges are the communal spaces. The bulk consists of a multi-purpose hall, that can be divided to accommodate classrooms for tutoring, dining facilities, as well as, an indoor basketball court.
The outdoor area consists of hard and soft landscape that accommodates both sporting activity and relaxation. At the heart is a basketball court and a landscaped ramp leading up to the basketball court with the secondary hall entrance.

Zone 5 - Entertainment
The highest level is of the greatest importance. The indoor activities are housed in this zone. The structure consists of spaces ideal for social interaction. The internal spaces should be adaptable to house new and current equipment, as required by the users. Facilities include a computer laboratory, arcade or video games, pool tables and lounges.

5-3 Concept Development

The development of the building was done through an exploration of physical models and computer generated models. The zones as discussed earlier were analyzed and then placed at optimum location on the site. The building form developed through a process of trial and error until a satisfactory layout was achieved.

Model 1 & 2

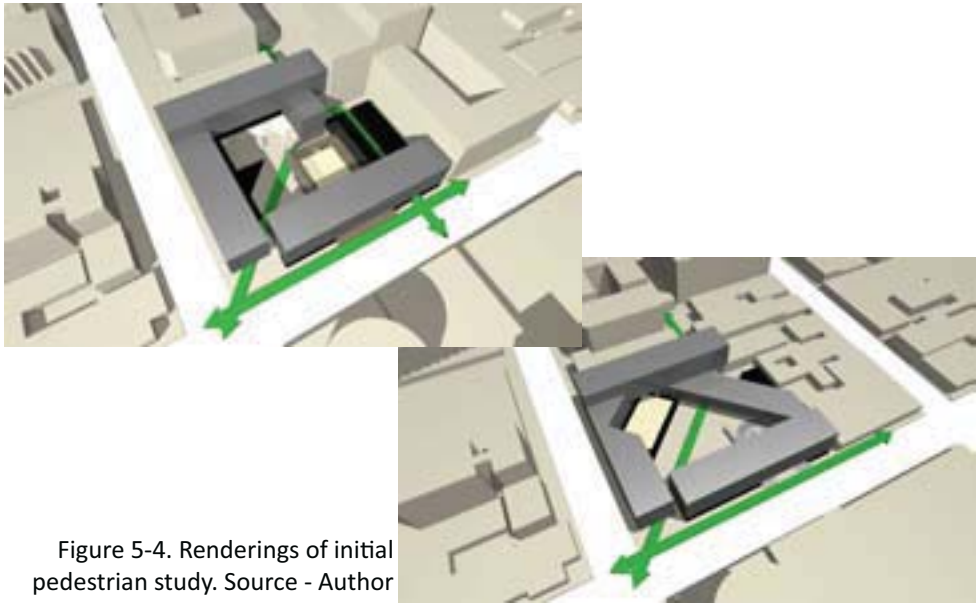


Figure 5-4. Renderings of initial pedestrian study. Source - Author

The first concept development was based around the pedestrian routes. The pedestrians move throughout and around the site. The building zones were arranged accordingly. The transportation node added to the complexity of the spacial layout.

Model 3

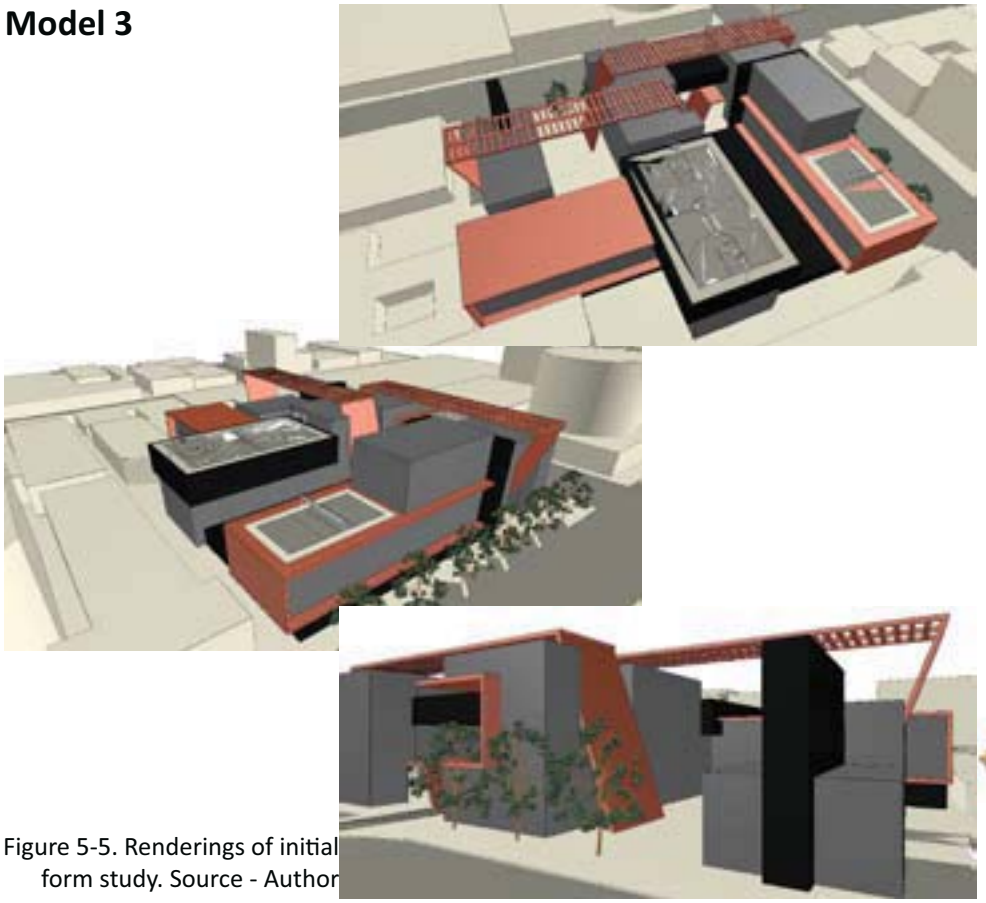


Figure 5-5. Renderings of initial form study. Source - Author

A form study was done based on vertical circulation. The different zones intersect one another creating intermediate zones. The roof top spaces were designed as out door activity spaces.

