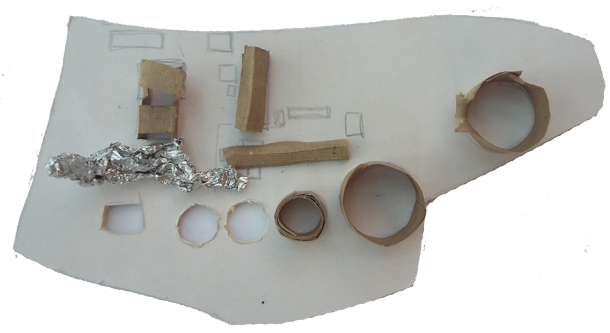
Chapter 7

Design Development



7.1 Intervention layer one - remedial action

The first layer of intervention upon the site entails the remediation of the physical terrain as a "base" layer. However, this intervention also serves as an opportunity for the next layer of intervention (formal heritage responses) to respond to and build on.

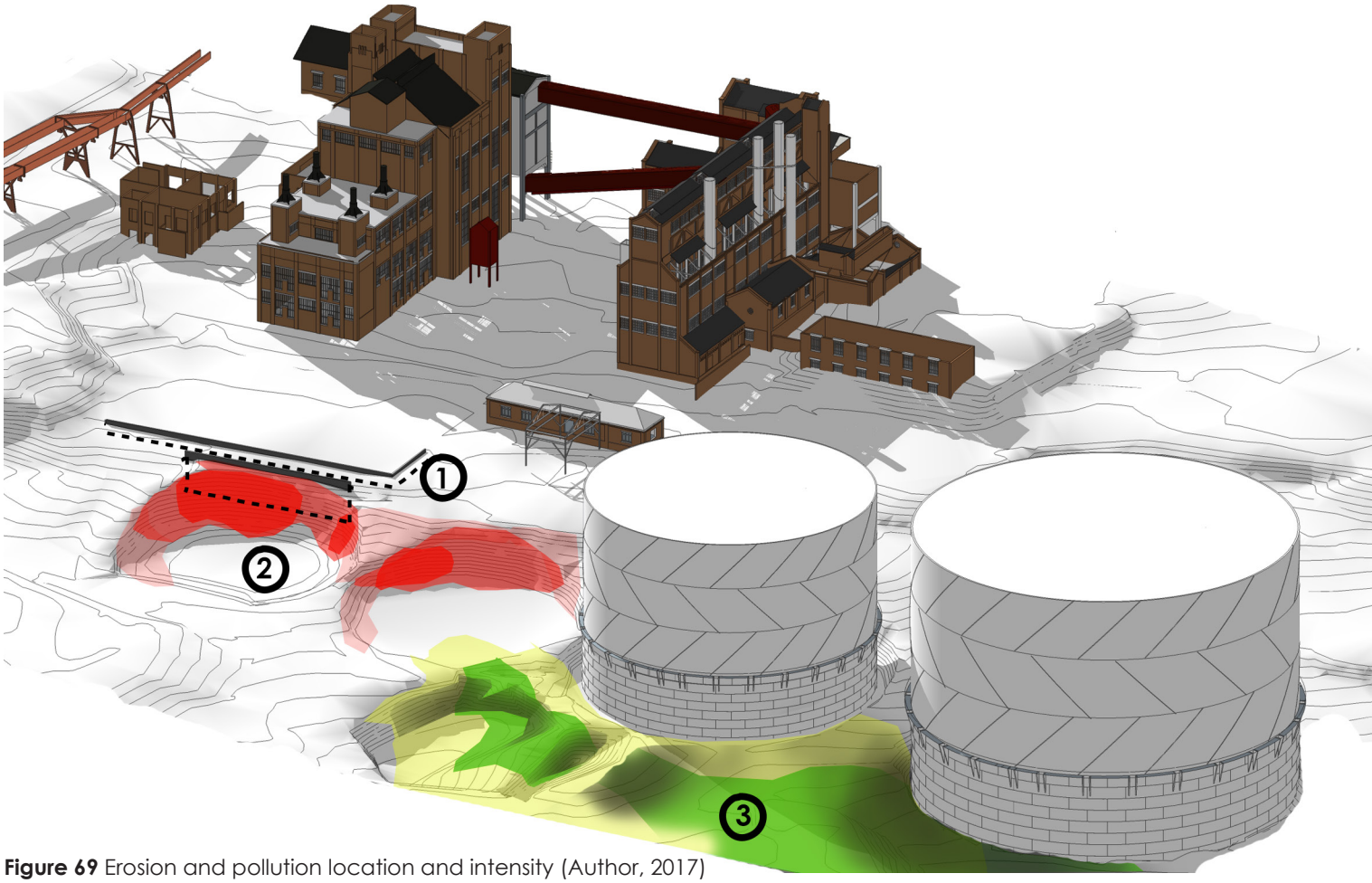


Figure 69 Erosion and pollution location and intensity (Author, 2017)

Place-based design interventions & opportunitues

1) Existing structures

The purification plant required vehicular access and thus a road was constructed between gas tank No 1 and the purification plant. After demolitions in the 1990s, there are currently two walls remaining in this area - the foundation walls of the plant itself as well as the retaining wall used for supporting the road. As mentioned in the conceptual development chapter this wall is deep enough to be used to support newly built interventions, especially interventions that require excavation

Figure 70 Hole 1 edge condition. Photograph by Author (2017)

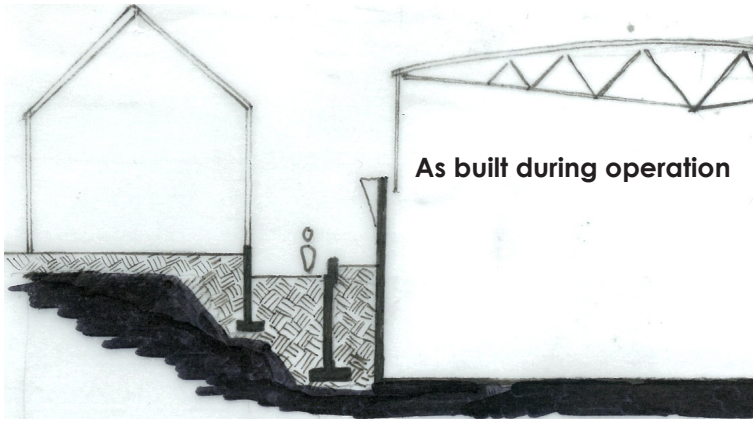
2) Erosion - appropriate remedial intervention

The diagram on the left illustrates the degree of instability of the hole's edges. Since the heritage value of these holes lie in their formal recognition of the gas tanks and not the soil itself (since the soil is backfilled soil and not virgin soil) it was decided to stabilize the edges with semi-circular retaining walls that support ramps that connect the park landscape to the heritage square.

3) Pollution

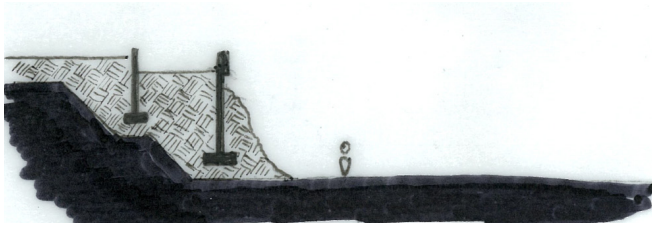
The yellow and green areas shown in Figure 69 highlight the location and intensity of tar pollution in the soil. It was decided to excavate to a depth of 1 meter below the pollution layer within the envelope of hole no 2 and to cap the polluted soil outside the envelope of hole no 2 with topsoil. By doing this, not only is the threat of contamination removed but the envelope of the demolished tank is more clearly celebrated.

Figure 71 Tar pollution within soil. (Tsica archive, 2017)



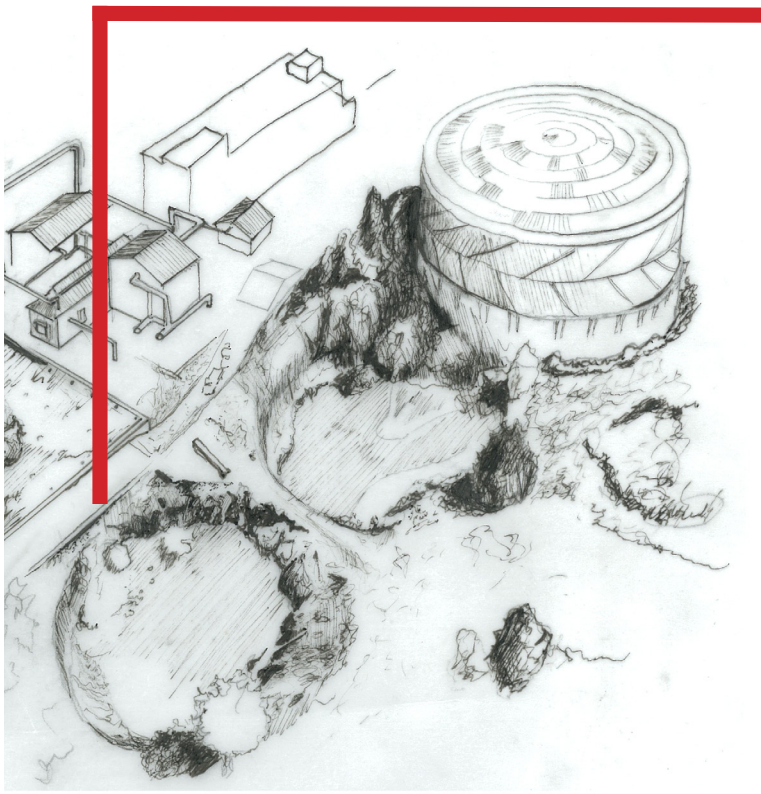
As built during operation

post industry



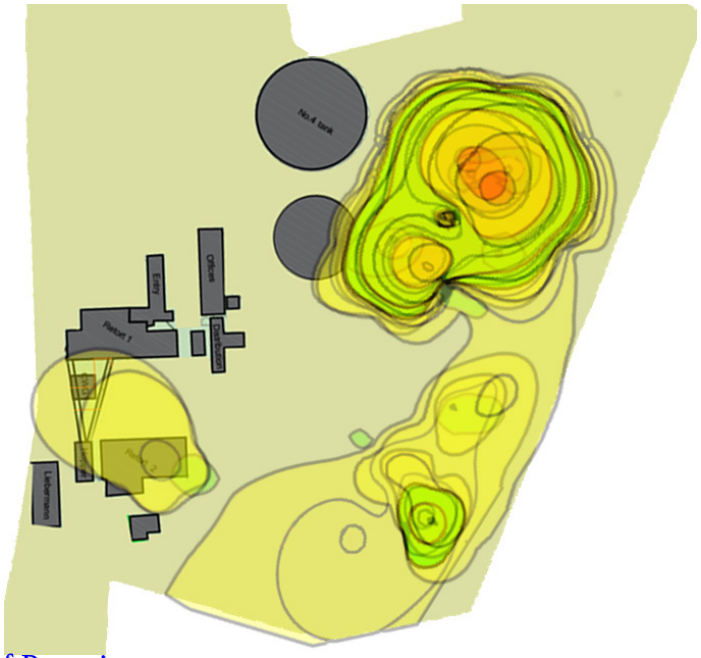
The No 1 & 2 gas tank holes

Before conceptual design drawings can be made of possible interventions within the two holes, the condition of these two holes has to be understood. As can be seen in Figure 75, soil pollution affects hole No. 2 and therefore the remedial measures illustrated in Figure 76 are deemed adequate. Areas affected by pollution should either by covered by topsoil or excavated to a depth below the polluted soil layers. Although hole 1 is not polluted, its edge condition and rubble mounds from dumping have also made stabilization of the soil and earth-moving necessary.



It is assumed that the wall seen in Figure 74 would have been built to a depth that would ensure its stability. Therefore, the soil seen in Figure 74 could not be virgin soil but rather infill dumped in between tank No 1 and the retaining wall. Although this face, left undisturbed, would have satisfied the theory behind the austerity aesthetic, it is inevitable that the soil would continue to erode away from the wall. In order to stabilize it, a new retaining wall is required that could also serve the purpose of commemorating the presence of the tank.

This exercise would be similar in approach to the Crissy Field example where commemoration and environmental remediation of the marsh were seen as one design exercise.



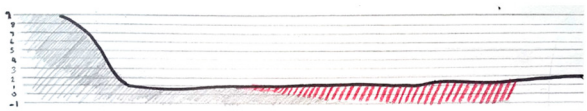
Top: **Figure 72** Sketch illustrating soil displacement as tank 1's construction, the present condition of hole 1 and the future conditions. (Author, 2017)

Above left **Figure 73** Hole 1 and 2 sketch (Author, 2017)

Above right: **Figure 74** Photograph of hole 1 edge (Author, 2017)

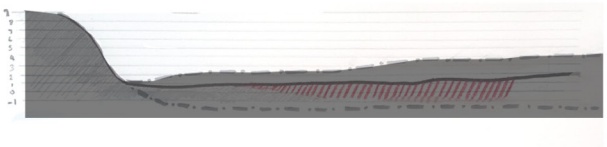
Bottom left: **Figure 75** Diagram of pollution on site (Author, 2017)

Bottom right: **Figure 76** Section through hole 2 indicating pollution and remedial actions (Author, 2017)



Hole 2 longitunial section indicating pollution depth and position

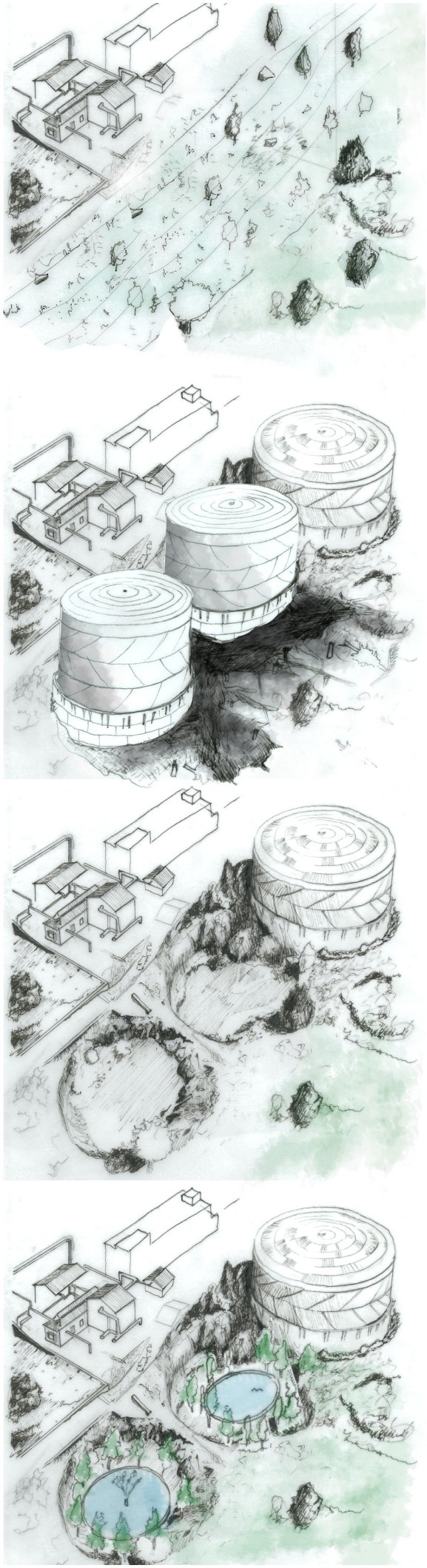
Remedial action 1:
Excavation to 1meter depth



Remedial action 2:
Addition of clean topsoil.

Right: **Figure 77** Pre-industrial, mid-industrial and proposes post industrial conditions. (Author, 2017)

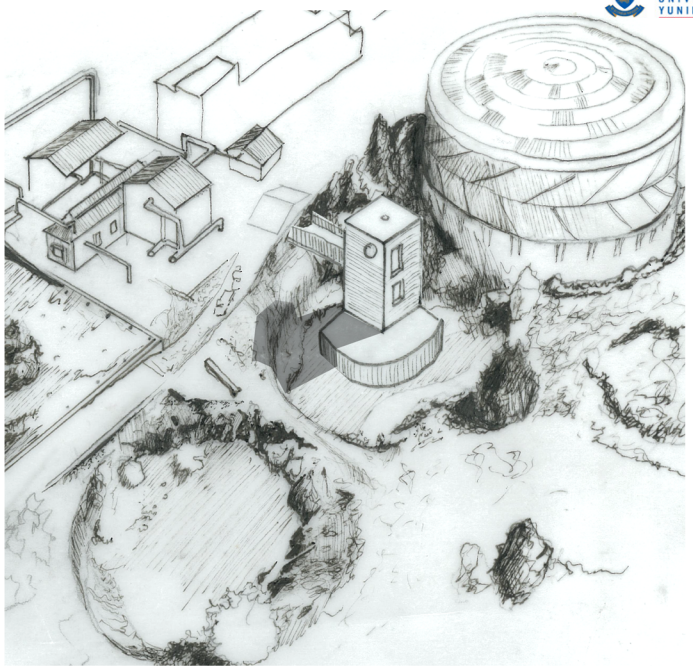
Opposite: **Figure 78** Possible interventions within gas tank holes (Author, 2017)



The No 1 & 2 gas tank holes : Understanding place specific meaning

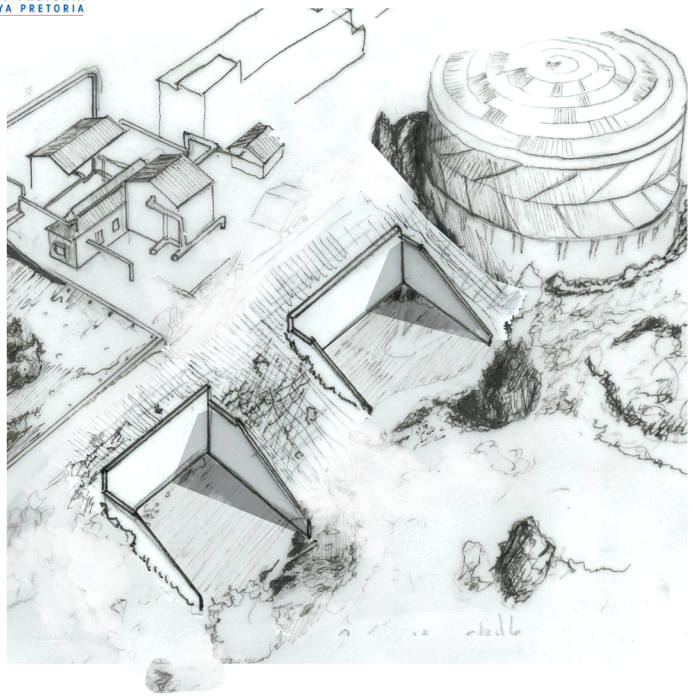
When using the relationship between the legacy of industry and ecology as a lens, it is quite clear why the location on which the gas tanks stood has so much meaning. As a legacy, industry has left soil pollution in certain areas, topographic disturbance and erosion. Even today, the holes have collected huge mounds of trash and rubble, probably too large or inconvenient to remove. This particular site has thus become the embodiment of the indifferent and destructive attitude that humans and, more particularly, industries have towards the natural environment.

In this dissertation that aims to communicate the restitution between ecology and industrial heritage, it was decided to reverse many of the associations made with this particular site. These holes, associated with ecological death, dirt and destruction, should epitomize healing in a way that reflects back on history. This contrast, reflecting on the old industry through spatial considerations whilst housing a new industry that heals the "wounds" caused by the old industry, could be a powerful device in communicating restitution. Large circular structures usually impart a sense of impenetrability, autonomy and indifference within their surroundings. This indifference needs to be reversed by forming new associations with these holes. Associations that speak of purification- the purification of water and soil as well the welcoming gesture of accessibility instead of impenetrability.



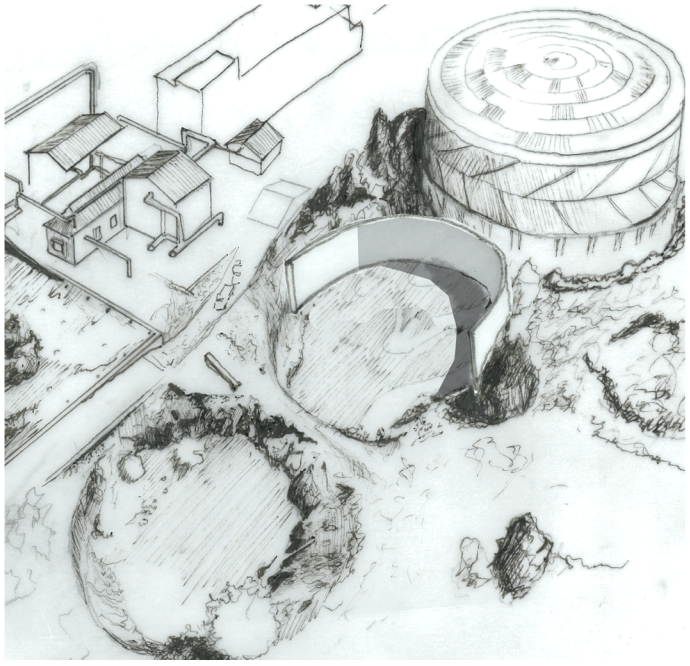
Building wthin the holes

As a starting point, it was considered what the consequences would be of building in the holes. It was found that the scheme would not contribute to the plaza to the south-west and that the intrusive nature of the gas tanks should rather be negated by maintaining the holes as open spaces that contribute to the park's landscape.



