



chapter 07

design development

07_design development

Introduction

The hypothesis and main research question (chapter 2) are further being investigated in this chapter. It will specifically look at design generators, informants and decisions in terms of the proposed new intervention of the Agrivaal Building. Focus on the design development from a conceptual point, proceeds to a more physical and realistic design proposal for the new European Commission. The European Commission identifies itself with sustainable development, with a large focus on the environment and it's awareness and sensitivity towards it. Thus a major influence in the design proposal.

Architectural goal:

adaptive reuse of a dormant building

Purpose of intervention:

reuse an existing building with the intension of respecting it's heritage and using principles of environmental sustainability.

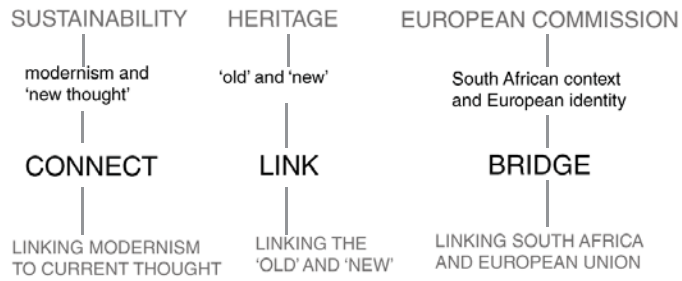
Programmatic intension:

to design the new head offices of the European Commission in South Africa, that will reflect their interests in sustainable development and sensitivity to environmental issues.

Design Generators

Concept

The concept and design guide for the intervention of the Agrivaal Building stems from the theoretical investigation of heritage and environmental sustainability. These the linking of the informants become the premise of the design. Thus 'Sustainable Heritage', in terms of this project refers to the adaptive reuse of an existng building in a manner that respects the environment and the surrounding context.



LINKING



Sustainable Heritage
Utilizing existing buildings in a manner that respects the environment

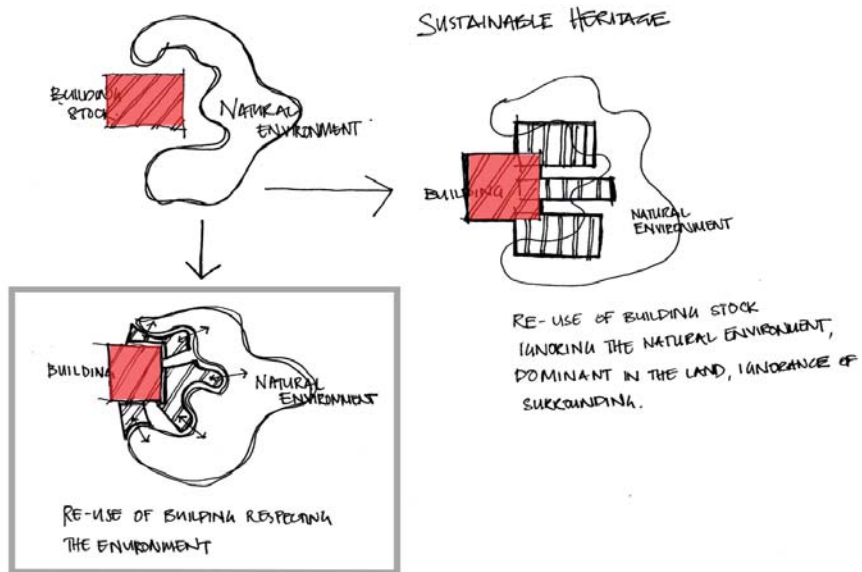


Fig.315:Diagram of concept, Sustainable Heritage [Source: author]

