



“Learning is increasingly becoming active learning and is no longer strictly tied to a fixed time or place. The standard school design with its rows of classrooms connected by corridors, a main hall and a teachers’ room, is no longer satisfactory. Relatively open learning domains and work places are emerging that are connected with places for study and work and areas for social interaction and relaxation”.

Tom Verstegen
Verstegen (2009: 9)

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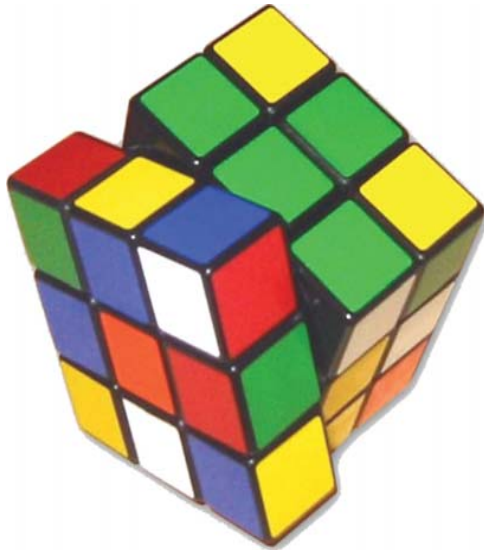


fig.9.1. Rubik's Cube

Introduction

The design development was done in an iterative manner. From the start the author did not have a clear vision of what the result should be. Instead he set out to explore a multitude of design interventions that addressed specific issues that could potentially lead to the wanted result. Each design intervention was explored, investigated, discussed and considered in its various aspects as well as in its relationship to the whole. The result of the numerous explorations lead to a final proposal that contained the qualities seen most fit as a result of the investigation that followed.

The design development will thus be presented as a series of design explorations that will ultimately reveal an evolution towards the final design proposal. The explorations will be referred to as different phases.

The final design proposal will be presented as a series of abstract interventions that will give a vision of the proposed whole. The final design proposal will then be resolved in the Technical Development chapter.

Chapter 9

Design Development

Phase 1

The functional zoning of the vertical structure was conceptually investigated (fig.9.3 and fig.9.4). A library on ground floor was proposed to be the public interface for the mixed-use building. A section of the building was proposed to be dedicated to educational spaces (classrooms). Another section of the building was proposed to be rentable office space. A multi-purpose sport and recreation hall was envisioned to be added to the rooftop space. The two basement levels were proposed to be left as is. A mixed-use building was thus proposed that starts to blur the boundaries of the surrounding urban activities and that of an urban school within a vertical structure.

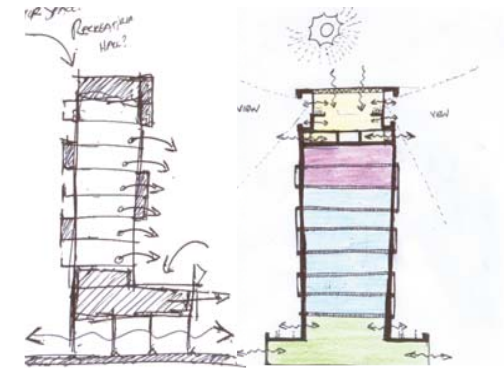


fig.9.5. Exploration sketches








fig.9.2. Existing Structure



fig.9.3. Proposed Functional Zoning



fig.9.4. Functional Zoning (model by author)

-  Multi-Purpose Sport + Recreation Hall
-  Office Space
-  Educational Space (Classrooms)
-  Public Library
-  Basement Parking (2 levels)

The idea of a mixed-use environment within a vertical structure was investigated (figs.9.6). It was investigated how this mixed-use environment could be arranged in a seemingly random way. A "Rubik's Cube" was initially used as the concept for this. A multitude of interrelationships of public, semi-public, semi-private and private spaces exist within this arrangement (fig.9.7).

Different ways of treating vertical circulation was investigated (figs.9.9). Although the project deals with an existing structure, additional circulation might be required. It could potentially contribute to the proposed quality of educational environment that is envisioned. Not only singular systems was investigated, but also combinations of different systems.

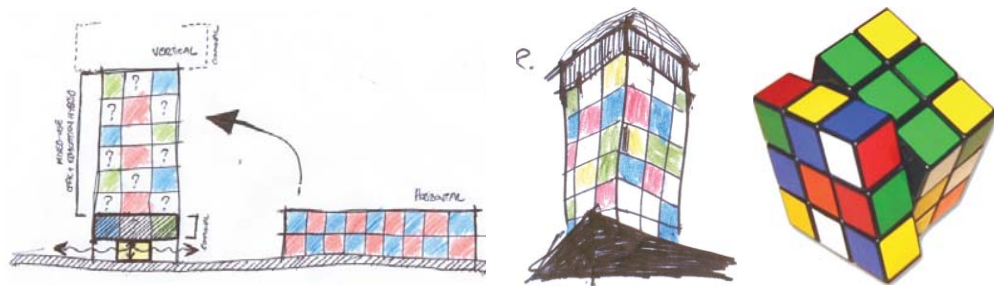


fig.9.6. Horizontal to vertical schooling in a mixed-use environment

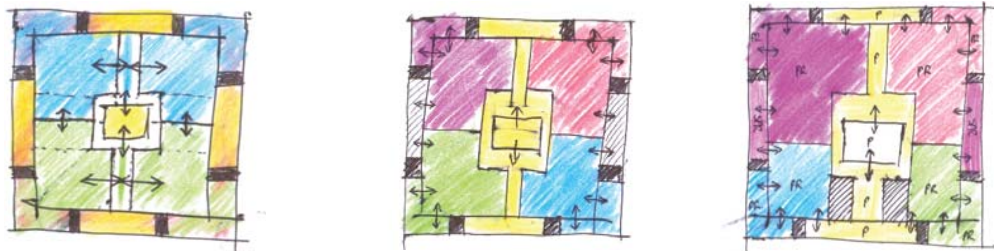


fig.9.7. Different relationships between the public and private realms

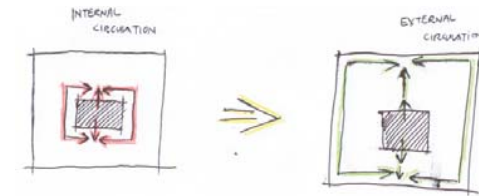
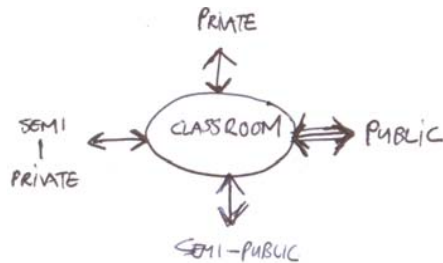


fig.9.8. Internal vs External circulation

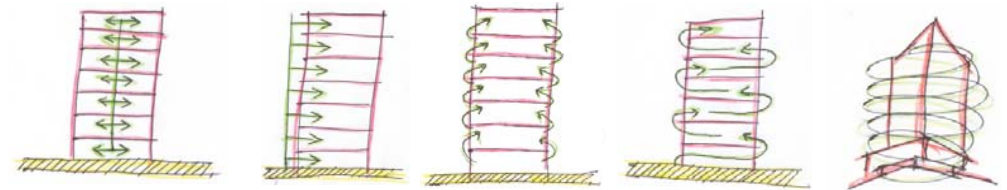


fig.9.9. Different ways of treating vertical circulation

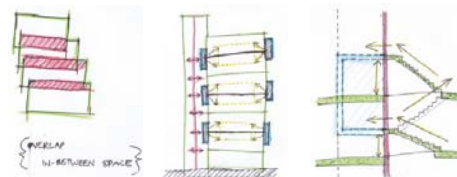
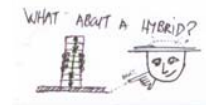


fig.9.10. "In-between" spaces that exist between two levels of varying height

Phase 2

Different plan variations were explored, individually as well as their relationship to the whole. A play started to happen between inside and outside, public and private, and open and closed spaces (figs.9.12). Different positions for new vertical circulation areas were also explored. Different usages for the rooftop space was explored (fig.9.14).

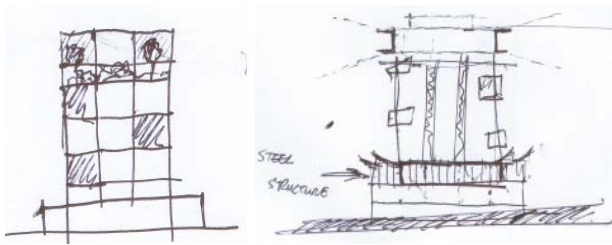


fig.9.11. A vertical environment containing a rich mix of interior and exterior spaces

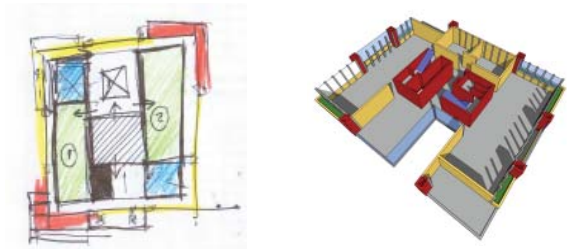


fig.9.12. Shifting similar spaces at different levels could lead to playful facades

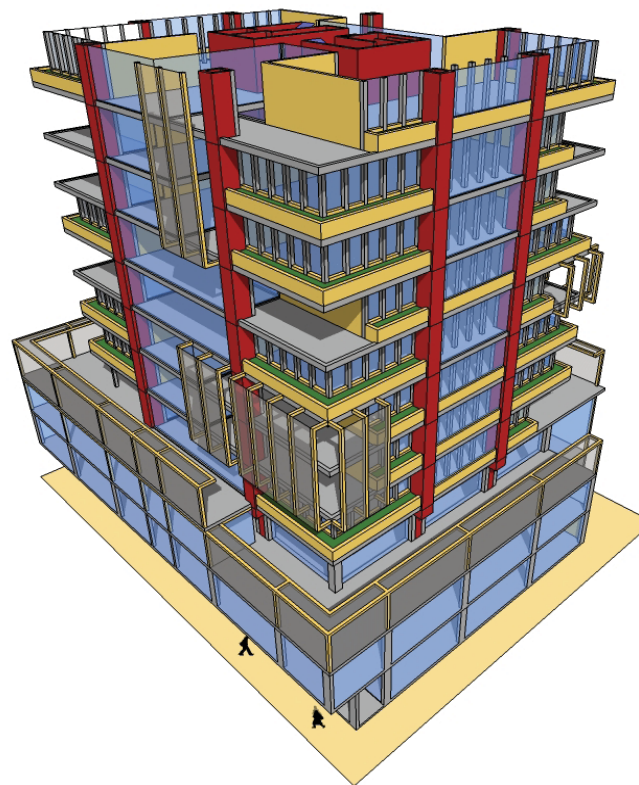
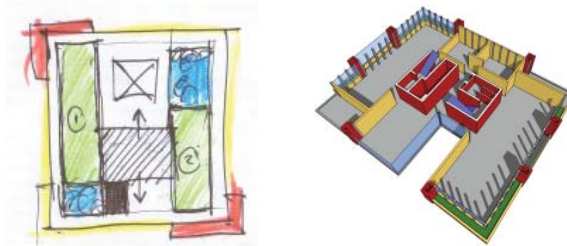


fig.9.13. Proposed 3-Dimensional structure

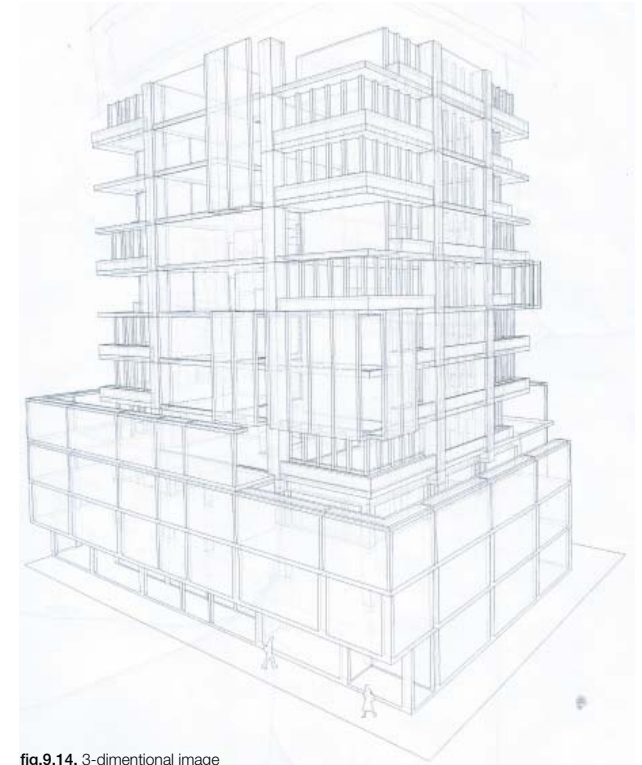


fig.9.14. 3-dimensional image



fig.9.15. Model testing different rooftop usage variations

Phase 3

The rooftop space was continually being explored in terms of its height, its required volume, the various functions that it might offer the community and the proposed school, as well as its structural requirements (fig.9.16). The idea of vertical gardening was also explored on the eastern and western facades to act as sunscreen devices (figs.9.19). The north eastern corner of the ground floor of Apollo Centre was structurally opened (fig.9.17). This had the implication of increased pedestrian activity from the proposed pedestrian arcade into and past the entrance of the proposed school.

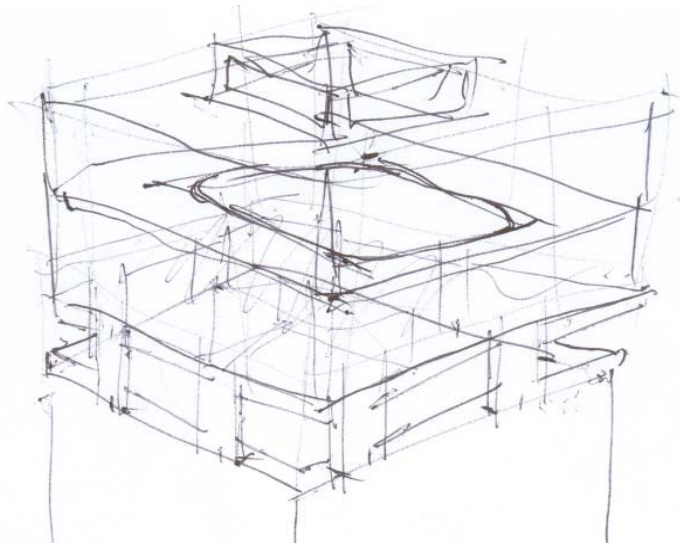


fig.9.16. Exploration of rooftop usage



fig.9.17. Model showing North Eastern corner of the Apollo Centre structurally opened

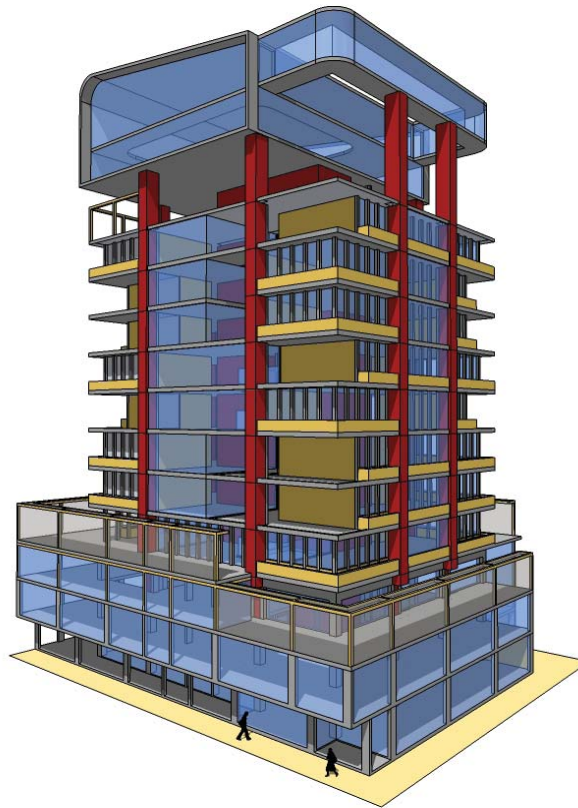


fig.9.18. 3-Dimensional image of proposed structure

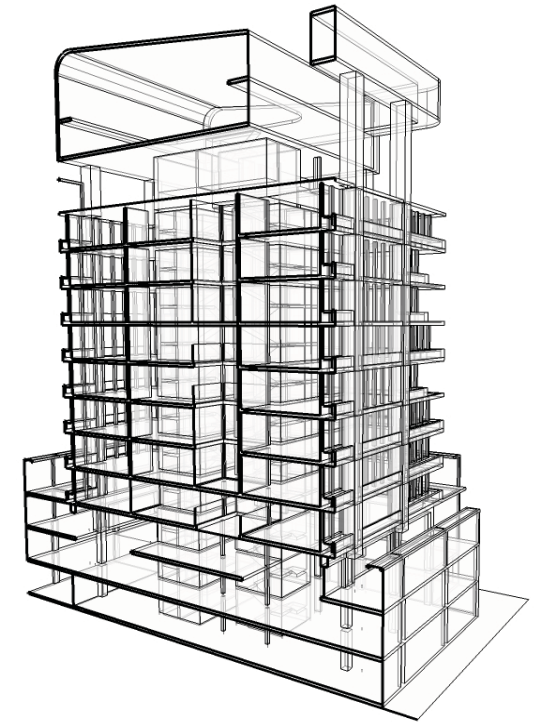


fig.9.20. 3-Dimensional section



fig.9.19. Model showing multi-purpose rooftop hall as well as the use of vertical screens on the eastern and western facades





Phase 4

Sectional explorations lead to the creation of various volumes within the existing structure (figs.9.21). Different levels were now starting to spatially connect and interact with each other. The layering of plans lead to the creation of x-ray like images, and revealed the intricate composition of all the individual parts of the proposed design to form a whole (figs.9.22).

