



# 05

## CHAPTER 05

### PROCESS

DESIGN CONCEPT	84
DESIGN DEVELOPMENT	
<i>Introduction</i>	84
<i>Design iteration 01</i>	86
<i>Design iteration 02</i>	89
<i>Design iteration 03</i>	94
<i>Design iteration 04</i>	97
<i>Design iteration 05</i>	98
DESIGN ITERATION SUMMARY	100
SYSTEMS	102

DESIGN CONCEPT

ARCHITECTURE AS  
CONNECTION DEVICE

DESIGN CONCEPT

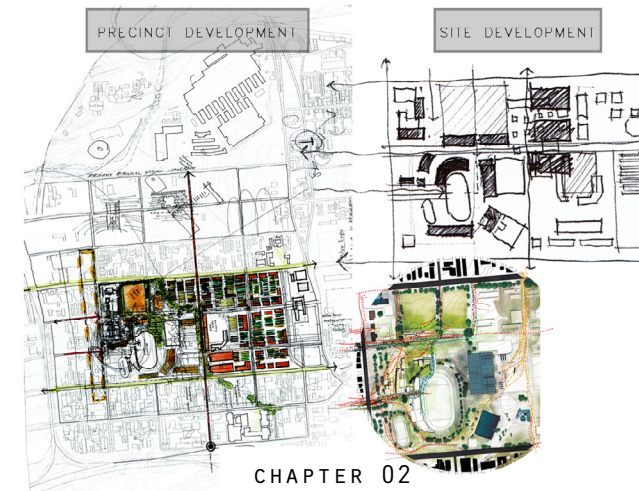
ARCHITECTURE AS CONNECTION DEVICE

This dissertation relies on the interaction and exchange of tangible and intangible elements of design and the resultant relationships formed. To enable this exchange, connections are made not only between the physical built structures but the spatial experience and functions it provides. The design development can be categorised according to design principles in relation to spatial continuity: organisation, program, edge, connection, route and ritual. These categories formed the premise of the design generators.

02  
FEBRUARY

DESIGN DEVELOPMENT

URBAN OBJECTIVE



DESIGN DEVELOPMENT

INTRODUCTION

Explorations through model building and drawing was used for the design development. As argued by Georg Vrachliotis in *Articulating Space Through Architectural Diagrams*, drawing is a “dynamic and active part of design thinking” (2005:02). The design process through sketch is described as a continuous process of interpretation and redrawing (ibid). This graph illustrates the process of design development of this dissertation as explained in the following chapter.

03  
MARCH

06  
JUNE

07  
JUNE REWORK

09  
SEPTEMBER

ARCHITECTURAL DESIGN INVESTIGATED THROUGH CONNECTION AND LAYERING

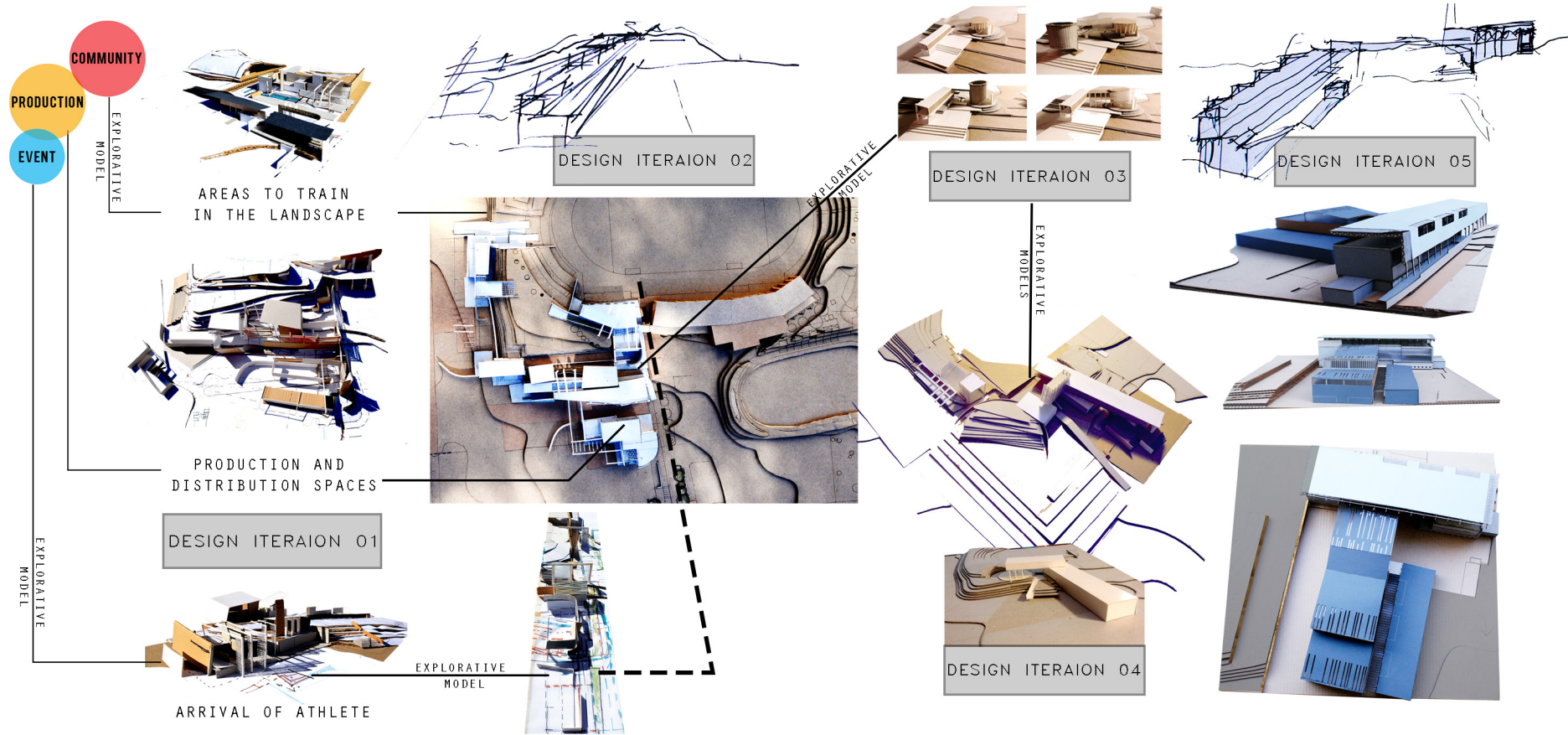


FIG. 61: Design development Layout  
(Author, 2016)

## DESIGN DEVELOPMENT

## DESIGN ITERATION 01

The intention was connect the berm with the edge of the site, creating an architectural experience into the site. Two main buildings were placed along the route of arrival of the athlete. These two buildings which would facilitate the production and distribution of the textiles. The building closest to the street edge would serve as storage and distribution space, therefore the building was placed with a direct link to the existing parking area.

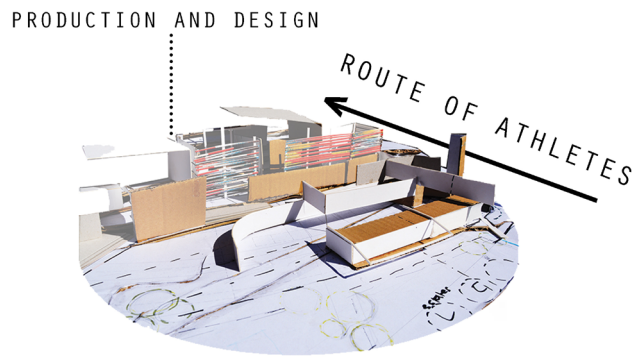
Placing the building along the identified routes (production, community and avert), the production and design house becomes a connection between the stadium and the rest of the site, and the route becomes a public connection between the site and the surrounding context.