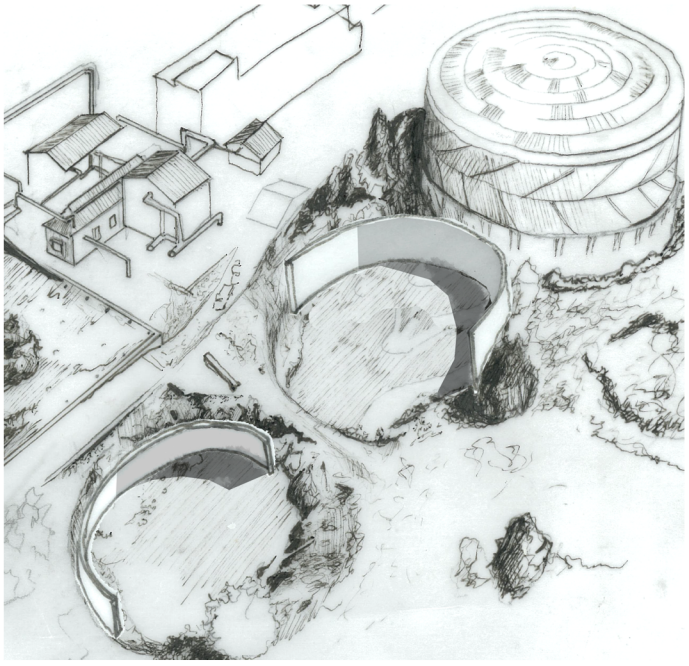
Pragmatic stabilization

If there were no regard for the structures that existed on the site beforehand, soil stabilization could easily be accomplished by providing the necessary retaining walls. This, however, goes strongly against the theory and priority of maintaing the site's history as a palimpsest that should be read in any new intervention.



Building on tank Nr.2's foundations

Utilizing the foundations of gas tank Nr 2 to facilitate the necessary remedial actions in a way that responds to the Nr 3 gas tank next to it was found to be an appropriate way to respond. Here, hole 1 is left untouched to create a progression from an undisturbed hole to a hole stabilized by intervention to the large existing structure. As explained in the previous page however, hole Nr.1 also required extensive soil stabilization and earth-moving.



Building on both tank's foundations.

This iteration aims to maintain the progression from hole 1 towards hole 3 whilst building upon the foundations in hole 1 as well by altering the scale of the retaining walls as well as the orientation of the walls. In doing so, memory of each tank is retained and water ponds can be intriduced that will remain unpolluted and serve both the functions of the scheme but also serve the park landscape.

7.2 Intervention layer two- commemorate demolished structures

The second layer entails appropriate built interventions that commemorate the purification plants. The strategies regarding the No 1 & 2 gas tanks are primarily seen as remedial interventions on the topography and has therefore been addressed in Chapter 7.1

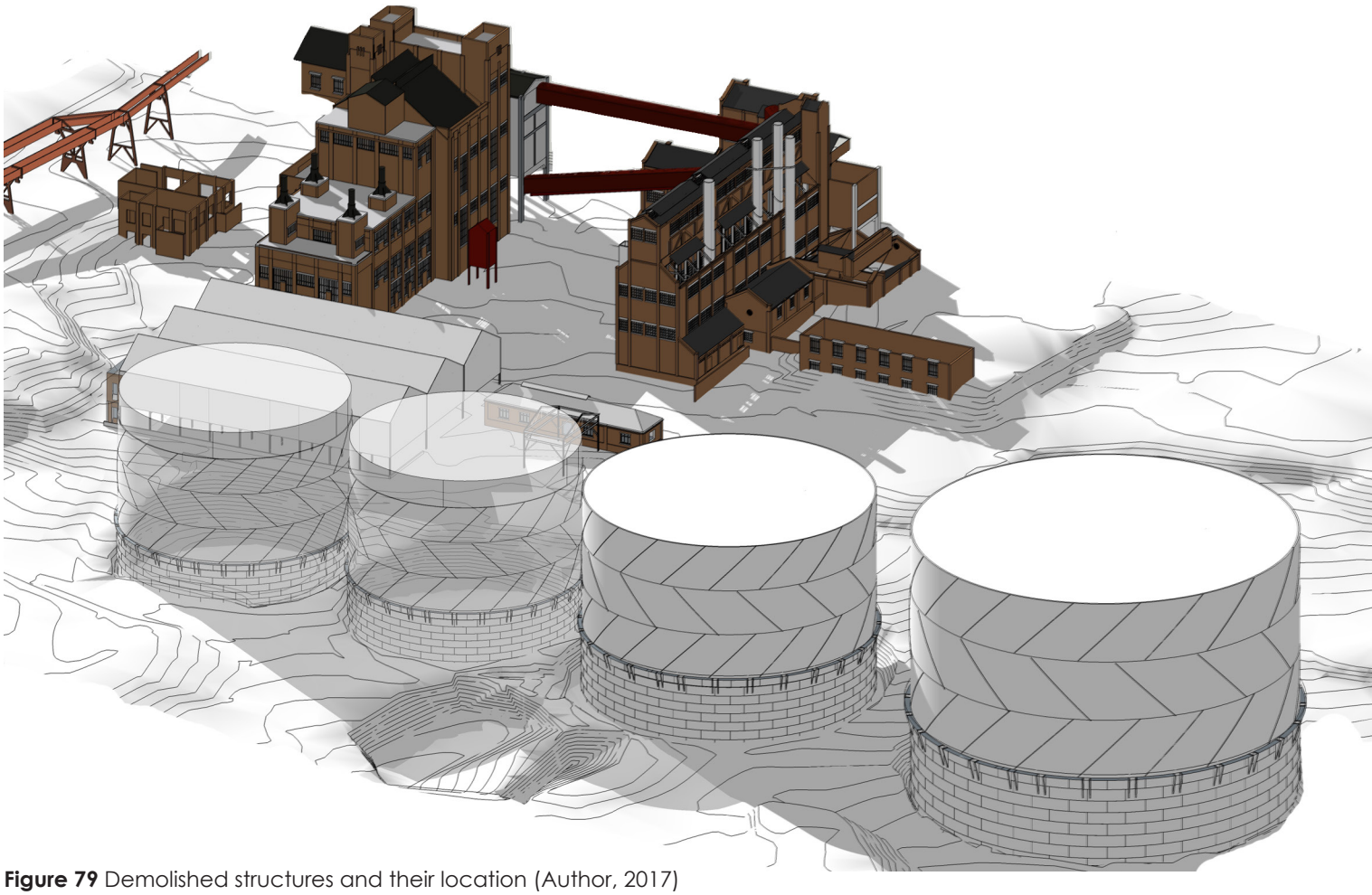


Figure 79 Demolished structures and their location (Author, 2017)

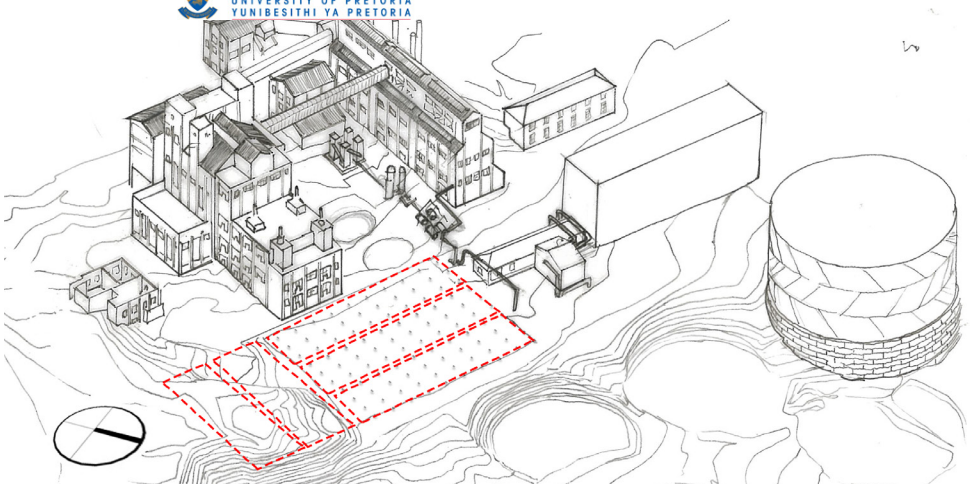


Figure 80 Sketch indicating position of five purification plants (Author, 2017)

7.2.1) The Purification Plants

Function - As mentioned before on page 19, the function of the 5 purification plants was to remove the last remaining impurity in the gas, hydrogen sulphide. This was removed in the form of solid Sulphur by mixing the gas with a small amount of air and passing it over an iron oxide catalyst supported on a suitable porous medium, such as wood shavings. This was achieved by suspending four purification boxes (one of which can be seen in Figure 84) and passing the gas through the catalyst. After an extended period of time and repeated use, the catalyst would become so hard that it would have to be removed from the boxes with a pick-Axe

Construction - The design and construction of the plant is a result of the requirements of the process of purifying gas. Since the gas would be passed over the catalyst from above before being distributed towards the distribution plant, the boxes were constructed to be suspended above the ground surface, leaving a 3,5 meter clearing below it. The floor surface was 5,7 meters off the ground, allowing shavings and catalyst to be introduced from above into the boxes (see typical cross section in Figure 82). The gas outlet would have to remain level on its way to the distribution plant and to achieve this required height, the entire structure rose 13,8 meters above the ground, supported by 304x150mm steel I sections spaced at 5,3 meters apart through the length of the structure. To achieve a width of 13 meters, the shed was conceived as a series of portal frames and the entire structure was clad in corrugated iron sheeting. For lateral stability, cross-bracing was used at every second column bay as can be seen in Figure 81.

Notable features - The portal frame profile of the shed-like structure and the structural system with its large iconic cross bracing expressed on the facade

Present day condition - After demolitions in the 1990s the only remains are seen in Figure 83 where corrosion of the steel I sections of the northern-most plant have caused the concrete footings cast around the sections to spall. The foundations of the two plants in front of Retort No 2 have been covered in rubble that can be removed whilst the easternmost two plants have been completely covered in meters of soil for reasons unknown.

Statement of historic significance - The purification plants were not only uniquely suited to their individual function within the gas production process, but were also shaped by their position within the entire ensemble of gas production. The site's topography and the surrounding buildings dictated the levels of the gas inputs and outputs that had to be accommodated by this structure, leading to its unique suspended design and significant height. It served as the last stage before gas could be used and therefore within the entire industrial sequence, the plants have to remain legible in order to the Gasworks narrative of gas production to remain legible.

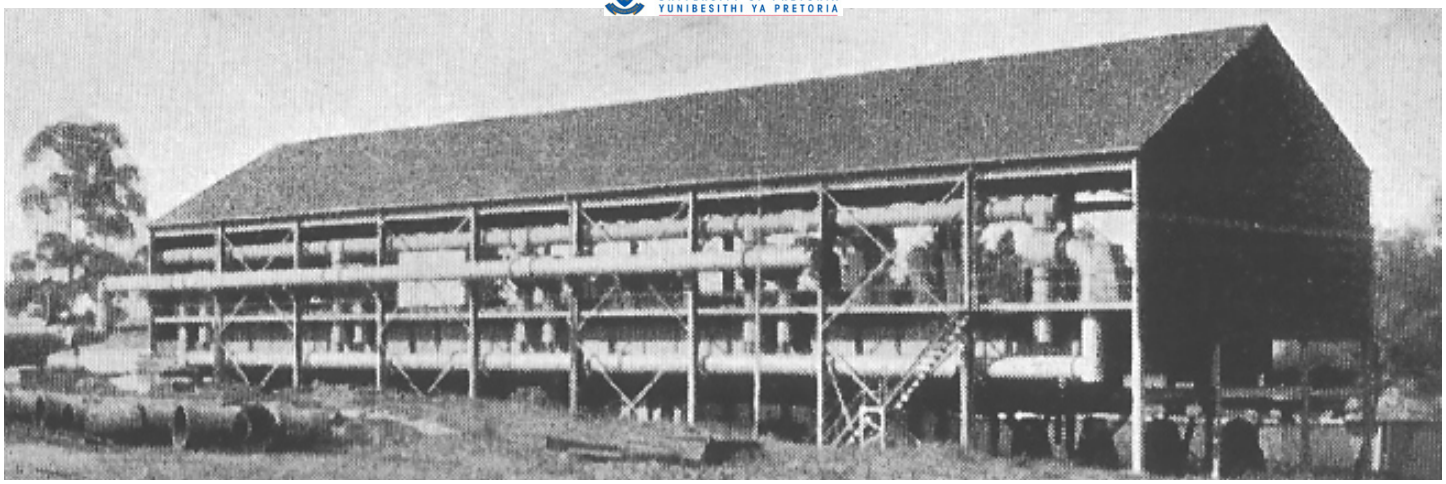


Figure 81 Dry purification plant_1929 (Tsica archives, 2017)

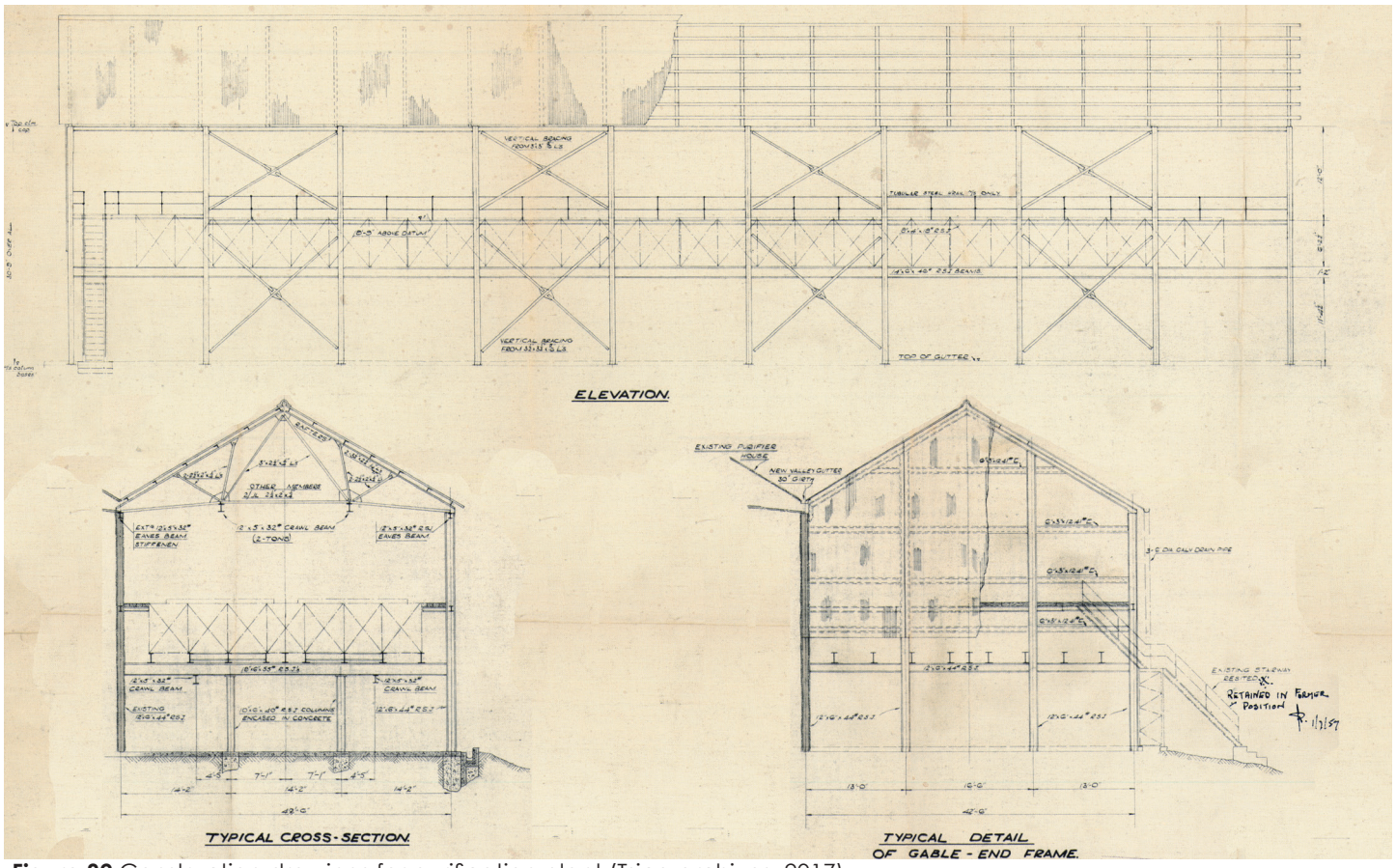


Figure 82 Construction drawings for purification plant (Tsica archives, 2017)

Figure 83 Column stubs (Photograph by Author, 2017)

Figure 84 Purification box inside plant (Tsica archives,2017)

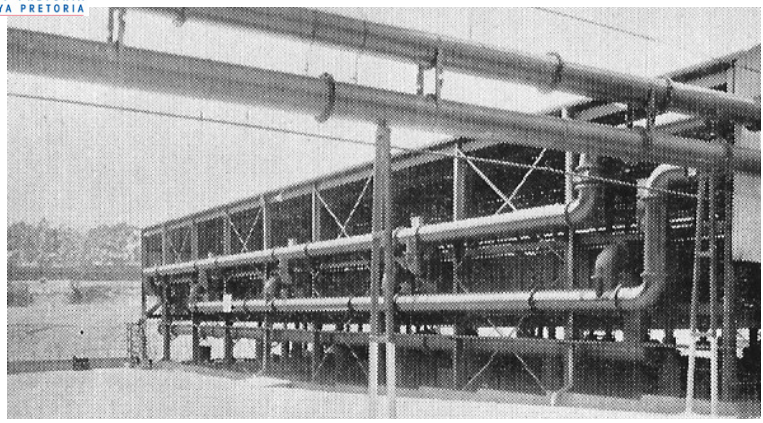
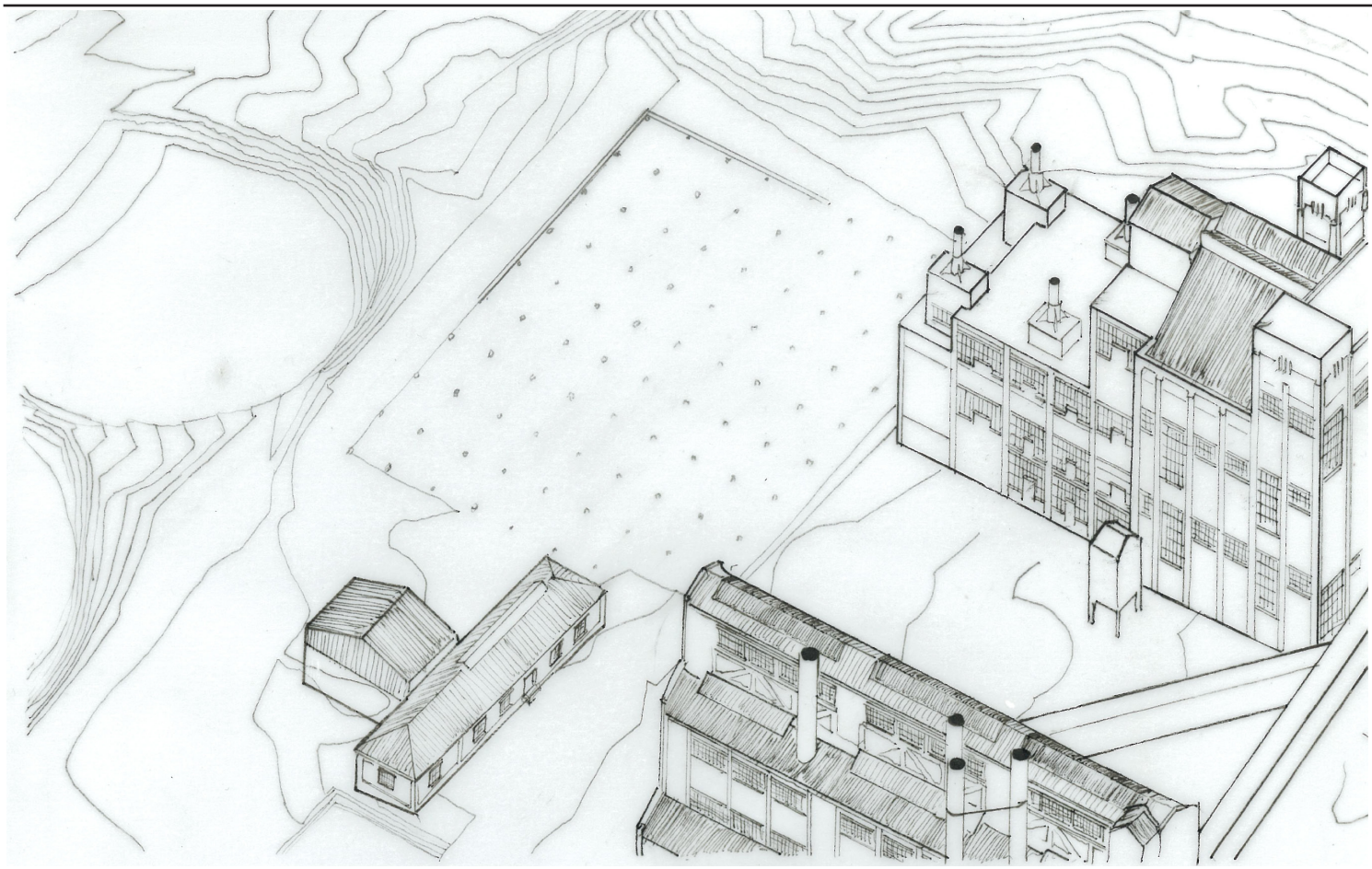
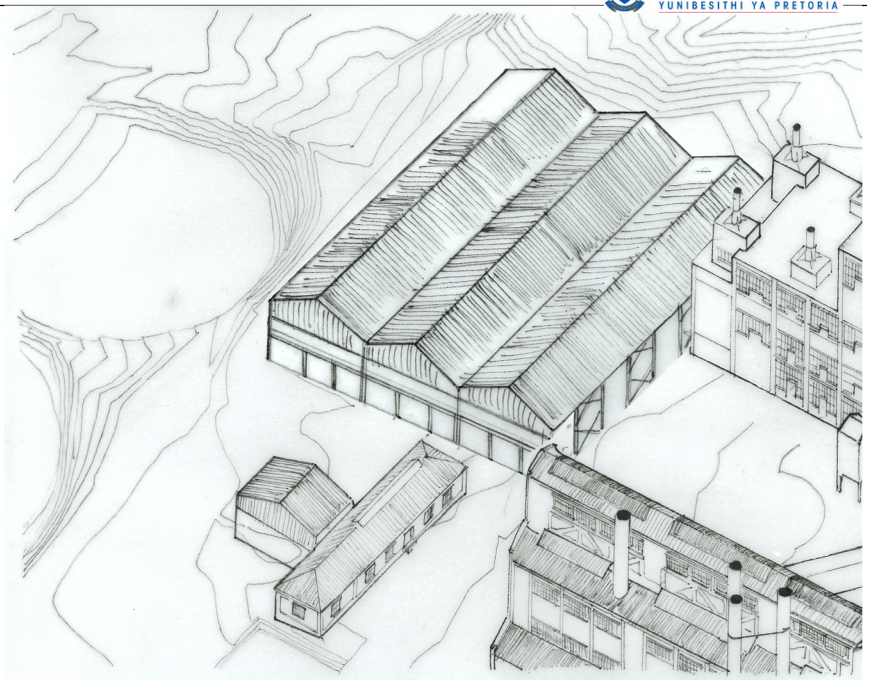


Figure 85 Gas plant_Cottesloe_ 1950_dry purification plant (Tsica archives, 2017)

7.2.2) Appropriate Commemoration



As mentioned in the chapter on theoretical approaches, total reconstruction is not considered an adequate way of commemorating a demolished structure, but rather that buildings should be translated into their current contexts. An adequate way would be to identify features that should endure this translation into the present age and maintain some memory of those features as a palimpsest. These could then be read in conjunction with contemporary design interventions. However, in the pursuit of an adequate design response the idea of reconstruction served as a starting point towards more deconstructed interpretations in a process of diagrammatic sketch designs.