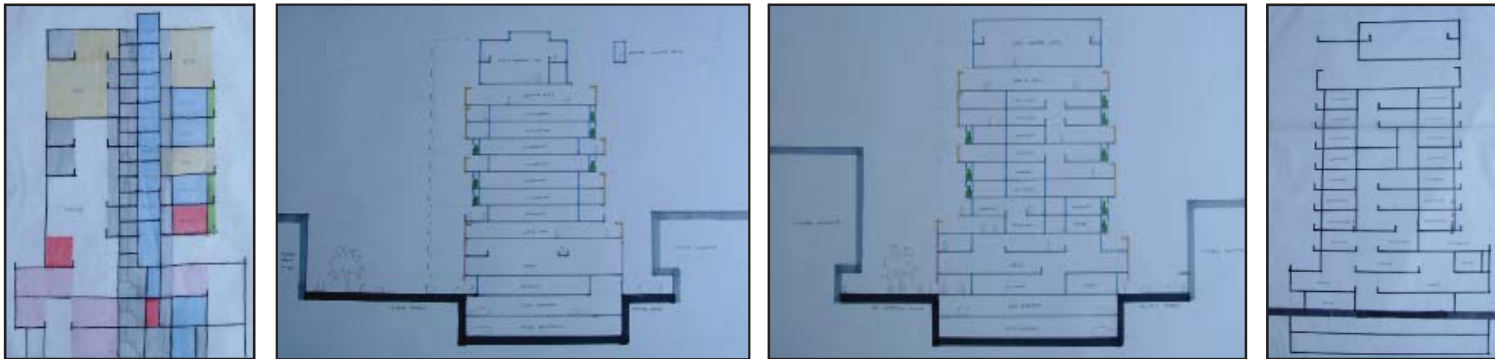


fig.9.21. Sectional explorations of internal volumes, exterior spaces, edge conditions, and relationships to the surrounding context and the scale thereof.

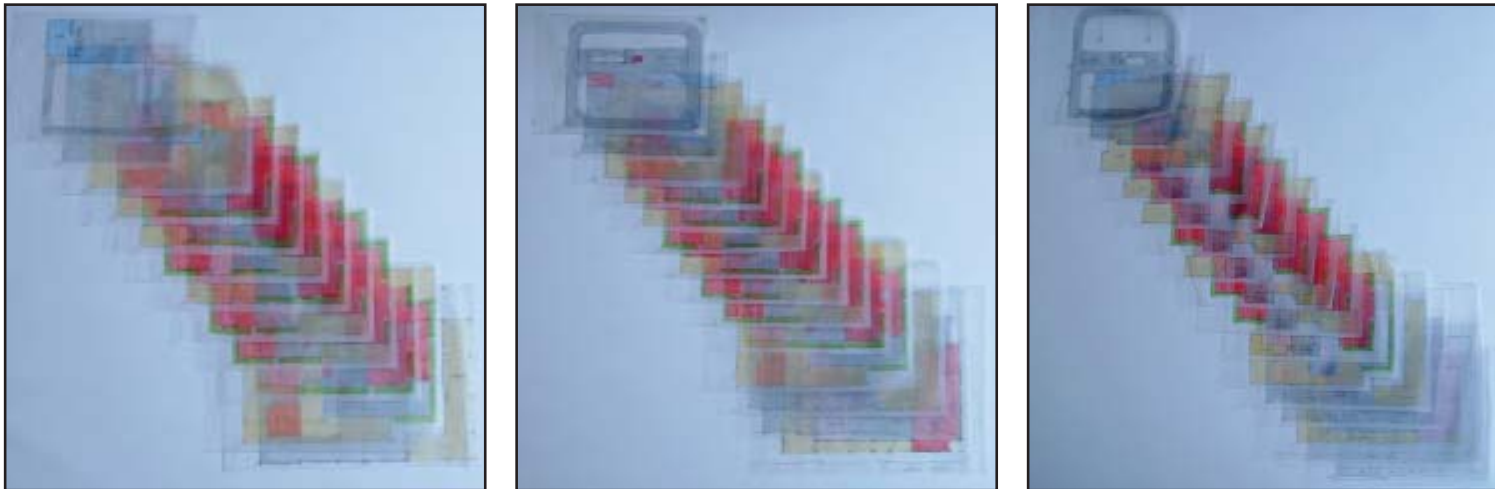


fig.9.22. Layering of all the floor plans lead to x-ray like images



fig.9.23. Model exposing the internal functioning of all the proposed floor plans stacked vertically

Phase 5

The rooftop space was continually being explored and developed. A cantilever running track at the rooftop space was investigated (fig.9.25 and fig.9.37). The urban framework proposal was revisited, re-developed and the proposed structure contextualized into the city block design (fig.9.28 - fig.9.30). The pedestrian arcade and its link with the proposed Apollo school was explored and developed (fig.9.30). New circulation was introduced on the northern facade (fig.9.24). The idea of expressing movement and activity on the interior to the exterior, and visa versa was explored. Classroom spaces for the upper floors were reconsidered. The relationship of the proposed structure towards the existing context was investigated.



fig.9.24. 3-Dimensional image of proposed structure



fig.9.25. 3-Dimensional image of proposed structure



fig.9.26. 3-Dimensional image of proposed structure



fig.9.27. Proposed structure within the proposed context

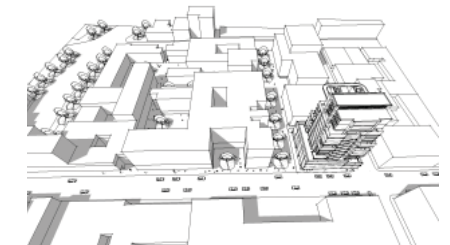


fig.9.28. Proposed structure within the proposed context

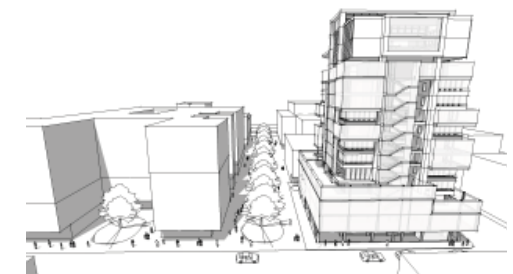


fig.9.29. Proposed pedestrian arcade connecting Church and Pretorius Street



Phase 5 (continued)

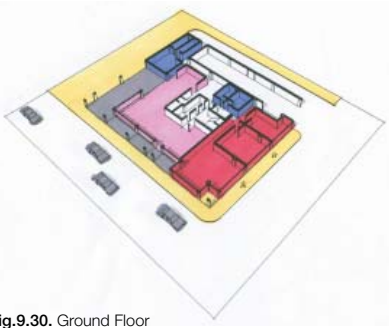


fig.9.30. Ground Floor
Proposed Retail, Semi-Public Restaurant, Kitchen, Pedestrian Arcade, Opened north eastern structure.

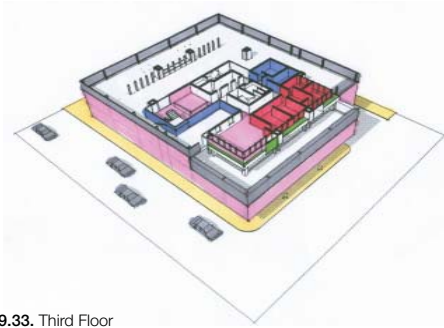


fig.9.33. Third Floor
Proposed School Reception, school offices, and exterior recreation area

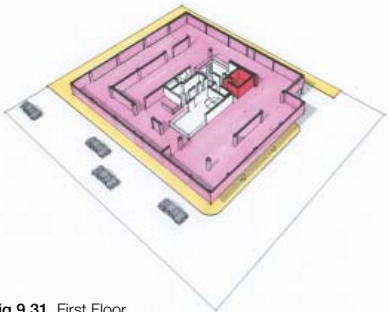


fig.9.31. First Floor
Proposed Semi-Public Library



fig.9.34. Typical Upper Floor
Proposed Educational Spaces (classrooms), communal spaces, and exterior spill out spaces for classrooms

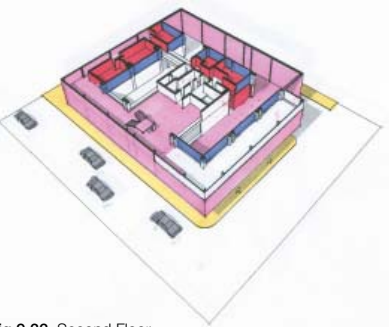


fig.9.32. Second Floor
Proposed Semi-Public Library and Semi-Public Offices. Double volumes connection to floor below



fig.9.35. Rooftop
Proposed Multi-Purpose Sport and Recreation Hall, with cantilevering running track on southern side

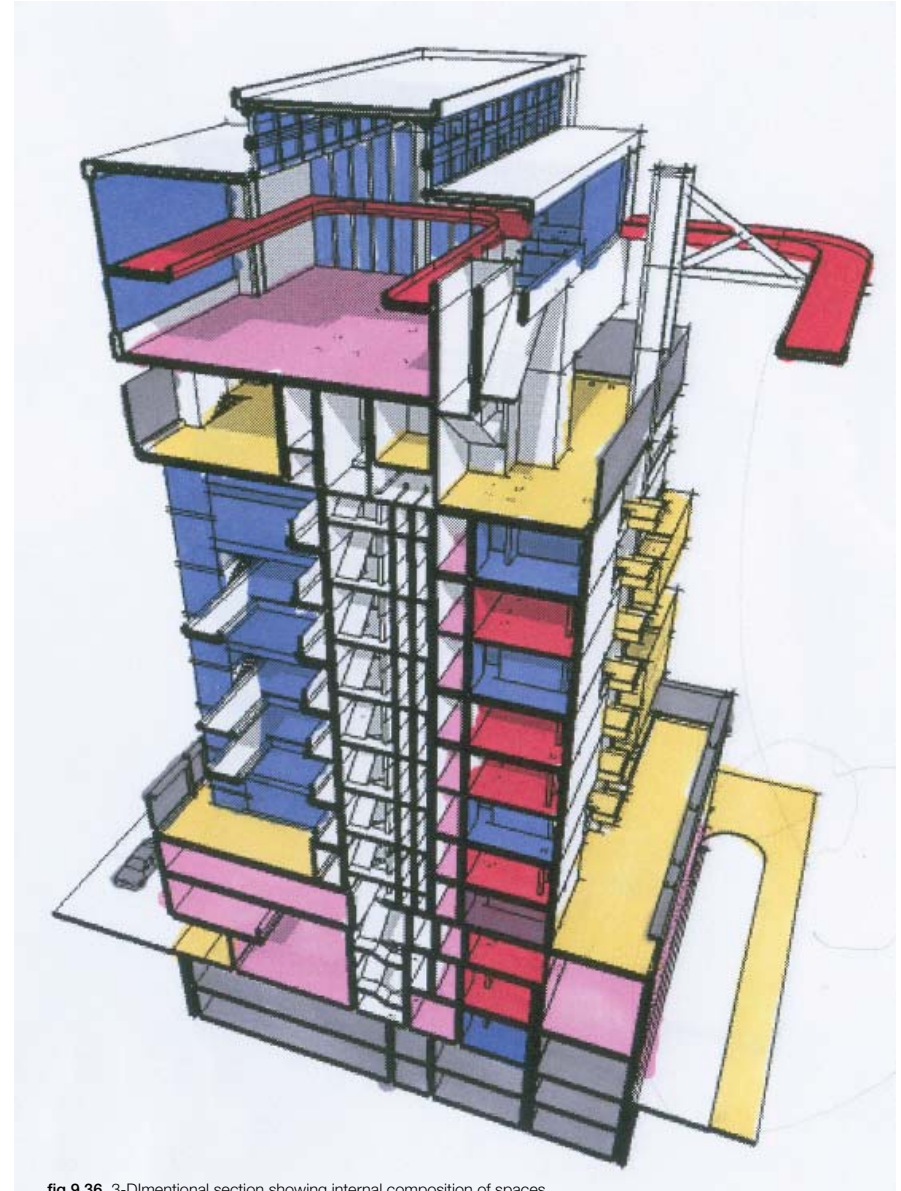


fig.9.36. 3-Dimensional section showing internal composition of spaces

Phase 6

The multi-purpose rooftop hall was reconsidered. The idea of adding a multi-purpose transparent auditorium over the proposed pedestrian arcade was explored (fig.8.39). A gathering space that is large enough to accommodate all of the students was required. Exterior recreational spaces on top of the proposed auditorium were explored (fig.9.39). New vertical circulation was explored in terms of how it is expressed on the facade, its function of translating interior to exterior activity and visa versa, as well as its role in connecting interior and exterior spaces on each level was investigated (fig.9.40). Classroom spaces for the upper floors were reconsidered. The idea of adding a new “skin” on the lower floors of the existing structure, that connects the floors to read as one continuous element was explored (fig.9.42). Vertical gardening as eastern and western sunscreens was further explored in terms of the lightweight structure that would support the growth of the particular plants, and the way in which it could become sculptural elements expressed on the facades (fig.9.42). The physical connection of the proposed structure to the surrounding buildings was investigated (fig.9.42).



fig.9.37. Conceptual addition of auditorium to the upper levels

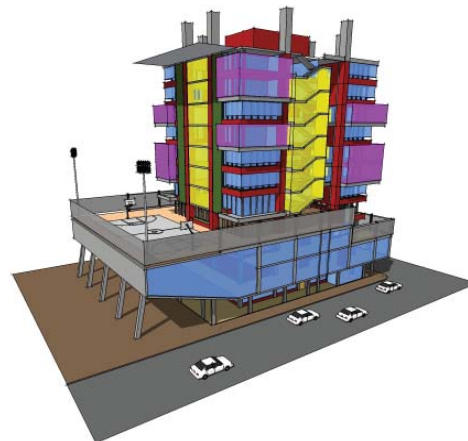


fig.9.38. Addition of auditorium over pedestrian arcade, with recreational space on its rooftop