Model 4

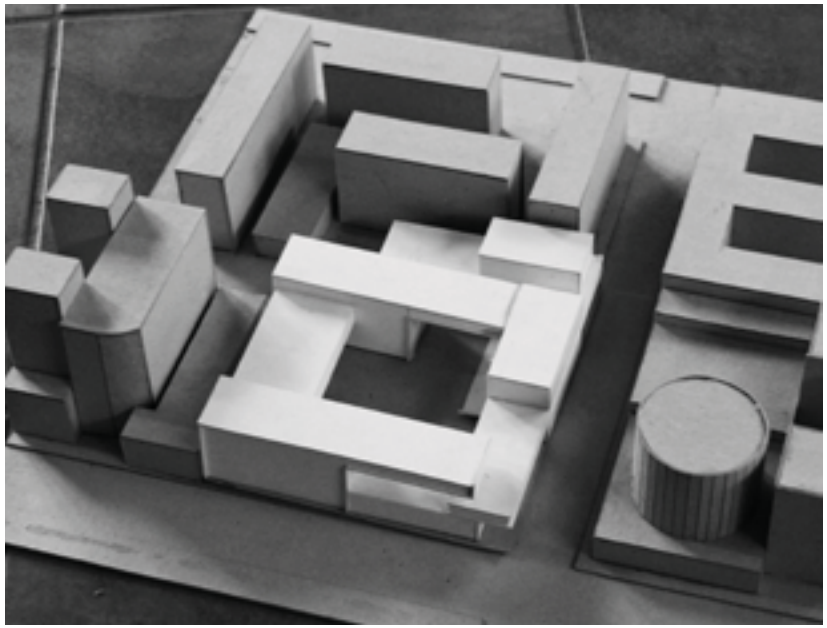


Figure 5-6. Photo of Model 4
Source - Author

The building is arranged around a private courtyard. The most predominant outdoor activities are to take place in this area.
The different buildings on site intersect on another to create balconies and usable rooftops.
The pedestrian corridor divides the building, creating a smaller building on the northern side of the site.
The main entrance to the building is located on the corner.

Model 5

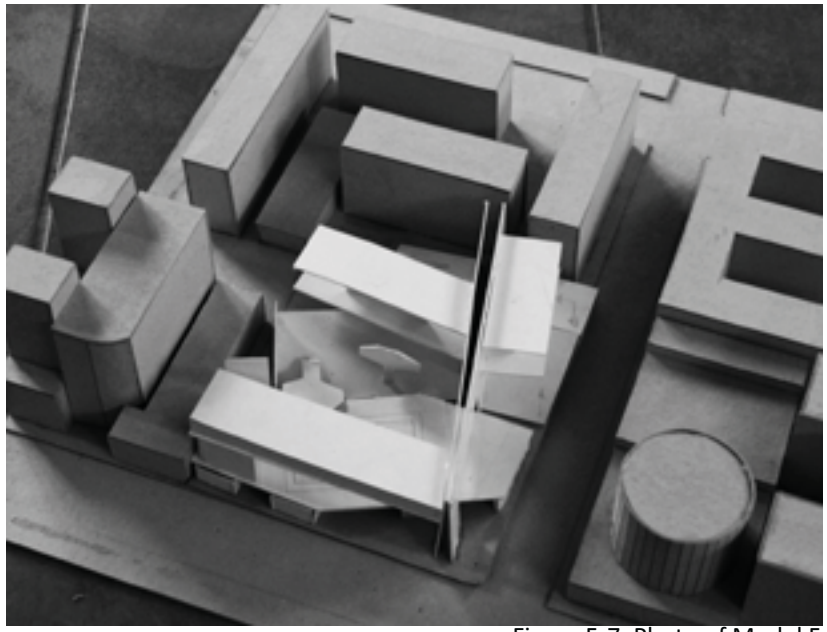


Figure 5-7. Photo of Model 5
Source - Author

A wall is built perpendicular to the twisted geometry. The wall accentuates the difference between the busy Schoeman street and the quieter Du Toit street.
The pedestrian corridor moves up a ramp and trough the building and down the other side of the wall.
The landscape consist of a ramp that forms a pavilion for viewing the activities on the basketball court.
The main entrance is on the corner with a secondary entrance on Du Toit street.