informants

concept

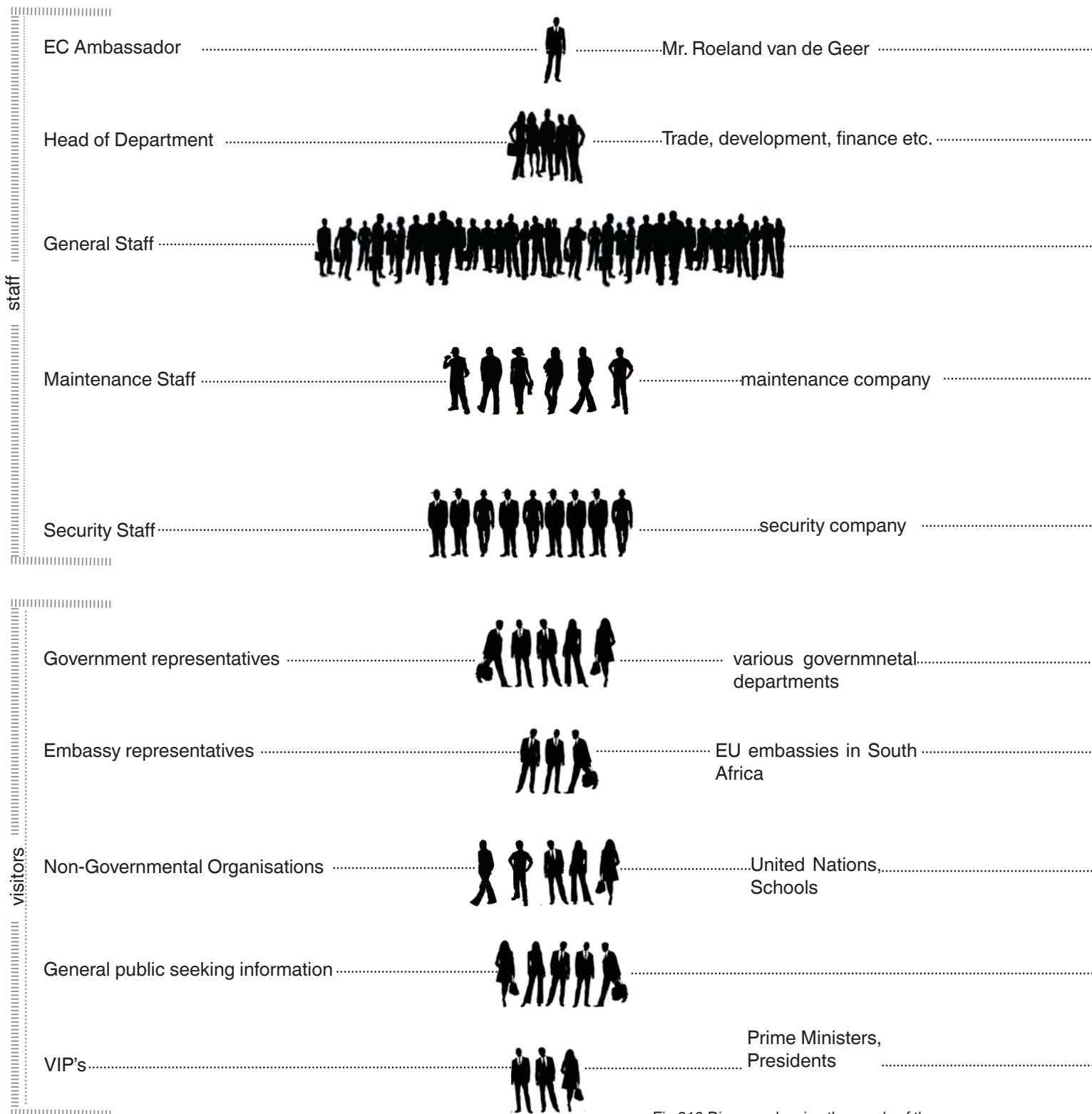


Fig.316:Diagram showing the needs of the user



special needs

space needed

estimated sqm

private office
security
Personal Assistant

Private office linick to
personal assistant and
boardroom

100sqm

private office with
access to open plan offices

10sqm

will mostly use open plan offices with
some in private office depending on
department

150sqm

office and storage for tools and
machines. Changeroom and showers
provided.

90sqm

office and storage for tools and
machines. Changeroom and showers
provided.

90sqm

meeting spaces/
boardrooms

information centre

150sqm

secure lounge used as
waiting point until ushered to
destination. The secure lounge
is also designed to be the 'safe
zone' incase of an attack.

meeting spaces/
boardrooms

200sqm

Types of Office Spaces

The vignettes below are of different office meeting and working spaces that will be incorporated in the design. These drawing communicate the idea of mundane scenarios in an office building, however collectively create a function office as a whole. Concept of vignettes is sourced from www.officespace.com



Fig.317: open plan office



Fig.320: private office



Fig.323: partitioned work space



Fig.318: partitioned group offices layout



Fig.321: private shared office

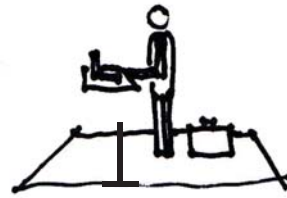


Fig.324: quick work point



Fig.319: cubicle- semi enclosed



Fig.322: private shared office

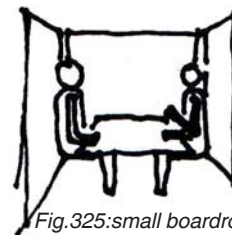


Fig.325: small boardroom



Fig.326: large boardroom



Fig.330: quick meeting point



Fig.334: locker area



Fig.327: small meeting space

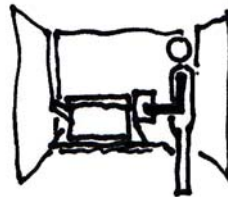


Fig.331: xerox room

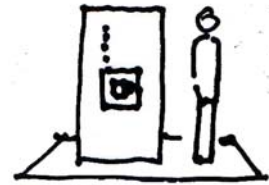


Fig.335: coffee/tea area



Fig.328: large meeting space



Fig.332: filing space



Fig.336: waiting area



Fig.329: boardroom facilities

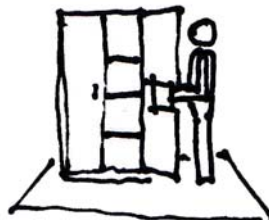


Fig.333: storage space



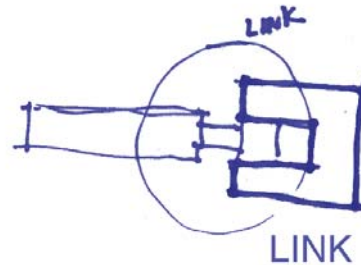
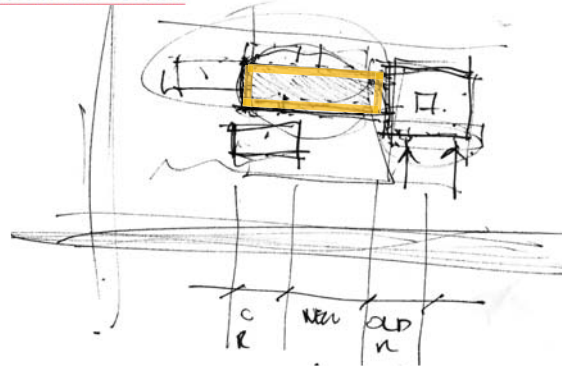
Fig.337: smoking room/area

Design Progression

This project engages with the adaptive reuse of the Agrivaal Building in a manner that responds to the needs of the client, respect and sensitivity to cultural heritage and environmental sustainability.