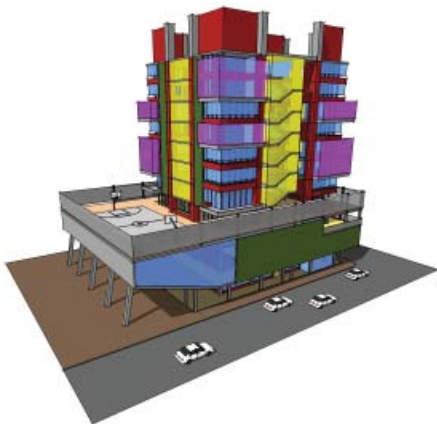


fig.9.39. Wrapping the recreational space around the existing structure



fig.9.40. New vertical circulation on northern facade

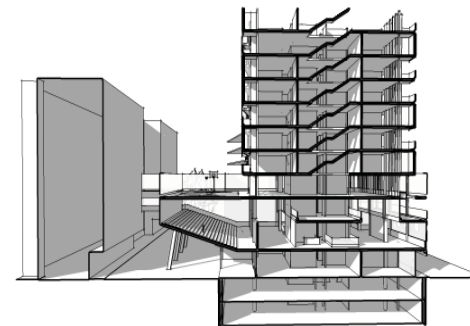


fig.9.41. 3-Dlmental section



fig.9.42. 3-Dlmental image of proposed structure with playful north and western screens

Phase 7

The addition of a transparent auditorium over the proposed pedestrian arcade was further explored (fig.9.46). Access to the auditorium from ground floor level by means of a ramp was explored, acting as a secondary entrance on the first floor for students (fig.9.46). The addition of two concrete staircases within the existing double volumes connecting the first and second floor levels was explored (fig.9.48). A running track, on the same level as the proposed basketball court, located on top of the rooftop space of the proposed auditorium that surrounds the existing structure was proposed (fig.9.47 and fig.9.48). A multi-purpose gathering space on the rooftop was revisited (fig.9.51). New vertical circulation with a atrium connecting all of the upper floors was explored (fig.9.50). Classroom spaces for the upper floors were reconsidered. The relationship of the proposed structure to the surroundings was investigated.

fig.9.43. 3-Dimensional image of proposed structure

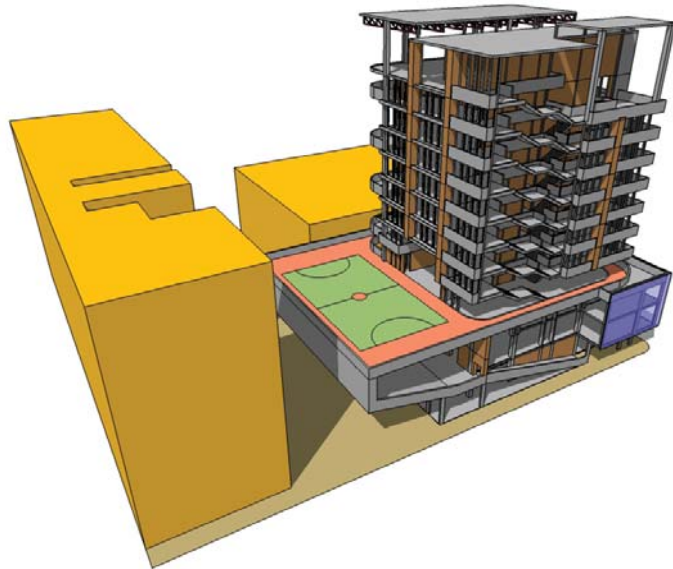


fig.9.44. 3-Dimensional image of proposed structure



fig.9.45. 3-Dimensional image of proposed structure

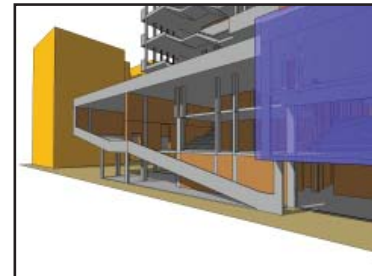


fig.9.46. Proposed ramp to auditorium over pedestrian arcade



fig.9.47. Proposed running track around the building



fig.9.48. Proposed staircases within existing double volumes

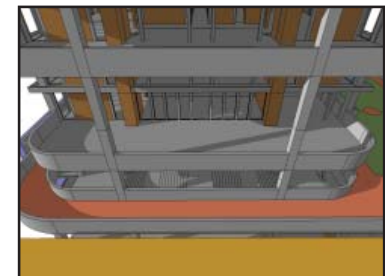


fig.9.49. Proposed running track around the building

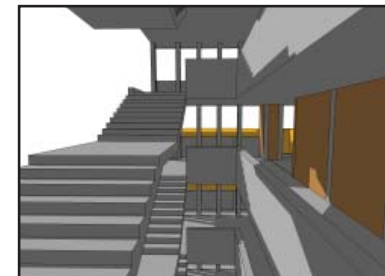


fig.9.50. New vertical circulation with central atrium



fig.9.51. Proposed rooftop gathering space

Phase 7 (continued)

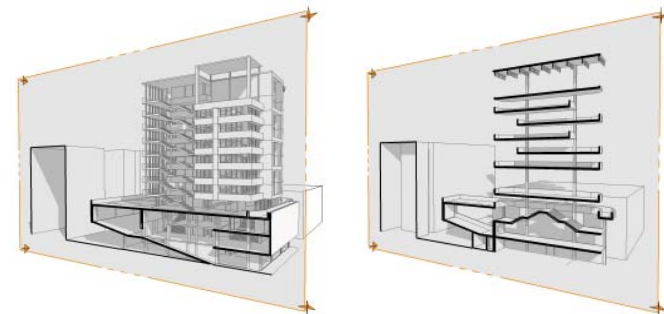
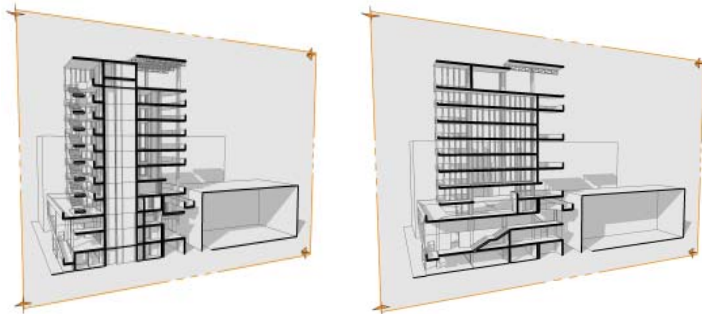
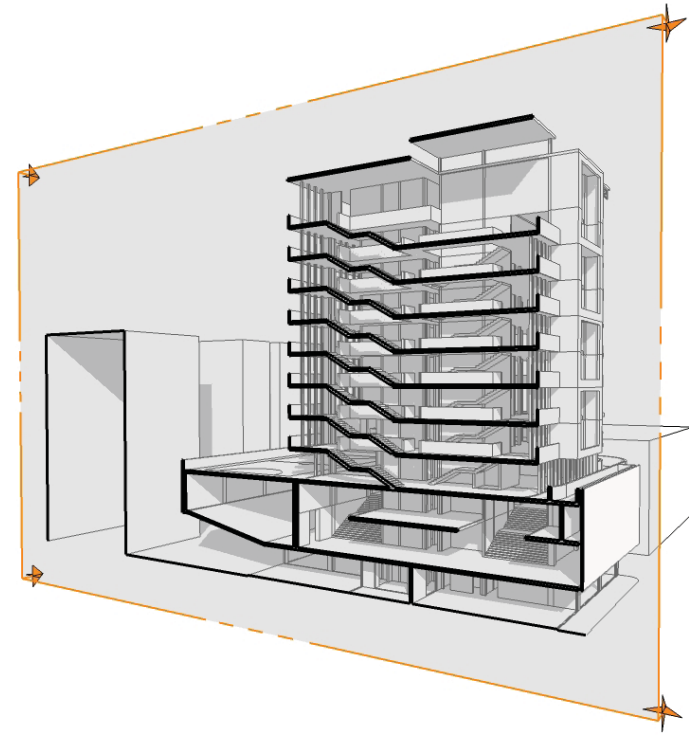
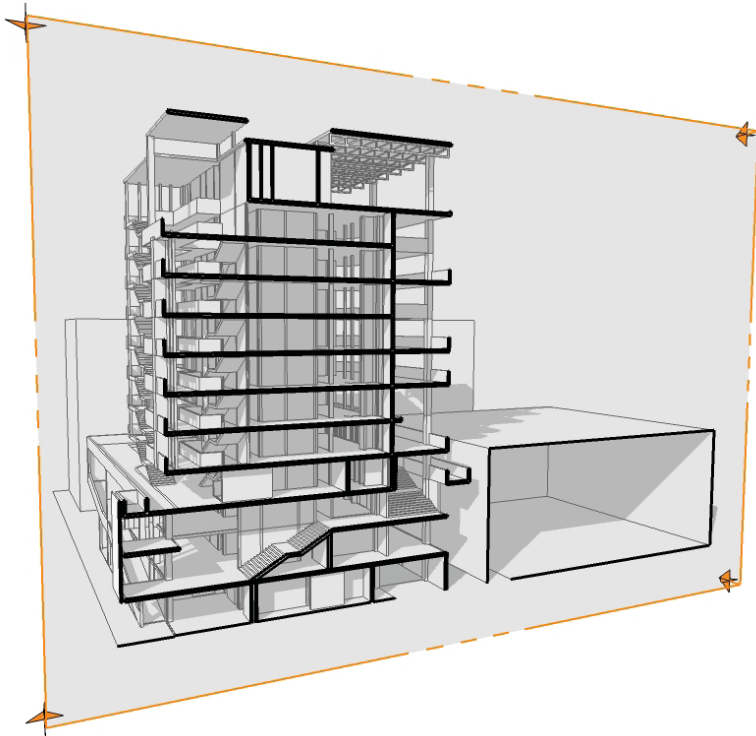


fig.9.52. 3-Dimensional sections of proposed structure (north-south)

fig.9.52. 3-Dimensional sections of proposed structure (east-west)

Phase 8

The addition of a multi-purpose indoor sports hall on top of the proposed auditorium was explored (fig.9.56). This indoor sports hall consists of three volumes with a running track on the second level of the hall (fig.9.56). The ramp leading up towards the first level was further explored (fig.9.58). Inserting an urban amphitheater in the proposed pedestrian arcade was investigated (fig.9.56). The proposed staircases within the existing double volumes were further developed (fig.9.59). A screen that envelops the first and second floor levels on the western facade was investigated (fig.9.58). New circulation for the lower floors was proposed on the southern facade that might become future connection points with the adjacent vacant warehouse structure (fig.9.60). A new main vertical circulation shaft was proposed on the eastern side of the structure (fig.9.57). The use of steel, colored glazing and transparency was explored for this prominent feature of the building. A screen that could potentially accommodate multi-functional plug-on panels, consisting of solar panels or vegetation panels that envelops the northern and western facades of the upper floors was investigated (fig.9.61). Sectional explorations led to a better understanding of the interior volumes proposed (fig.9.63). An educational greenhouse/nursery was proposed for the rooftop space (fig.9.61). Rainwater collection and a translucent roof were explored. Classroom spaces for the upper floors were reconsidered.

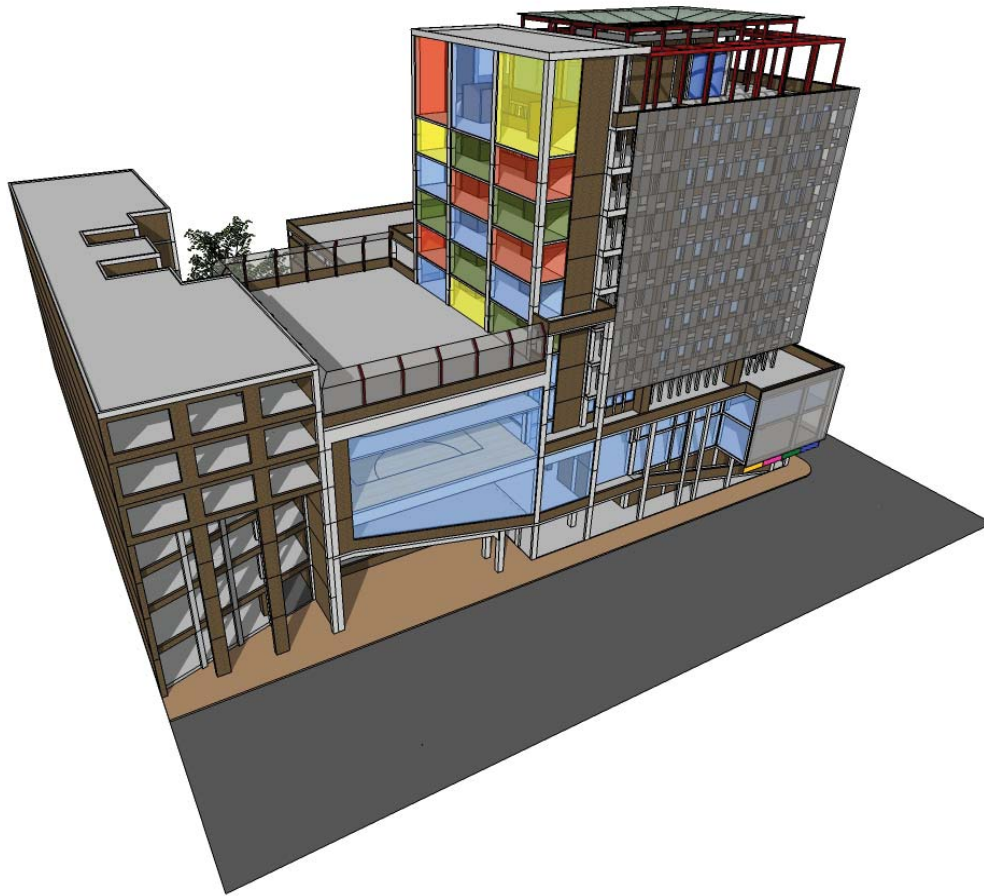


fig.9.53. 3-Dimensional image of proposed structure



fig.9.54. 3-Dimensional image of proposed structure

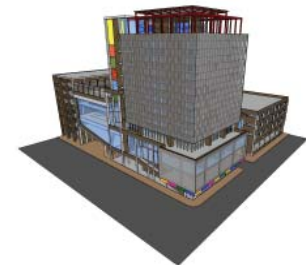


fig.9.55. 3-Dimensional image of proposed structure



fig.9.56. Proposed auditorium with indoor sports hall on-top

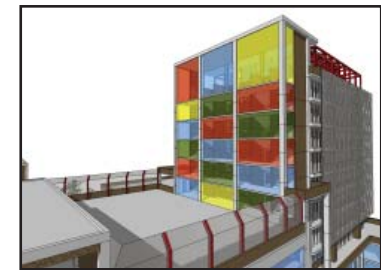


fig.9.57. New vertical circulation and rooftop recreation area



fig.9.58. Proposed western screen, connecting two levels

Phase 9

The proposed transparent auditorium was replaced by a multi-purpose indoor sports hall that could double-up as communal gathering space (fig.9.70). The idea of transparency in the urban environment was continually pursued (fig.9.68). The insertion of an urban amphitheater in the proposed pedestrian arcade was further explored (fig.9.67). The idea of physically connecting the proposed structure to the vacant warehouse structure on the southern facade was further explored (fig.9.73). The screening of the lower floors on the western facade and the use of a solid edge on the second floor that would function as office space investigated (fig.9.71). New vertical circulation was proposed (figs.9.69). This circulation would function like a spiral on the exterior of the structure, continuing upward to the rooftop space (fig.9.74). This would be constructed of a steel and treated as a plug-on structural element (fig.9.64 - fig.9.66). The rooftop space was being further developed as an educational greenhouse/nursery that is fully glazed with openable sections (fig.9.74). Classroom spaces for the upper floors were reconsidered. The idea of interior circulation and transparency to the classroom environment was investigated. Openings in the slab were proposed that would offer visual access to activity down into the classroom and up towards the interior circulation route (figs.9.72).