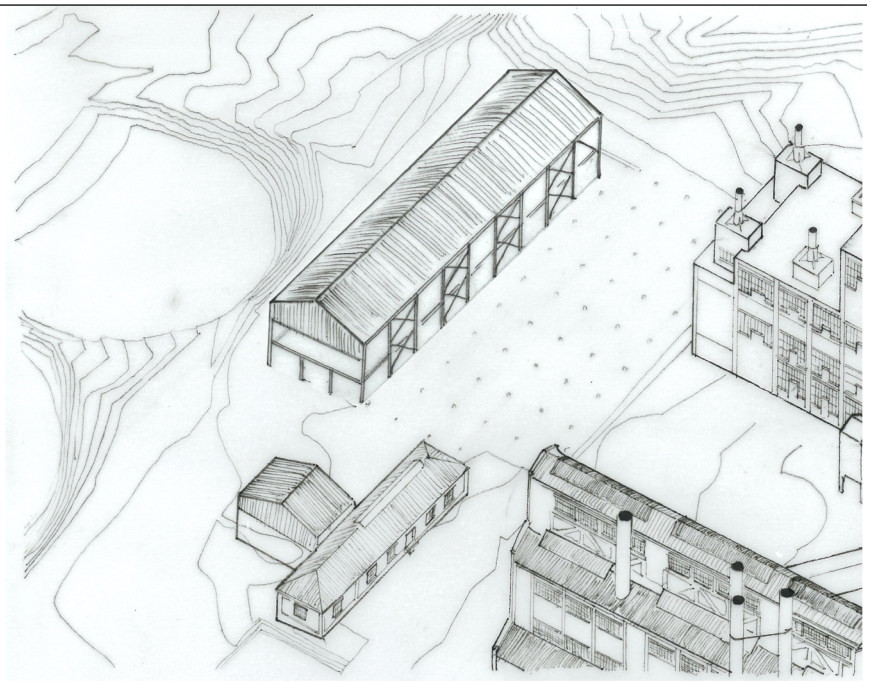
Total reconstruction

The reconstruction of all three plants were found to be an inadequate response for the following reasons:

1) Contradiction to theory and adequate "translation"

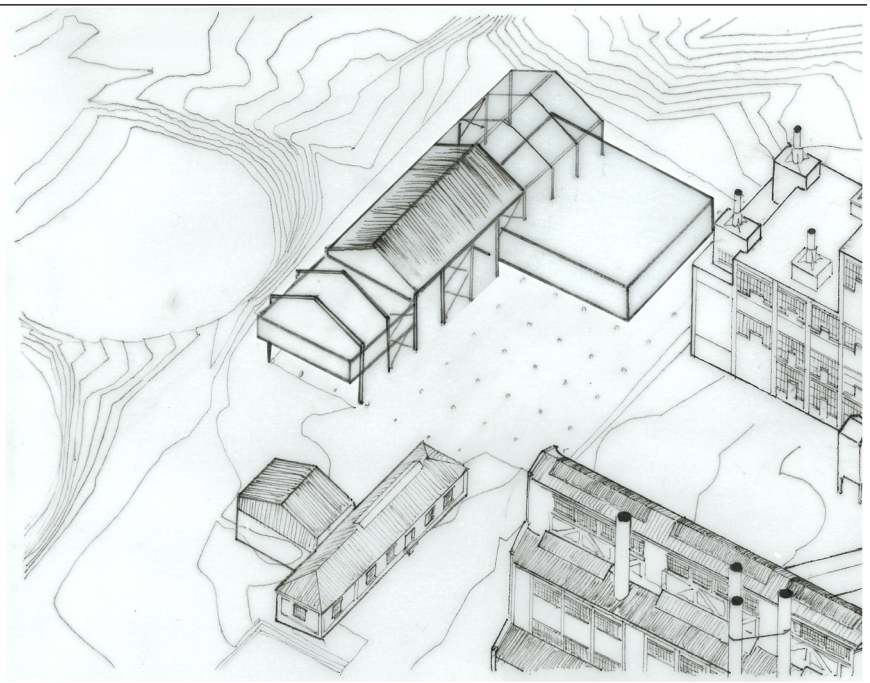
2) Scale too vast to accommodate the functions of the project's programme

3) The disruption of significant public space.



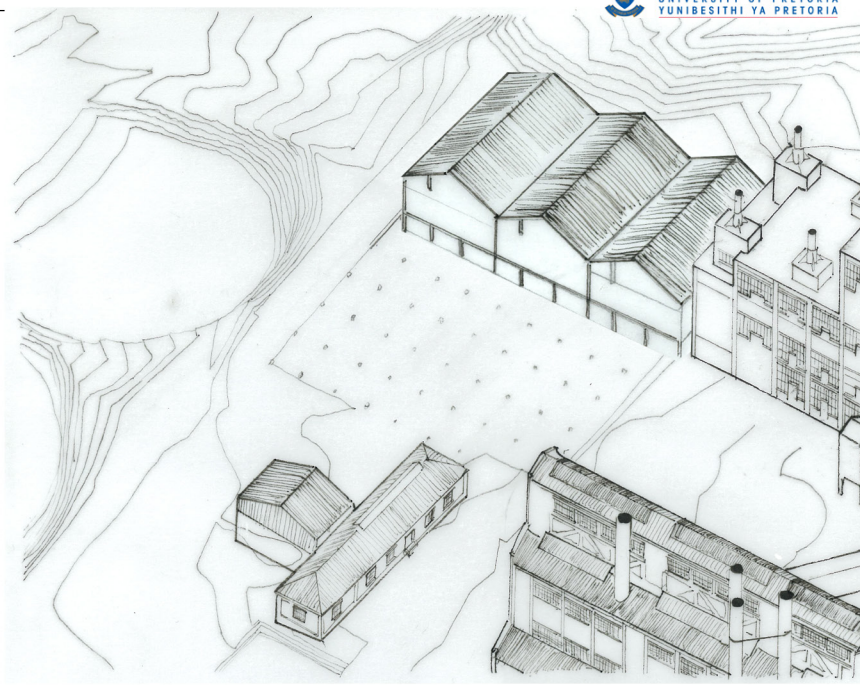
Reconstruction of one

With the first design iteration it was found that the reconstruction of even only one of the purification plants would be inappropriate due to its scale. Commemorating the shed profile in an alternative way than rebuilding the 14m high structure was found to be an avenue worth exploring.



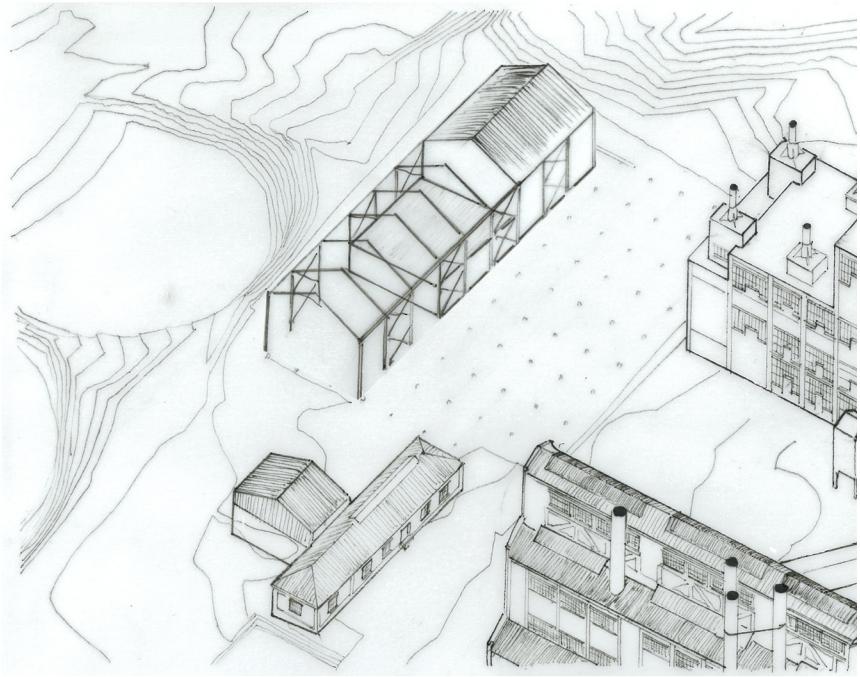
Structure vs form

Iteration two entailed rebuilding the structure as it was originally, but forming masses that define open, closed, public and private spaces that have an interplay with the structural frame. This iteration proved to employ no interrogation of the actual frame itself but still entailed reconstruction.



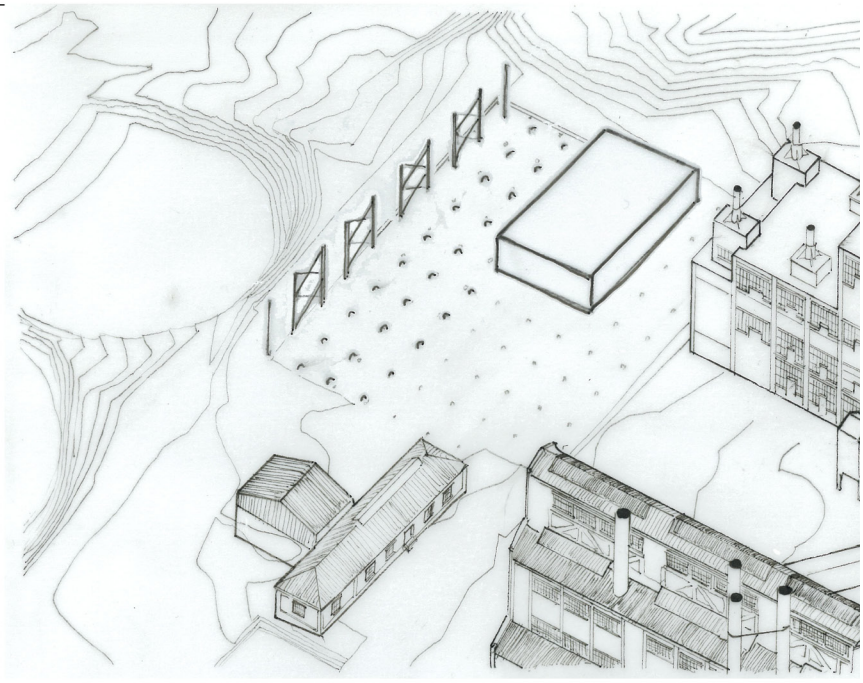
Maintaining three profiles

This design exploration was found to not contribute to or define the public space it sits in as well as it could. Also, with an outdoor market space planned by a different scheme to the right of Retort 2, this layout posed some obstacles to a continuous public space.



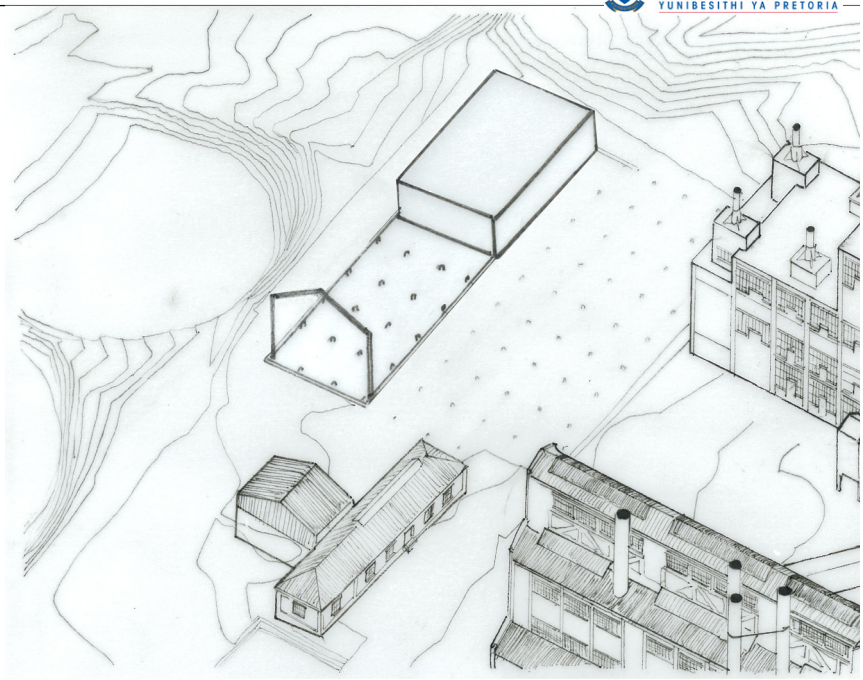
Building along the frame

With this iteration it was attempted to resolve the commemoration of the full length of the original footprint whilst maintaining the westernmost space as open and public. This was done by rebuilding the frame and constructing spaces that become more enclosed and private as it moved along the length of the footprint. Rebuilding all the frames was found to restrict freedom in the design process and therefore ended with this iteration.



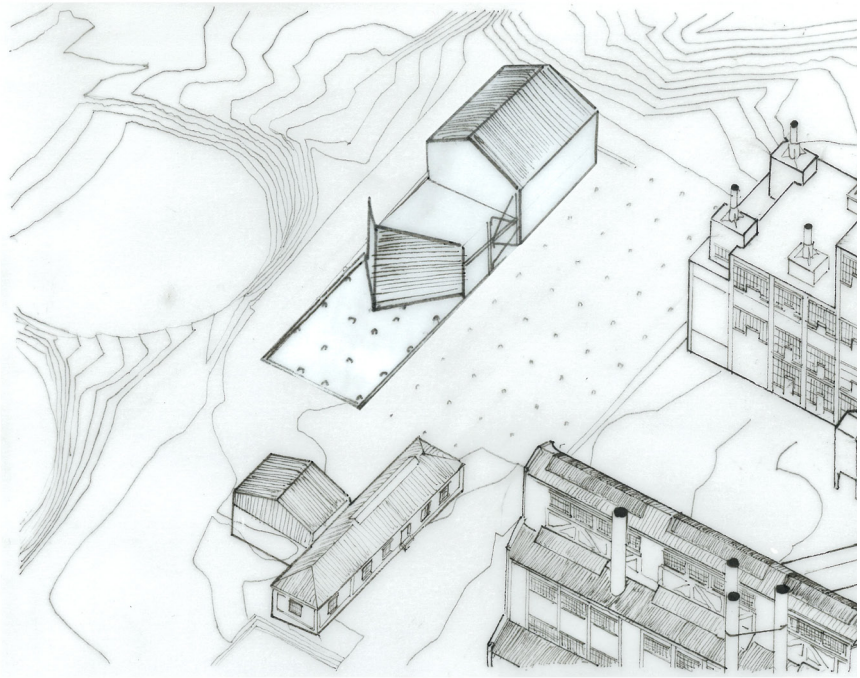
Separate mass and footprint

Iteration five entailed maintaining the footprint of plant no 5 as an open space with a new mass adjacent to it. Although this layout offered great potential in terms of public space, it didn't read as a destination at the end of the significant viewpoint and approach line and posed a disconnection with building no 2 proposed within hole no. 2



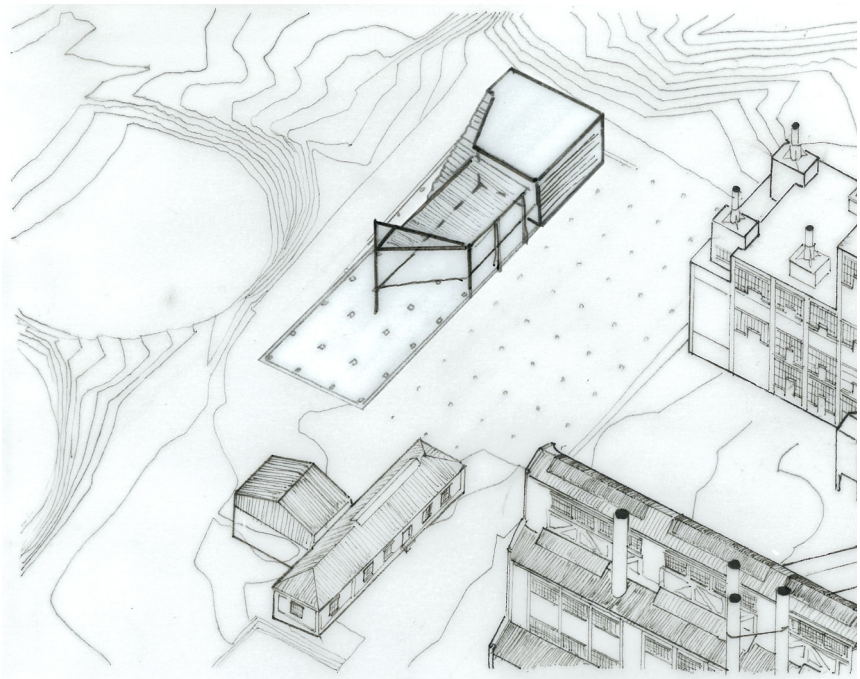
The shed profile as folly

Iteration six entailed the separation of open and closed space along the building footprint and saw the shed profile as an element that needn't have any connection with the building, but that it could be a mere folly. This seemed an inappropriate disconnection between commemoration and contemporary construction since the profile would remain an object isolated from a functional design resolution.



Breaking the orthogonal grid

Iteration six explored the idea of merely maintaining the appearance of the shed profile as one approaches the scheme, whilst not building on the actual foundations. This would be adequate since a clear distinction between the past condition and present condition could be made through changes in geometry, whilst still making reference to earlier form.



"Climbing" along the footprint.-

Iteration seven offered more recreational and public opportunities in the design by viewing the building mass as an entity that grows and leads to a accessible vantage point at the top. The front end of the plant footprint was envisioned here also as a water park where the stub columns could be translated into contemporary use as holes in the water surface. The shed profile could be maintained by utilizing half of the portal frame shape as support for a more tectonic structure.-

7.3 Intervention layer three - formal heritage responses

The third layer entails the built interventions in their formal qualities such as placement, materiality and scale.