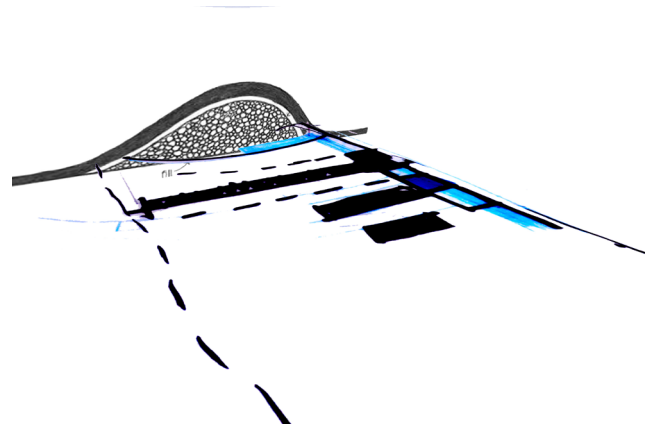
DESIGN ITERATION 01

FIG. 62: Makette, Stitching House  
 (Author, 2016)

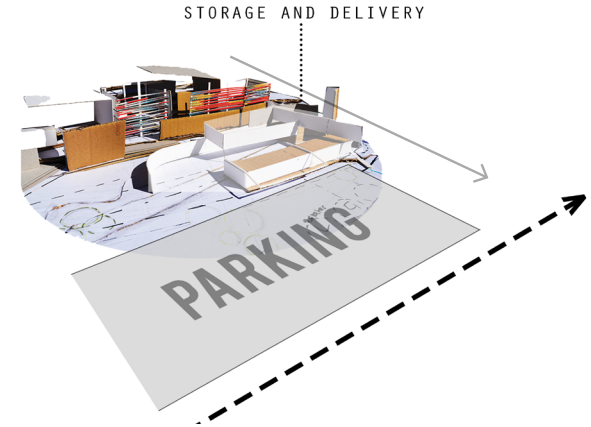
FIG. 62 A-c: Makette diagrams, Stitching House  
 (Author, 2016)



A  
ROUTES



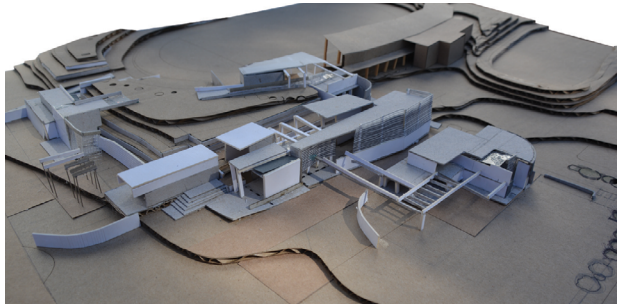
B  
POCKETS BETWEEN BUILDINGS (ALONG  
ROUTE)



C  
SITE EDGE

DESIGN DEVELOPMENT

DESIGN ITERATION 02



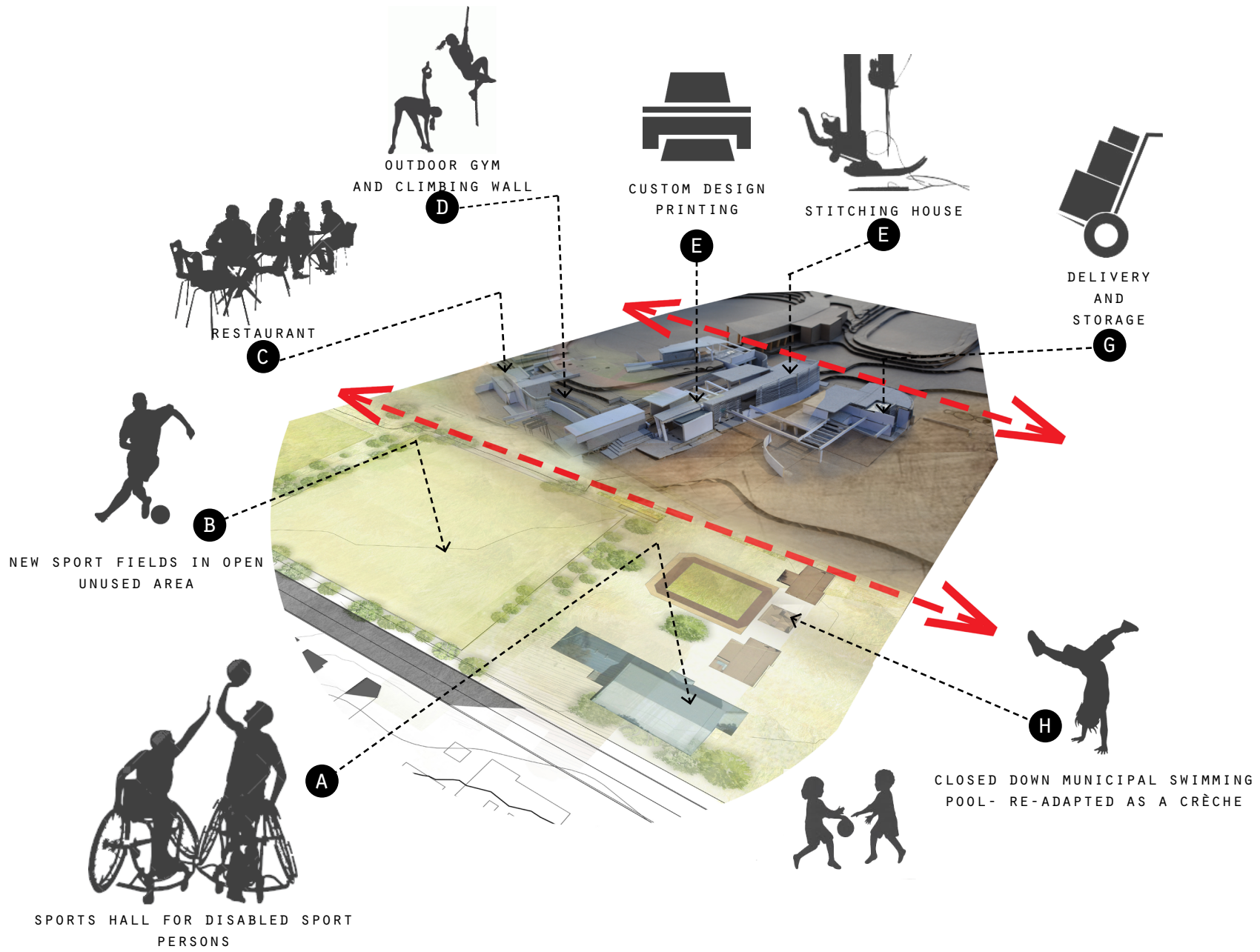
“The idea is to create places where people can meet, randomly or with intent, and where activities of communal interest find place” (Shared space, Hertzberger 2013:19). As described by Lind Pollak, “Because boundaries are where things meet” (Pollak, 1999) they can therefore act as thresholds and barriers of social space (Steenkamp 2011:32).

The proposed routes (that guide the development of site) were laid out to connect the site, with the idea that where these routes crossed, a node could form. Acting as both boundaries and thresholds; this node could, for instance, be a place where production, event and community could form, randomly or with intent.



FIG. 63: June model, Stitching House  
(Author, 2016)

FIG. 64: Collage of node development (Author, 2016)





Moving along the new proposed public promenade, the first encounter with the site is that of the creche (an adaption of the existing Municipal Swimming Pool) and Preschool development centre (a new proposed building). The Sports Hall for Disabled sportspersons is to the left of the creche and the book-ends the site. Moving past the creche, the facilities listed above all live out onto the new proposed sport field. Smaller open air pavilions frame the sport field. From WF Nkomo road, the sport belt is visible and accessible through secondary entrances.

The next encounter is that of the refectory and athletes warm up area. Here, as part of an alternative interpretation of the functions of a clubhouse and a restaurant, a new meeting space, kitchen, relaxation area and canteen is proposed for staff, officials and general public. This space can be rented out when the facilities are not used during large events. Raised to the top level of the berm, the refectory sits 6m above ground where berm is at its most drastic incline. Here meetings are held before every event to discuss the previous competitions and possible objections by athletes. Currently these meetings take place in the inadequate basement level warm up area for the athletes. In order to instill pride in the position of an official, the idea is to raise this area as a beacon, simultaneously creating direct view to the track which is essential to meetings as direct reference. Incorporated in the clubhouse and restaurant, this is also where officials rest between lunch breaks and receive morning coffee/tea.

The warm up area is visible from the refectory but not directly accessible creating a viewing platform of the warm up while still maintaining a level of privacy. Included in the planting library of that area, is a medicinal thyme ground creeper. Athletes can walk barefoot over the plants to relieve aches and pains.

From here, the public promenade extends to the rest of the precinct to finally connects with the trade route on urban level. Along the route residential and commercial development generates new energy on site. As the route continues, the event fades and everyday activities build up the energy on site. Activities range from trade, production and athletics; the everyday and the event.

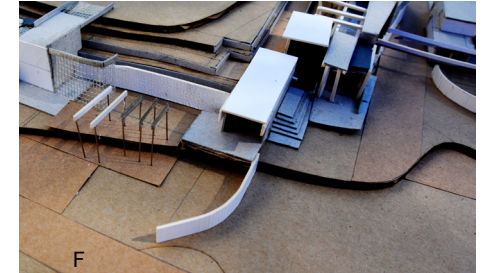
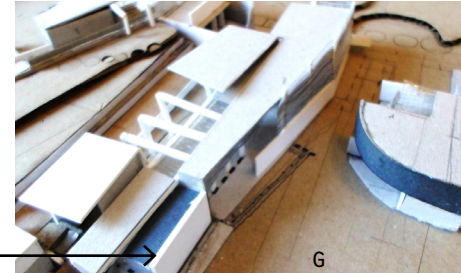
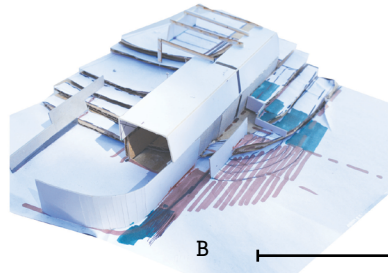
The original entrance to the Stadium is slightly altered to create direct entrance to the track. This allows for an enhanced architectural experience through means of a sudden reveal.