fig.9.64. 3-Dimensional image of proposed structure



fig.9.66. 3-Dimensional image of proposed structure

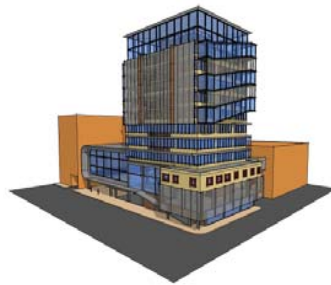


fig.9.65. 3-Dimensional image of proposed structure

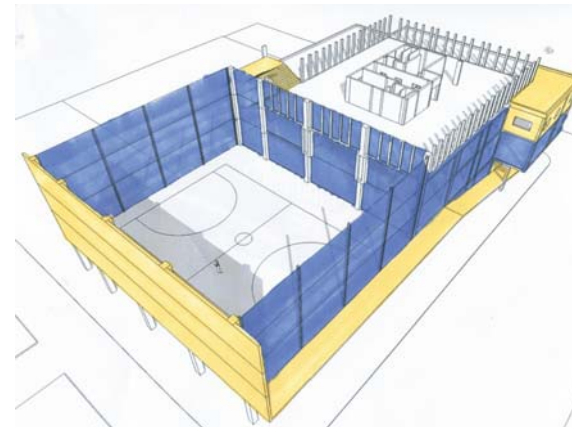


fig.9.68. Proposed transparency of indoor sports hall makes recreational activity visibly to the urban context



fig.9.69. Proposed new system for vertical circulation (exterior series of ramps connecting all the levels)

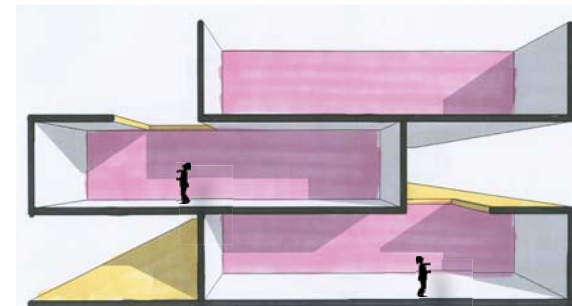
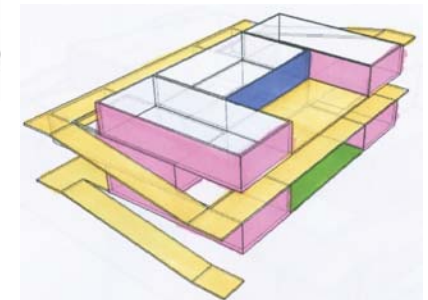


fig.9.72. Proposed classroom environments that step back on-top of each other to not only increase natural daylighting and ventilation conditions but also to create views to the various educational spaces

Phase 9 (continued)



fig.9.71. Proposed western screening and solid edge



fig.9.73. Proposed new circulation for lower floors and potential future connection area



fig.9.74. Proposed new circulation on the exterior as well as proposed educational greenhouse/nursery on the rooftop

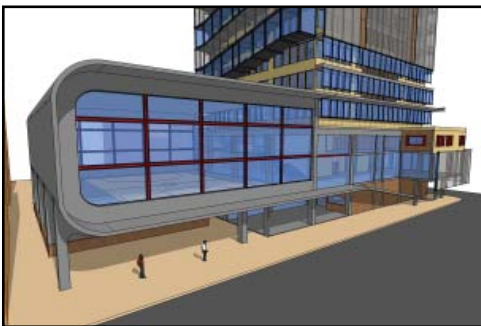


fig.9.70. Proposed multi-purpose indoor sports hall

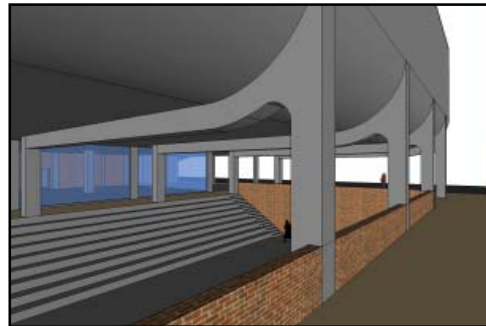


fig.9.67. Proposed urban amphitheater



fig.9.75. Model of proposed interventions in relation to the whole

Phase 10

The proposed multi-purpose indoor sports hall was further developed. Natural lighting was playfully controlled to enter the proposed gathering space from various directions (fig.9.81 and fig.9.88). An outdoor playing space was proposed for the rooftop of the hall, which offered views from the rooftop into the hall (fig.9.80). The back of stage was proposed to act as a potential background, but have openings that allow for transparency to the urban context (fig.9.81). The public space in front of the proposed Apollo School was defined by sculptural concrete work overhead (fig.9.80). The proposed pedestrian arcade running underneath the hall was further developed and more natural light allowed to reach it (fig.9.82 and fig.9.92). The urban amphitheater was further developed. The ramp leading to the student entrance on the first level was further developed (fig.9.79 and fig.9.90). The main visitor entrance to the school was defined by opening up the existing facade and stepping back the user interface of the building (fig.9.85 and fig.9.91). This effectively widened the Church Street pedestrian route. This space became visually and physically controlled from the interior and acted as a safe waiting area for students awaiting their guardians.

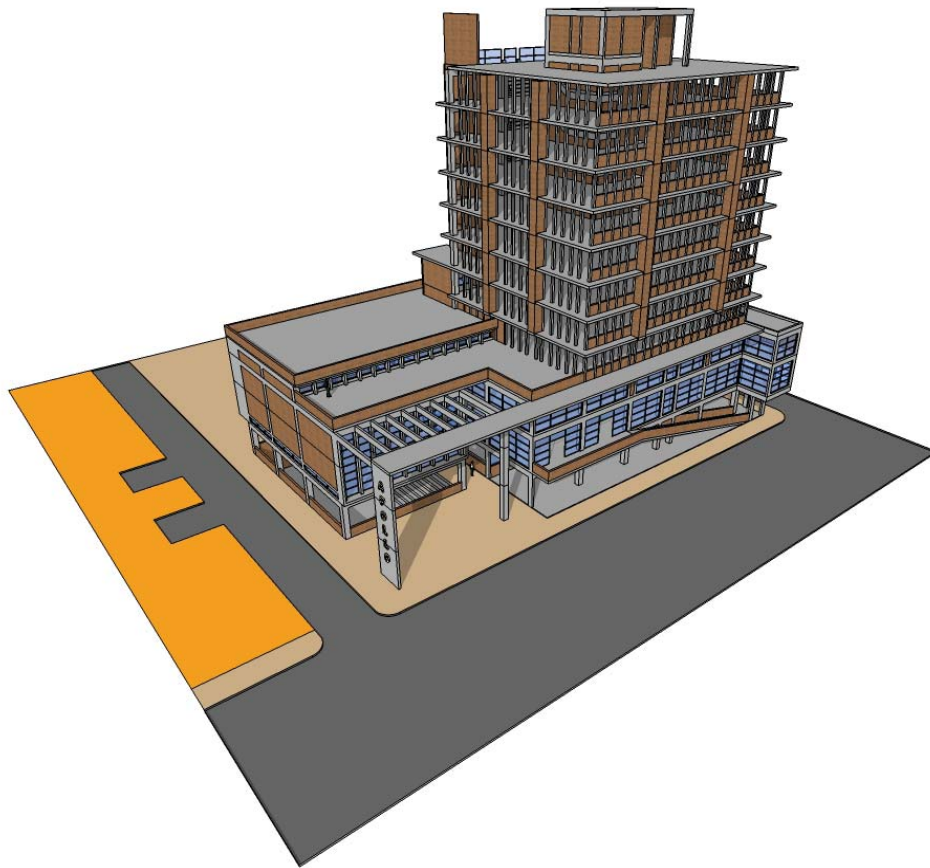


fig.9.76. Bird's eye view of 3-dimensional proposed structure from the north-eastern direction



fig.9.77. Bird's eye view of 3-dimensional proposed structure from the north-western direction



fig.9.78. Bird's eye view of 3-dimensional proposed structure from the south-western direction



fig.9.82. Increased volume allows more natural light to reach pedestrian arcade on ground floor



fig.9.80. Sculptural concrete work overhead defines the quality of pedestrian space below

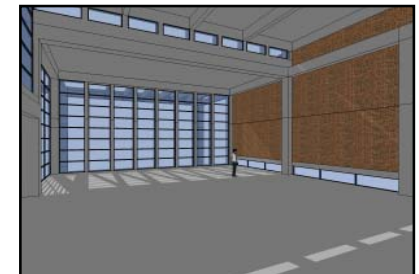


fig.9.81. Natural light playfully entering the multi-purpose hall from different directions and heights

Phase 10 (continued)

Concrete staircases proposed for the double volumes of the first to second floor were further developed to offer opportunities for formal and social seating (fig.9.87 and fig.9.90). Openings in the first floor slab, below the proposed staircases, allowed for visual contact to the ground floor (reception), as well as the exterior waiting area proposed (fig.9.90). Circulation on the lower floors of the southern facade was further developed to become partial cantilevering glass boxes (fig.9.84 and fig.9.90)). The boxes were proposed to be future connection areas to the adjacent vacant warehouse structure. New vertical circulation for the upper floors was proposed on the southern facade. Social staircases entered each level from the south and edged a communal gathering space on each classroom level (fig.9.86). The social staircases offered opportunities for formal and social seating.

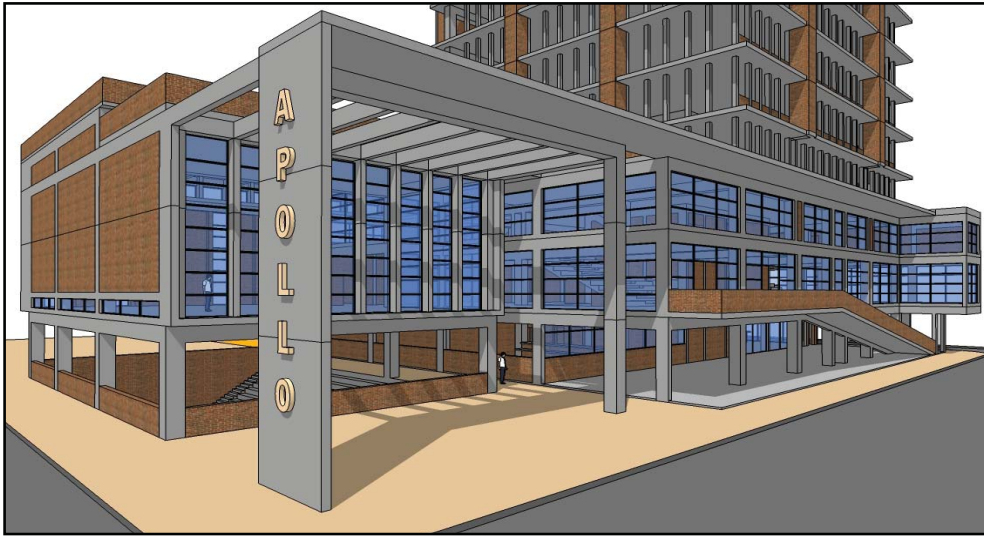


fig.9.79. Proposed public interface of the Apollo School with sculptural concrete work framing the transparent facades visible from the pedestrian routes and spaces on ground floor



fig.9.84. New vertical circulation introduces at the lower floors on the southern facade

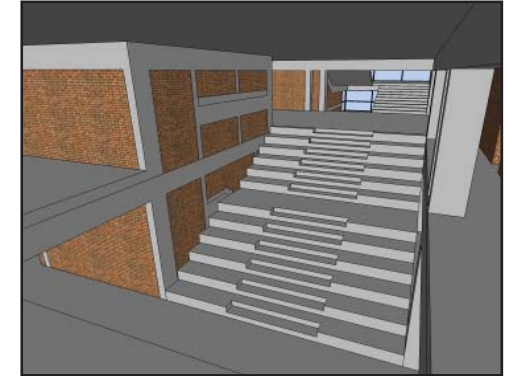


fig.9.87. New concrete staircases in existing double volumes that becomes socializing spaces



fig.9.85. Opening of structure to widen pedestrian route at Church Street interface to create safe passive surveillance area



fig.9.83. Proposed back of stage on southern facade

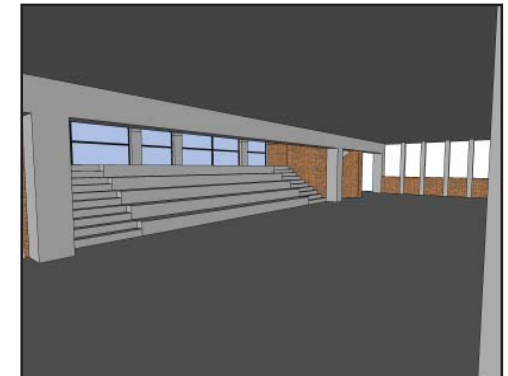


fig.9.86. Social seating area that edges communal gathering space

Phase 10 (continued)

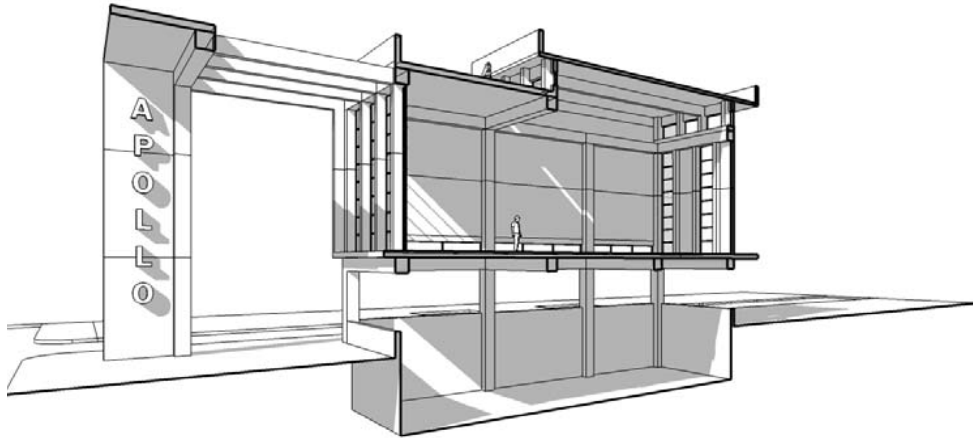


fig.9.88. 3-Dimensional Section (north-south) showing multi-purpose indoor sports hall with rooftop playground above and informal performance space below