Model 6

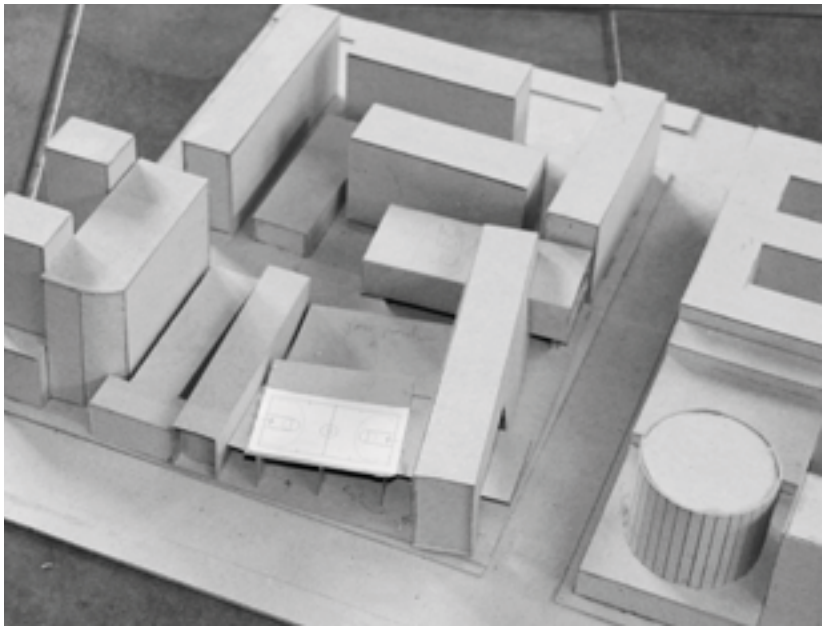


Figure 5-8. Photo of Model 6
Source - Author

Model 7

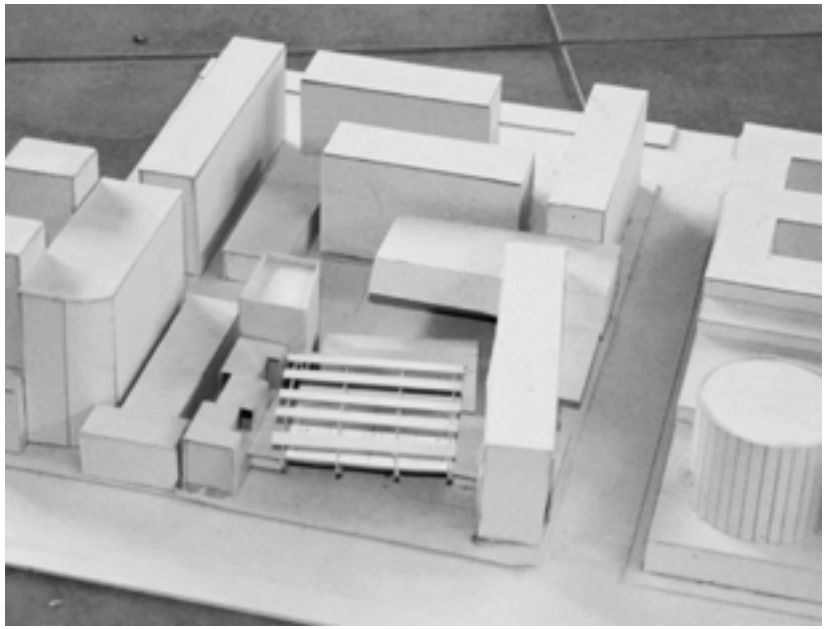


Figure 5-9. Photo of Model 7
Source - Author

The previous model is developed. The wall structure is transformed into a building. The model explores the relationship between the lower building on the western edge.
The outdoor spaces incorporate a basketball court above the commercial zone. The surface of the court punches through the eastern building. Creating a visual link through the wall.
The multipurpose hall is located on the northern edge of the site. The buildings intersect one another.

On the eastern edge the entrance to the pedestrian corridor and basement parking is enhanced by a canopy. The canopy is an extension of the interior spaces from the hall and wall building.
The outdoor spaces are adapted to be permeable and provide shading.
The western edge building incorporates courtyard spaces.

Model 8

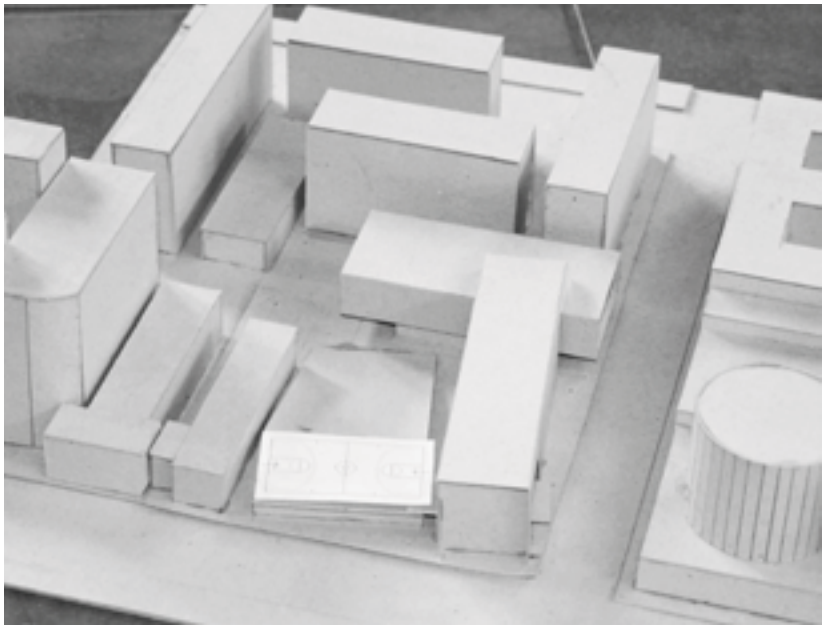


Figure 5-10. Photo of Model 8
Source - Author

Figure 5-11. Rendering of the southern edge. Source - Author

Figure 5-12. Rendering from north west. Source - Author

Figure 5-13. Rendering of eastern edge. Source - Author

June exam concept exam.

Building is centered around a central courtyard. The courtyard consist of a land-scaped ramp leading up to the basketball court on the southern edge of the site.

The 3 story building on the western edge is an office building. The roof consist of a Skate park and solar panels. The indoor entertainment building frames the building on the east and links with the multi-purpose hall on the northern side of building.