FIG. 65 (A-E): Makettes (Author, 2016)

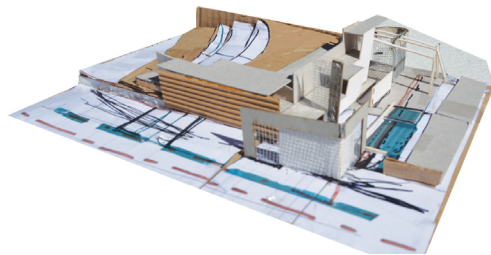
FIG. 66 (F-J): June Model development (Author, 2016)

DESIGN ITERATION 01

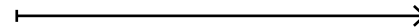
DESIGN ITERATION 02



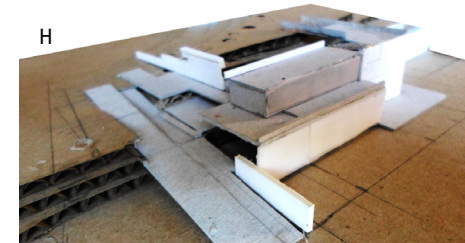
CUSTOM DESIGN PRINTING  
AND OFFICIALS MEETING  
PLACE



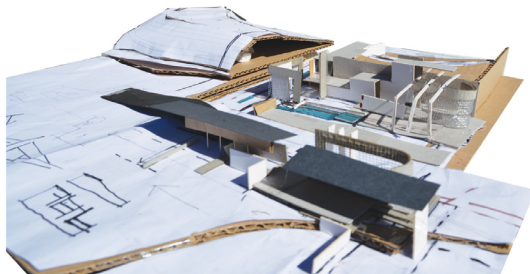
C



RESTAURANT AND  
CLUBHOUSE



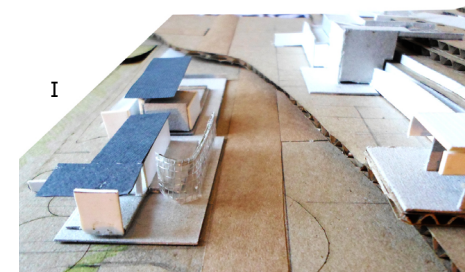
H



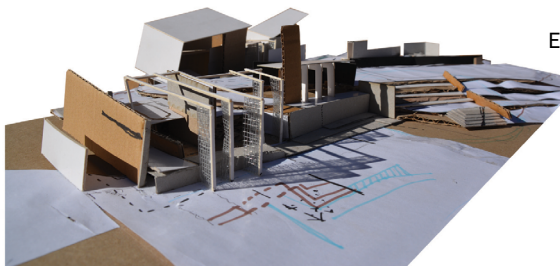
D



OPEN AIR PAVILION



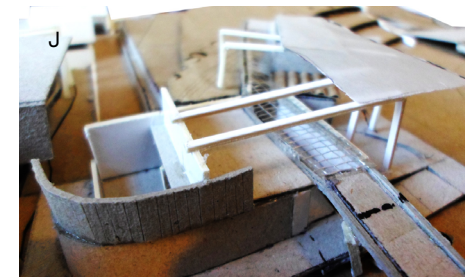
I



E



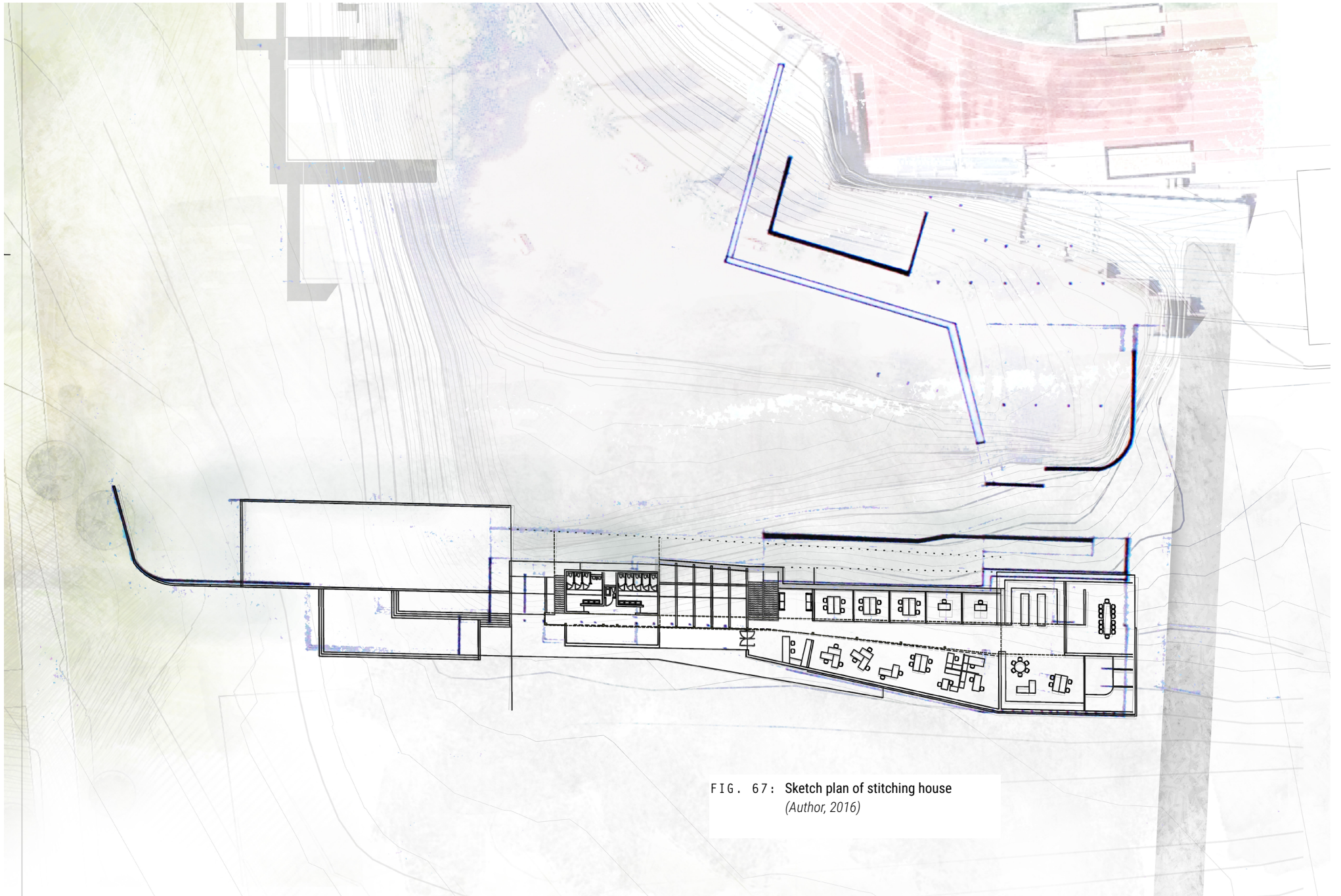
WARM UP AREA AND  
OFFICIALS MEETING  
SPACE



J

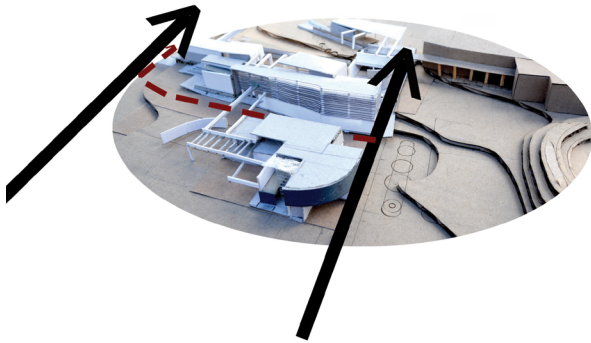
PROCESS

91



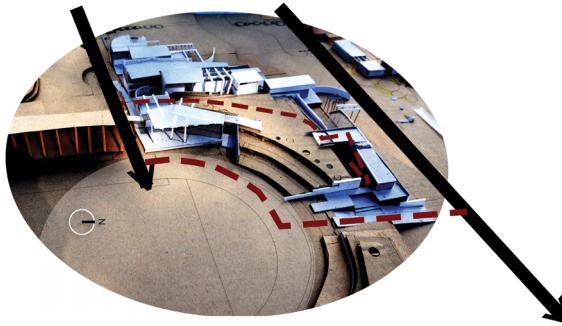
With the first few iterations it was clear that although the routes connected at various stages, the resultant spaces actually ran parallel to one another and never created a shared space, simply adding more incoherent buildings in open space and contributing to the current issue. Therefore the routes were iterated to combine various routes in one shared space at the entrance of the event with the intent that the three components of the design (production, event and community) should have equal right to this space. The second design iteration was also questioned in terms of the orientation and the scale of the buildings. The programs for the production spaces, restaurant and call room were reconfigured in the third iteration. The call room and restaurant was combined at the edge of the berm with a warm up area and additional sport fields. The delivery, production and design spaces were relocated to one building facing North East.