The success of the design will be tested on the following:

- The building working/functioning as a whole
- Security within the building
- Identity
- Environmental systems in the building
- The contrast between existing building and new intervention
- Comfort: working spaces, resting spaces, eating spaces



Form Development

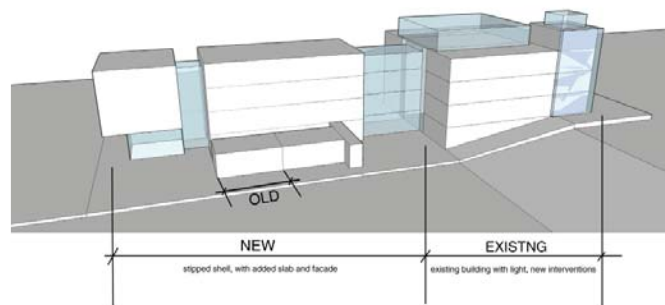
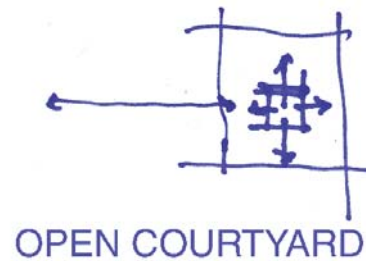
The form and general massing of the new intervention is derived from a number of factors including site analysis and building analysis. The initial focus is to open the courtyard building (phase 1 and 2) into phase 3 allowing for a large atrium space. This allows the link between the two phases in a subtle manner. It also allows visual access between the two buildings.

The second major form that was designed was the auditorium. This is a floating mass supported by pilotis. It is informed by the council chamber positioned in front of it. The height of the building is slightly lower than the rest of the building. This was to respect the main courtyard building, which is benchmark height that the intervention works from. The intension is to keep most of the buildings mass just below the courtyard building, highlighting the importance of it, as well and bringing focus to the corner articulation of the building (high cultural significance).

Proportions were of importance in deciding the form since the the new building must relate to and existing form.

Proposal 1

The project developed through numerous site visits, site and building analysis of the Agrivaal Building. The



opportunities presented were limited if no demolition was considered. The Burra Charter assisted in the analysis of the building in terms of cultural significance, thus an and informed decision was made on demolition. Phase 3 to be stripped of it's façade and work with its existing columns and slab. According to the HIA, the building was analyzed by an engineer, deeming it structurally sound, and safe to add more weight onto the columns and foundations.

The semi-basement initially was proposed to serve as parking. This presented a very limited parking bays, however allowed for direct entrance to the building, which was needed for important and 'high security' guests. Other possibilities were explored, and will be mentioned in the next proposal.

Proposal 2

The second proposal responded to the need of a new, pronounced entrance between the courtyard building (phase 1 and 2) and the brick addition (phase3) building. The position seems to be appropriate, allowing an opportunity to demonstrate the intended link between old and new. Phase 3 of the Agrivaal Building is of low cultural significance and thus demolition in some areas would be acceptable. Before entering the building through the main entrance there is a small semi-public square, allowing for a pause, just before the four storey entrance. When entering the complex after a security check, it is the option of the user to either enter the large entrance presented as on moves forward. The other option would be to enter a smaller building, the existing council chamber which is proposed to be the new information centre. The information centre frames the square allowing the for an intimate semi-public space, visually accessible to the street.

In terms of proportion, a number of concepts were explored. The corner articulation of the courtyard building is the main attraction of the existing building, thus the height of the new building should not compete. The new building is the phase 3 column and slab with added floor space and new articulation of facades (north and south facades).

In terms of material, the link between old and new at the new entrance of the building (link between courtyard building and new building) will in contrast to the heavy existing terrazzo cladding be articulated with steel and glass. This will allow for transparency and natural light into the knuckle of the building.

This response, and initial attempt in design proposes that

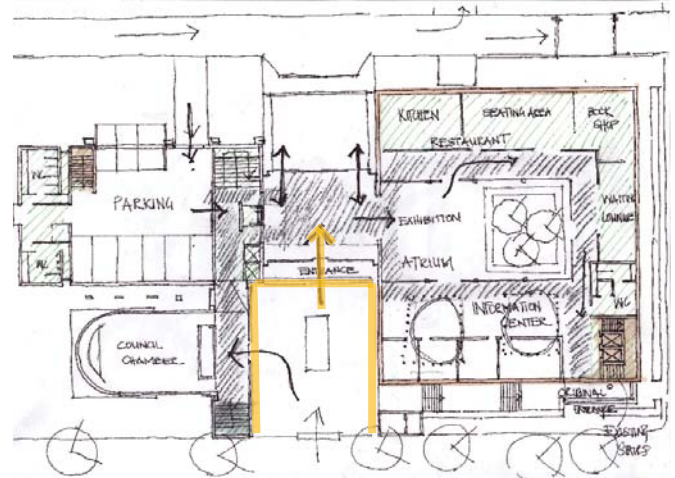


Fig. 338: proposed ground floor [Source: author]