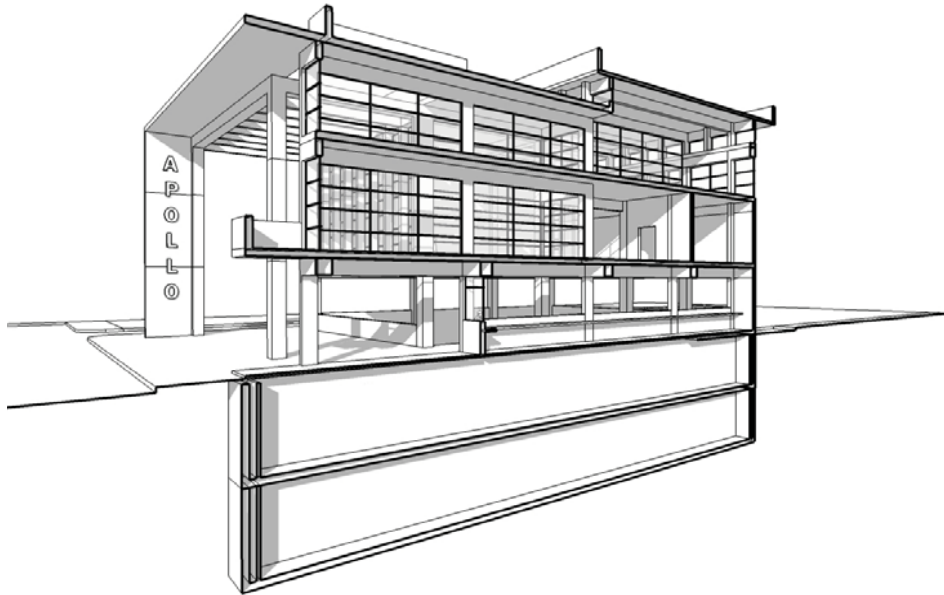


fig.9.89. 3-Dimensional Section (north-south) showing indoor playing areas, ground floor cooking school interface and basement levels below

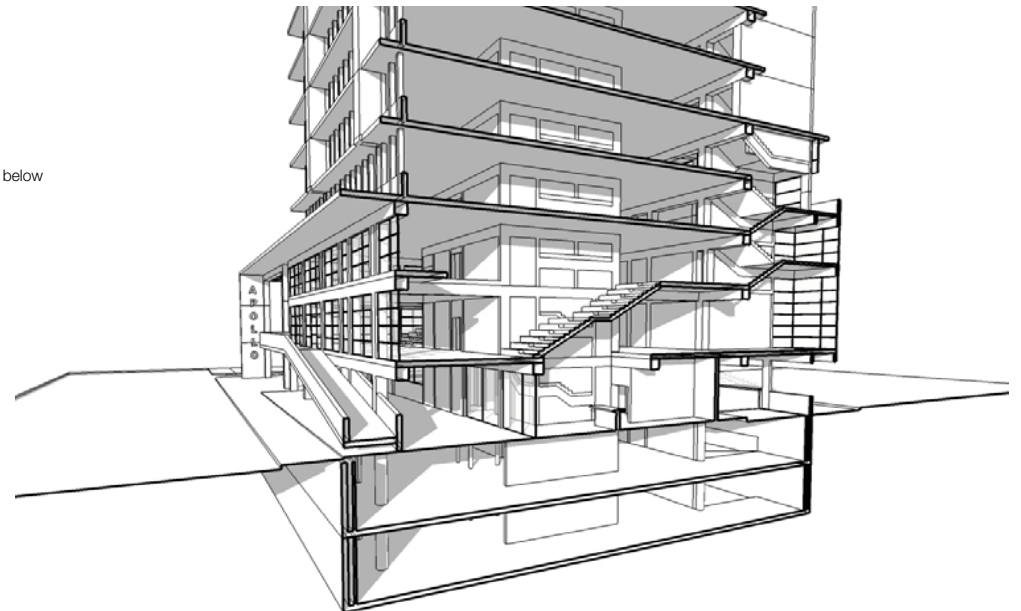


fig.9.90. 3-Dimensional Section (north-south) showing ramp leading to first floor student entrance, social staircase connecting the first and second floor indoor playing areas, reception area on ground floor and indoor volumes that has views to the reception area and extended Church Street pedestrian route

Phase 10 (continued)

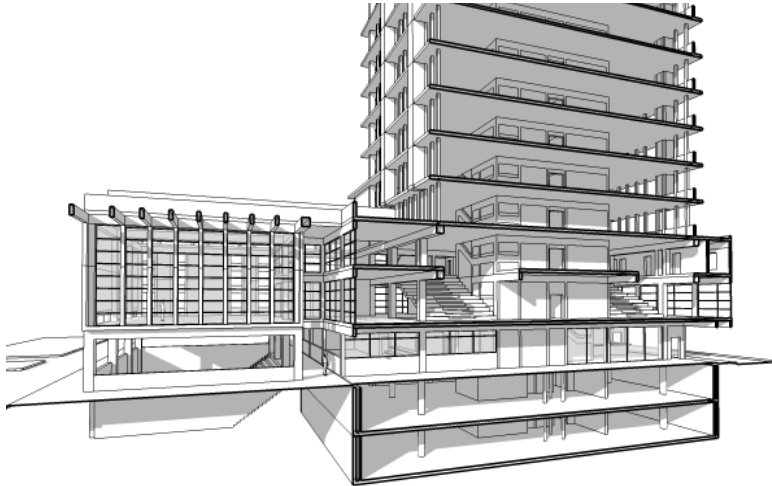


fig.9.91. 3-Dimensional Section (east-west) showing sculptural concrete work overhead, increased volume of pedestrian walkway, indoor playing areas and social staircases, basement levels below and educational spaces above

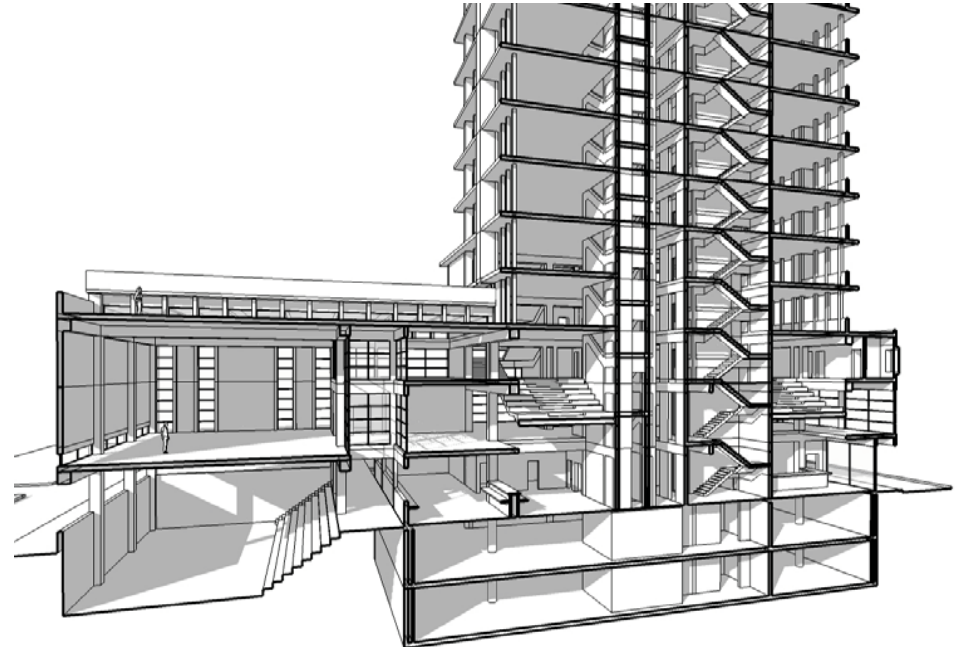


fig.9.92. 3-Dimensional Section (east-west) showing multi-purpose indoor sports hall with rooftop playground above it offering views into the gathering space, urban amphitheater below it, cooking school interface on the eastern ground floor, reception interface on the western ground floor and vertical circulation within the concrete service core of the existing structure

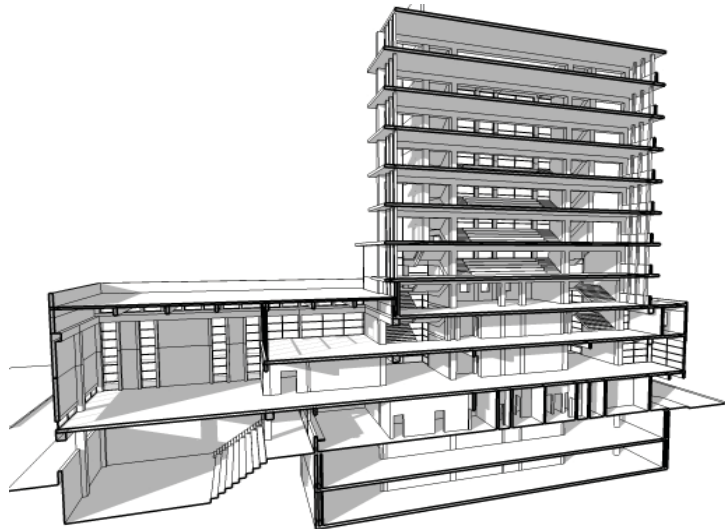


fig.9.93. 3-Dimensional Section (east-west) showing multi-purpose indoor sports hall with rooftop playground above it, urban amphitheater below it, basement levels below street level and educational spaces on the upper floors

Phase 11

The proposed multi-purpose indoor sports hall was replaced by a semi-transparent auditorium over the pedestrian arcade (fig.9.97 and fig.9.108 - fig.9.110). The orientation of the auditorium was altered. The sloped seating offered views below from the interior to the pedestrian arcade (fig.9.98). It was also proposed that views into the auditorium would be possible from the socializing and library spaces (fig.9.110). Informal seating was arranged in the pedestrian arcade for socializing and views towards the informal performance platform proposed (fig.9.98 and fig.9.107). The proposed ramp was developed to continue and connect to the backstage area (fig.9.99 and fig.9.108). The western screening of the lower floors was further explored in terms of its materiality (fig.9.100 and fig.9.108 - fig.9.109). The proposed cantilevering glass boxes for circulation of the lower floors on the southern facade was further developed (fig.9.101 and fig.9.111). The parapets in the middle of these staircases were stepped to form arm-resting platforms and offer views into the social activity of the lower floors. The rooftop space of the auditorium was developed as a full size exterior basketball court (fig.9.102 and fig.9.111). The edges were proposed to be roofed with seating provided all round. Each level was proposed to consist of a transitional space

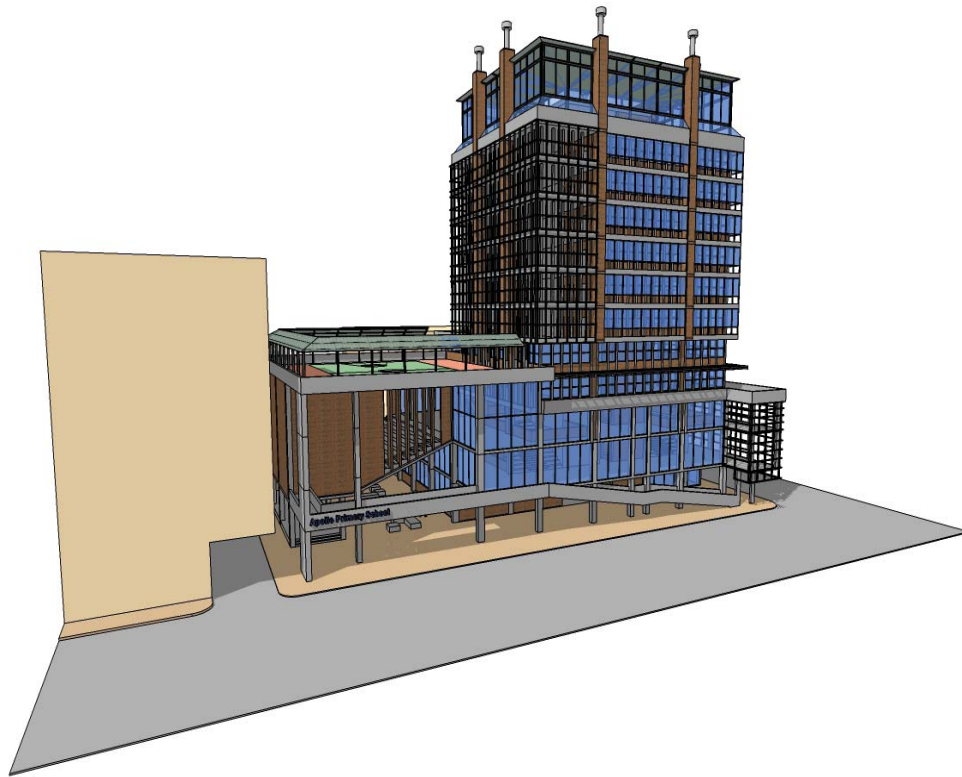


fig.9.94. 3-Dimensional image of proposed structure



fig.9.95. 3-Dimensional image of proposed structure



fig.9.96. 3-Dimensional image of proposed structure

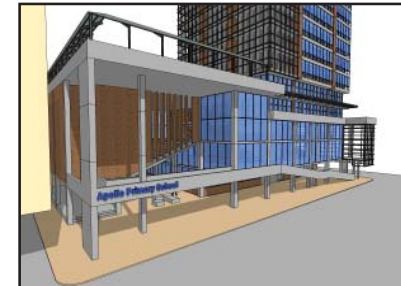


fig.9.97. New public interface and semi-transparent auditorium



fig.9.98. Sloped seating area offers views from inside outward



fig.9.99. Proposed ramp for students to entrance on first floor

Phase 11 (continued)

from the central circulation on the northern and southern sides, two formal classroom areas on the western side, a communal group learning area in-between the classrooms, and a communal open-air learning environment on the eastern side (fig.9.112). This open-air learning environment was proposed to be edged by a steel mesh, that would not only secure a safe environment, but also offer the opportunity for vertical gardening (fig.9.103). Existing glazed sunscreen devices on the northern, western and southern was proposed to be left in place (fig.9.104). The rooftop space was further developed as an educational greenhouse/nursery (fig.9.105 and fig.9.113), with rainwater collection proposed to provide the grey water needs of the structure. Angled glazing on the perimeter allowed more natural light to enter onto the proposed work surfaces. Existing brick columns on the perimeters of all the upper floors, was opened to act as natural ventilation ducts. At the rooftop level they were extended, and “whirly bird” devices placed on top to extract warm air from all of the classroom spaces (fig.9.105).