DESIGN ITERATION 02



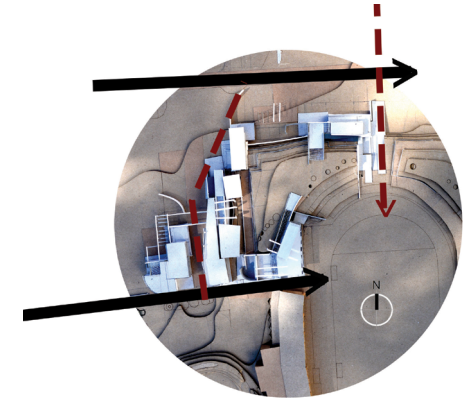
SITE EDGE

FIG. 68 A



SITE EDGE

FIG. 68 B



SITE EDGE

FIG. 68 C

FIG. 68 (A-C): June model (Author, 2016)

FIG. 69: Diagram (Author, 2016)

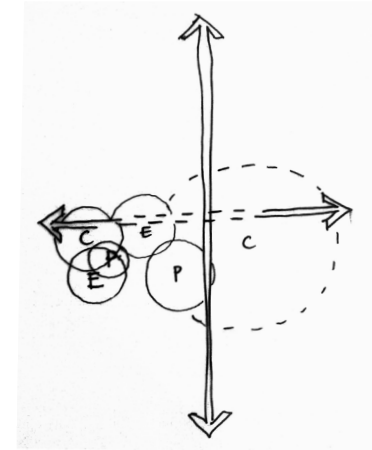


FIG. 69  
RECONFIGURED ROUTES

To maintain an integrity between connected and separate space, the Velodrome by Kengo Kuma and Dalseong Citizen's Gymnasium by Nomad Offices was studied as precedents. In both these precedents the sport facility is not seen as a closed system, but as an open system with the capacity to revitalise the area in which it stands. Both the precedents create an intermediate space before the entrance of the arena.

This intermediate space allows for many shared activities and serves as a public gathering place. Functions that support both the sporting events, such as changing rooms, ablutions and rehabilitation areas, and the general public, such as retail and exhibition space, was placed along this new arena, which also serves as a smaller event space itself when the athletes arrive. The public functions diffuse the wall borders, creating an open and inviting entrance.

FIG. 70 (A, B): Design development Precedent: Dalseong Citizen's Gymnasium (Nomad Office Architects, 2014)

FIG. 71: Design development Precedent: Velodrom Vigorelli (Kengo Kuma and associates, 2013)



DESIGN DEVELOPMENT

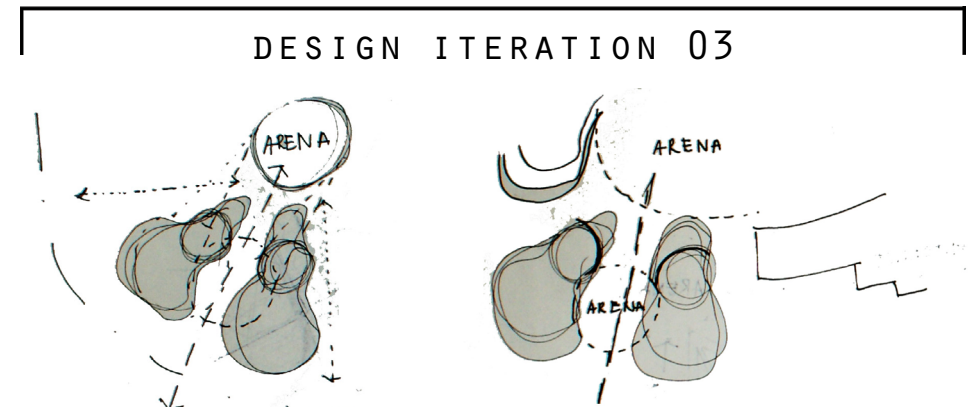


FIG. 72 (A, B): Visual diary route development (Author, 2016)

MAKETTES; LARGE PUBLIC ENTRANCE DEVELOPMENT

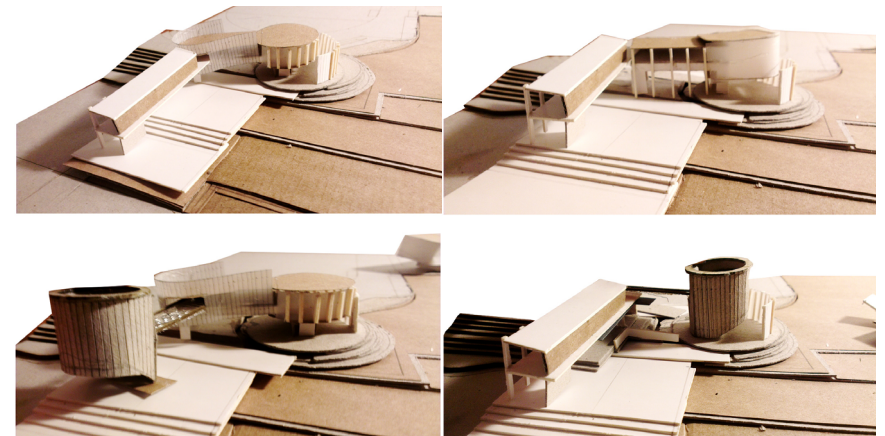
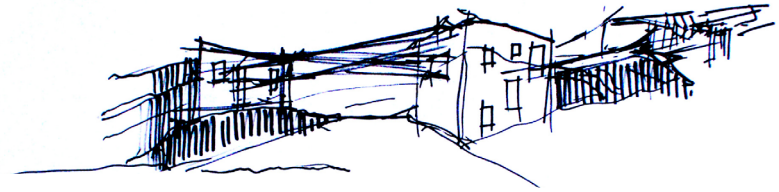


FIG. 73 (A-D): Makette development, June Submission Reworked (Author, 2016)



LARGE PUBLIC ENTRANCE FLANKED BY TWO ANCHOR BUILDINGS

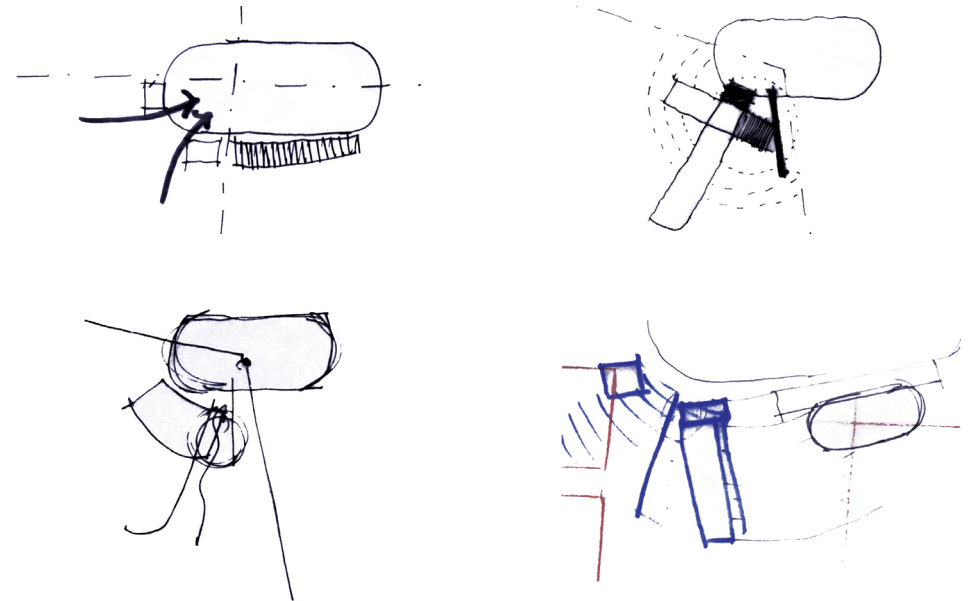
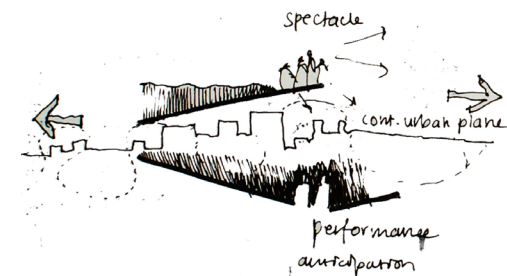


FIG. 74: Sketch, two anchor buildings with connecting bridge (Author, 2016)