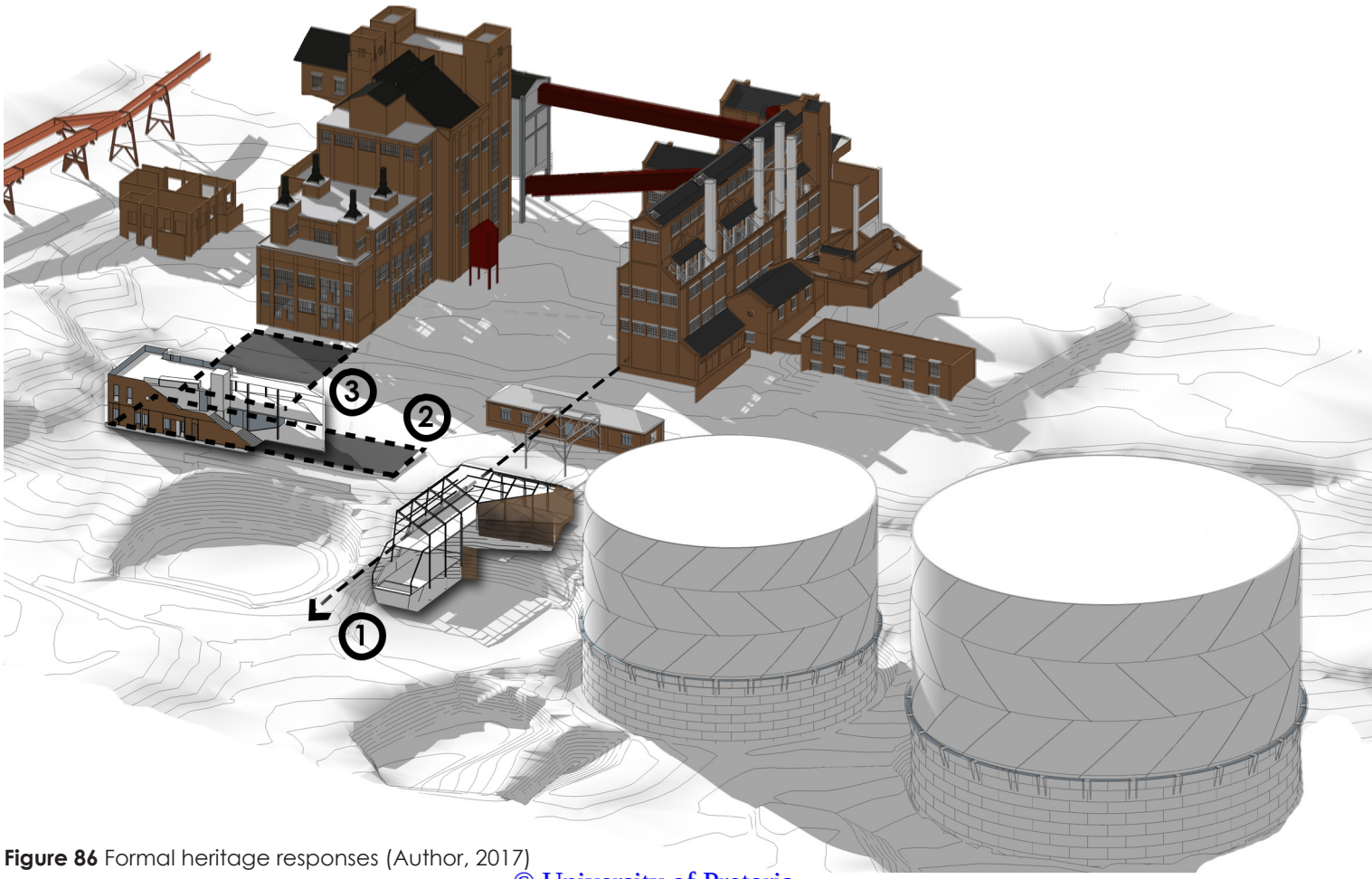


Figure 86 Formal heritage responses (Author, 2017)

Place-based design interventions & opportunities

1) Extension of industrial heritage narrative

In a formal sense, building no 2 derives its placement, roof and verticality to its alignment with Retort No. 1. Its construction detailing will also stem from Retort 1 as will be explored in the next chapter.

2) Place-making between new and old structures.

Framing and activating spaces seek to restore coherence between old and new built fabric and thus create well defined public spaces in between.

3) Respond to Retort No. 2

Formally, building no 1 derives its horizontality, materiality and construction from its location in front of Retort No 2's North-Eastern facade.

below:

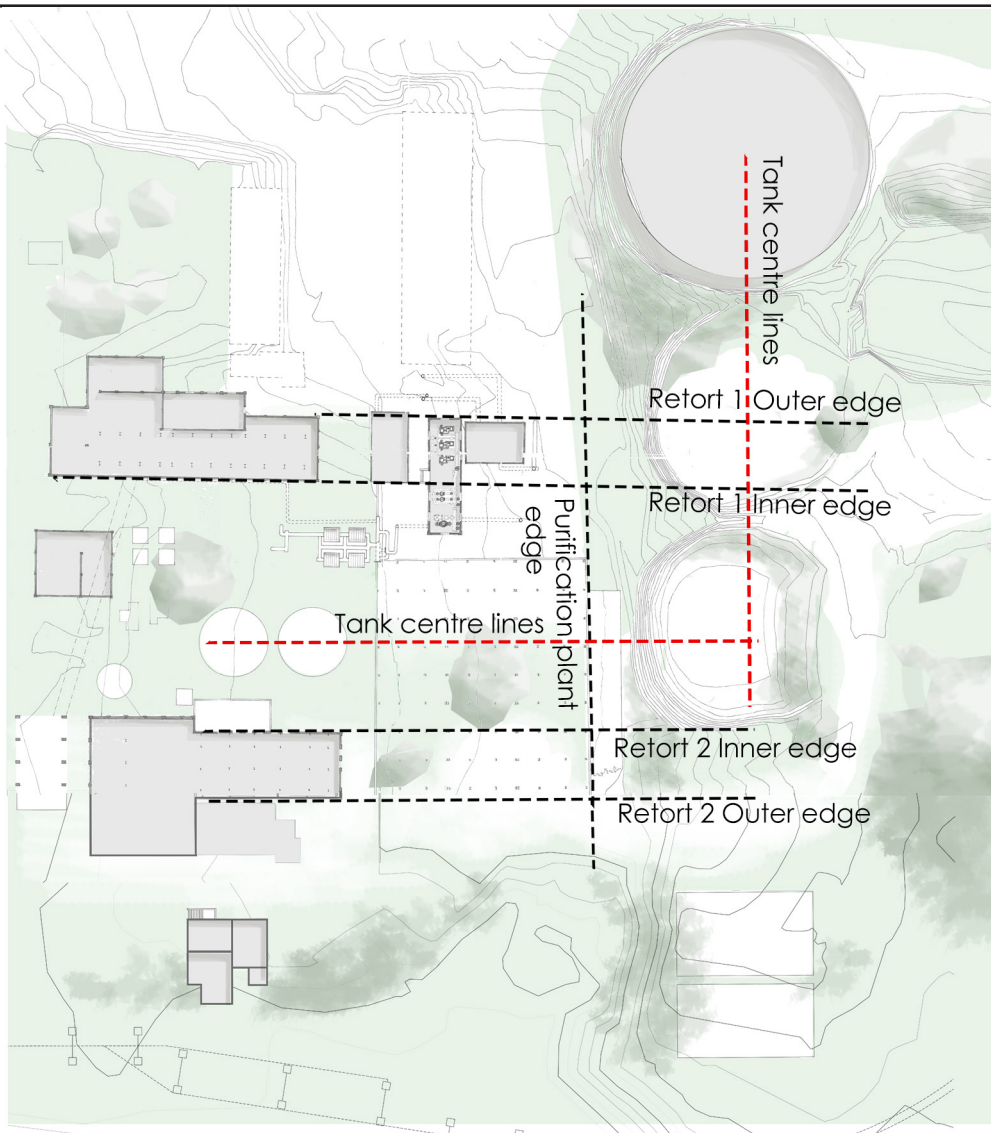
Figure 87 Identifying order (Author, 2017)

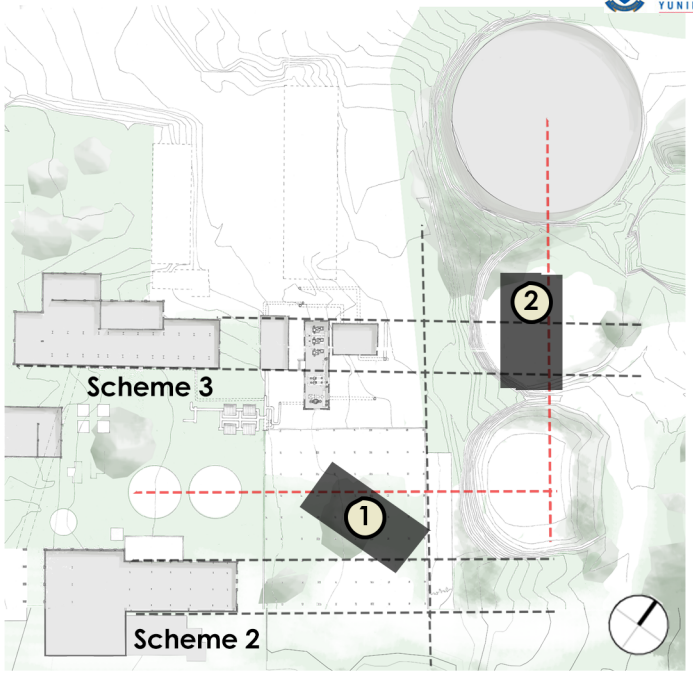
Right: **Figure 88** Design explorations as response (Author, 2017)

7.3.1) Overall intervention area

The built fabric on the intervention area within the Johannesburg Gas Works site was laid out according to the process of producing gas from coal in a manner that utilized the topography. This ordering system, legible on the site, provides a set of guides that any new architectural intervention could pay respect to. The diagram on the right identifies these guides and the diagrams on the right note possible responses to these guides and the effects thereof.

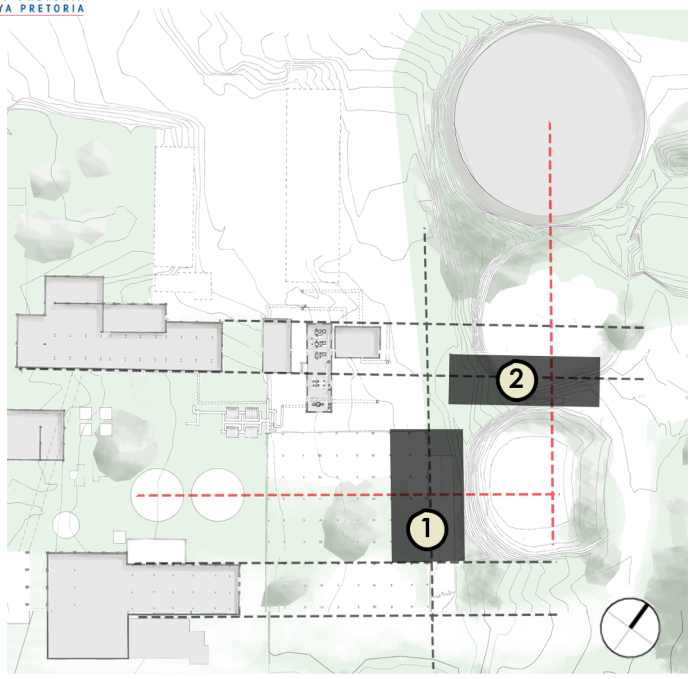
It was decided early on in the design process to design the scheme as two entities, each entity fulfilling its own distinct role. The first entity, responding to a linear alignment of significant industrial heritage to the south-west would represent a new industry and extend that linear alignment towards the park. The second entity would facilitate the public's experience of this industry and form part of a open plaza proposed by this scheme as well as two other schemes.





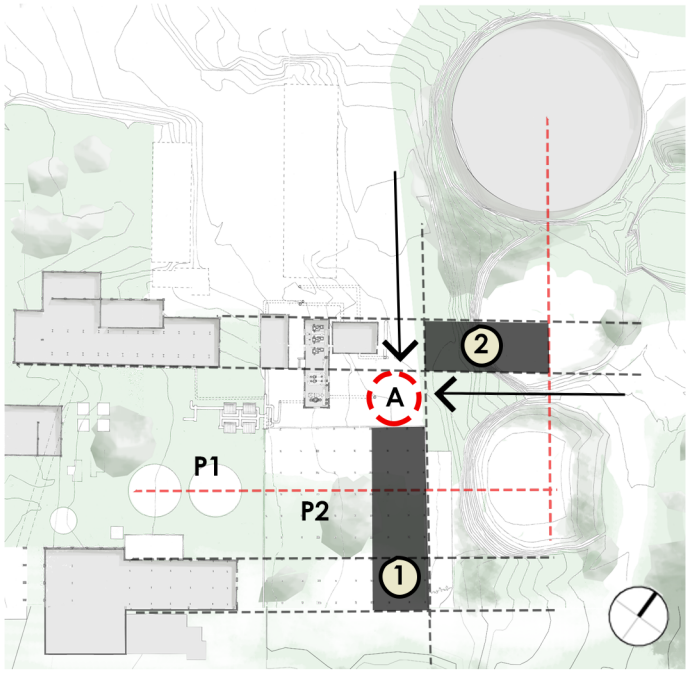
Non-alignment (north-orientation)

Building 1's placement within the purification plant plaza closes possible open space between scheme 1 and 2. This orientation would serve as an intentional disruption and would communicate a disregard of heritage fabric. Building 2's location within hole no. 2 would negate any possiblitiy of interaction with the public realm to the west.



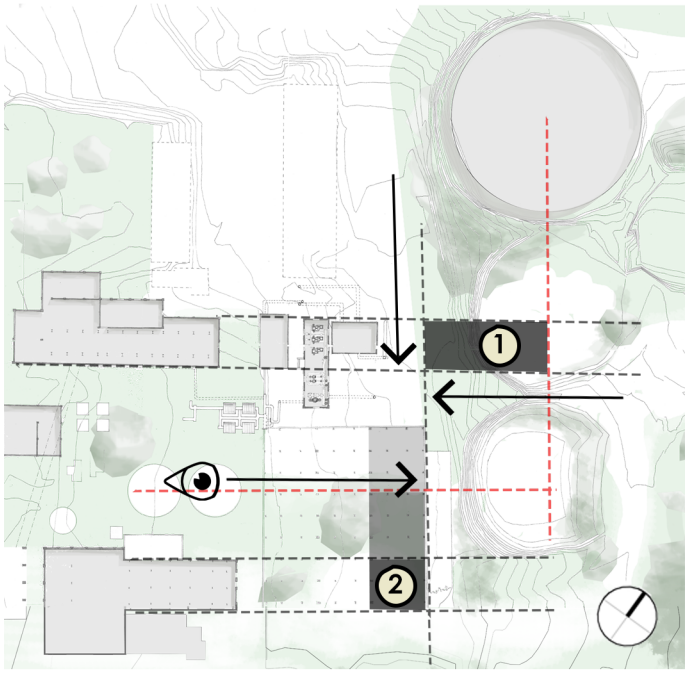
Alignment with structures as priority

Placing structures directly upon alignment axes has 2 undesired consequences. Building 2's location would block linear access between the park to the east and the plaza to the west. Building 1's location purposefully negates the grid upon which it is built and its distance from scheme 1&2 could make a cohesive plaza between these three schemes less successful.



Alignment and reconstruction

Rebuilding the entire footprint of the easternmost purification plant was feared to create a seperation between plaza 2 (P2) to the west and the arrival space (A) from the park and the north. A visual connection from from Plaza 1 towards the park to the East would also be blocked. Building 2 aligns itself to Retort No. 1's inner edge and opens the possibility of access from the park. Aligning building 1 with retort 2 would negate the rectangular footprints of the plants.



Alignment, alternate reconstruction and openness

This iteration of the layout to the left still utilizes the full footprint of the easternmost purification plant but the footprint becomes a building to the south and contributes to an open recreational area to the north whilst keeping space open to the west in order to design a coherent plaza between the three schemes. The difference in programs between the two buildings allows this distance as long as landscape binds them together as one intervention

7.4 Intervention layer four - programmatic responses

The fourth layer responds to the progamme as well as public components. It defines the nature of spaces created between built interventions and seeks to create more definition of public space through programme.

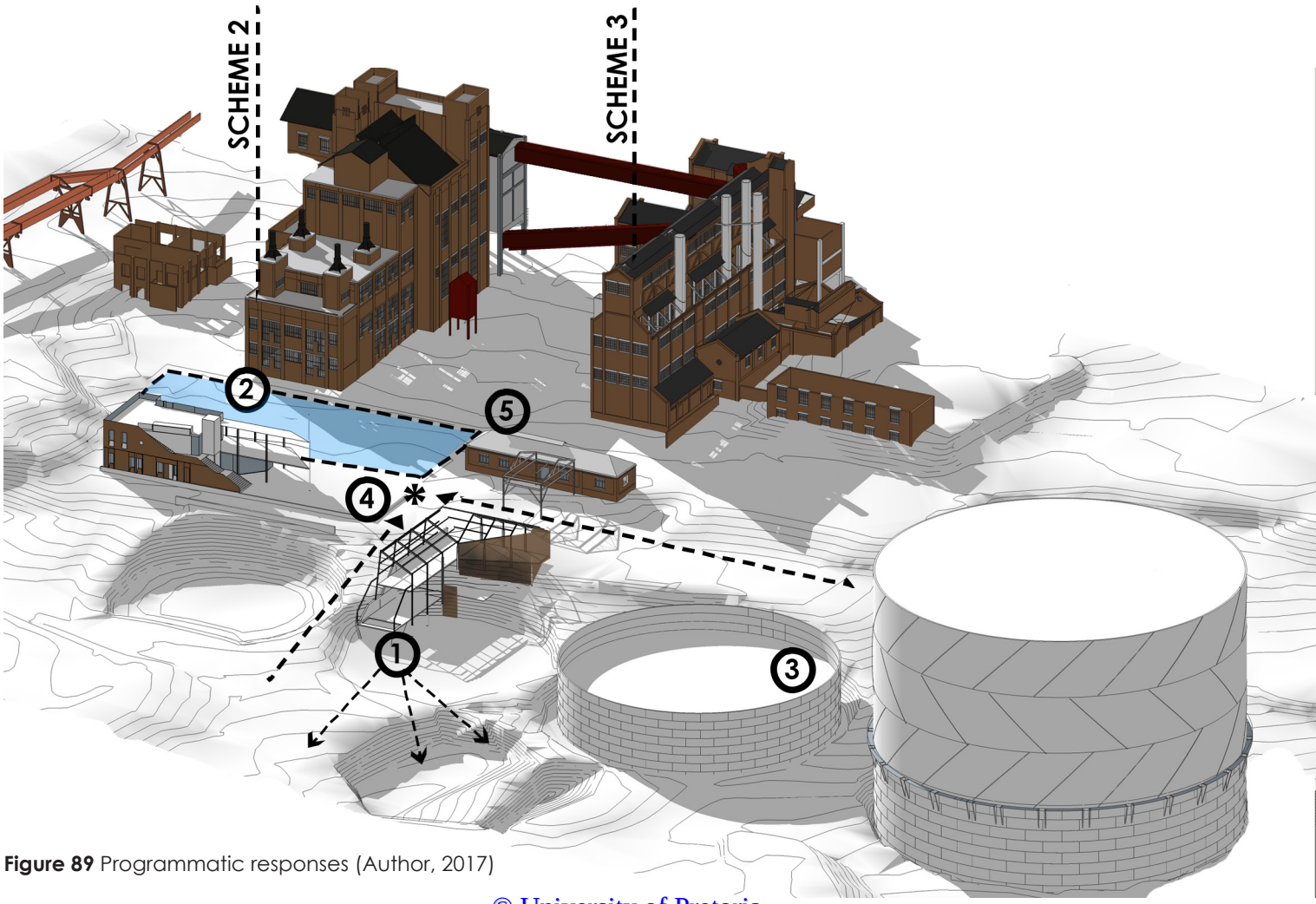


Figure 89 Programmatic responses (Author, 2017)

Place-based design interventions & opportunities

1) Active environmental remedial action

By introducing the production of fish feed for aquaculture in building No 2 which has compost as a by-product, the terrain could continually benefit from successive soil purification. Therefore, its placement within the linear heritage sequence makes it the communicator of industrial progress that is read as the next chapter within industrial heritage.

2) The definition and activation of public space

A priority in terms of public space creation was the creation of an outdoor fish market area that would be in close proximity to the market area of scheme 2's textile market (see illustration).

3) An industrial giant's surrender to ecology

By removing the steel casing of gas tank No 3, the foundation basin can be filled by excavated soil following the construction of all four schemes and be made accessible to the public. Since compost is produced in close proximity, an outdoor nursery component to the scheme as well as open air rainwater storage will transform this industrial icon into a valuable contribution to the park landscape with noteworthy vistas of the park and the rest of the site.