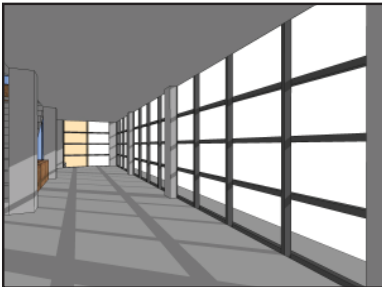


fig.9.100. Western screening of lower floors



fig.9.103. Eastern screening of open-air learning spaces



fig.9.101. Cantilevering glass boxes and stepped parapets



fig.9.104. Existing glazed sunscreen panels

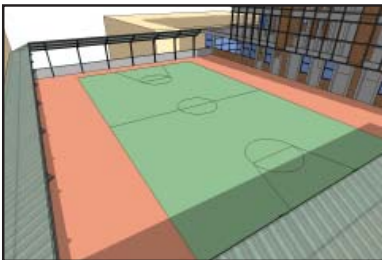


fig.9.102. Rooftop basketball court



fig.9.105. Proposed rooftop greenhouse/nursery

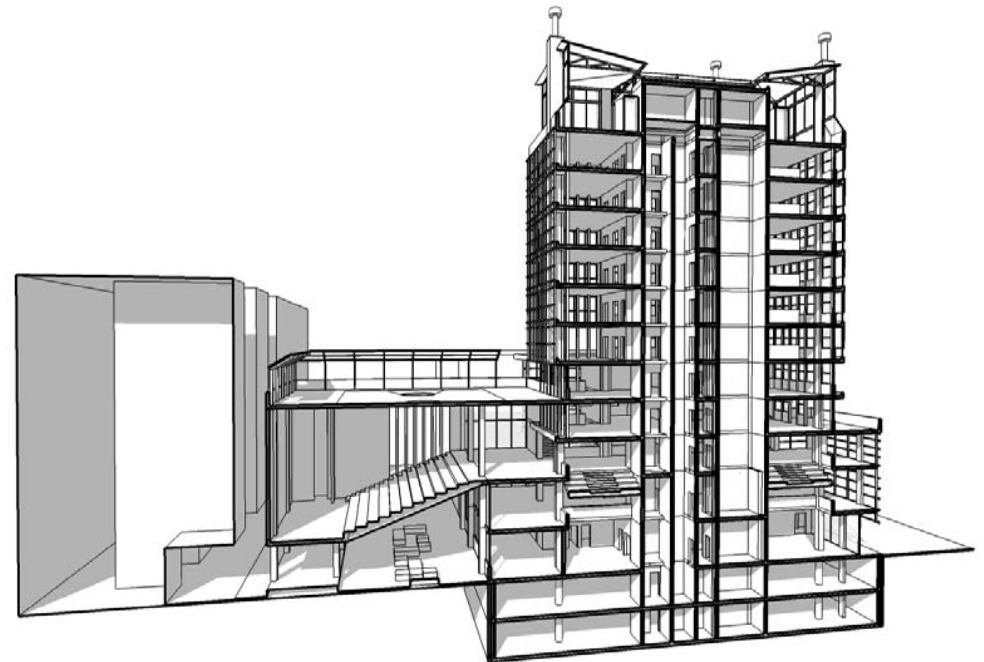
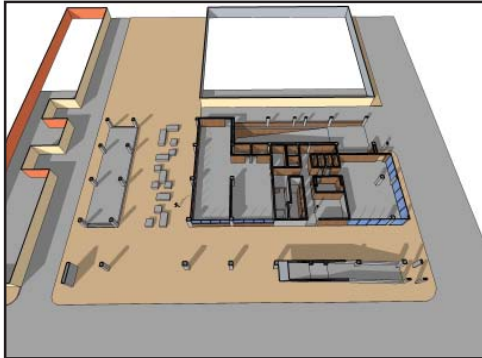


fig.9.106. 3-Dimensional Section (east-west)



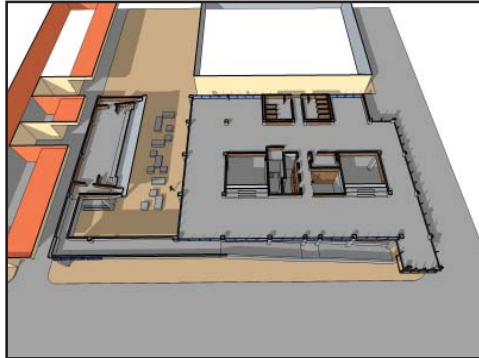
Phase 11 (continued)

fig.9.107. Ground Floor



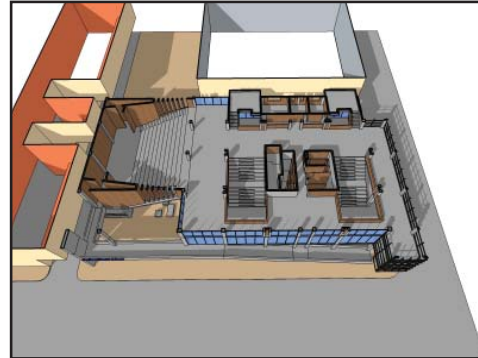
Proposed Reception on western side and Cooking School on the eastern side. Informal seating provided for pedestrian arcade.

fig.9.108. First Floor



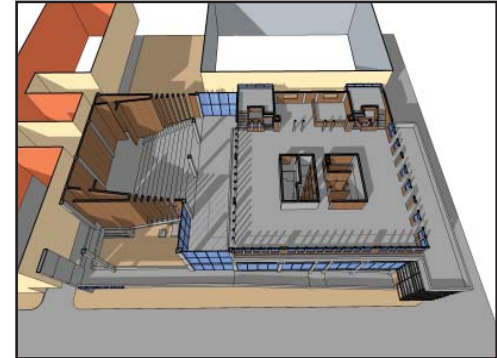
Proposed student entrance from ramp, indoor socializing area, rest rooms, and backstage area.

fig.9.109. Second Floor



Proposed auditorium entrance, personnel room, administration offices, and indoor socializing space.

fig.9.110. Third Floor



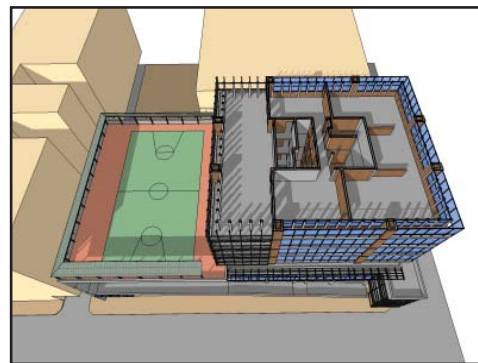
Proposed library level with views into the auditorium and socializing spaces below.

fig.9.111. Fourth Floor



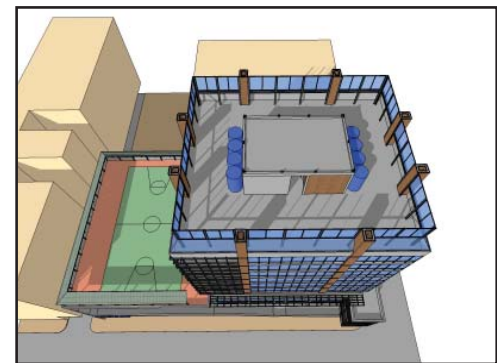
Proposed rooftop playground, roofed seating area, a tuck shop, and rest rooms.

fig.9.112. Typical Upper floors



Proposed transitional, classrooms, group learning, and open-air learning spaces.

fig.9.113. Rooftop



Proposed educational greenhouse/nursery, and rainwater collection and storage space.



Phase 11 (continued)

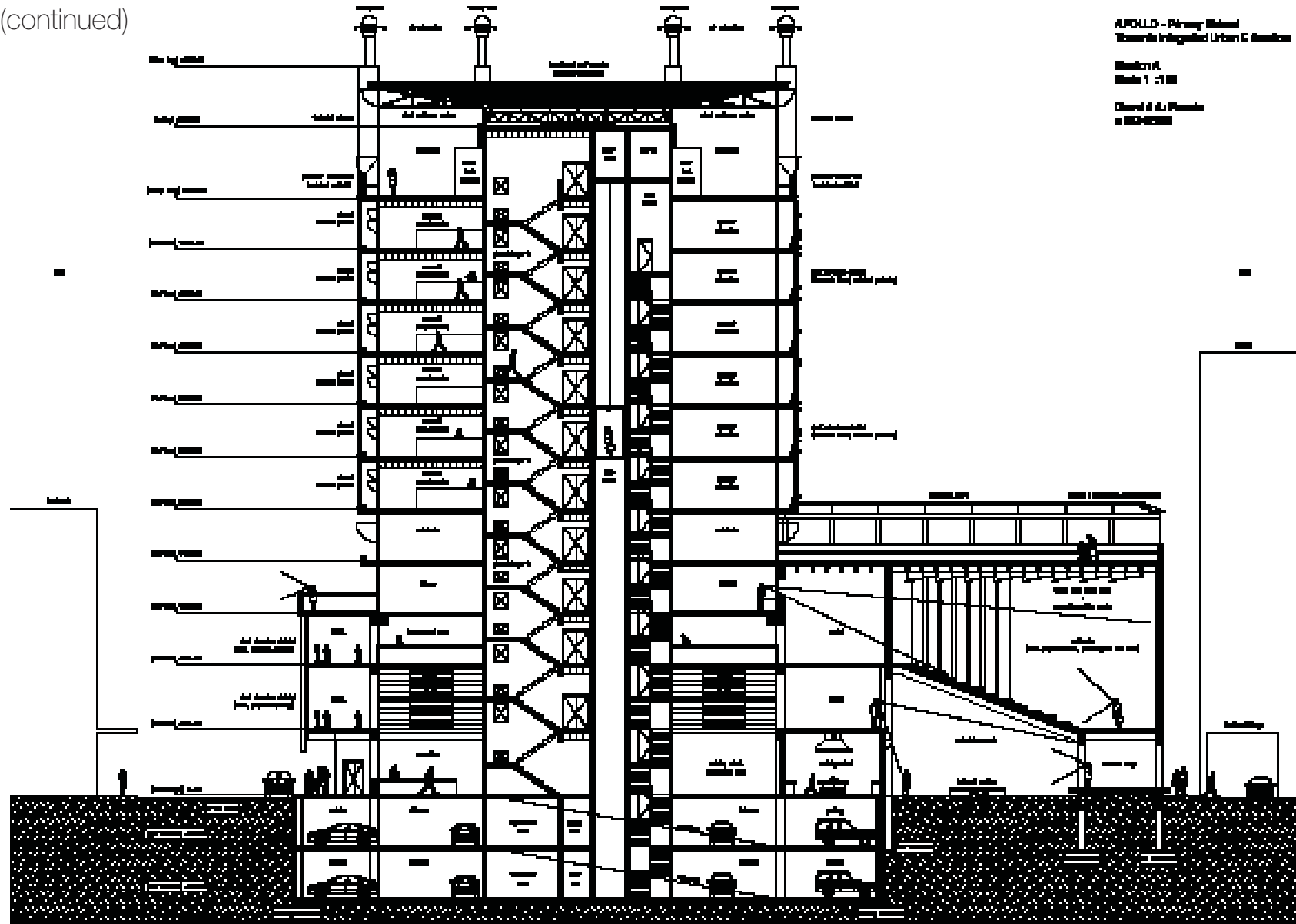


fig.9.114. Section of proposed structure

Phase 11 (continued)

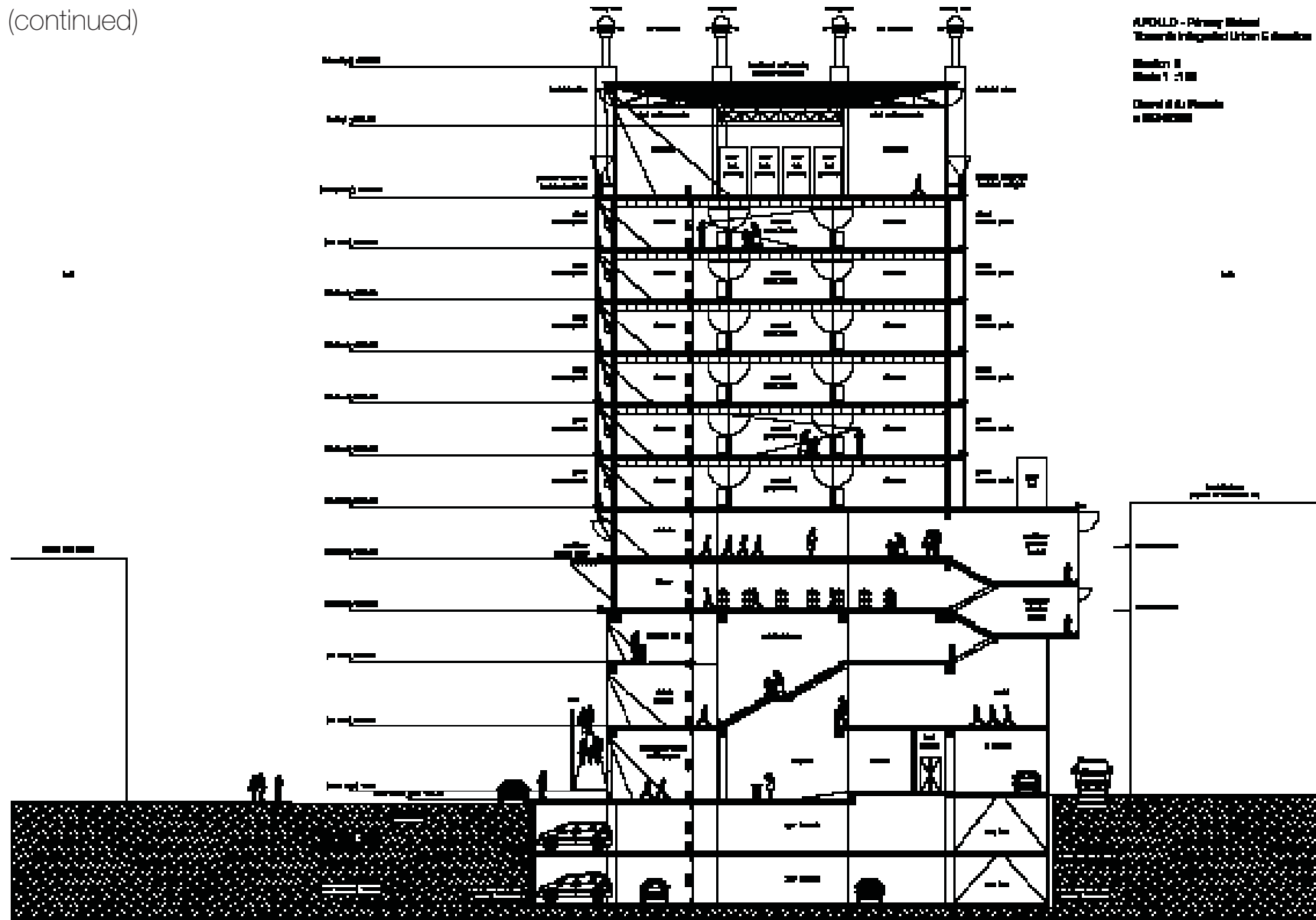


fig.9.115. Section of proposed structure

Final Design Proposal

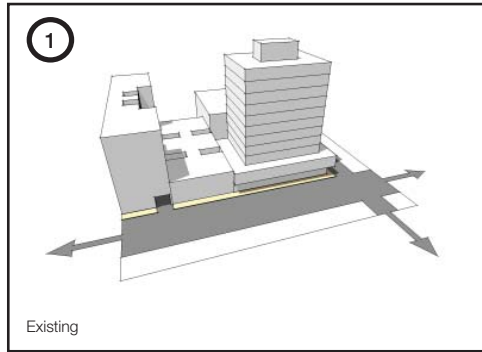


fig.9.116. Existing building adjacent to the Apollo Centre

1. Demolish adjacent structure

The structure adjacent to the Apollo Centre is proposed to be demolished. It is in a visible poor condition and contextually out of scale. Although it is being occupied by a tertiary educational institution, it is proposed that its function should be relocated to remain within the educational precinct.

A pedestrian arcade is proposed that connects Church Street with Pretorius Street. It is additionally proposed that the main entrance to the school will be directly from the proposed arcade.

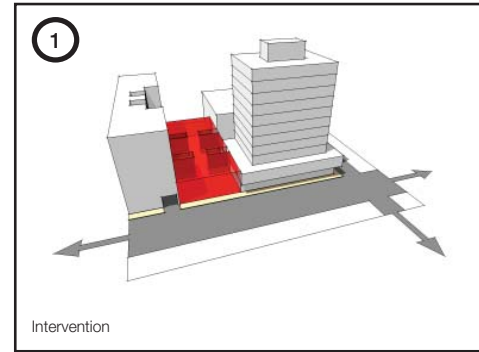


fig.9.117. Building proposed for demolition

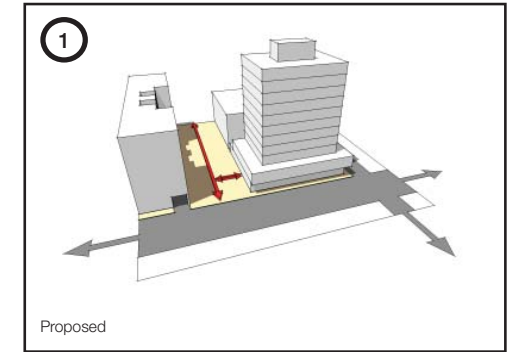


fig.9.118. Introduction of pedestrian arcade

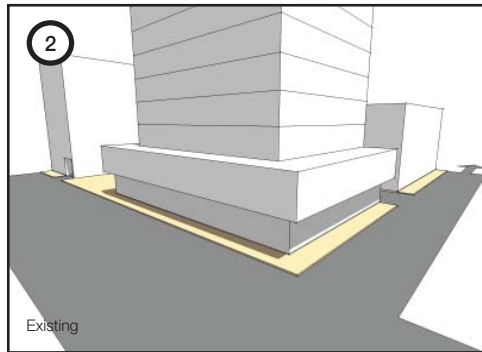


fig.9.119. Existing pedestrian interface of the Apollo Centre

2. Increase Pedestrian Scale of Church-and Du Toit Street

It is proposed that the pedestrian scale be enlarged at the Church-and Du Toit Street interface. At Church Street the existing ground floor facade is opened and stepped back, the cantilevering first floor demolished, and the second and third floor extended to the previous cantilevering line of the first floor. At Du Toit Street the existing ground floor facade is opened and stepped back, the cantilevering first floor kept, and the second floor extended to the cantilevering line of the first floor.