FIG. 75 (A-D): Visual diary: building placement (Author, 2016)

FIG. 76: Sketch, route development through experience of users (Author, 2016)



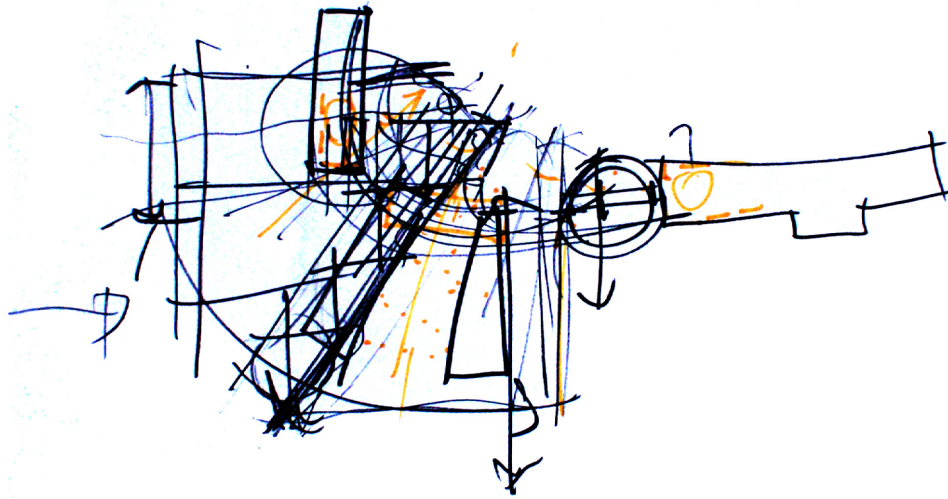
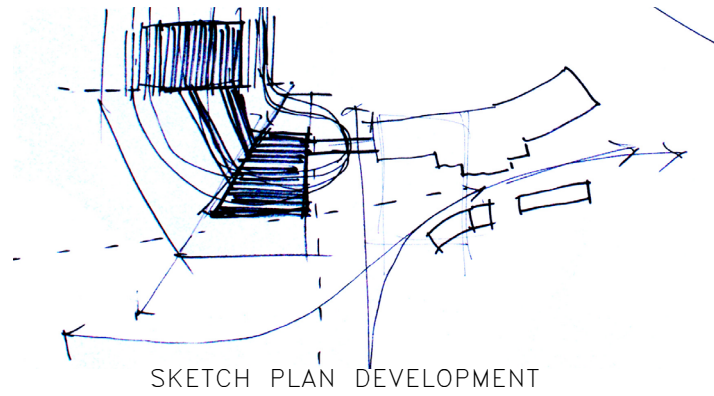


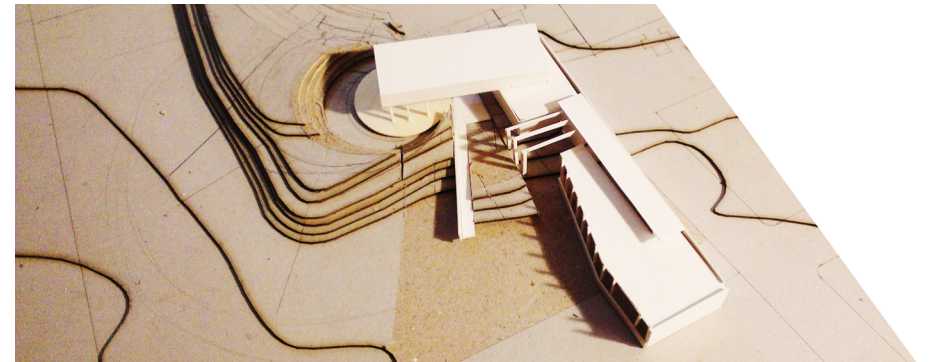
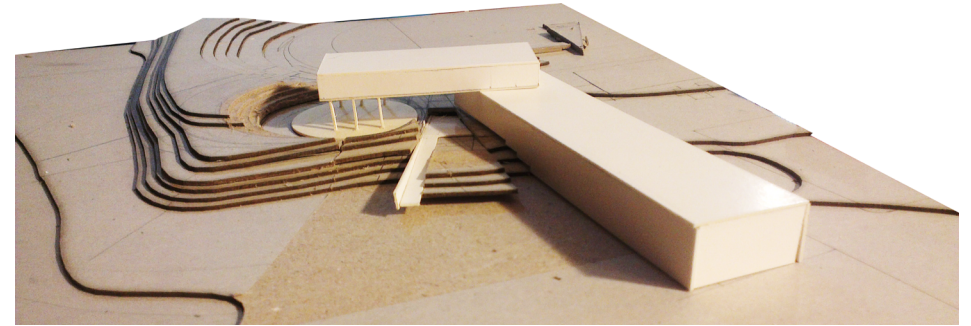
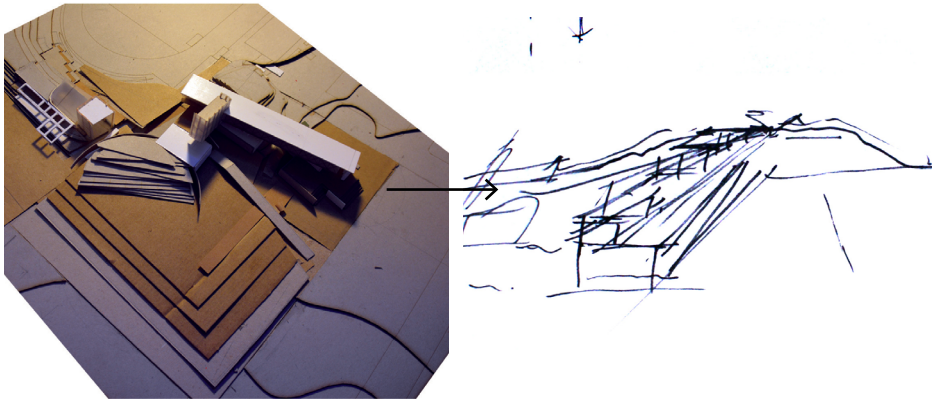
FIG. 78 : Makette, June Model Reworked (Author, 2016)

FIG. 79 : Design development, June Submission Reworked (Author, 2016)

FIG. 80 : Makettes, June Model Reworked (Author, 2016)

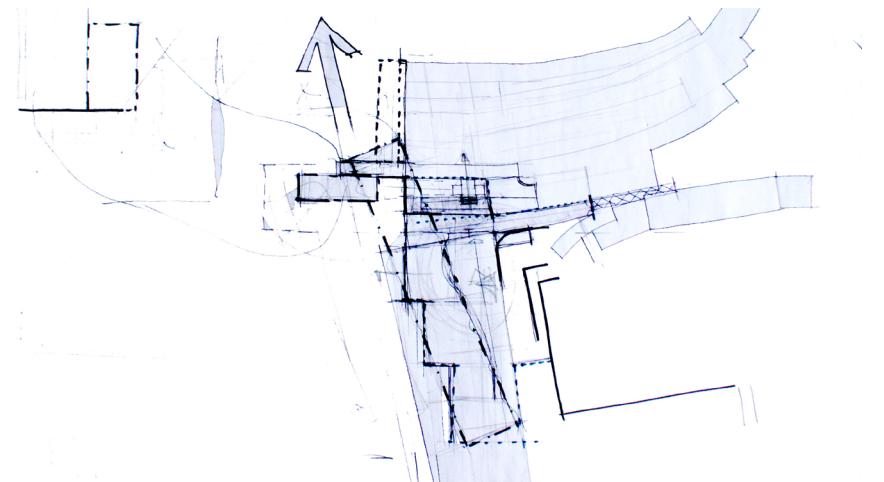
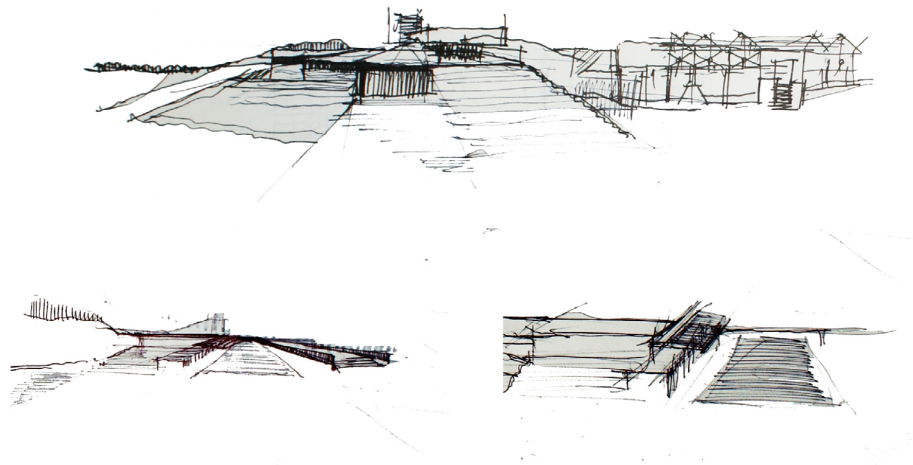
FIG. 81 : Visual diary sketches (Author, 2016)