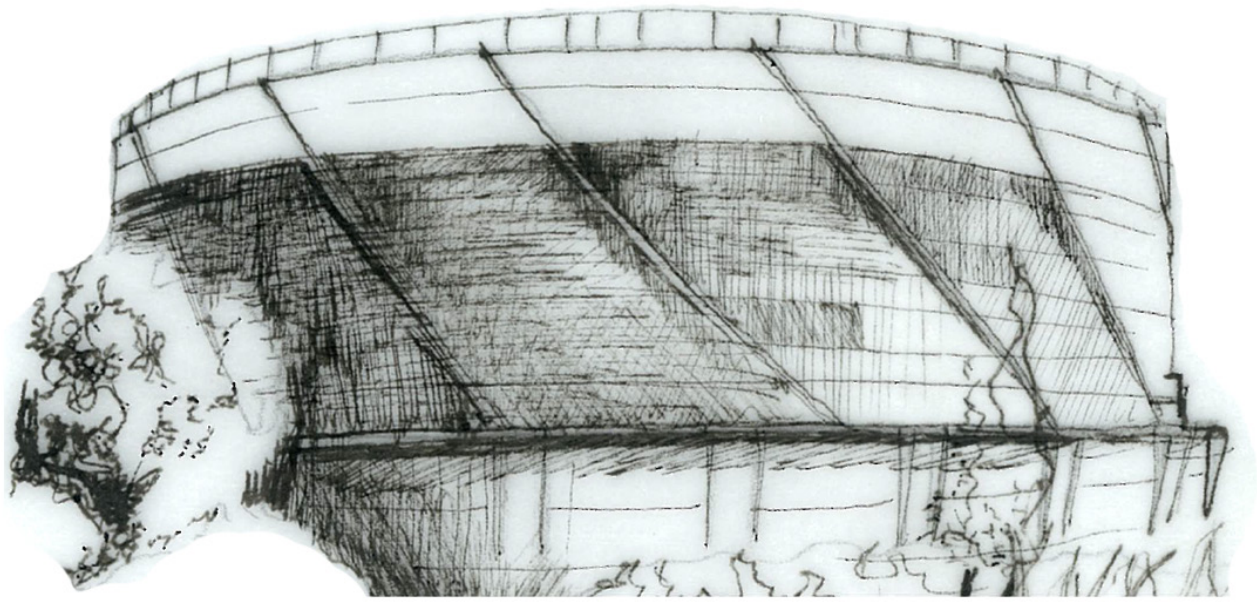
4) Recreation and the presence of water

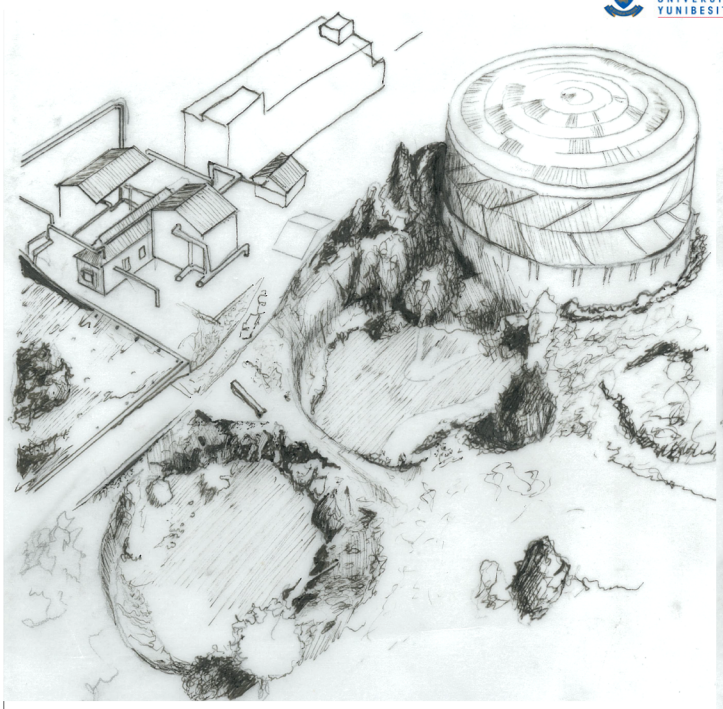
Re-used piping taken from the basement of the distribution plant are here transformed into water-spewing features within the water park. The water park follows the envelope of the purification plant and holes within the water surface occur where columns used to be located prior to demolition. The goal is to have the water park in close proximity to aquaculture breeding tanks so that this intentional proximity can meet any user when the scheme is entered from either the park or from the north-west.

5) The distribution plant

The distribution plant will accommodate a fish market and museum in its interior.

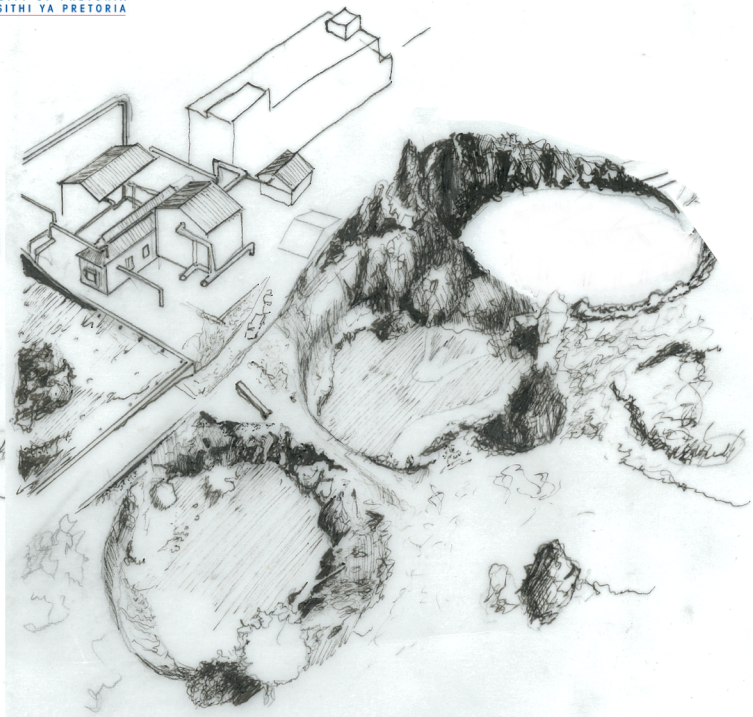
7.4.1) No 3 Gas tank





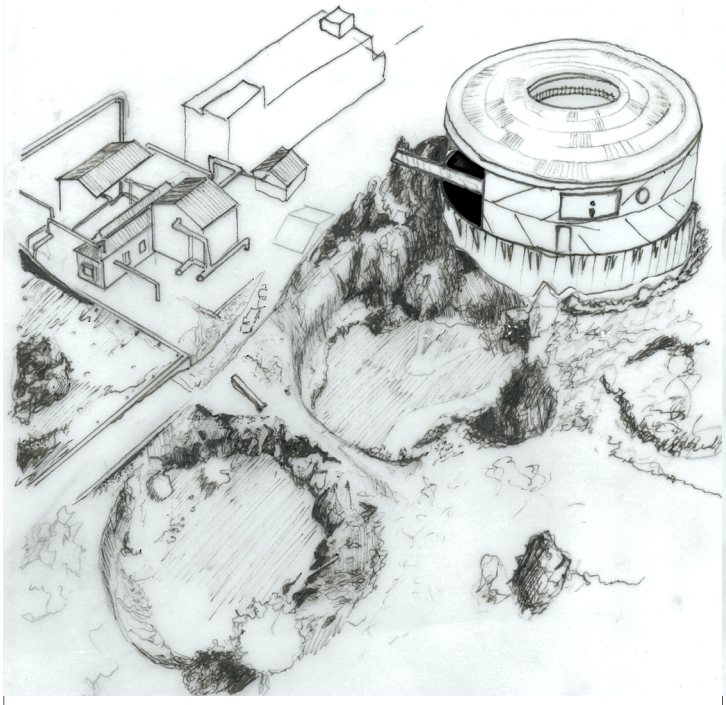
Leave as is

Since the tank needn't be used by Egoli gas anymore, the stucture can be utilized for its vast scale and stability. There is a potency in reading the tank as part of the scheme since the scheme would then include newly built architecture as well as a repurposed structure as part of the same scheme.



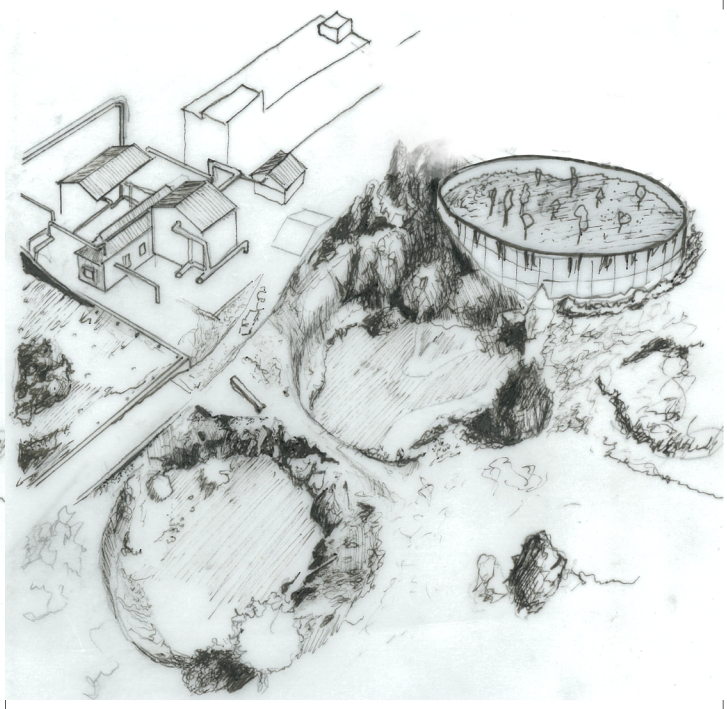
Remove entire structure completely

If the entire structure (foundation and steel cylinders) is removed, the same problem of soil stabilization would be caused that is being resolved in the other two holes. The existing circular foundation still serves its purpose as retaining wall and therefore the structure should not be removed completely.



Utilize interior space

After a thorough investigation it was found that the base of the interior should be about 3m below the surrounding ground level. This coupled with the construction method of the envelope (steel sheets welded to diagonal steel sections) made repurposing less effective than any new build. The placement of functions within this structure was also found to be too far from any coherent public space such as the plaza.



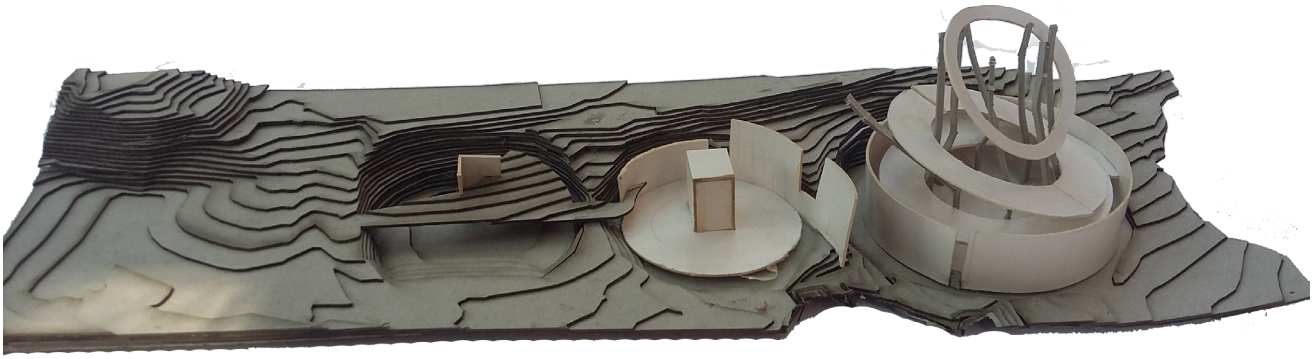
Utilize foundation as park/program extension

The most appropriate solution was found to be keeping the retaining wall but removing the steel cylinder above it. The foundation can be used as a basin for polluted soil, demolition debris from site alterations and the raised surface could be used as an extension of the park landscape and an open-air plant nursery. This would be a powerful statement of how industrial heritage fabric can be used for ecological functions.

7.5 Design explorations

As seen in Figure 90 the design iterations started with a strategy for the comparison between the undisturbed pre-industrial ecological condition and the post-industrial condition: this was realized trough the construction of green roof construction over hole no. 1 that would simulate the topography as it was before disturbance. This surface could then serve as an extension of the park. It was abandoned for its non-natural means, its forced approach and also for the quality and scale of the space below the surface.

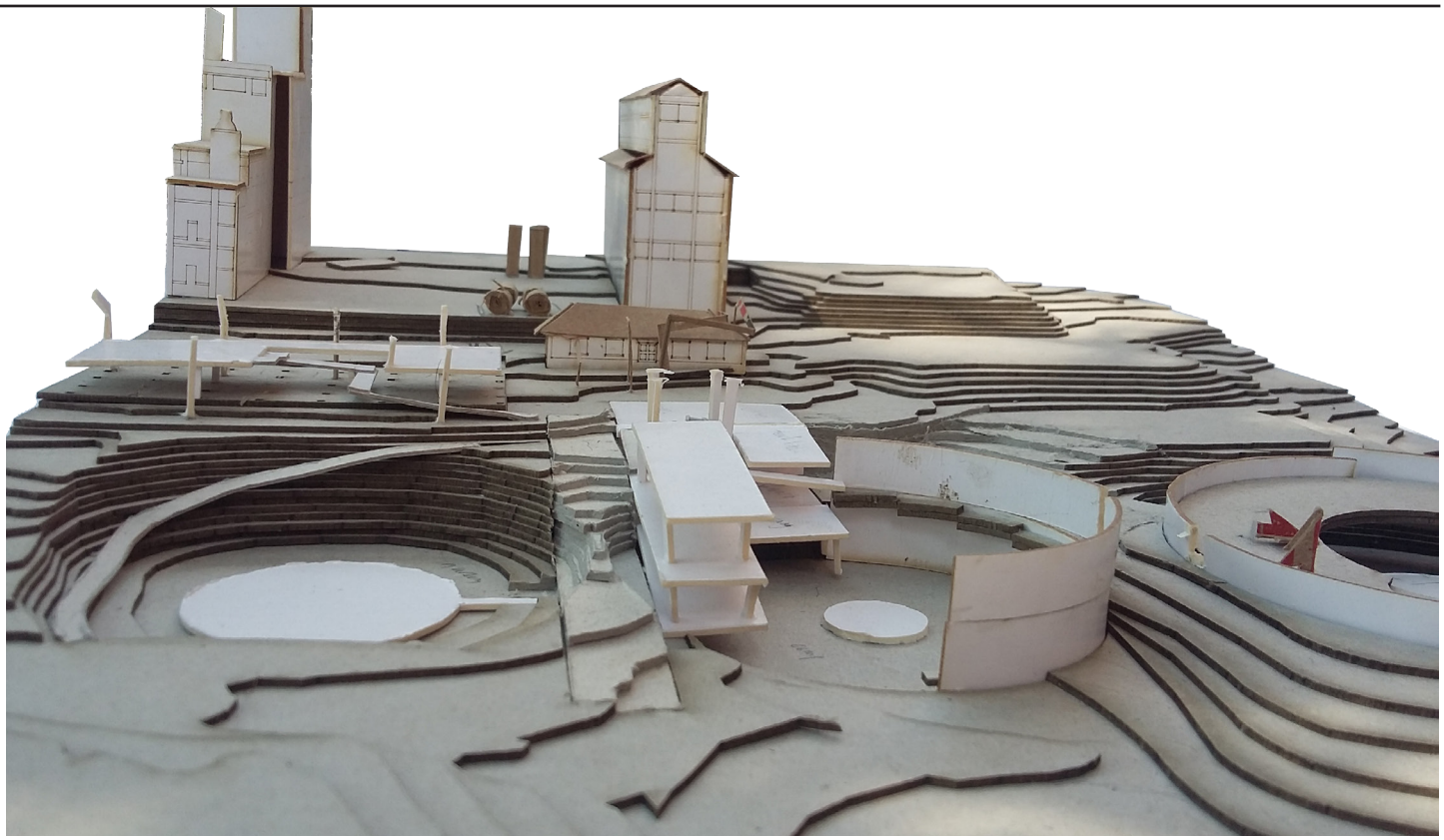
The scheme also entailed a spatial progression and hierarchy that followed an axis starting at hole 1 and reaching a climax at a re-appropriated gas tank Nr3. The tank would be utilized to its full extent, with private functions hidden within the above-ground foundation and more public spaces within the tank's higher levels, overlooking the park. As mentioned in chapter 6, it was found that re-appropriation of this structure poses various construction challenges and would isolate important spaces from any contribution to a public plaza to the south-west.



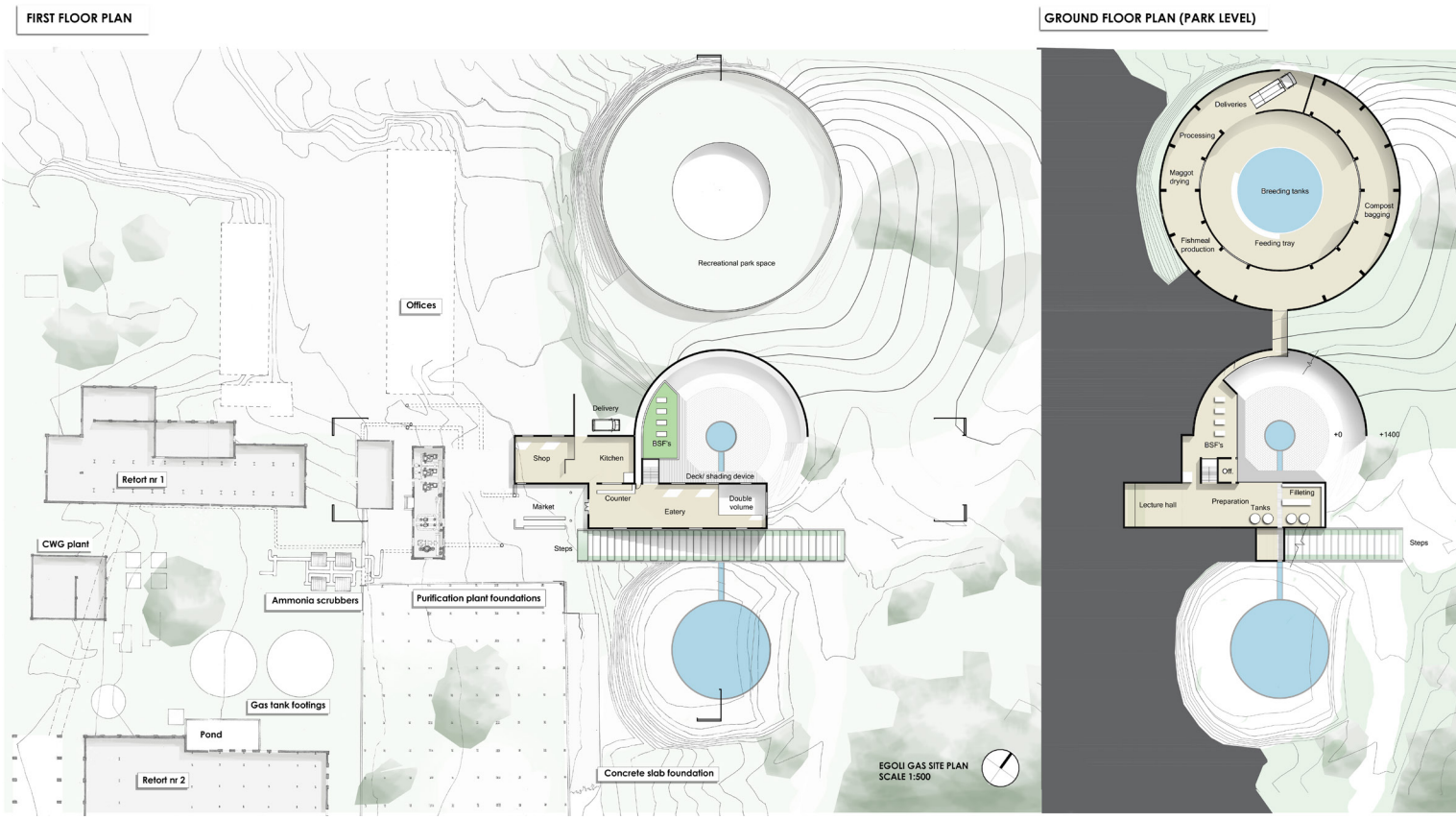
In Figure 91, a more formal response was sought for the restitution of ecology and industry. In this iteration, rectilinear forms derived from the heritage fabric would interact with circular forms to create space. The binding element would be similar tower-like circulation spaces in each hole. This design proposed a linear stair connecting the park to the heritage square. This iteration was found to overly formal, with no consideration for industrial remnants on site or adequate remedial actions for soil pollution.

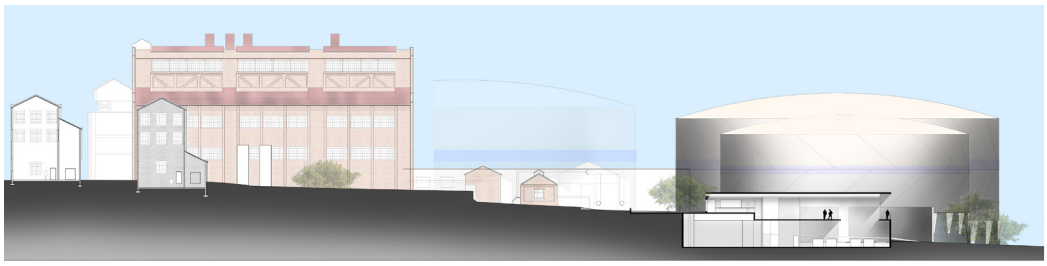
Left: **Figure 90** Model exploration 1: Rebuilt topography as means of commemoration and reflection
Opposite bottom: **Figure 91** Model exploration 2: Interplay between rectilinear and circular form
Below: **Figure 92** Model exploration 3: Structure, scale, placement and the nature of the stair.