Model 9

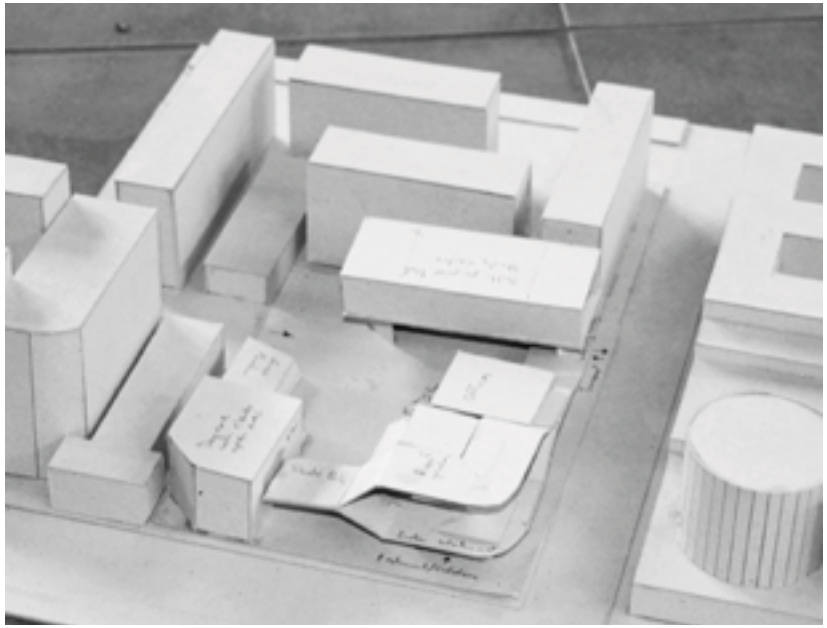


Figure 5-14. Photo of Model 9Source - Author

Model 10

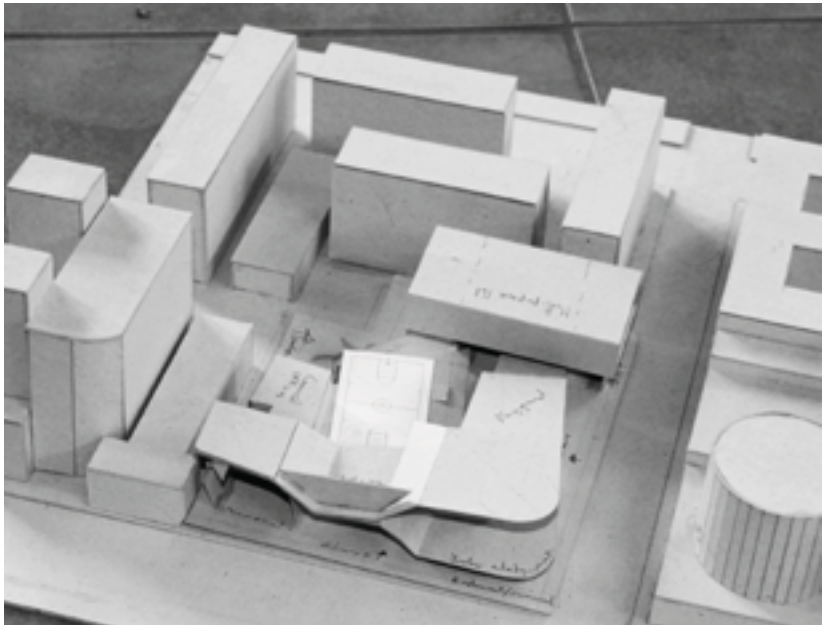


Figure 5-15. Photo of Model 10 Source - Author

The importance of corner is reinvestigate.
The design consist of the indoor entertainment area on the corner. The shape draws the observer around the corner. The facade is ideal to accommodate a digital screen.
The multi-purpose hall remains on the northern edge. The buildings are integrated by extending the surfaces of the indoor entertainment area to wrap over and underneath the other buildings.

Model 10 is a development of Model 9.

The twisted geometry is reintroduced by extending the corner past 90 degrees. The roof surfaces is adapted to form part of the landscape by accommodating a Skate park.
The central Basketball court is raised to create access to the basement parking and link with the internal spaces of the building.

Model 11

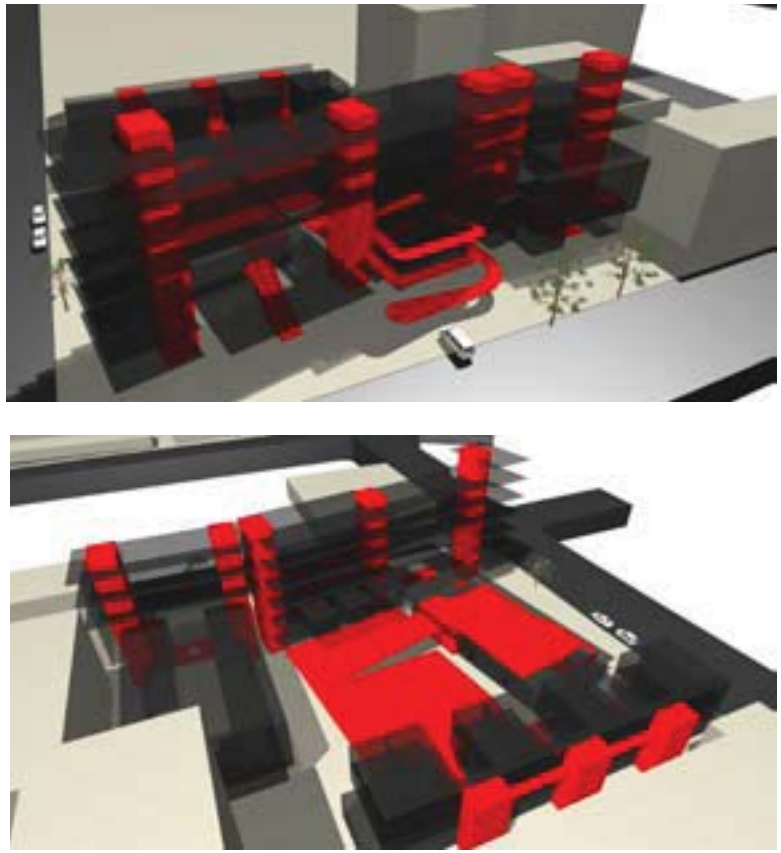


Figure 5-16. Renderings of Model 11
Source - Author

The main video game design principal is based around exploration and movement.
The movement and circulation routes are highlighted in red. The central courtyard ramps consists of several ramps linking the ground floor commercial with the upper floor open spaces.