FIG. 82 : Diagram development of plan, June Submission Reworked (Author, 2016)

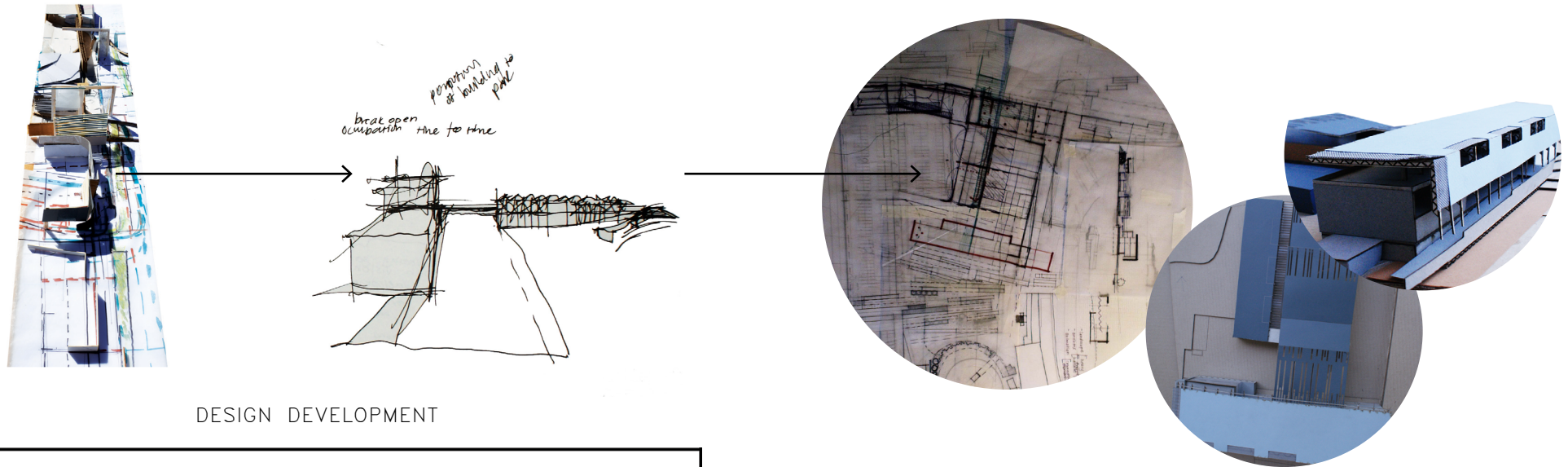


## DESIGN ITERATION 04

The development of a large public entrance led to the proposal for a public staircase that allows for public engagement with the athletics track. Spectators can view competitions from the raised staircase, but also use the public square created on the outside of the berm.





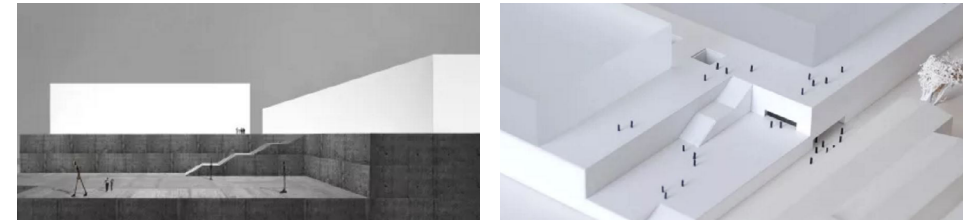


DESIGN DEVELOPMENT

DESIGN ITERATION 05



The fifth design iteration presents two distinguishable buildings: a design house and stitching house, extending from one another in a T shape. The architecture attempts to open up the experience of the site to the street and responds to the street edge. The T shape also provides large open outside rooms which responds to various connection points on precinct plan. The building is placed in relation to the stadium, as an extension of the stadium, but distinctly new. Both as a boundary to contain the space and threshold to announce the space, it is placed along the axis into the stadium. Investigating the idea of the route and ritual in various works of Alvaro Siza, the route is read as one continuous space but functions along the route create smaller parts of the journey.



In order to visibly communicate the hierarchy of space, the Zurich Stadium designed by Alberto Campo Baeza was taken into account, in which a raised urban plane creates a monolithic approach to the stadium, engaging with the street edge in an alternative way. This raised urban plane becomes an extension of both the street and the stadium and where both contexts meet. In this dissertation, the ground floor level of design house was raised to respond to the functions of athletes and spectators arriving at the stadium. The basement of the design house is used as storage for the production facility, which allows the ground floor level to create a seamless entrance on the same level as the stadium and athletics track. Retail spaces are provided on ground floor level. This creates a public space where previously it was an isolated entrance.

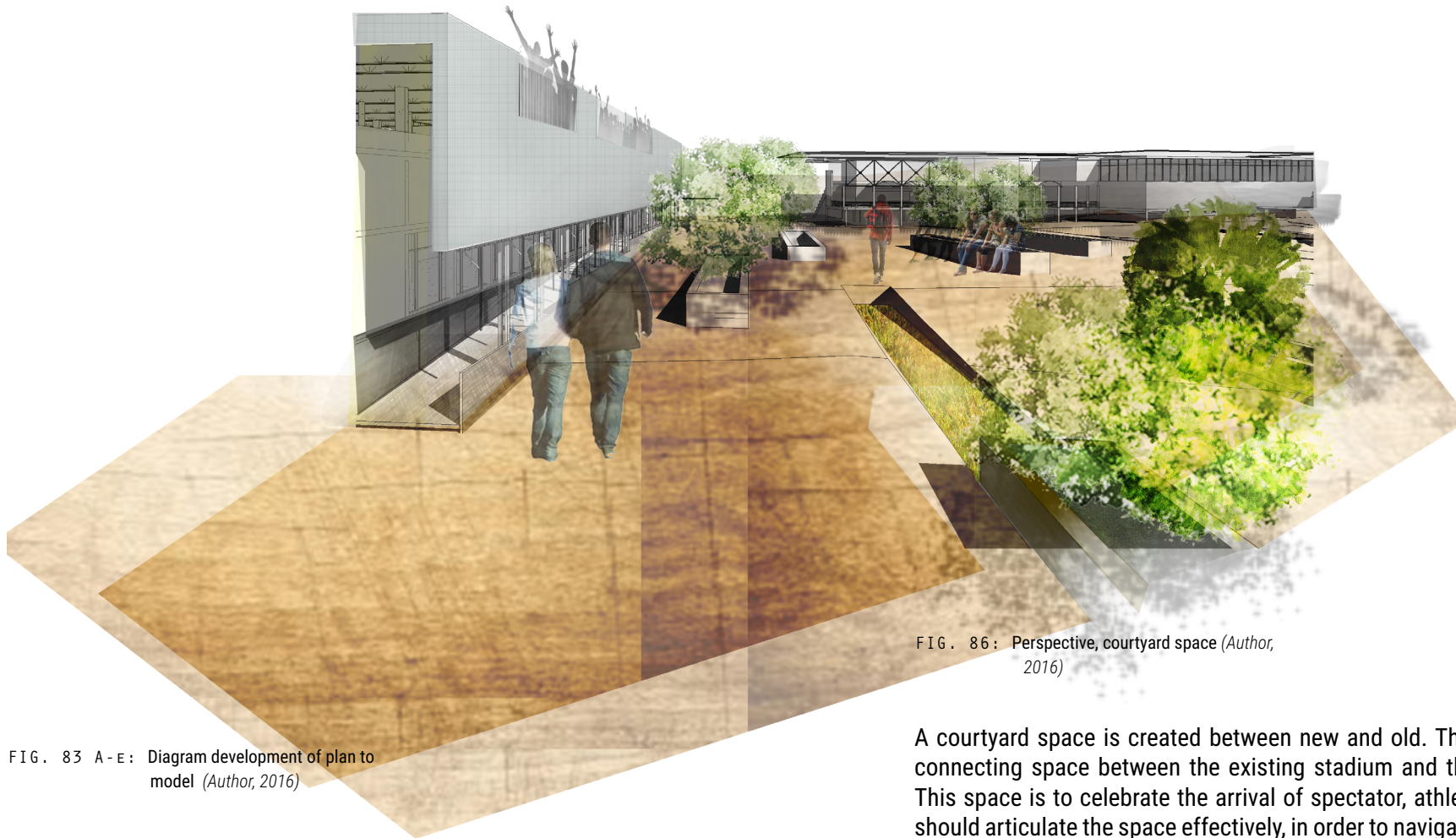


FIG. 86 : Perspective, courtyard space (Author, 2016)

FIG. 83 A - E : Diagram development of plan to model (Author, 2016)

FIG. 84 A - D : Leça Swimming Pools, Portugal, Alvaro Siza, 1966 (Sofia Balters, 2011)

FIG. 85 A , B : Zurich Stadium, Switzerland, Alberto Campo Baeza, 2012 (Baeza, 2012)

A courtyard space is created between new and old. The courtyard serves as the connecting space between the existing stadium and the new production house. This space is to celebrate the arrival of spectator, athlete and general public and should articulate the space effectively, in order to navigate the site easily. The inner courtyard is a paved hard surface courtyard, with planters of trees for seating and shade. The courtyard is designed to emanate an overspill of the event of the stadium. This also serves as a resting place or place of delight. Cyclists and pedestrian can easily weave through the open courtyard and a direct link into the stadium is created by breaking into, and retaining the berm.