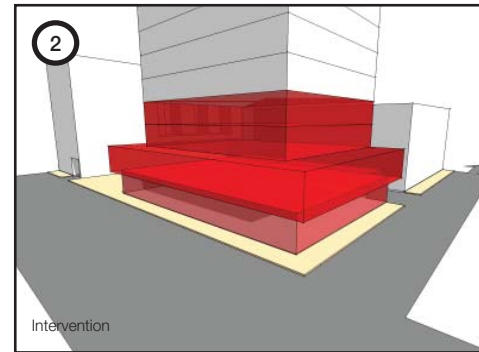


fig.9.120. Proposed area of intervention

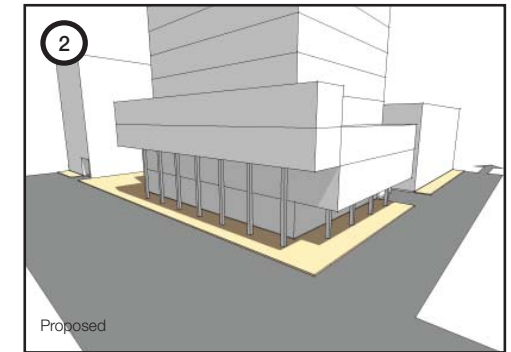


fig.9.121. Proposed new pedestrian interface

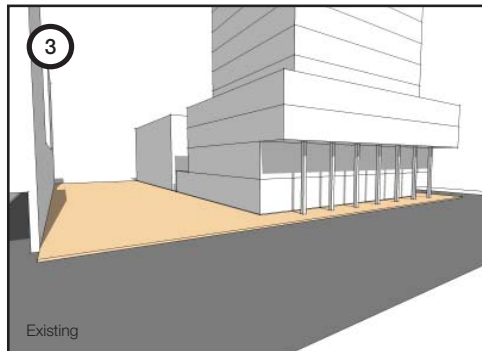


fig.9.122. Existing eastern facade and proposed pedestrian arcade

3. Add Auditorium over Pedestrian Arcade

It is proposed that a multi-purpose auditorium/theater be added above the proposed arcade. The enlarged Church Street pedestrian scale is continued to form the northern facade of the proposed auditorium. Backstage entry is located to the south on the first floor, and audience entry located to the north on the second floor.

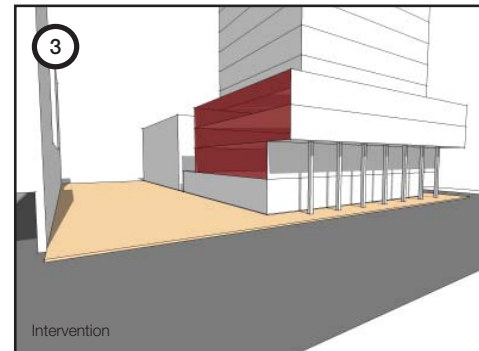


fig.9.123. Proposed area of intervention

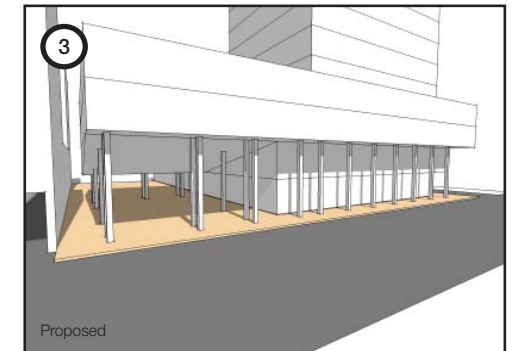


fig.9.124. Proposed multi-purpose auditorium over pedestrian arcade

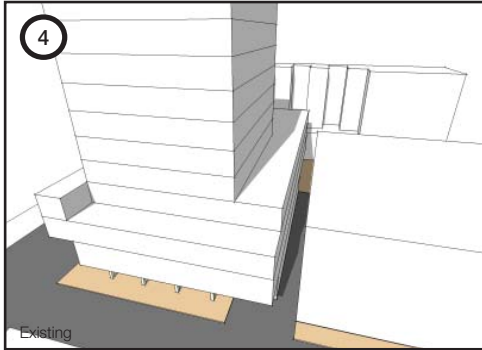


fig.9.125. Existing western and southern facades

4. Add new (southern) Circulation

It is proposed that new circulation be added to the southern facade of the structure, in the form of cantilevering glass boxes. These stairs will connect the social spaces of the second to fourth floors.

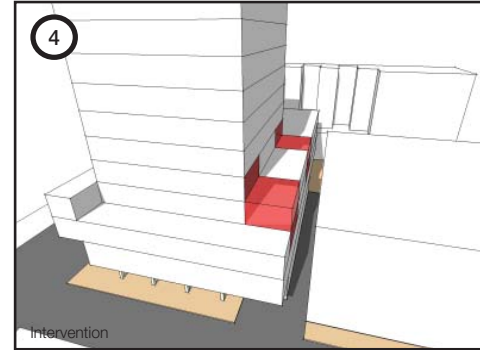


fig.9.126. Proposed areas of intervention

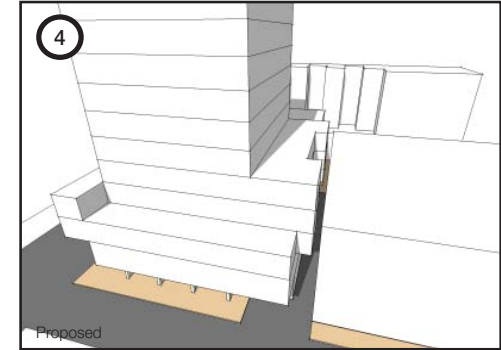


fig.9.127. Proposed new circulation areas on the southern facade

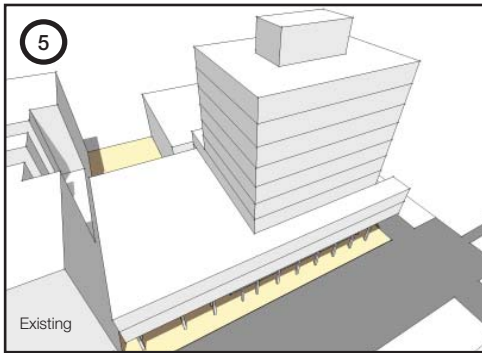


fig.9.128. Existing rooftop of proposed auditorium

5. Add Rooftop Recreation Space

The rooftop of the proposed auditorium and altered Apollo structure is proposed to be used for outdoor recreational activity. A roofing structure is proposed that will provide shading to the proposed outdoor spaces. A full-size basketball court is proposed with covered seating provided on the eastern side. Structural fencing is proposed on the periphery to safeguard the rooftop space.

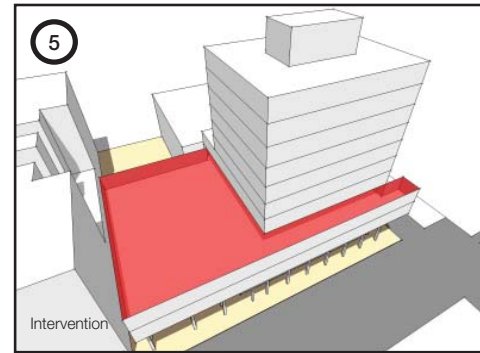


fig.9.129. Proposed area of intervention

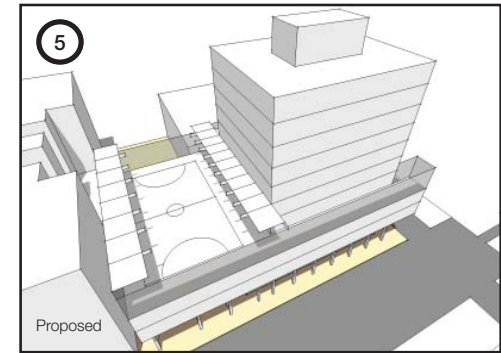


fig.9.130. Proposed rooftop playground and roof covering

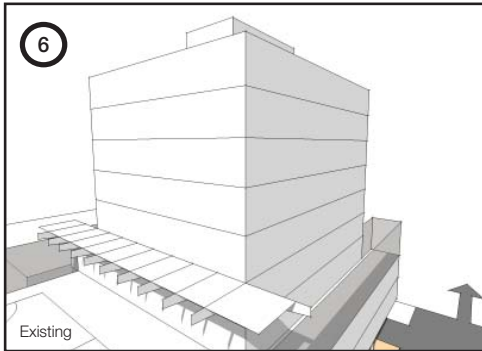


fig.9.131. Existing upper floors proposed for classroom areas

6. Create Open-Air Educational Spaces

It is proposed that from the seventh floor upwards, the eastern side of each floor be opened to create open-air educational environments. Two outdoor double volumes are hereby created. These spaces may be used for formal or informal education purposes.

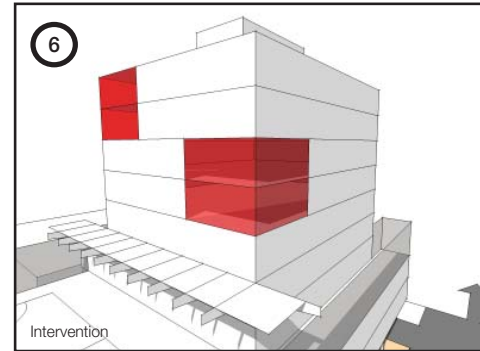


fig.9.132. Proposed areas of intervention

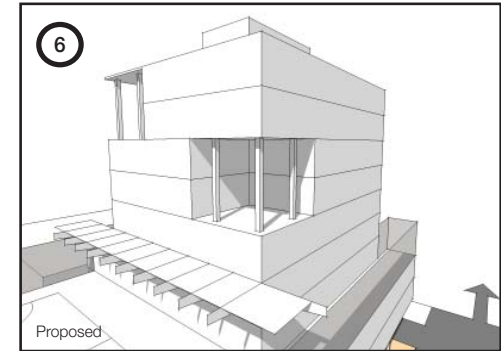


fig.9.133. Proposed exterior double volume areas

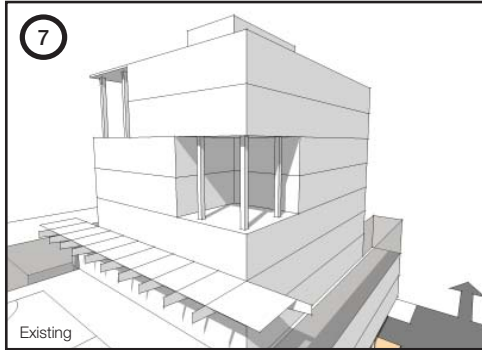


fig.9.134. Existing upper floors with double volumes proposed

7. Add Eastern Vertical Gardening Screen

It is proposed that a vertical structural screen is added to the eastern side of the structure. Vertical gardening will be encouraged to grow the full area of the screen.

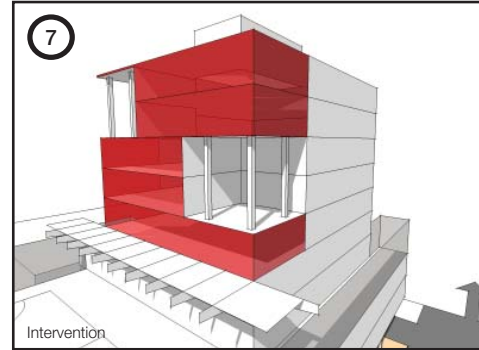


fig.9.135. Proposed area of intervention

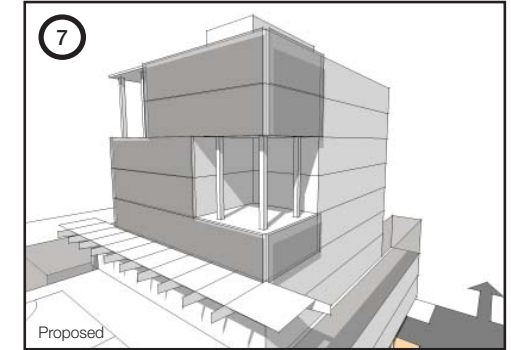


fig.9.136. Proposed vertical gardening screen on eastern side

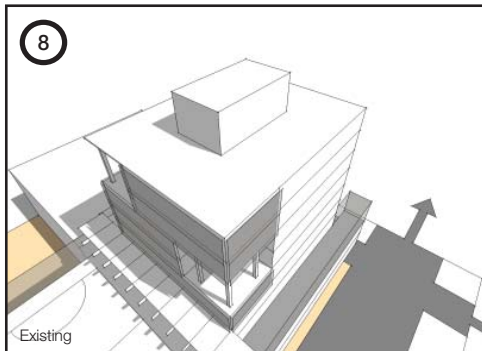


fig.9.137. Existing rooftop of the Apollo Centre

8. Add Rooftop Natural Sciences Room

An Natural Sciences Room is proposed for the rooftop space. A translucent roof surface is proposed that will harvest rainwater, and be available for use for the watering of plants, the proposed vertical gardening screen,

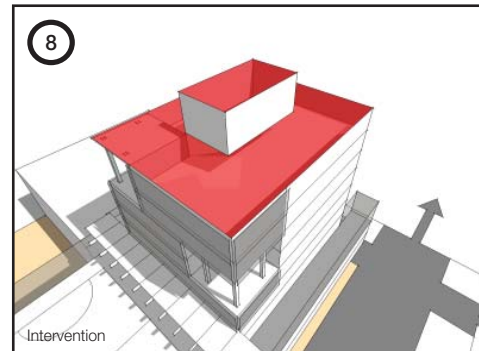


fig.9.138. Proposed area of intervention

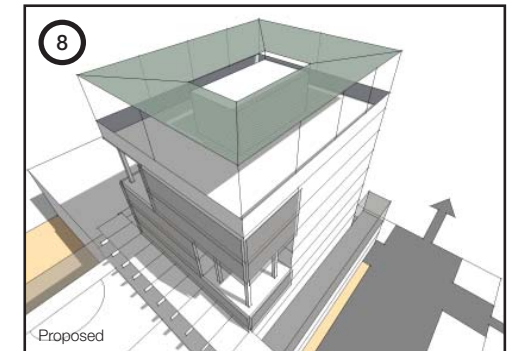


fig.9.139. Proposed Natural Sciences Room for the rooftop space



Proposed Accommodation Schedule

- Reception/Security

The main pedestrian entrance to the building will be situated on the eastern side of the ground floor, directly from the proposed pedestrian arcade. A visitors waiting area will be located close to the reception desk.

Secure access to the basement levels from Du Toit Street, will be controlled separately from the reception area.

- Culinary Classroom

A culinary classroom will be situated on the western side of the ground floor, directly against the pedestrian walkway of Du Toit Street. The class will be able to accommodate twenty students and one teacher at a time. The edges of the room will mostly be transparent in order to make the educational process visible to the public passing the activity. A visual connection will also be established with the socializing area of the school on the first floor. Cold, dry and cutlery storage areas will be provided.

- Circulation

The main circulation will take place in the service core of the Apollo School. An existing ventilation duct makes way for a larger circulation shaft. This circulation shaft will continue from ground floor to the rooftop space. Strategic openings in the new circulation shaft will allow visual access to activity on each floor.