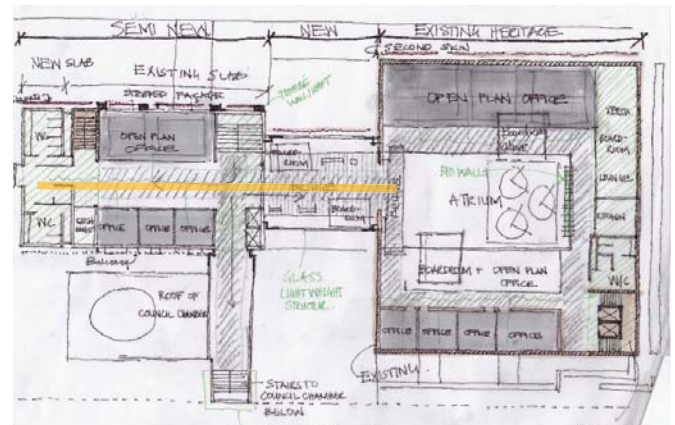


Fig. 339: proposed first floor [Source: author]

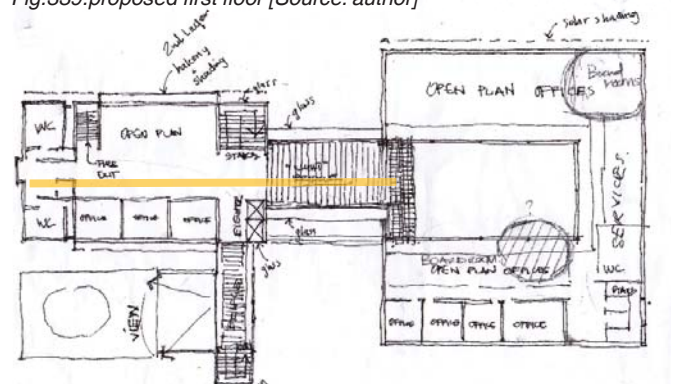


Fig. 340: proposed second floor [Source: author]



the existing concrete roof becomes another office floor. The idea of a new roof structure with roof sheeting was considered and explored. Water recycling methods were considered at this point, where water can be directed towards water tanks for use within the complex.

Proposal 3

The third proposal focused on the link between the new building and the council chamber that sits to the south of the new building. The council chamber is a quaint and small structure that speaks of the early Modern era, with influence of Pretoria Regionalism. This building has two floors with as semi basement as the lower floor. The semi basement will be utilized as the security office, and the floor above will be the information centre. The link between the council chamber and the new building will be a wide passage, allowing visual access into the square. This passages frames the square at main entrance of the building.

Proposal 4

Proposal four looks and the systems of the building. The influence of security, heating and cooling, ventilation and façade treatment. This process re-evaluated many issues in the building, moving openings, creating new spaces, etc. This stage of designed force the holistic view of the building. As informed design decisions were made previously, the detailed systems confirmed and justified, or rejected the idea or concept.

Security

The security in the building considers three major categories of users within the building. There are the staff that work on a day to day basis. Visitors will be expected, in terms of the general public, and well as important people, such as head of states and government officials. Due to bombings and premeditated attacks, the first line of defense is right at the boundary entrance, where a complex structural steel mesh prevents anything from beincaIg thrown in (to a certain level) but still allows visual access to the building and complex. The pedestrian will enter and must pass a security check point before entering the compound. At the main entrance the user is confronted with the receptionist and further security check if entering the upper levels of the building must be conducted. Vehicles entering the building will also be checked at each entrance.

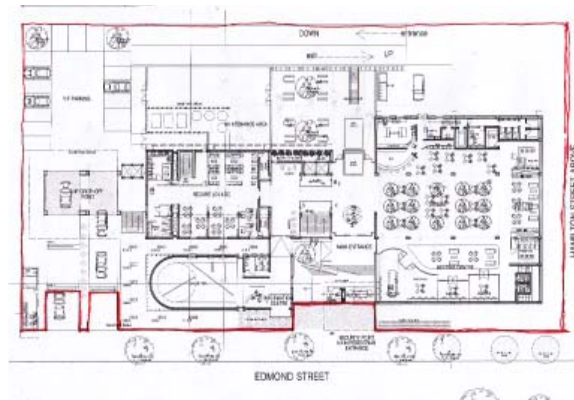


Fig.341:First line of defence, the boundary fence [Source: author]



Fig.342:different security zones in the building [Source: author]

Façade treatment

The north and south façades are articulated in response to the sun. The southern façade is also presented at the entrance side of the building and should present the signage and flags of the European Commission.

Links

Major physical links are located between the courtyard building and the new building. The smaller link is between the council chamber and the new building. These links are intended to be articulated in a light manner, contrasting to the existing cladding of the Agrivaal Building.

Heating and Cooling system

The heating and cooling system uses trombe stacks that encourage the movement of air out of the building from the northern side of the building. Fresh treated air enters from the south side of the building. This process will be fully explained in the technical investigation.