DESIGN DEVELOPMENT

DESIGN ITERATION SUMMARY

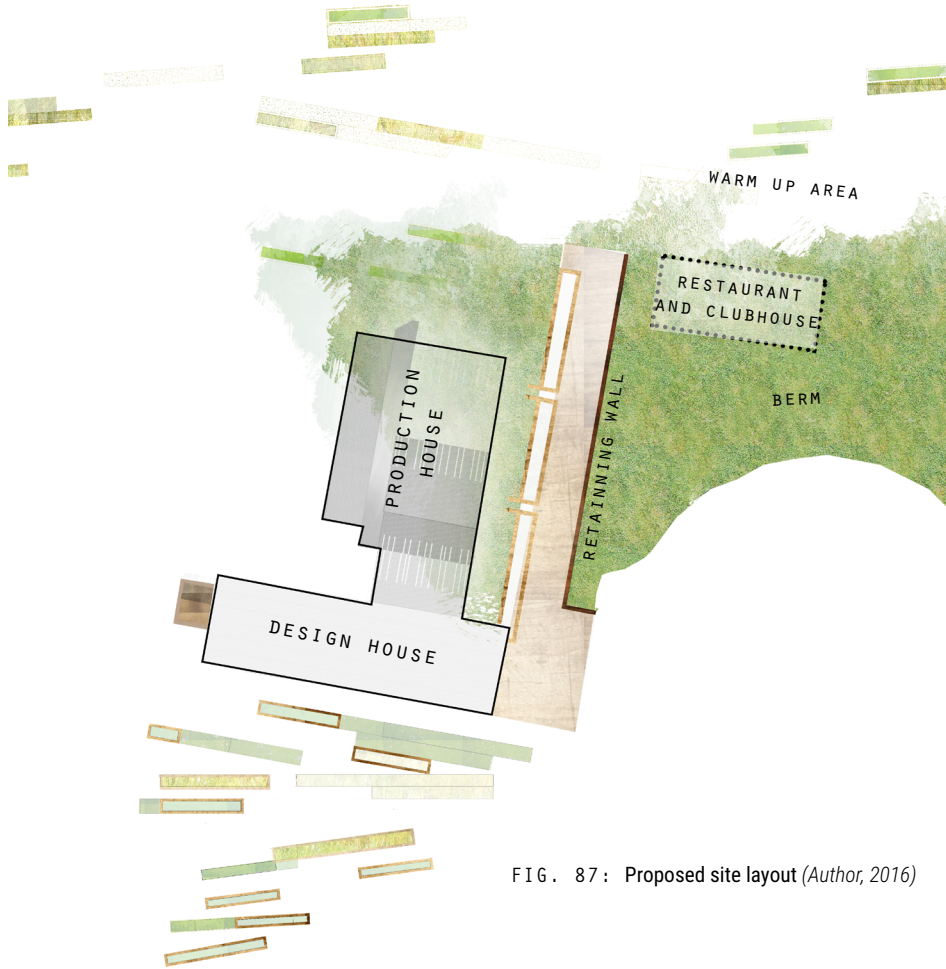


FIG. 87: Proposed site layout (Author, 2016)

FIG. 88: Connections (Author, 2016)

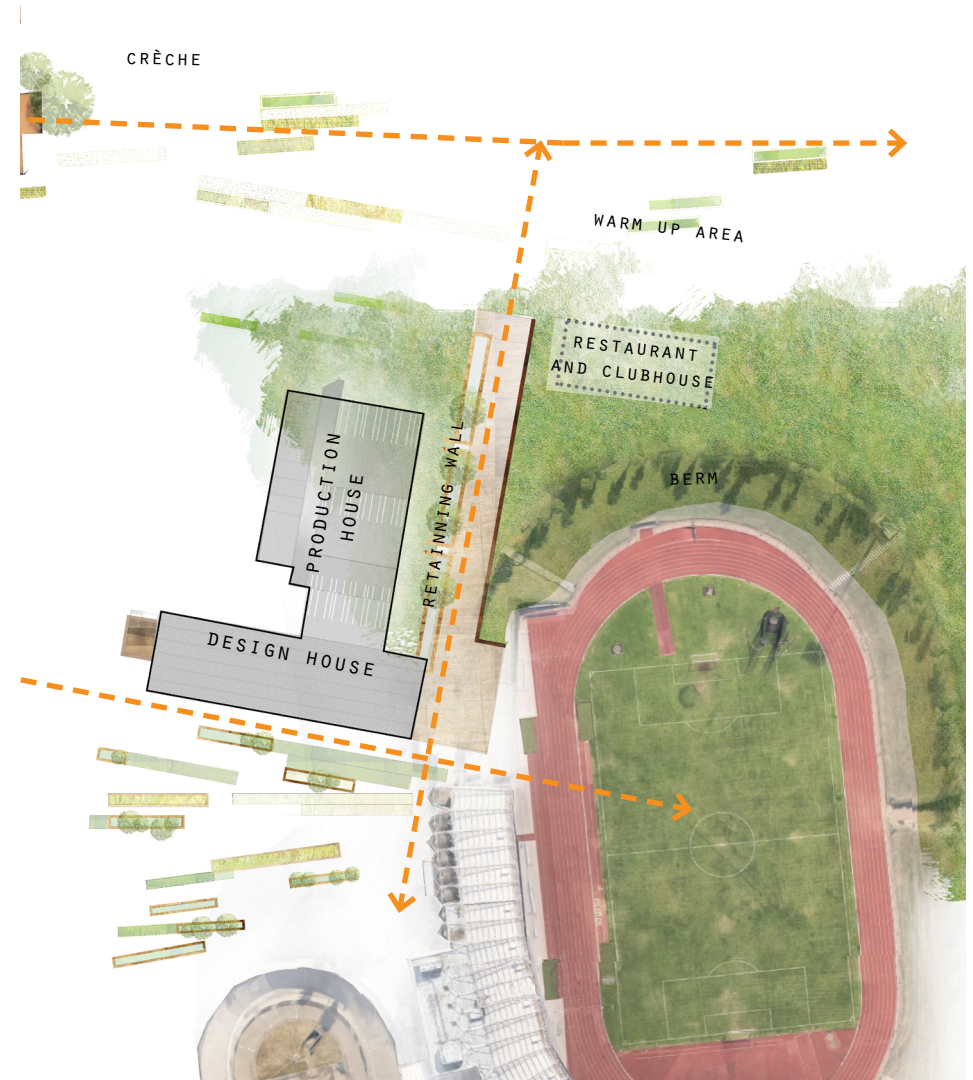


FIG. 89: Views (Author, 2016)