Model 12

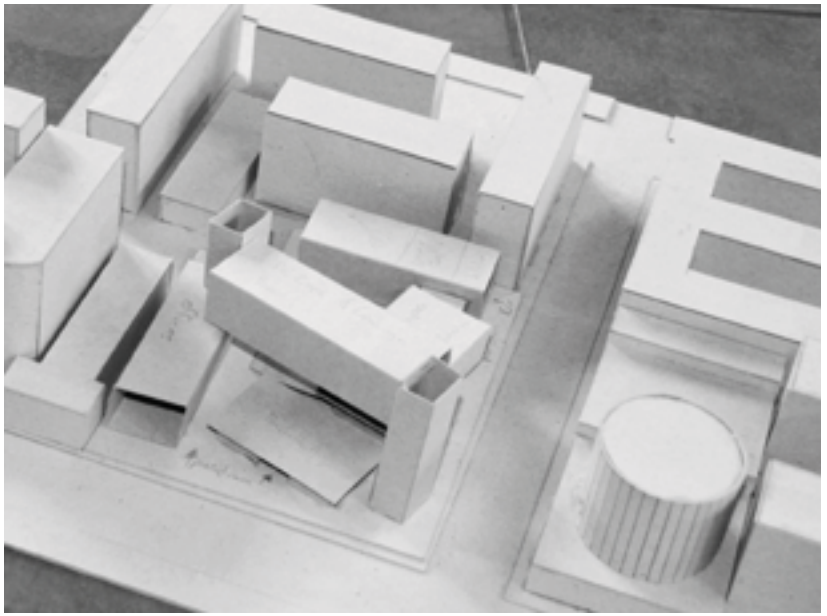


Figure 5-17. Photo of Model 12
Source - Author

The direction of the twisted geometry is challenged.
The building is arranged over the four levels as found in video game design (p51).

Ground level	- Commercial level.
Outdoor	- The public spaces like the landscape ramp and basketball court.
Indoor	- Multi-purpose hall and day-care facility.
Fourth level	- Indoor entertainment area

The building consist of a bridge that fills the hole in the skyline, while maintaining a low level ground floor interface.
The twisted geometry accentuated the corner element, challenging the importance of the colosseum hotel.

Model 13

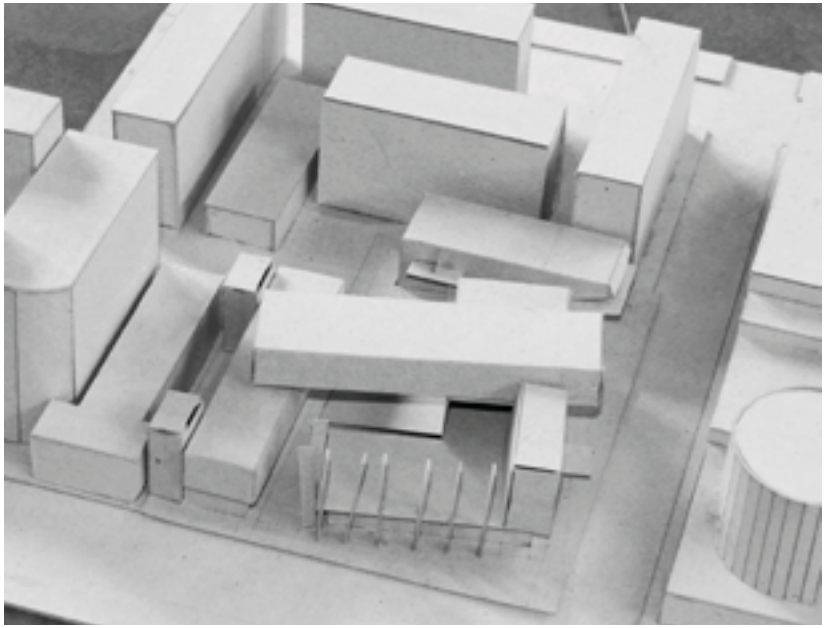


Figure 5-18. Photo of Model 13
Source - Author

The twisted geometry is restored in order to accentuate the Colosseum hotel as prominent landmark.
The bridge structure fills the gap in the skyline.
The basketball court links directly with the multi-purpose hall in order to create a bigger public space.
The basketball court screen is highlighted as being important.
The day-care facility at the north of the site incorporates a ramp that highlights the entrance to the basement parking while linking the pedestrian corridor with the multi-purpose hall.

Model 14

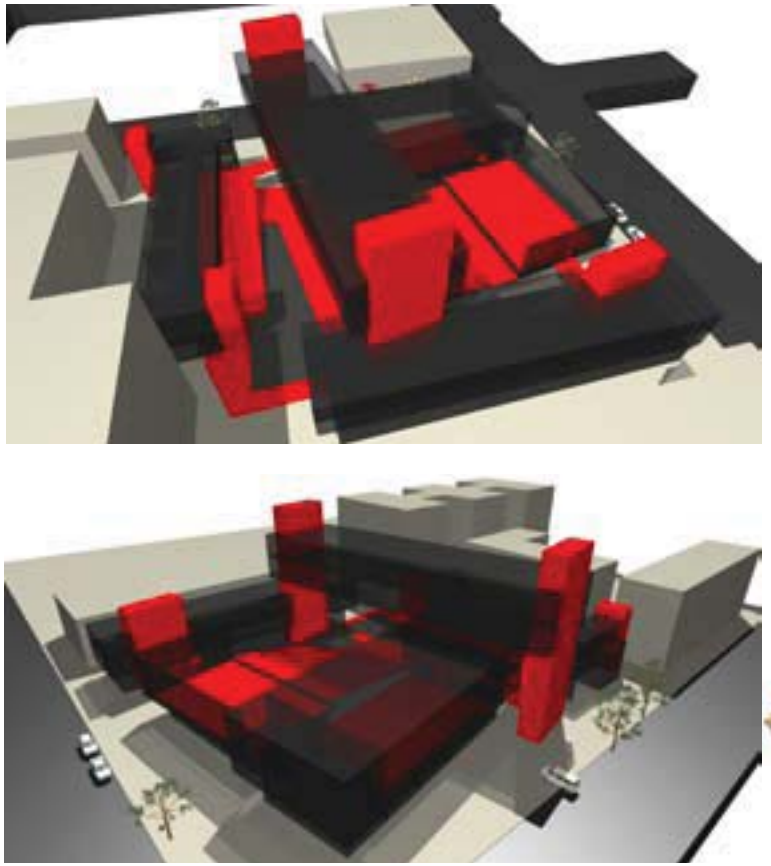
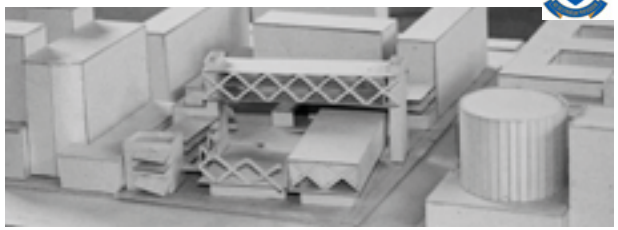