Ventilation system

The ventilation system works simultaneously with the heating and cooling system, and is the driving force of movement of heated or cooled air. The ventilation system also uses stacks located on the northern and southern façade, where solar energy heats the trombe stack encouraging movement of air from an area of high pressure to an area of low pressure. This process will be fully explained in the technical investigation.

Stacks had determined the facade articulation.

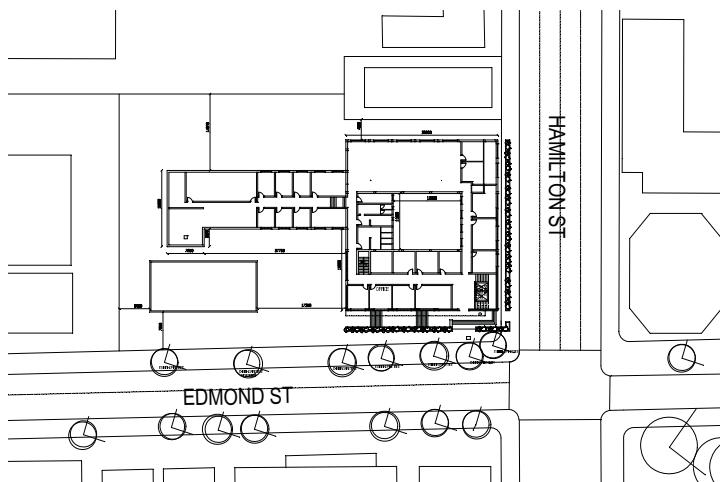


Fig.343:Existing plan of the Agrivaal Building

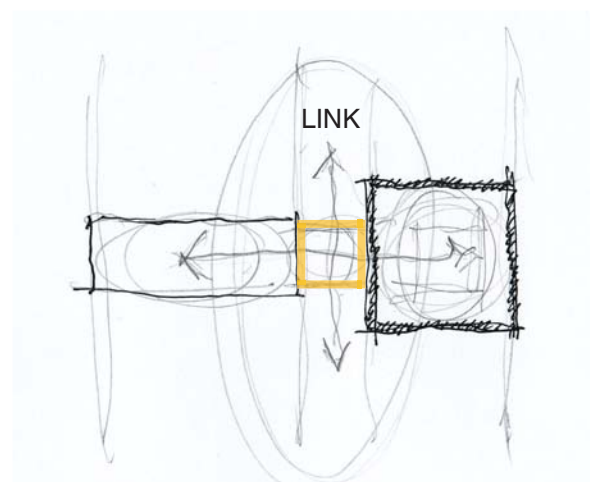


Fig.344:Parti diagram



CONCEPT DEVELOPMENT

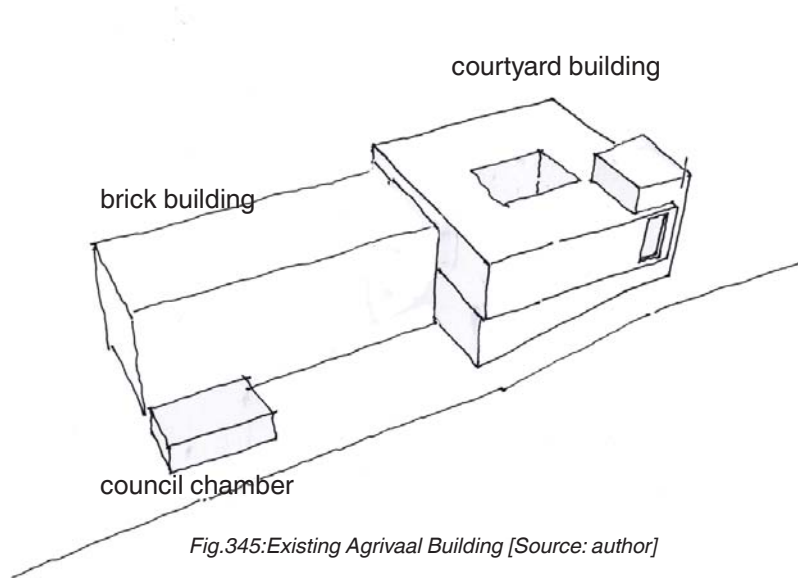


Fig.345:Existing Agrivaal Building [Source: author]

Identified as the 'new building' as existing facades to be stripped and slab and columns to be reused