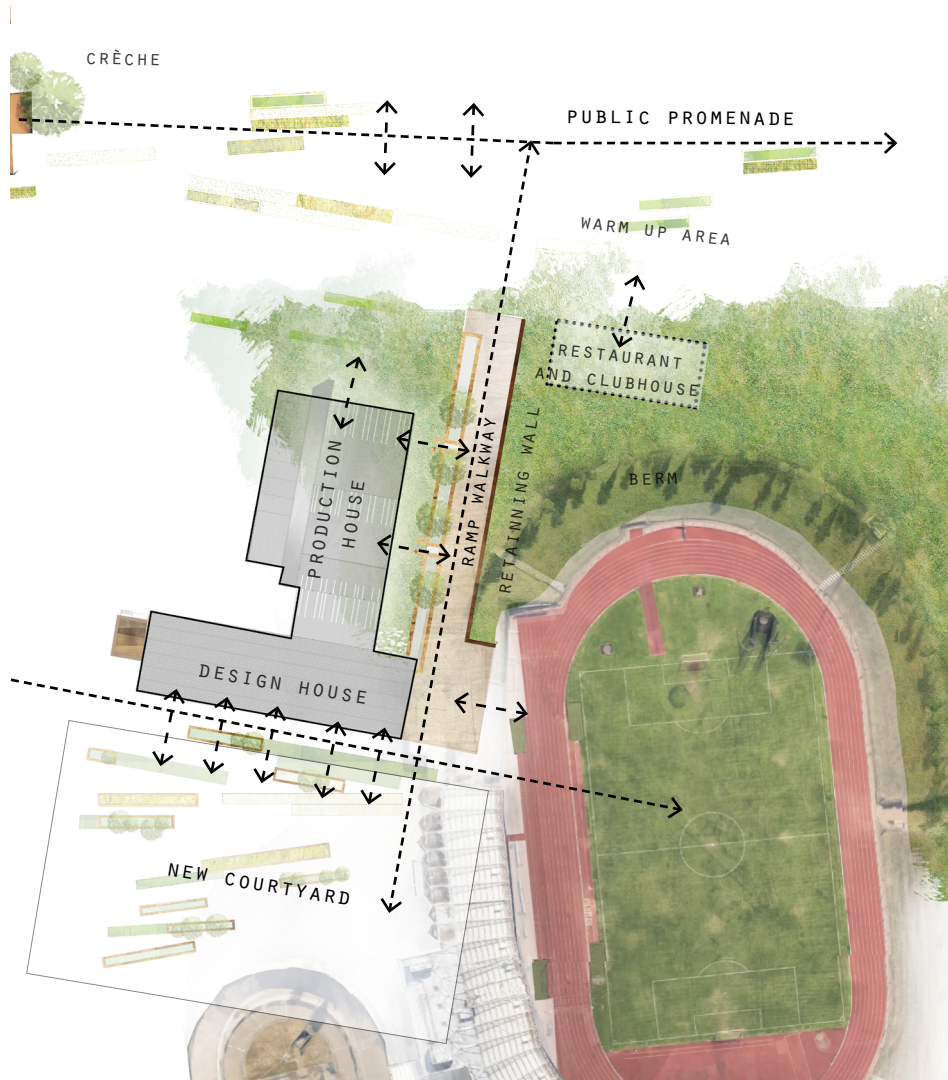
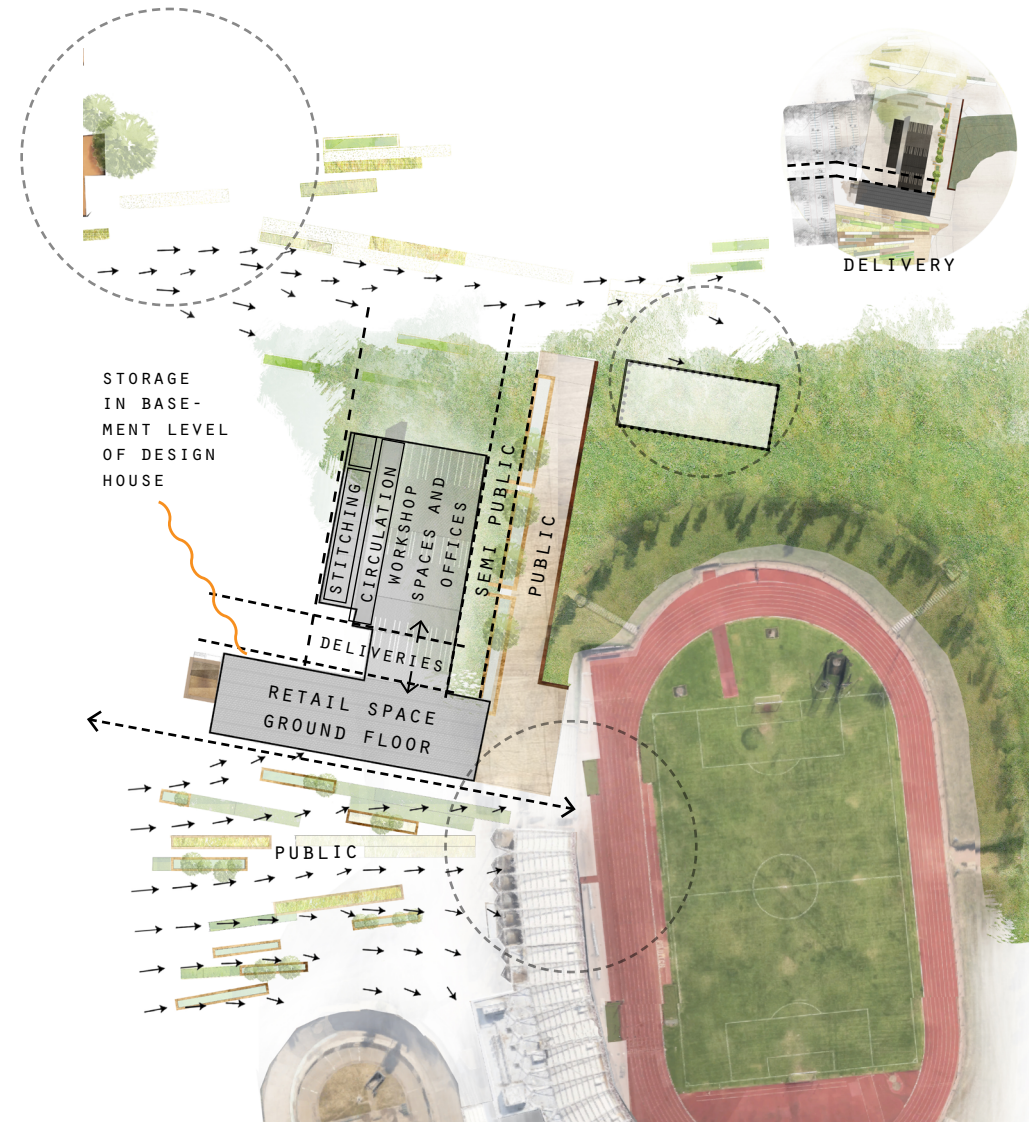


FIG. 89: Arrival spaces (Author, 2016)



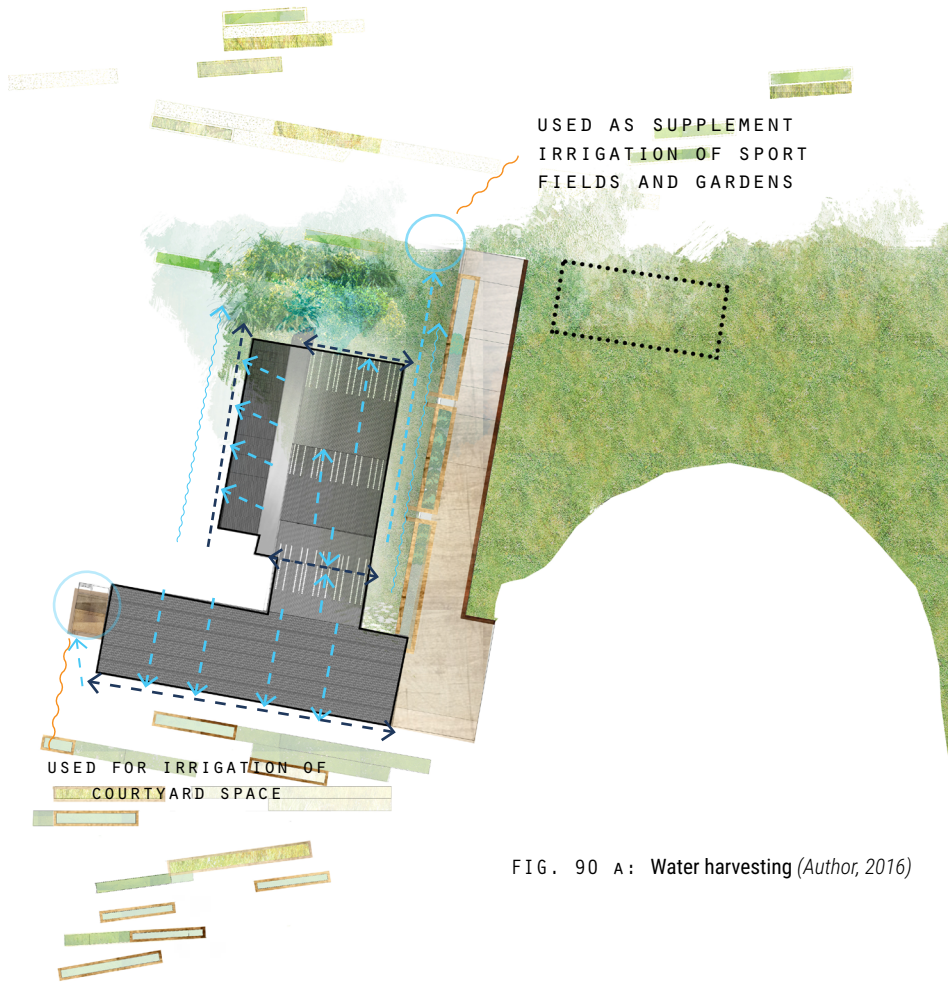


FIG. 90 A: Water harvesting (Author, 2016)

FIG. 91: Thermal mass (Author, 2016)

FIG. 92: Ventilation (Author, 2016)