Broad socializing staircases will be added from the ground to the fourth floor. These staircases are will connect all of the indoor socializing spaces of the lower floors, but are in themselves socializing spaces with seating provided.

The existing elevator shaft will be kept as is with its three elevator booths. These are for the exclusive use of staff, except in the case of emergencies. An existing fire escape route will also be kept as is with only staff allowed to use it, except in the case of

emergencies.

- Multipurpose Auditorium

A Multipurpose Auditorium is proposed to be added to the eastern side of the existing structure, over the newly introduced pedestrian arcade. The Auditorium will host school gatherings and school plays.

It is proposed that the Auditorium be available for use by the community and tertiary colleges in the area as a lecturing and performance venue on a cross-programming basis.

- Socializing/Recreational Spaces

Indoor socializing spaces are proposed to occupy the first and second floor areas with its double volume spaces. It will be of an open and adapting nature with moveable, playful elements and objects scattered throughout the area.

A roofed indoor/outdoor area is proposed for the fourth floor of the Apollo School that will establish the transitional space between indoor and outdoor socializing and recreation. This area is proposed to be used as a seating area with a tuck shop available.

An outdoor recreational area is proposed for the rooftop of the multipurpose auditorium. This recreational area will consist of a full size basketball court with covered seating on the periphery of the rooftop space.

- Library

A library will be situated on the third floor of the Apollo School. It will overlook the indoor socializing spaces. Areas will be allocated for book shelves, individual and group working areas, as well as computer and printing facilities.

It is proposed that the library be open to the community and tertiary colleges in the area on a cross programming basis.

- Personnel Room

A personnel room will be situated on the northern platform of the second floor, overlooking the indoor socializing areas. The edges will be treated mostly transparent to allow for maximum visibility and control. Sound proofing will provide privacy for the staff.

- Principals Office

The principals office will be situated on the same floor as the personnel room. Access to the principals office will happen through the administration room.

- Administration Room

The administration room will be situated on the same floor as the personnel room, and directly next to the principals office. Access to the principals office will happen through the administration room. Access to the sick room will also happen through the administration room.

- Sick rooms

A sick room will be situated next to the administration room. Access to it will through the administration room. The sick room will be able to accommodate two children and will feature an inclusively designed ablution facility.

- Ablution Facilities

Ablution Facilities is situated on various places throughout the structure. Existing ablutions are situated on the landing space of the main circulation shaft, as well as the fire escape circulation shaft. New ablution facilities are proposed for the ground floor, the first floor, the sick room on the second floor, and the socializing area on the fourth floor. Staff will make use of the ablution facilities located within the fire escape route.

- Classrooms

Six floors of the Apollo School will be dedicated to classroom areas. The fifth and sixth floor will accommodate two classrooms spaces for two grades each. The seventh to tenth floors will all accommodate two classroom spaces for one grade per floor, with the aging children moving to the higher floors.

It is proposed that every floor upwards from the seventh one, will consist of a transitional space between the circulation shaft and the classroom space, an instructional area, an individual/group working area, an outdoor learning area, and an outdoor double volume space that will either spatially connect it to the floor above or the one below.

- Rooftop Natural Sciences Room

A Natural Sciences Room will be situated on the rooftop. A glazed structure with corrugated roof-sheeting will be constructed that collects rainwater and allow for an abundance of natural lighting and ventilation conditions. This will be an educational space that will act as a laboratory for science, biology and urban agriculture. Food that is harvested here can potentially be used in the culinary school situated on the ground floor. Rainwater is proposed to be used for the vegetation, but potentially also for grey water.

Diagrammatic indication of vertical functions in the Apollo School

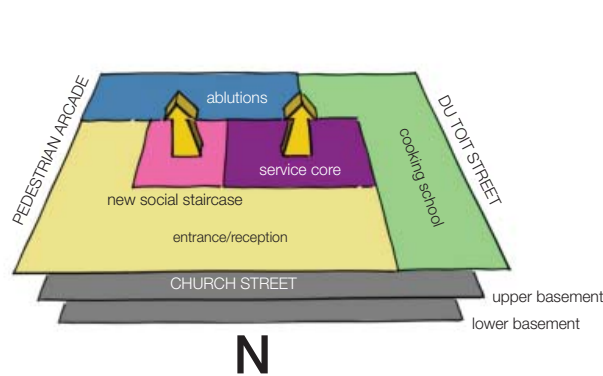


fig.9.140. Ground Floor - The main entrance to the Apollo School will happen from the proposed pedestrian arcade on the eastern side. A reception area is provided together with a waiting area for visitors. Studying areas are provided in the reception space. A social staircase is proposed that will be used as the main access for students to the school, as well as visitors to the auditorium. Ablution facilities for both genders as well as the disabled are provided. A cooking school is located on the western side with visual access to the public but physical access only possible from the inside.

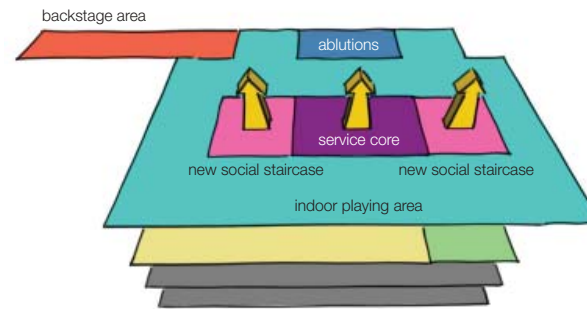


fig.9.141. First Floor - Access to the first floor will mainly take place from the newly proposed social staircase, but is also possible from the increased circulation shaft in the service core as well as the elevators. The predominant function of the first floor is to accommodate informal indoor recreation. Ablutions are provided. Access to the backstage area will also happen from this level.

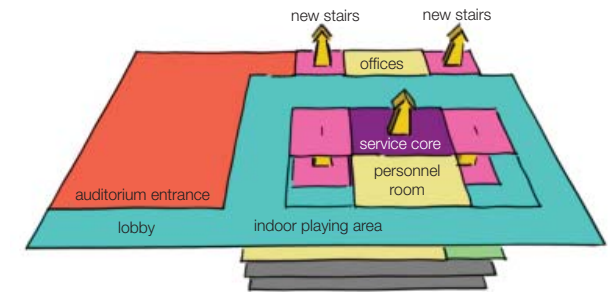


fig.9.142. Second Floor - Access to the second floor will mainly happen from the newly introduced social staircases on either side of the service core, but is also possible from the increased circulation shaft or elevators. This floor also accommodates space for informal indoor recreational activities. A personnel room is placed centrally to have views into the indoor socializing areas. An administration room, principal's office and sick room are placed near the personnel room. Two new staircases are proposed on the southern facade that will protrude from the facade and appear as cantilevering glass boxes. The main entrance to the auditorium is located on this floor. Part of the indoor playing area will function as the lobby for the auditorium.

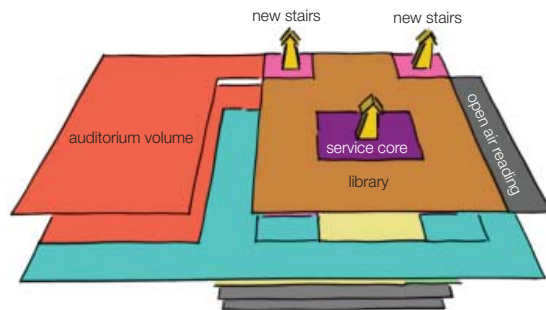


fig.9.143. Third Floor - Access to this floor will mainly happen from the new staircases introduced on the southern facade, but is also possible from the increased circulation shaft and elevators. This floor will accommodate a library with an outdoor reading area. The library will be spatially connected to the informal indoor playing areas below. The upper volume of the auditorium will occupy the remainder of space on this floor.

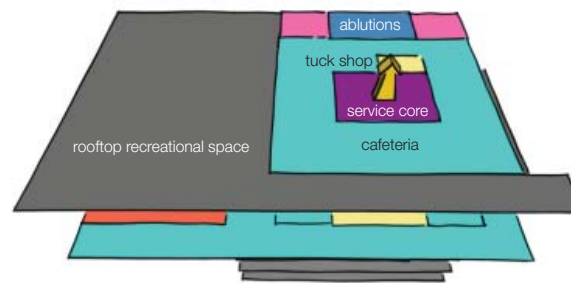


fig.9.144. Fourth Floor - Access to this floor will mainly happen from the newly introduced staircases on the southern facade, but is possible from the service core. This floor accommodates a cafeteria that is served by a tuck shop. Ablutions are provided. The permeable cafeteria space leads to an outdoor recreational area. This area consists of a full-size exterior basketball court. A roofing structure on the eastern perimeter of this rooftop space will provide shade and seating. Seating will be located all round the perimeter of the rooftop recreational space.

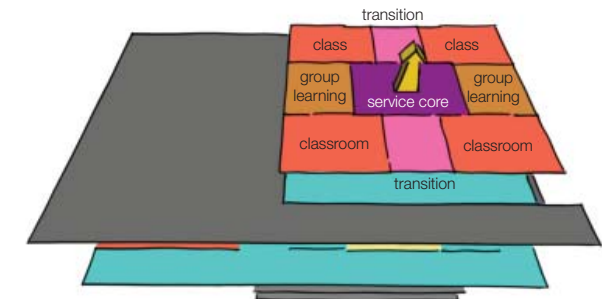


fig.9.145. Fifth Floor - Access to this floor will be only possible from the service core with its increased circulation shaft and existing elevators. This floor accommodates two pairs of classroom spaces, both which share communal group learning areas. Transitional areas provide a practical space for students to enter and exit the classrooms into the service core and visa versa. This floor will host two Grade R and two Grade 1 classes with 20 students proposed to be accommodated per class, thus 40 students per grade and 80 students per floor.

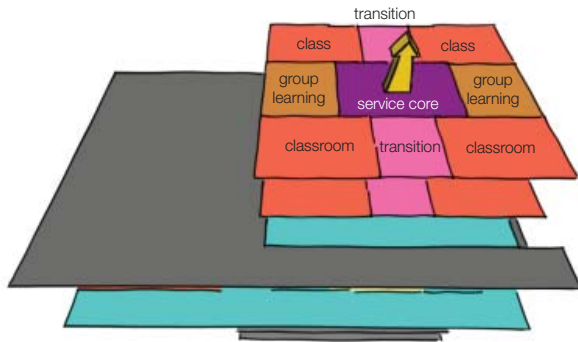


fig.9.146. Sixth Floor - Access to this floor is only possible from the service core with its increased circulation shaft and existing elevators. This floor accommodates two pairs of classroom spaces, both which share communal group learning areas. Transitional areas provide a practical space for students to enter and exit the classrooms into the service core and visa versa. This floor will host two Grade 2 and two Grade 3 classes with 20 students proposed to be accommodated per class, thus 40 students per grade and 80 students per floor.

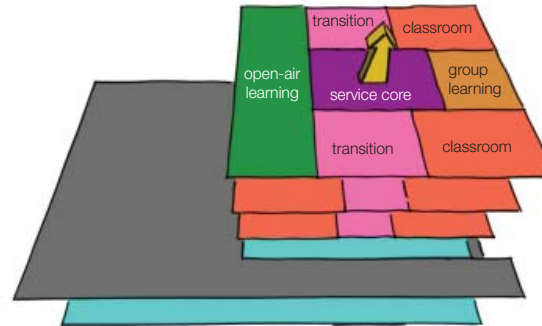


fig.9.147. Seventh Floor - Access to this floor is only possible from the service core with its increased circulation shaft and existing elevators. This floor accommodates one pair of classroom spaces which share a communal group learning area. Transitional areas provide a practical space for students to enter and exit the classrooms into the service core and visa versa. The structure is opened at the eastern side to create a communal outdoor, open-air learning environment. This space's edges will host vertical gardening. This floor will host two Grade 4 classes with 20 students proposed to be accommodated per class, thus 40 students per grade and 40 students per floor.

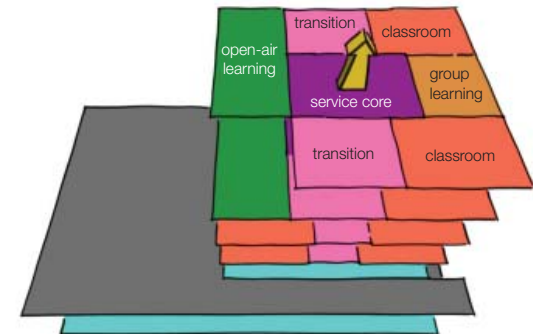


fig.9.148. Eighth Floor - Access to this floor is only possible from the service core with its increased circulation shaft and existing elevators. This floor accommodates one pair of classroom spaces which share a communal group learning area. Transitional areas provide a practical space for students to enter and exit the classrooms into the service core and visa versa. The structure is opened at the eastern side to create a communal outdoor, open-air learning environment. A part of the northern slab is cut away to create an exterior volume that spatially connects the floor with the one below. This space's edges will host vertical gardening. This floor will host two Grade 5 classes with 20 students proposed to be accommodated per class, thus 40 students per grade and 40 students per floor.

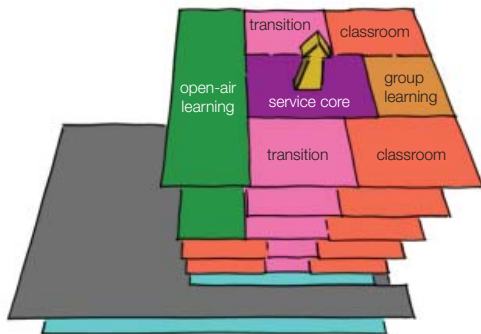


fig.9.149. Ninth Floor - Access to this floor is only possible from the service core with its increased circulation shaft and existing elevators. This floor accommodates one pair of classroom spaces which share a communal group learning area. Transitional areas provide a practical space for students to enter and exit the classrooms into the service core and visa versa. The structure is opened at the eastern side to create a communal outdoor, open-air learning environment. This space's edges will host vertical gardening. This floor will host two Grade 6 classes with 20 students proposed to be accommodated per class, thus 40 students per grade and 40 students per floor.

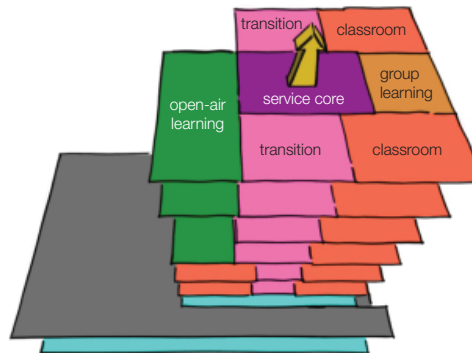


fig.9.150. Tenth Floor - Access to this floor is only possible from the service core with its increased circulation shaft and existing elevators. This floor accommodates one pair of classroom spaces which share a communal group learning area. Transitional areas provide a practical space for students to enter and exit the classrooms into the service core and visa versa. The structure is opened at the eastern side to create a communal outdoor, open-air learning environment. A part of the southern slab is cut away to create an exterior volume that spatially connects the floor with the one below. This space's edges will host vertical gardening. This floor will host two Grade 7 classes with 20 students proposed to be accommodated per class, thus 40 students per grade and 40 students per floor.



fig.9.151. Rooftop Greenhouse/Nursery - Access to this floor is only possible from the service core with its increased circulation shaft and existing elevators. This floor accommodates an educational greenhouse/nursery where students will have the opportunity to grow vegetables and experiment with everything related to plants and agriculture. Water will be harvested here and the water available for use by the students, as well as the ablution facilities below. 40 Students will be accommodated.



fig.9.152. Bird's eye view of model showing structural composition of first three floors of the proposed altered structure



fig.9.153. View of model from the corner of Church and Du Toit Street



fig.9.154. Bird's eye view of model from a north western direction



fig.9.155. Bird's eye view of model from a south-eastern direction



fig.9.156. View of model from Du Toit Street



fig.9.157. Proposed pedestrian space at Church Street interface