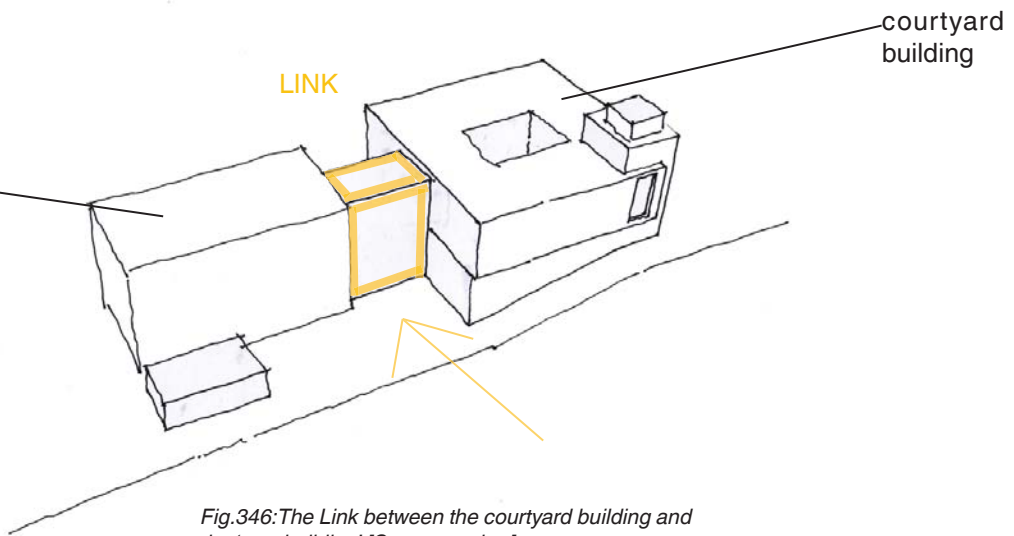


Fig.346:The Link between the courtyard building and the 'new building' [Source: author]

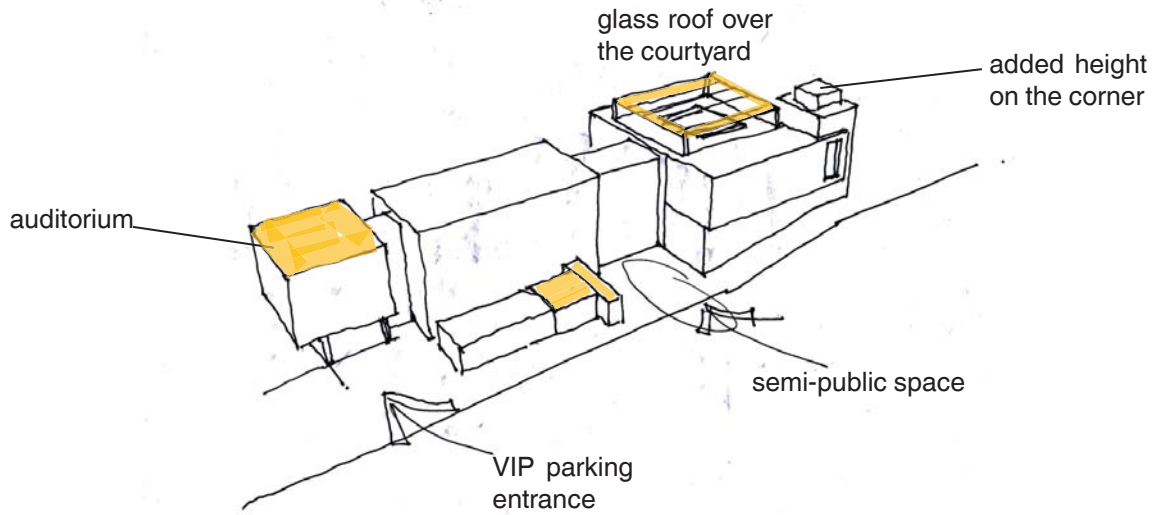


Fig.347: Auditorium and addition to council chamber [Source: author]

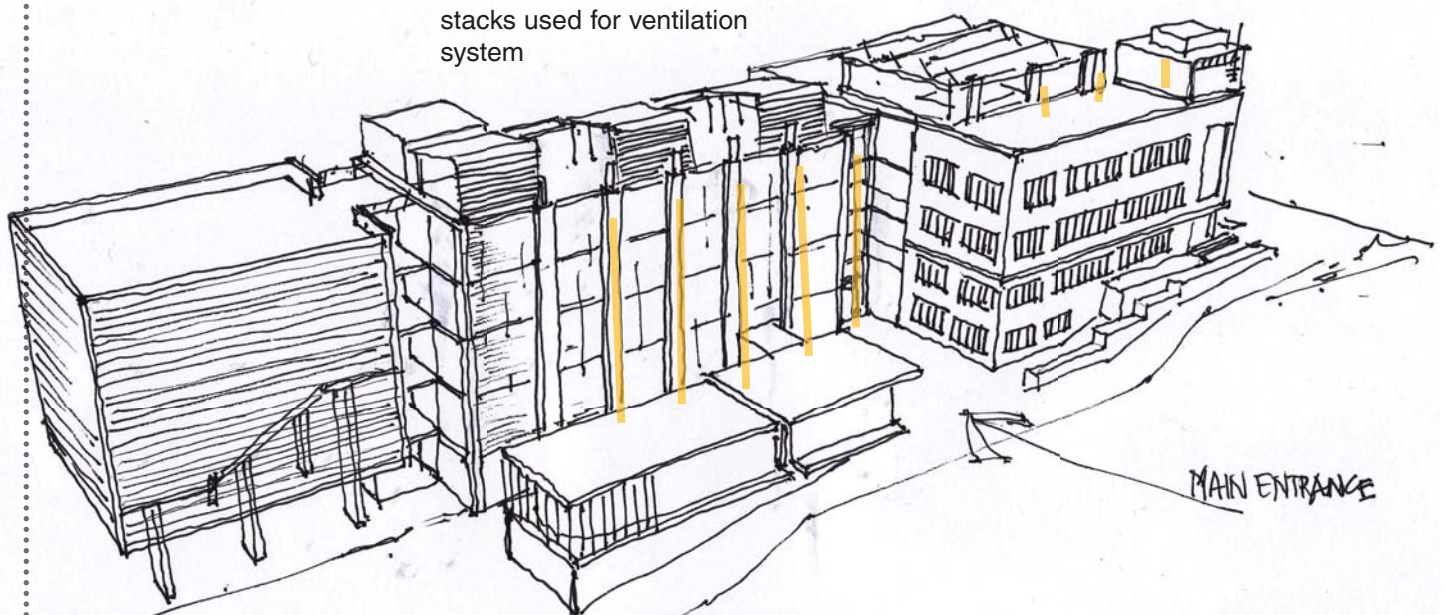


Fig.348: Proposed concept for Agrivaal Building [Source: author]