Two entities with two natures and the connection between park and square

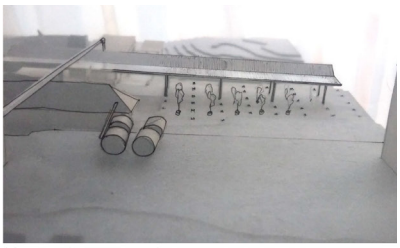


7.5.1) Design iteration 1

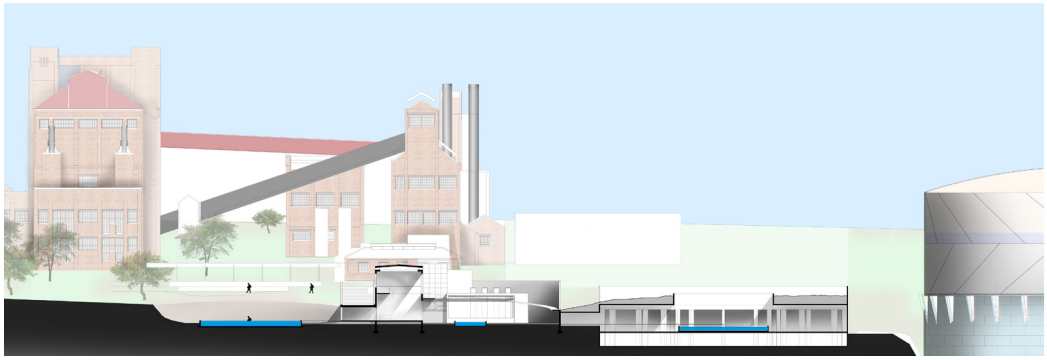


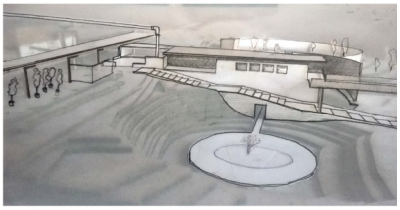


LONGITUDINAL SECTION FACING NORTH-WEST (scale 1:500)



SOUTH-WESTERN ELEVATION





SOUTH-EASTERN ELEVATION

Figure 93 Design iteration one with re-appropriated gas tank no.3 (Author, 2017)

Design iteration 1 entailed the construction of a new building within hole no. 2 and re-appropriating gas tank no. 3 for more intensive industrial purposes. In this design, hole Nr1 and the purification plant plaza are left as they are as places of interest that can be visited. After further development, it was found that re-appropriation was unfeasible since the internal ground level of the tank would be about three meters below the soil. The foundation walls of the gas tanks are 11,5 meters high (Lauferts le Roux & Mavunganidze 2016:40) yet a site inspection revealed that only about 8 meters are above ground. After this design iteration it was also found that the scheme should make a much more meaningful contribution to the plaza to the south-west.

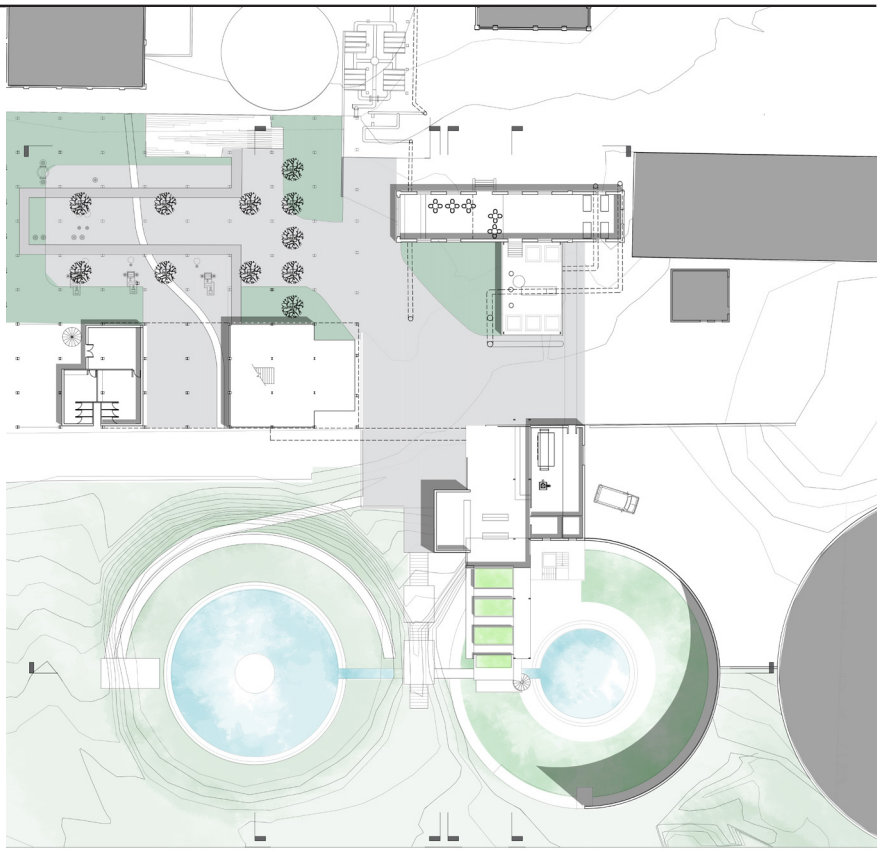
7.5.2) Design iteration 2

Reconstruction of the purification plant structure

This design iteration entailed the reconstruction of the purification plant structure within which new spaces and forms could be accommodated. Th design intention was that there would be a legible difference between new form and reconstructed heritage form.

Concluding the matter of reconstruction

This iteration did not however contain any interrogation of the appropriateness of reconstruction. As discussed earlier, the purification plants' structure provided the required height for the flow of purified gas towards the distribution plant. Therefore, its form was derived from practical considerations and thus the reconstruction of the building for vastly different purposes would be an ill-considered formal exercise that does not communicate the uniqueness of the new intervention. Therefore, after this iteration, the building form broke free from any direct reference. Making reference to the original portal frame of the Purification plant however remained a design challenge.



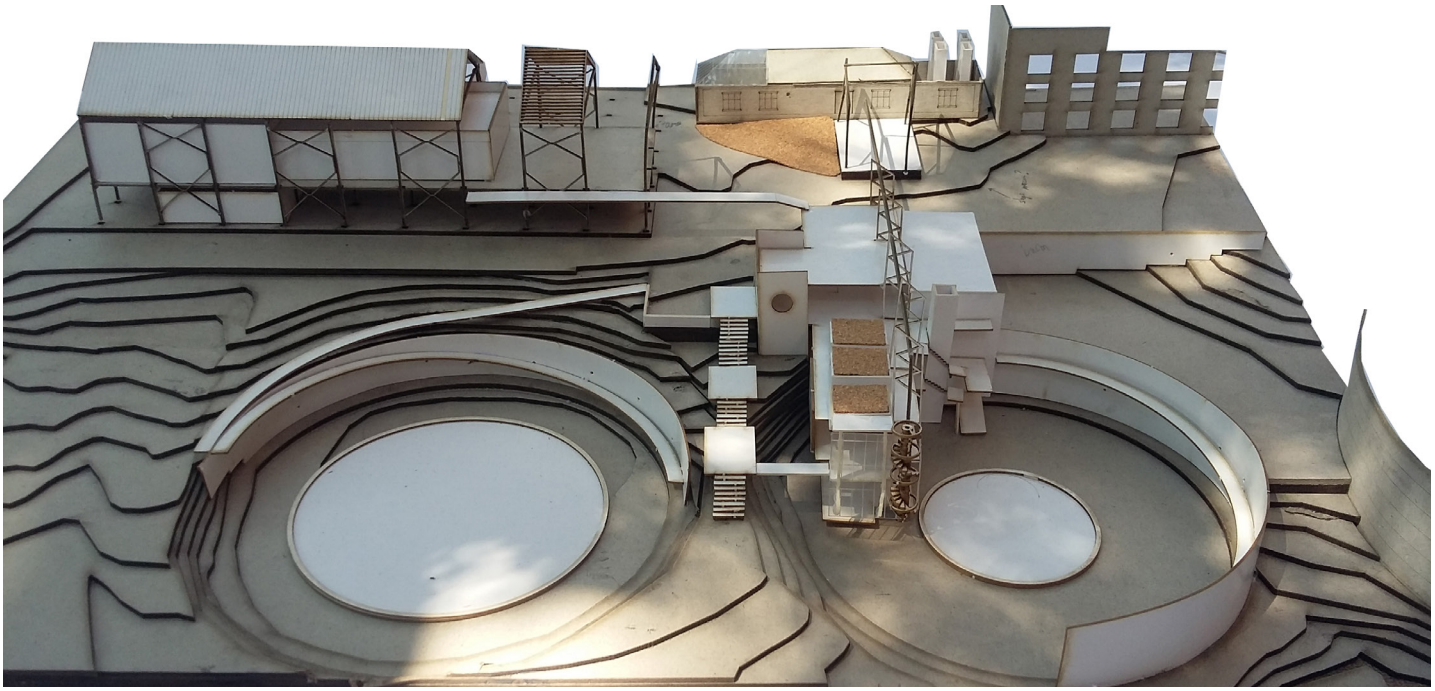
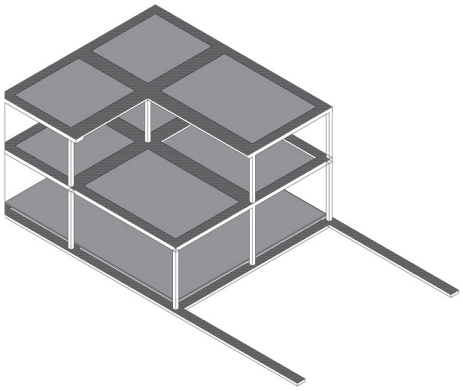
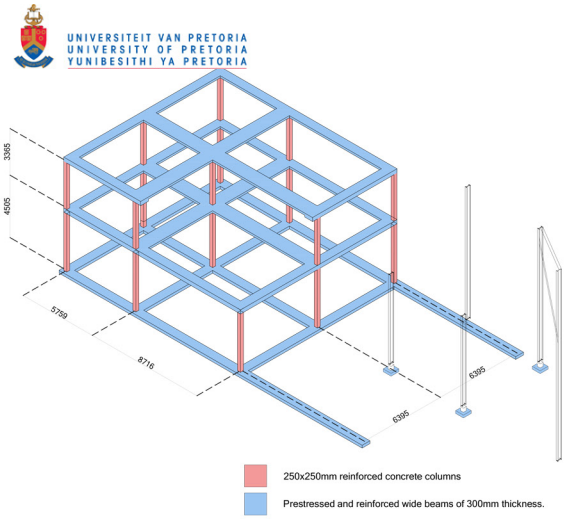
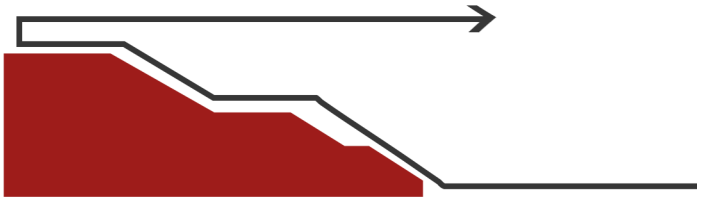


Figure 94 Design iteration 2 (Author, 2017)





7.5.3.1) Design iteration 3. Building 1



① Southwestern elevation openings

The openings facing Retort No. 2 derive their widths from the openings in Retort No. 2's front facade. In this iteration, the facade did not express the structure, which was a concrete column and beam grid set back from the building edge.

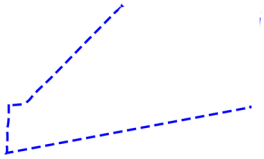
② Northeastern facade

The northeastern facade is designed to be read in conjunction with the front elevation of Retort 1 beyond. Although the same materiality would associate these two elevations, the difference in form is meant to represent the different nature of the "new" industry. Therefore, the rectangular rigidity of usual brick construction is challenged and a more inviting form is proposed that makes access to the top and a vantage point over the entire landscape possible.

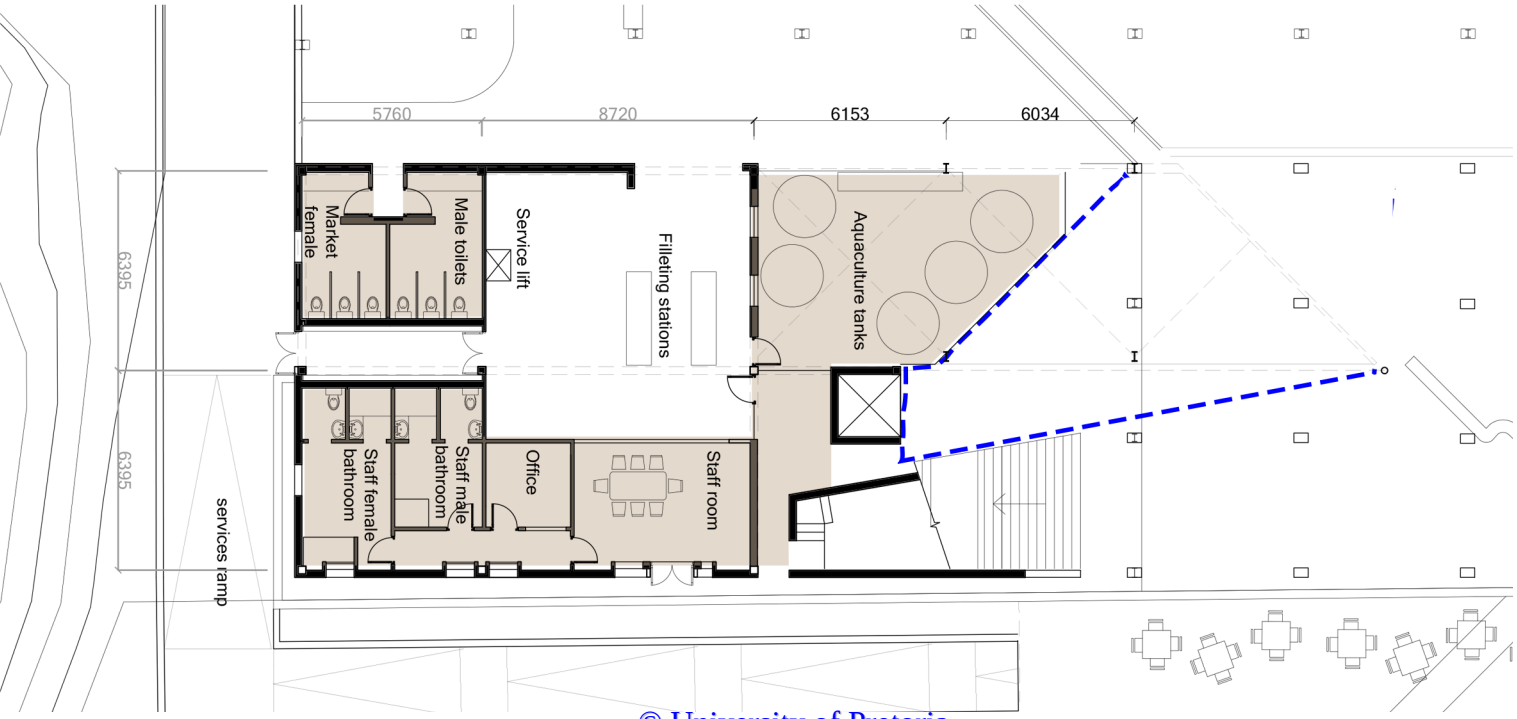
③ Openings details

The openings in the northeastern elevation maintain solar control by their depth rather than overhangs. This also expresses the brickwork and its use more clearly. The narrower widths were found to be most appropriate for openings within a non-rectalinear facade.

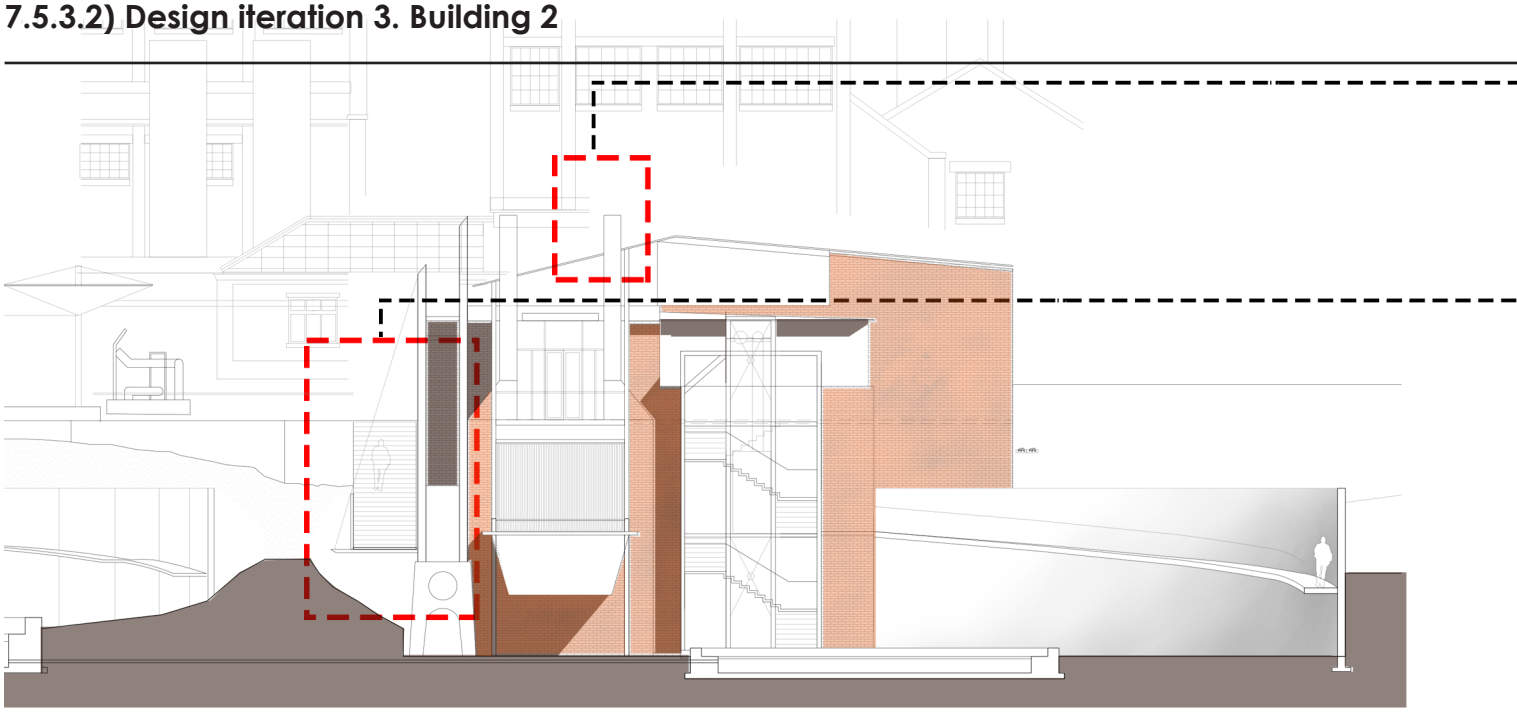
④ Angles in plan

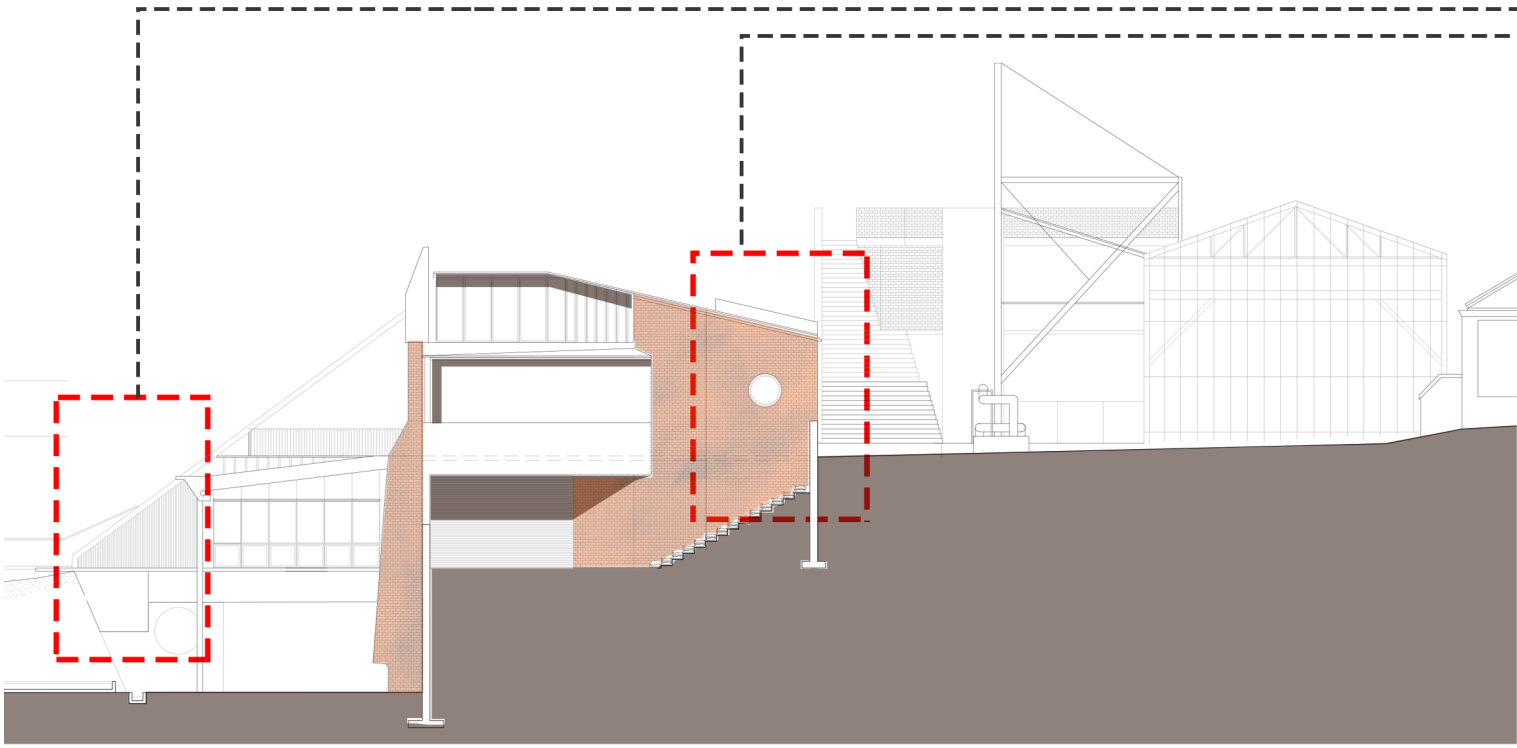


The angles seen in the stair form and breeding tank room (see below) are meant to draw the public from the plaza towards the building by creating a visual focal point on the circulation and access points.