Figure 5-19. Renderings of Model 14
Source - Author

The movement routes of model 13 is defined and articulated in model 14.

The high movement towers holding the bridge structure guide the visitor to where the entrance to the building are. In addition the towers highlight the top level, guiding the visitor to the place where they would like to go.



Model 15

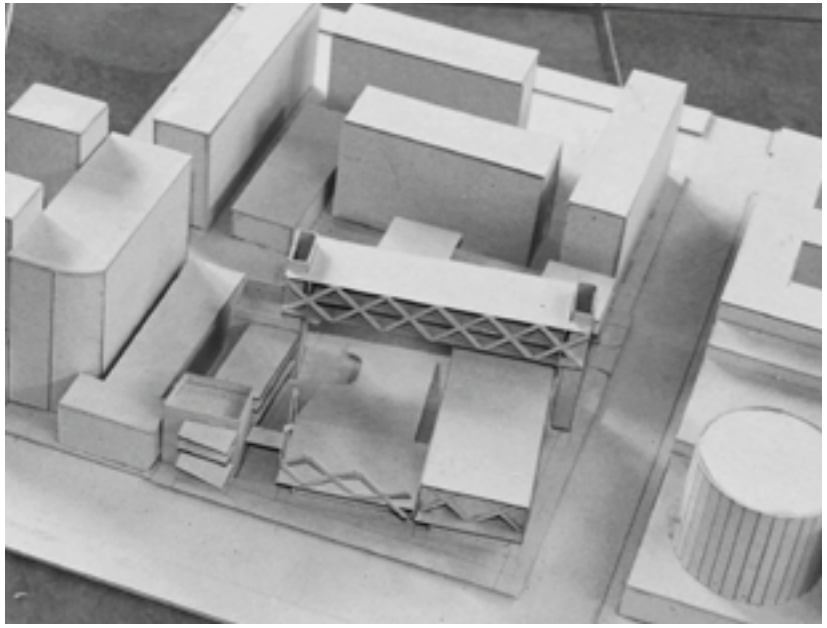


Figure 5-20. Photo of Model 15
Source - Author

The structure is explored.
The bridge structure consists of two concrete towers providing circulation and services. The bridge span approximately 50m with a steel girder truss forming the walls of the structure. The floors are constructed of steel frame with lightweight infill structure

The multi-purpose hall consist of a portal frame structure with brick infill walls on the side.
The ramp and skate park is constructed of moulded concrete.

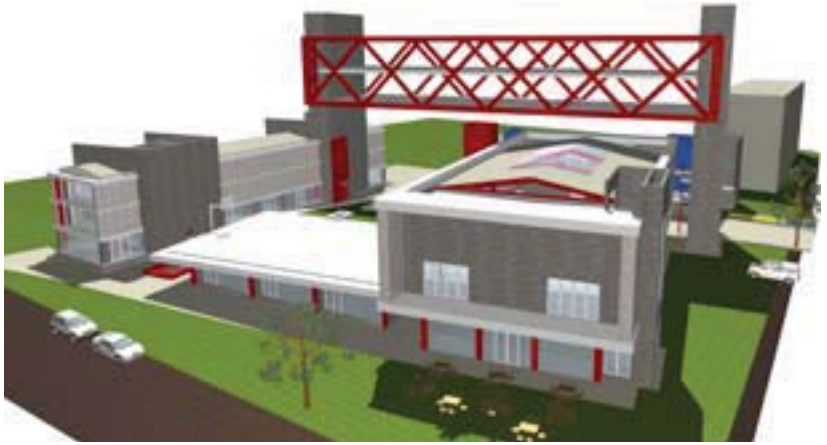


Figure 5-21. Rendering of the southern edge. Source - Author

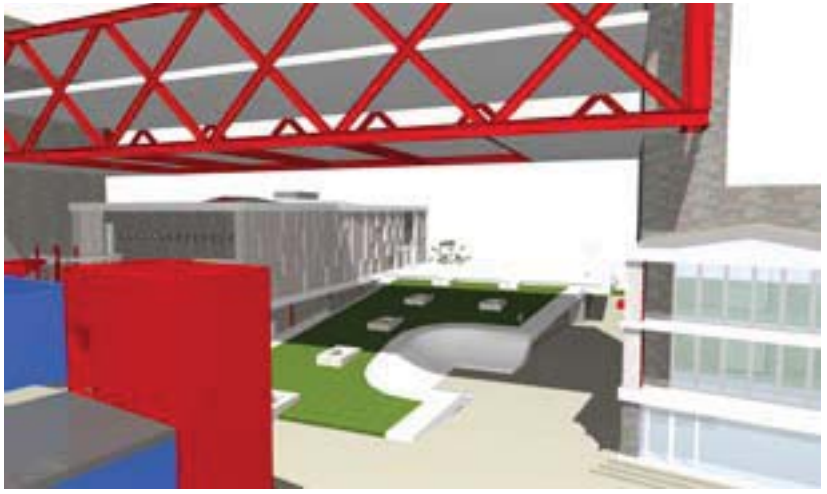


Figure 5-22. Rendering of the central courtyard as seen from the north.
Source - Author

Model 16

Figure 5-23. Rendering of the centre as seen from the south - Birds eye view. Source - Author

Figure 5-24. Rendering of the centre as seen from the south - Street level. Source - Author

The bridge structure is changed to a vierendeel truss. The structure consist of large steel square tubes that are welded in place with ridged joints.