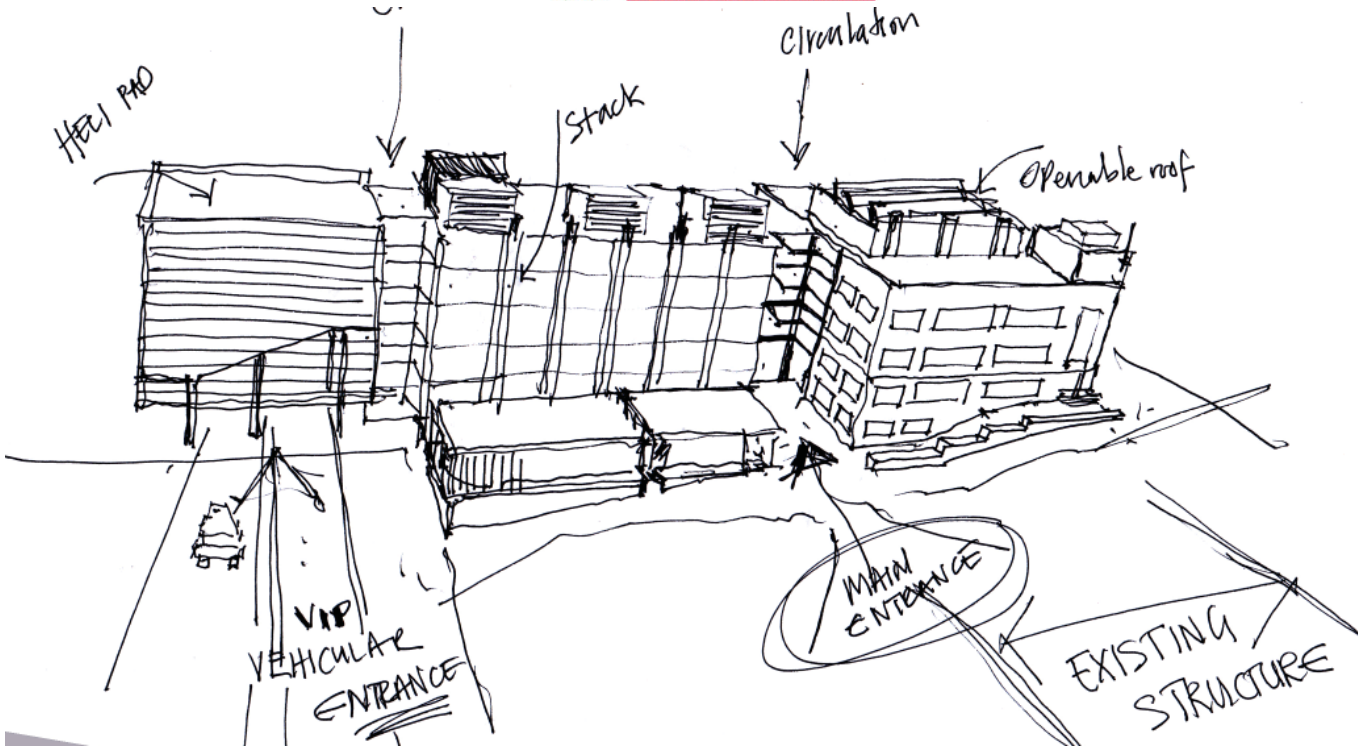


Fig.349: Design development [Source: author]