7.5.3.2) Design iteration 3. Building 2





① Solar stacks

The implementation of solar assisted stacks meant that the service floor could be ventilated more effectively since the floor is submerged and used for handling waste. This also meant that the genius loci of the site could be maintained by the introduction of this industrial aesthetic.

② the Stair

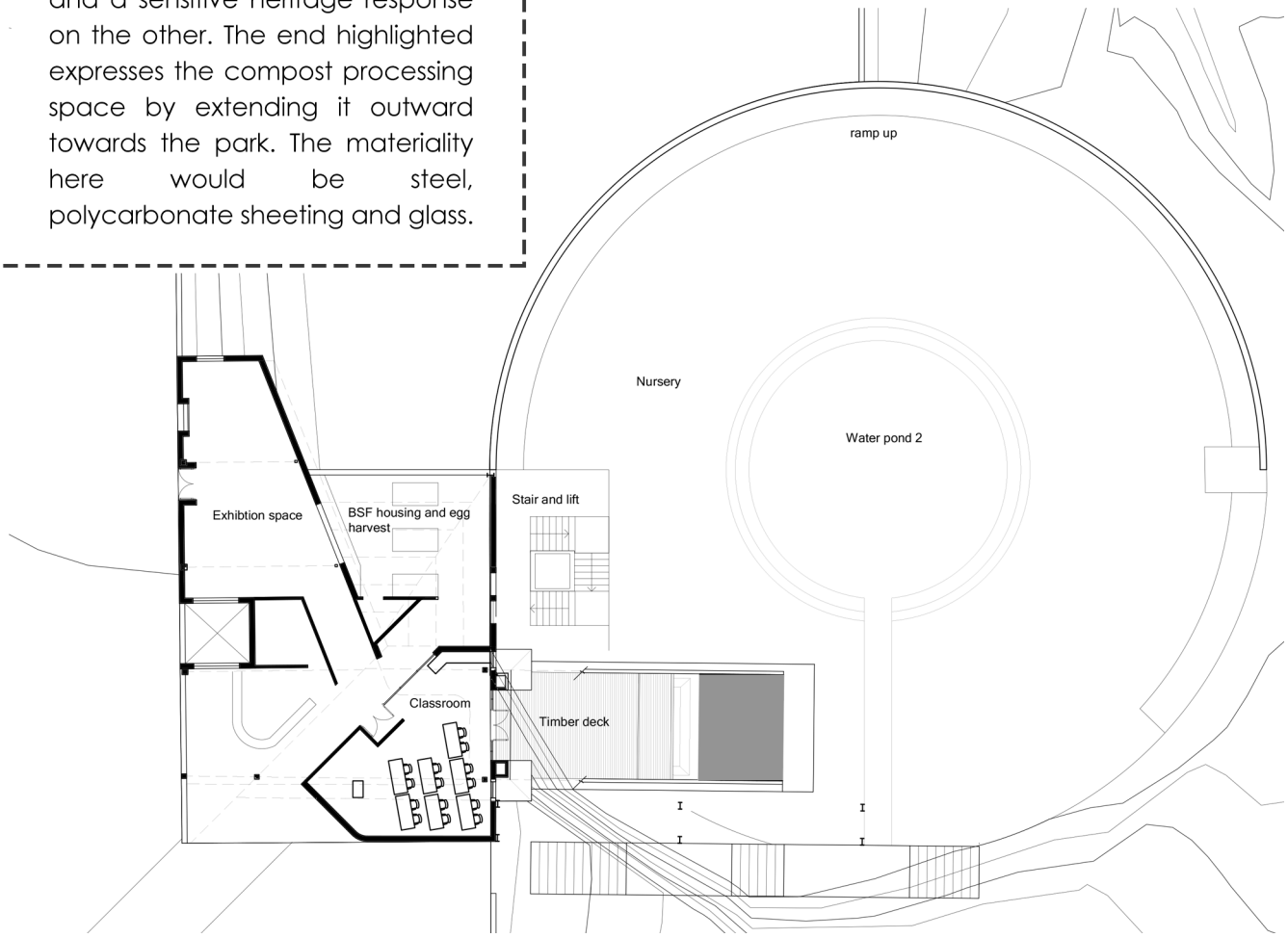
Designing the outdoor public stair in such a way that touched the ground lightly was realized in this iteration through a separate structure against building No. 2. This iteration made it clear however that the stair should be part of the building, allowing visitors to see more of the internal processes.

③ Ecological industry

Buildings no. 2 was conceived as one edge condition becoming another - ecological industry serving the park on the one end and a sensitive heritage response on the other. The end highlighted expresses the compost processing space by extending it outward towards the park. The materiality here would be steel, polycarbonate sheeting and glass.

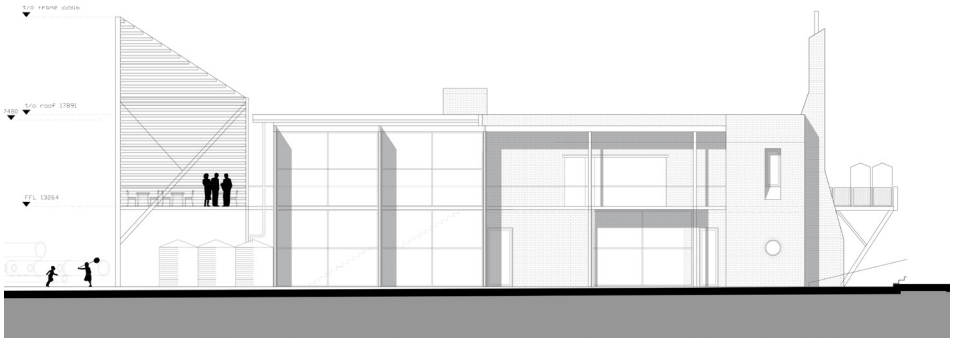
④ Industrial heritage

The back end of building No. 2 responds to the heritage buiding adjacent (distribution plant) through its scale, materiality and roof although the following iteration achieved this more succesfully.



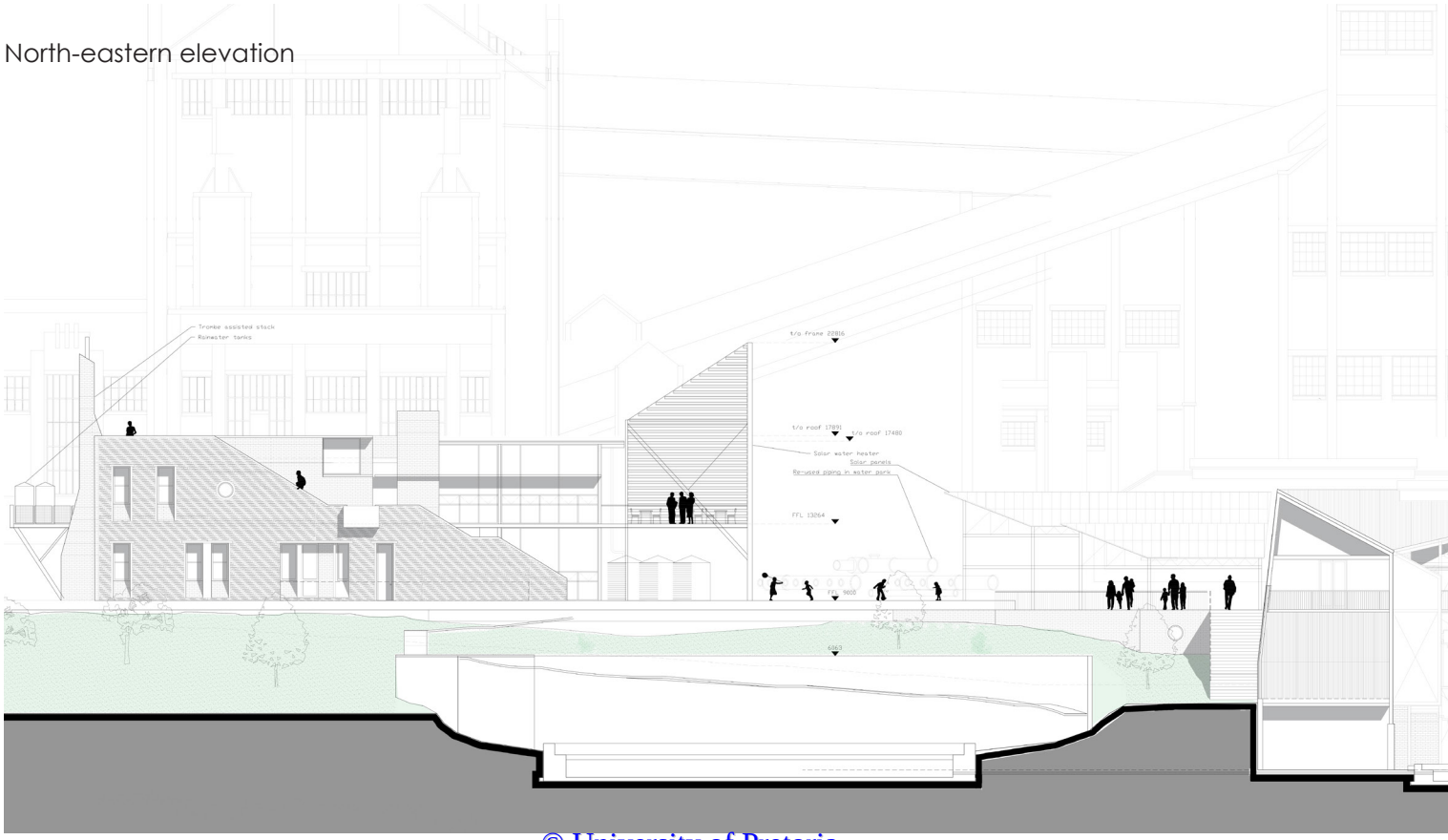
Below: **Figure 95** Design iteration four, elevations (Author, 2017)

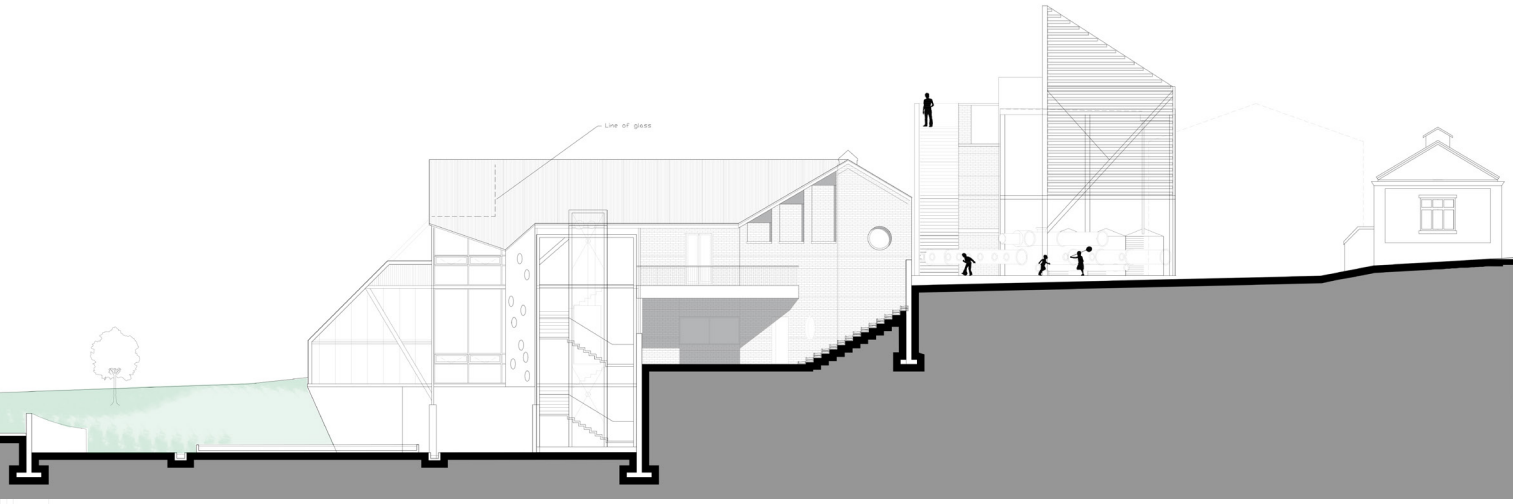
7.5.4) Design iteration 4. Elevations



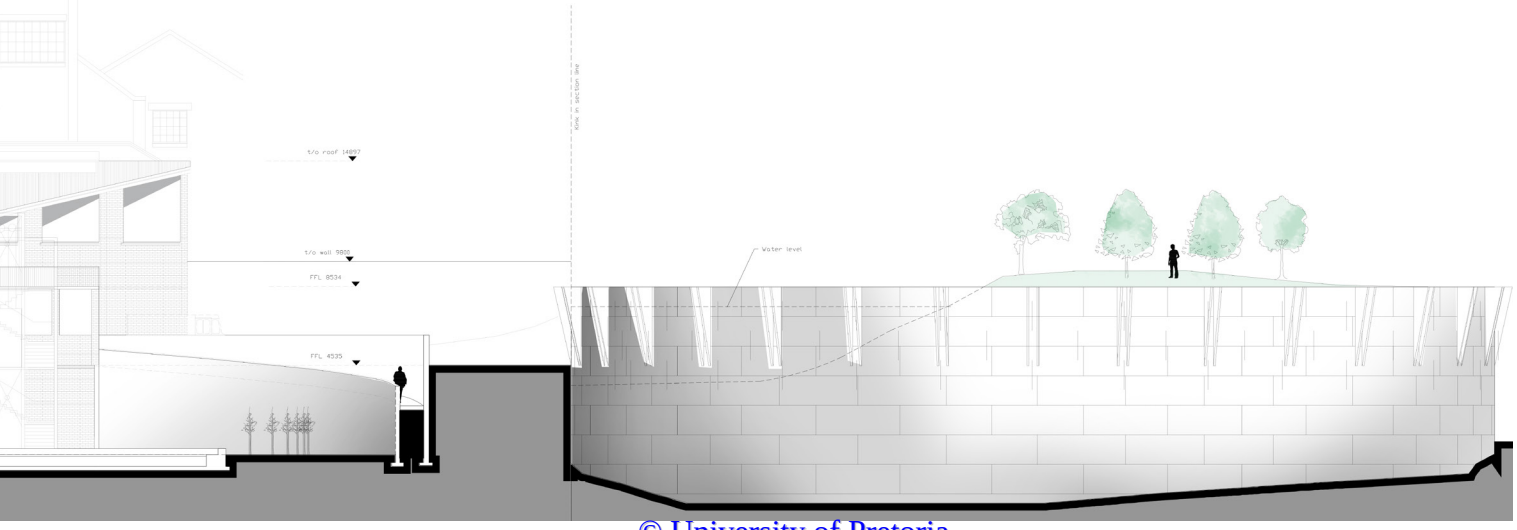
South-western elevation, building 1

North-eastern elevation





North-western elevation, building 2



7.6 Facade analysis as design informants

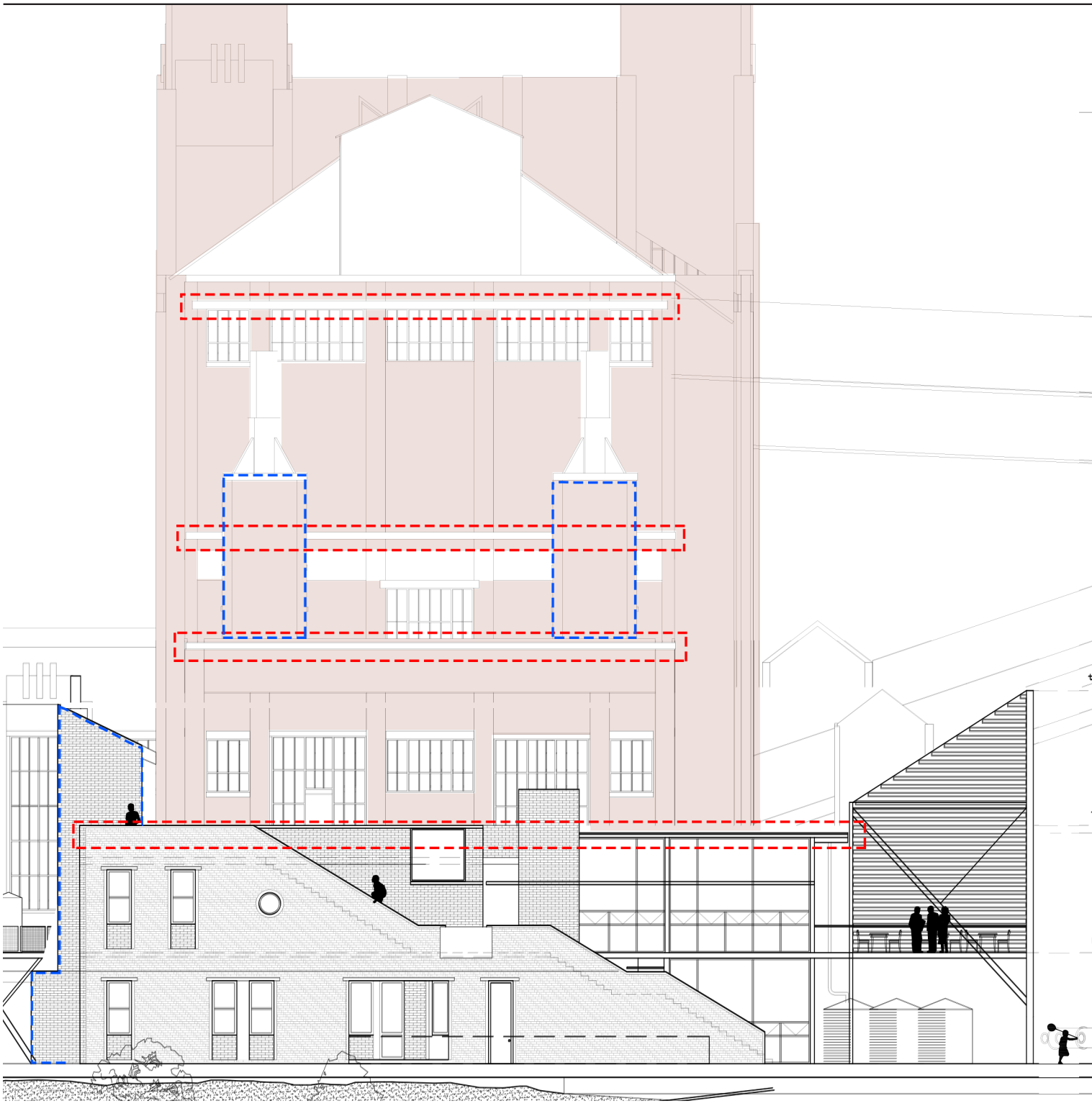


Figure 96 Facade analysis of building 1 (Iteration 5) and Retort no. 2 (Author, 2017)

Design decisions related to the form of Building 1 and Building 2 were derived from their positions in front of the Retort buildings. For Building 1 the relatable feature was chosen to be horizontality in the facade whilst Building 2 derived its slanted steel roof from Retort 1 behind it. Employing a slanted tower-like element at the back of Building one not only related it to the towers of Retort 2 and the external stair of the building but assisted in passive ventilation strategies that will be explored in the following chapter.