The screen surrounding the basketball court is designed to accommodate creeping plant to cover it and create a green wall between the busy street and the activities in the courtyard.

The core structure of the day-care centre was investigated with the use of load bearing brick work and floors spanning in between.

Figure 5-25. Rendering of the central courtyard as seen from the north. Source - Author

Figure 5-26. Rendering of the centre as seen from the south east. Source - Author

Figure 5-27. Rendering of the centre as seen from the north. Source - Author

Model 17 - Technical review - September

Figure 5-28. Rendering of central courtyard as seen from the North.
Source - Author

Figure 5-29. Rendering of building as seen from south east
Source - Author

Figure 5-30. Rendering of Multi-purpose hall interior.
Source - Author

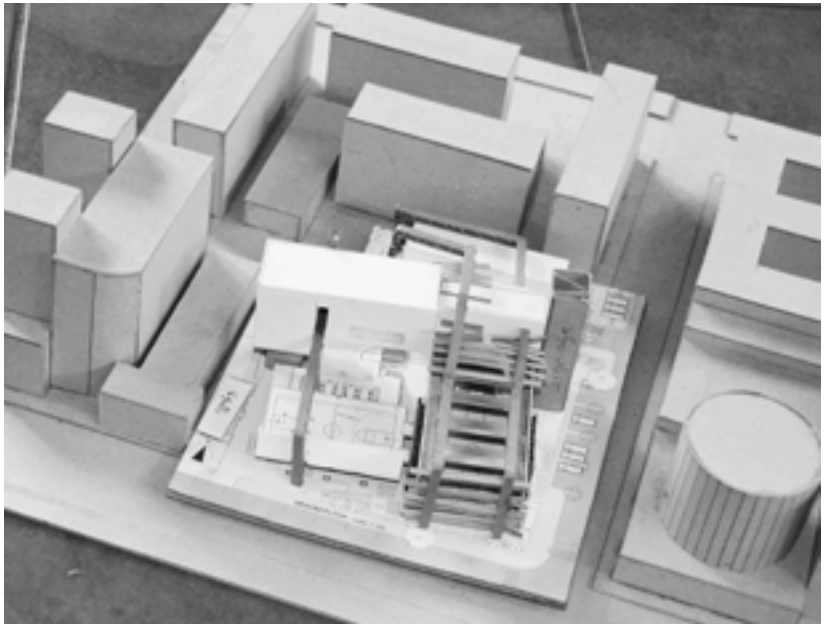
The bridge's structure is sorted with a square, fixed hinge truss and cladding.
The truss is set between the two tower structures. The truss is therefore offset from the side of the building.
The buildings are predominantly constructed of a lightweight material. The outside cladding is done with copper to blend in with the dark brown brick buildings that surround the site.

Figure 5-31. Rendering of the courtyard as seen from the western pedestrian corridor.
Source - Author

Figure 5-32. Rendering of the Youth Centre as seen from the east
Source - Author

Figure 5-33. Rendering of the Youth Centre as seen from south east.
Source - Author