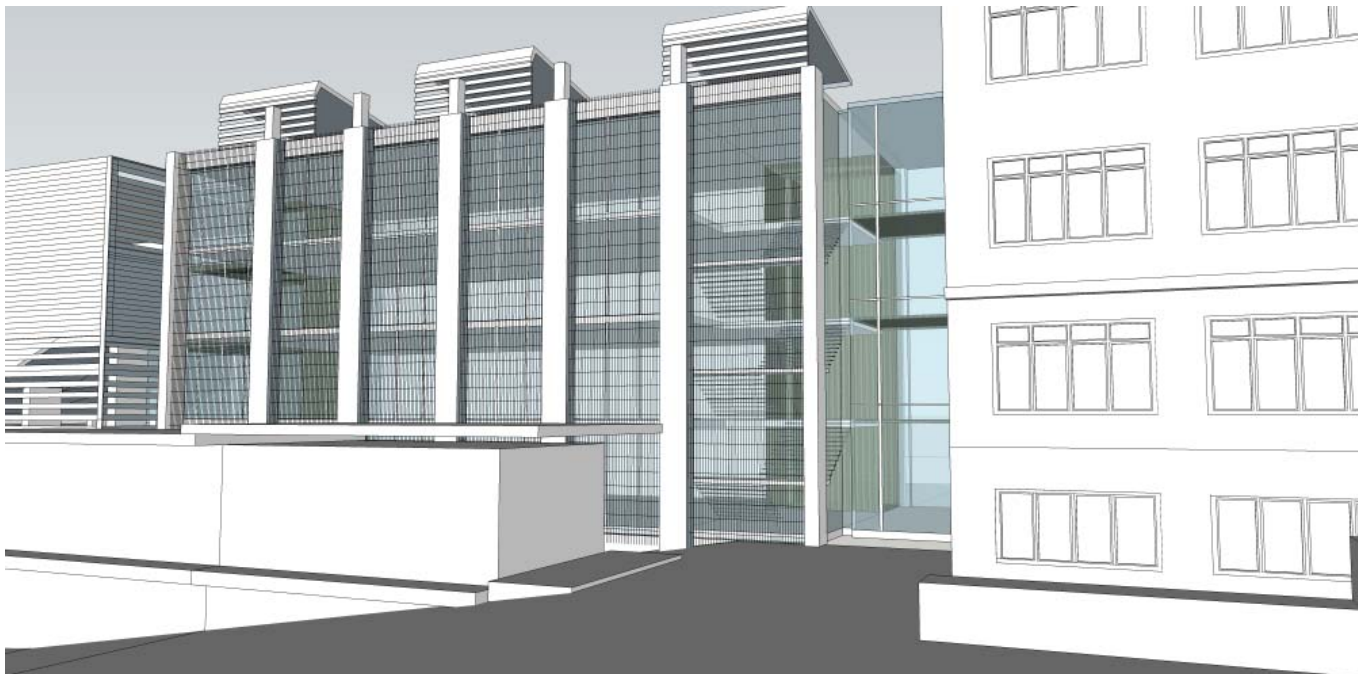


Fig.350: View of new southern facade [Source: author]

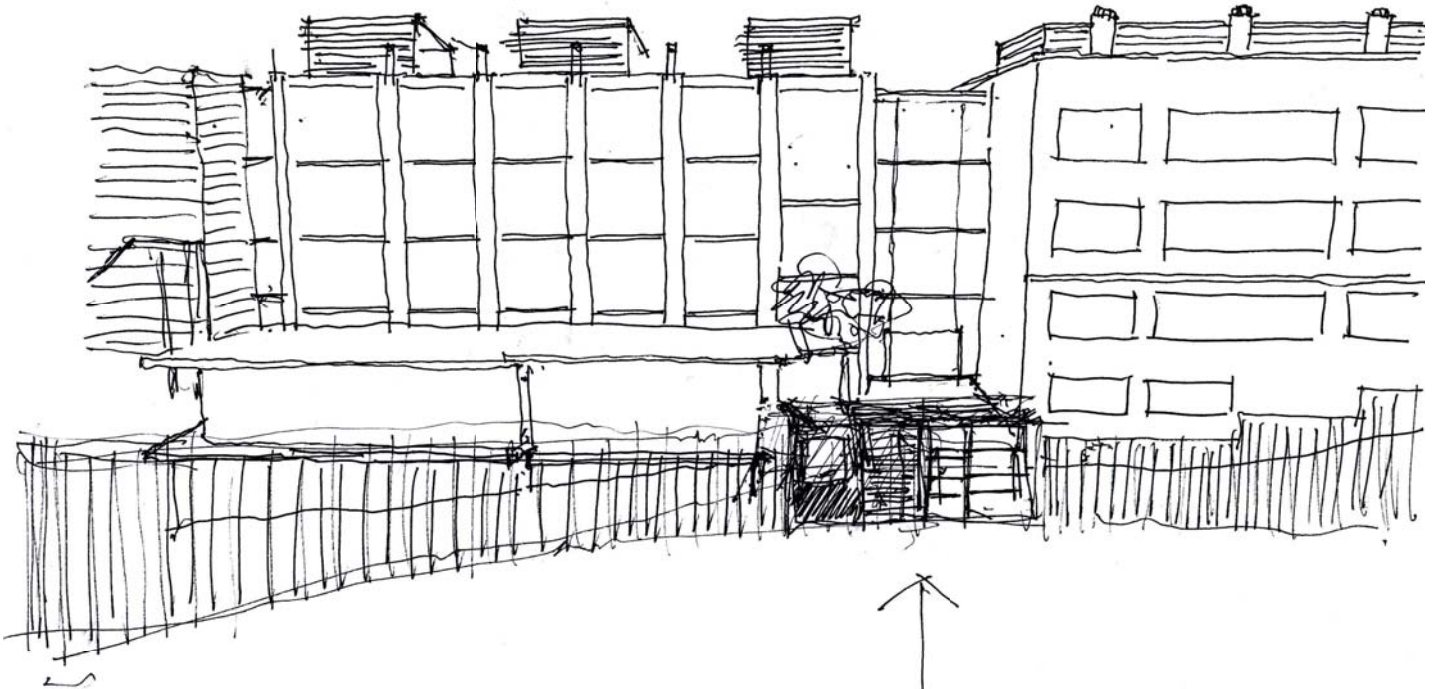


Fig.351: Sketch showing the concept of boundary fencing and entrance
[Source: author]

SECURITY CHECK
ENTRANCE



Fig.352: Southern view of the proposed Agrivaal Building as seen on Edmond Street [Source: author]