Model 18



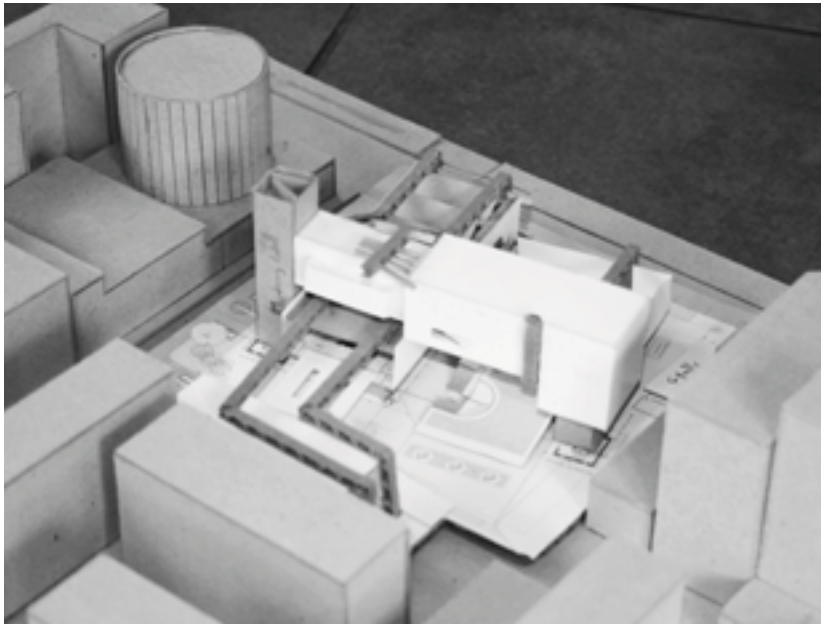
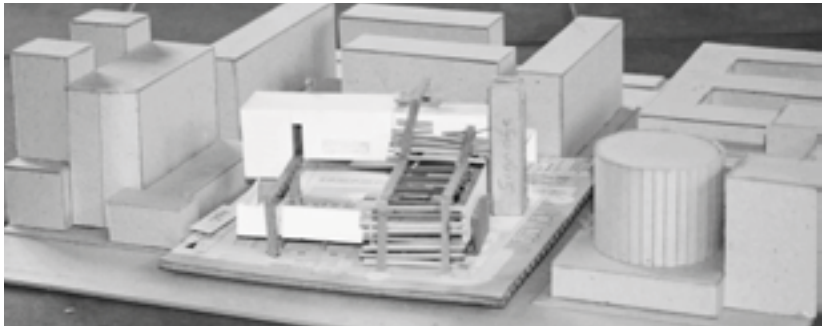
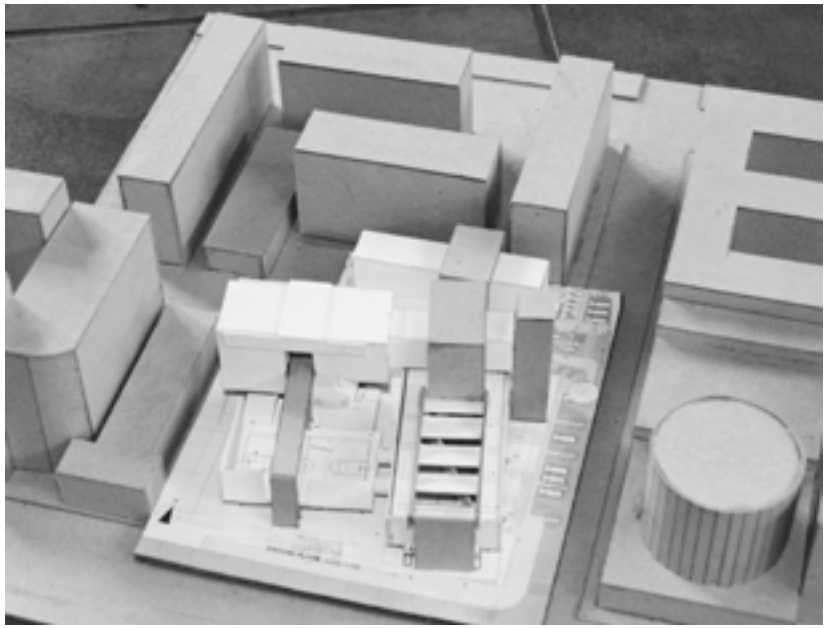


Figure 5-34. Photos of Model 18
Source - Author



An attempt to integrate the different forms of the different buildings.
The hall's roof is changed to a sawtooth structure to provide soft southern light inside.
The bridge structure is changed to wrap over one of the concrete shafts. The relationship between the hall and the bridge structure is also investigated.
The indoor entertainment area is now able to spill out onto the roof of the hall.
A secondary movement path is introduced over the outdoor basketball court and into the bridge structure.
The office building on the eastern edge is discarded.

Model 19



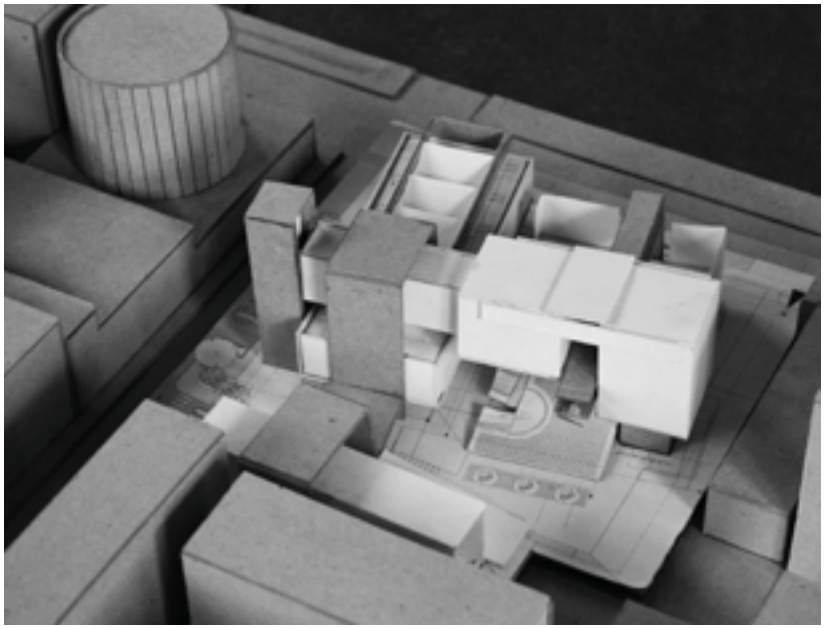
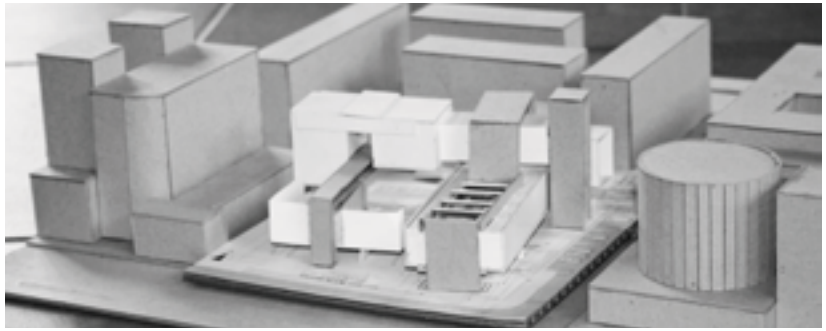


Figure 5-35. Photos of Model 19
Source - Author



Model 19 simplifies the roof structure of the hall. The double volume activity space in the indoor entertainment centre is expressed on the outside by adding a secondary structure that wraps over and under the other structures.

The day-care facility has been changed to have a central office building and circulation with classrooms on either side.

Model 20

Figure 5-36. Rendering from the south east
Source - Author

Figure 5-37. Rendering from the west
Source - Author

Figure 5-38. Rendering from the south west
Source - Author

Model 20 is a computer development of model 19.

The structure, material and floor plans have been updated.