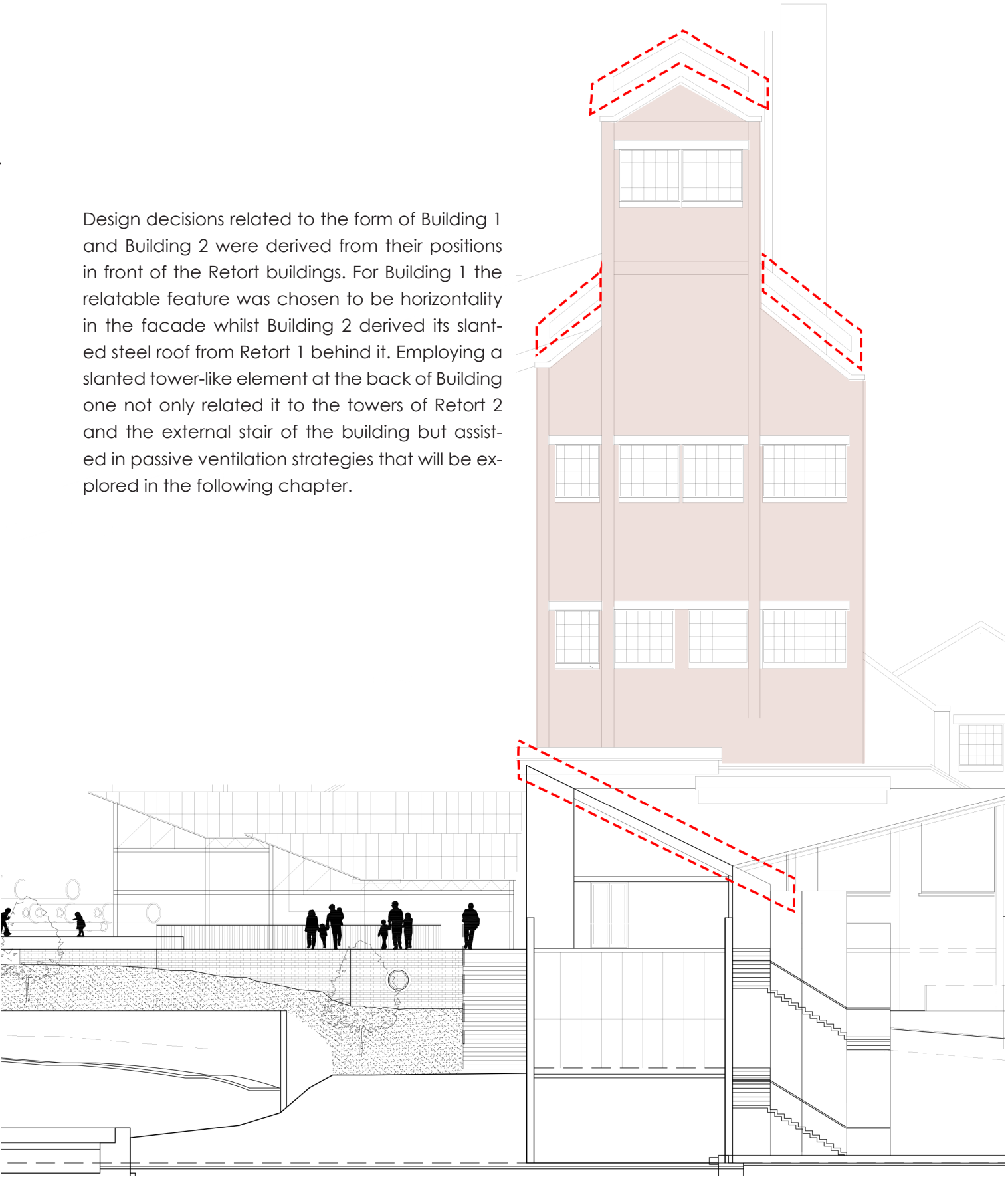
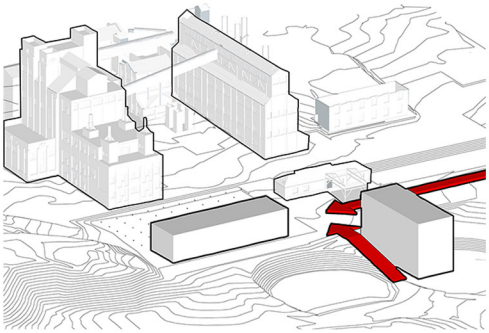


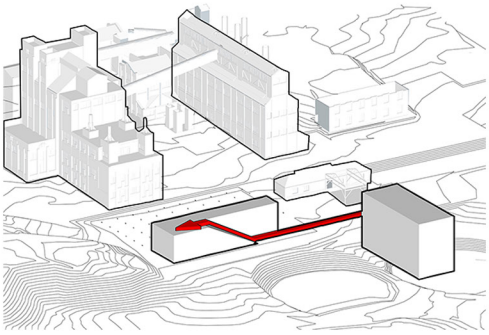
Figure 97 Facade analyis of building 2 (Iteration 5) and Retort no. 1 (Author, 2017)

Below: **Figure 98** Design drivers (Author, 2017)
Right: **Figure 99** Scheme plan (Author, 2017)

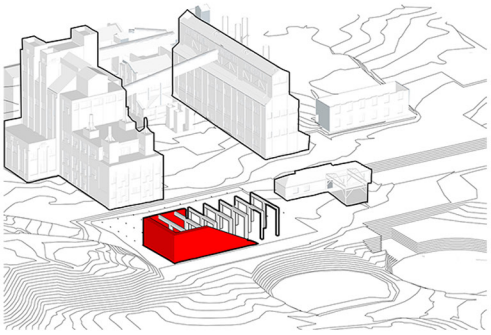
7.7 Iteration five design drivers and resolution



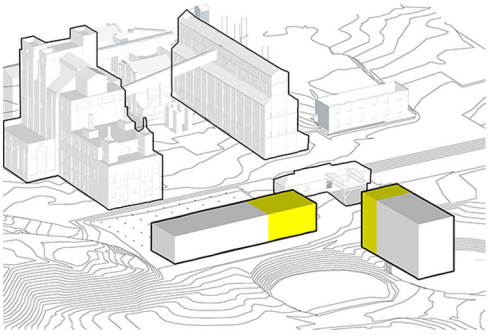
Pedestrian access from the park



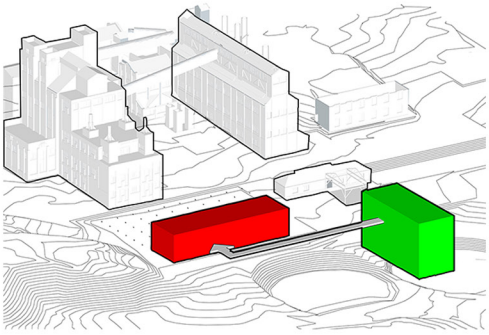
Building one's response to movement



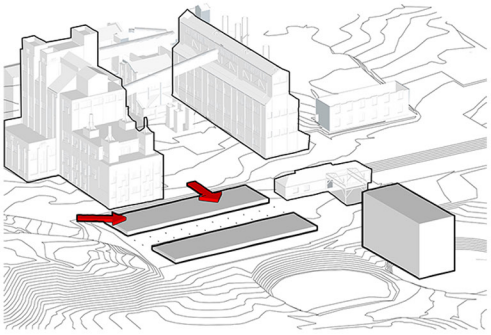
Tectonic response to movement



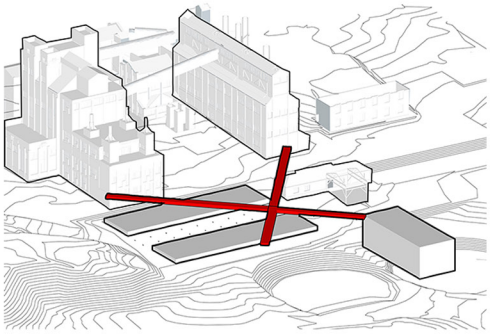
Allocation of private and public



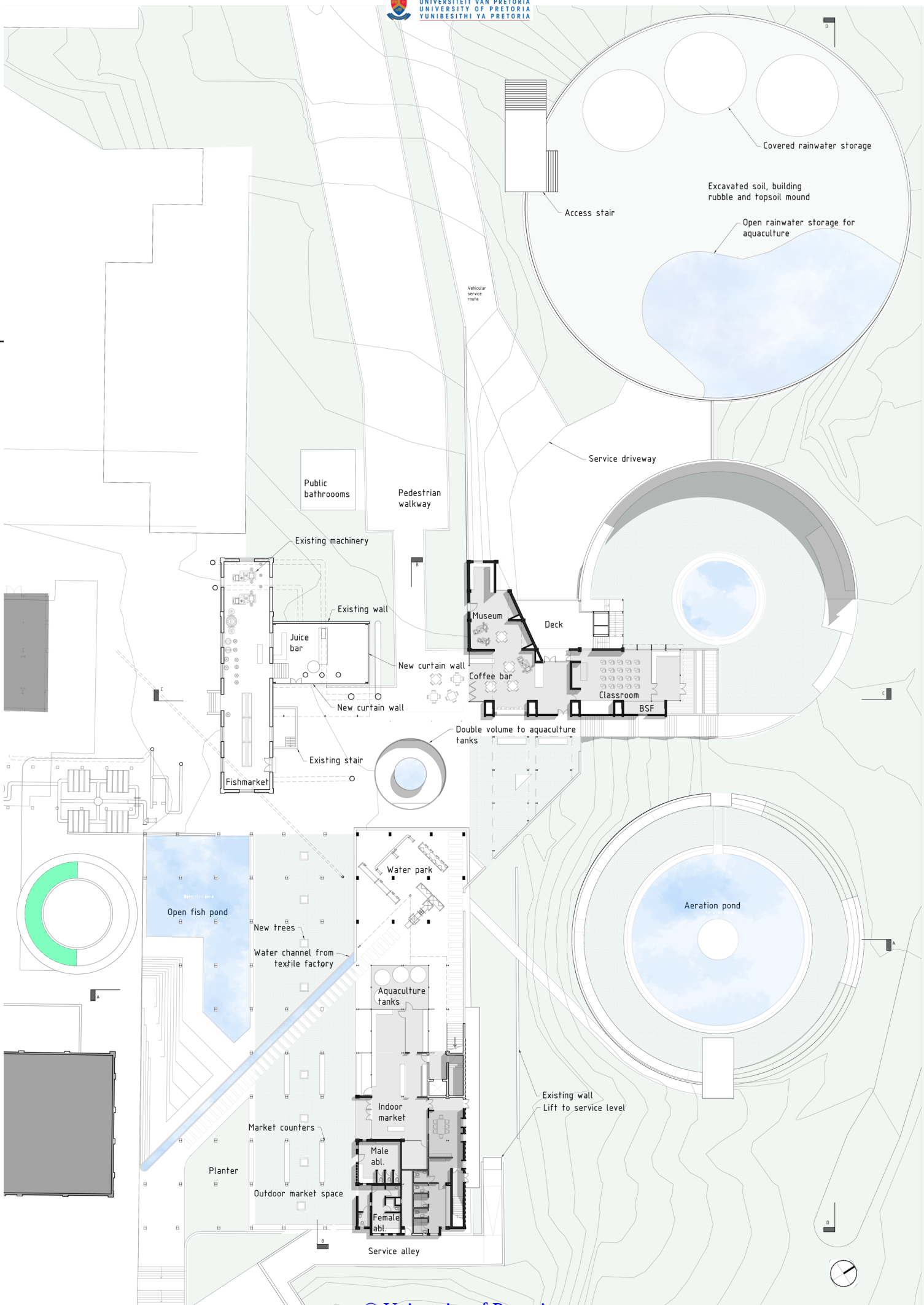
Allocation of the "giver" and "receiver" as two co-dependant entities.



The allocation of different zones



Juxtaposition of perpendicular geometry



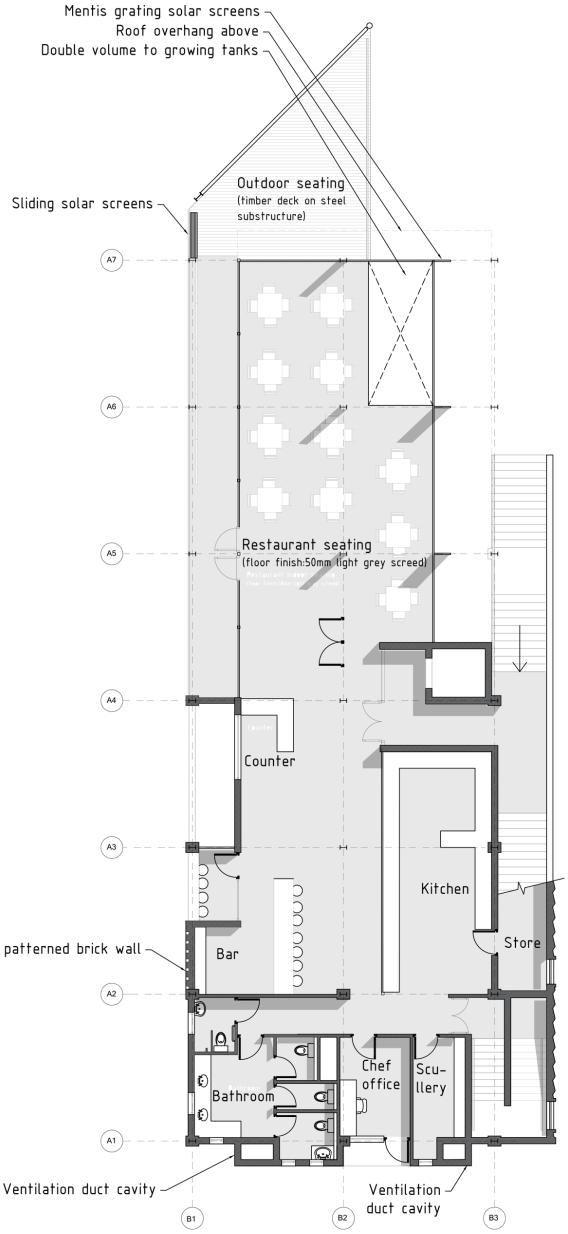


Figure 100 Building 1 first foor plan (Author, 2017)

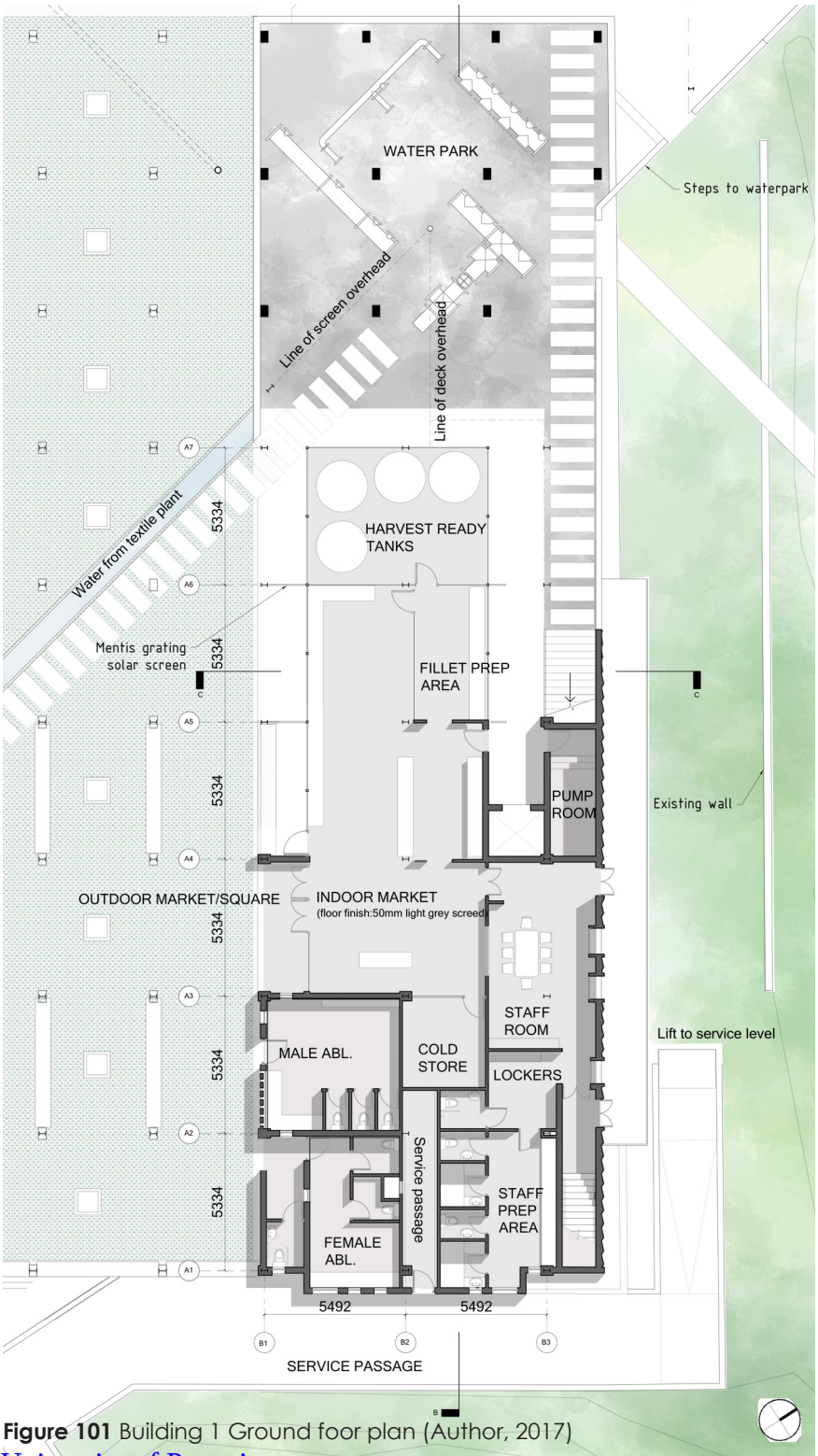


Figure 101 Building 1 Ground foor plan (Author, 2017)

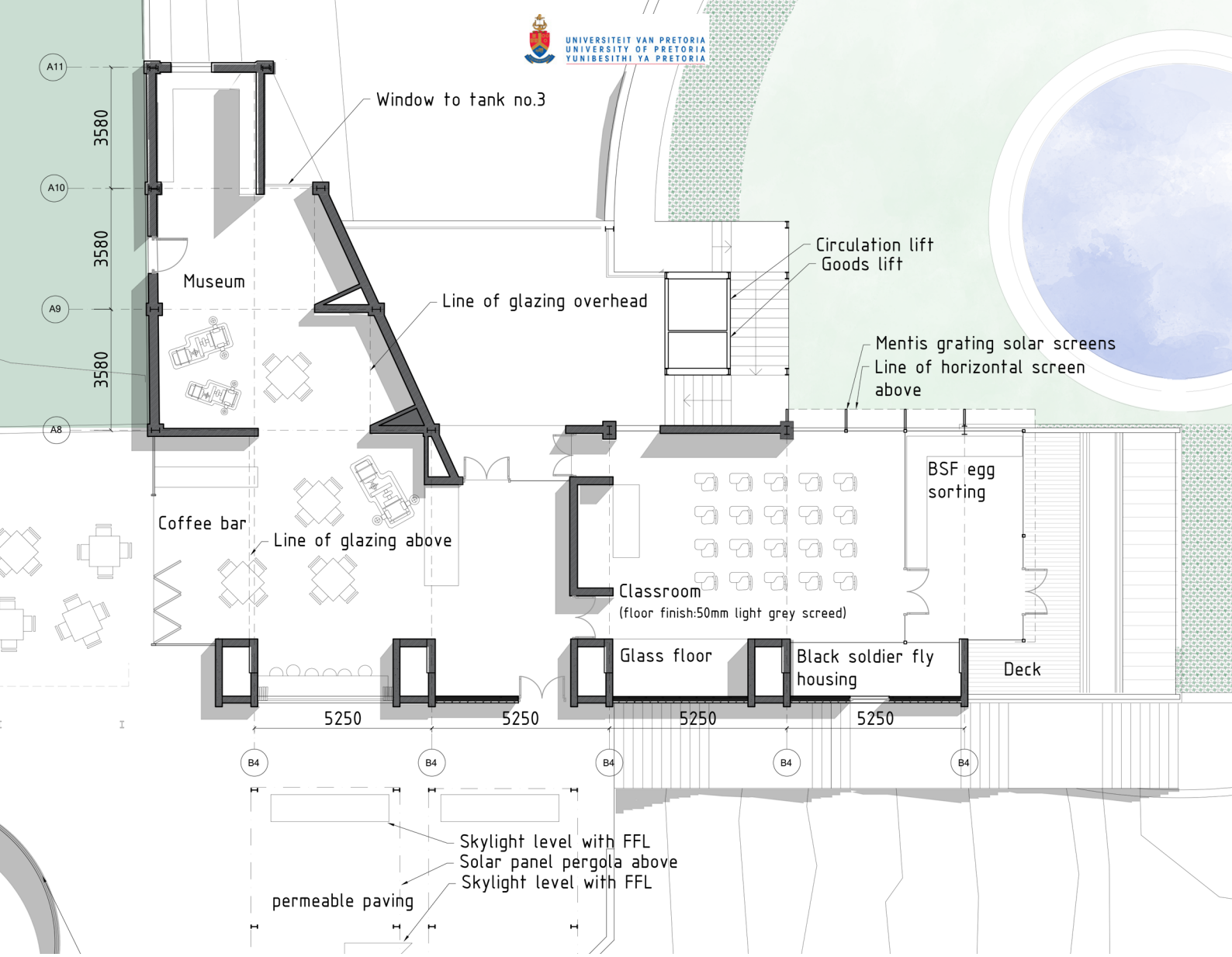


Figure 102 Building 2 square level plan (Author, 2017)

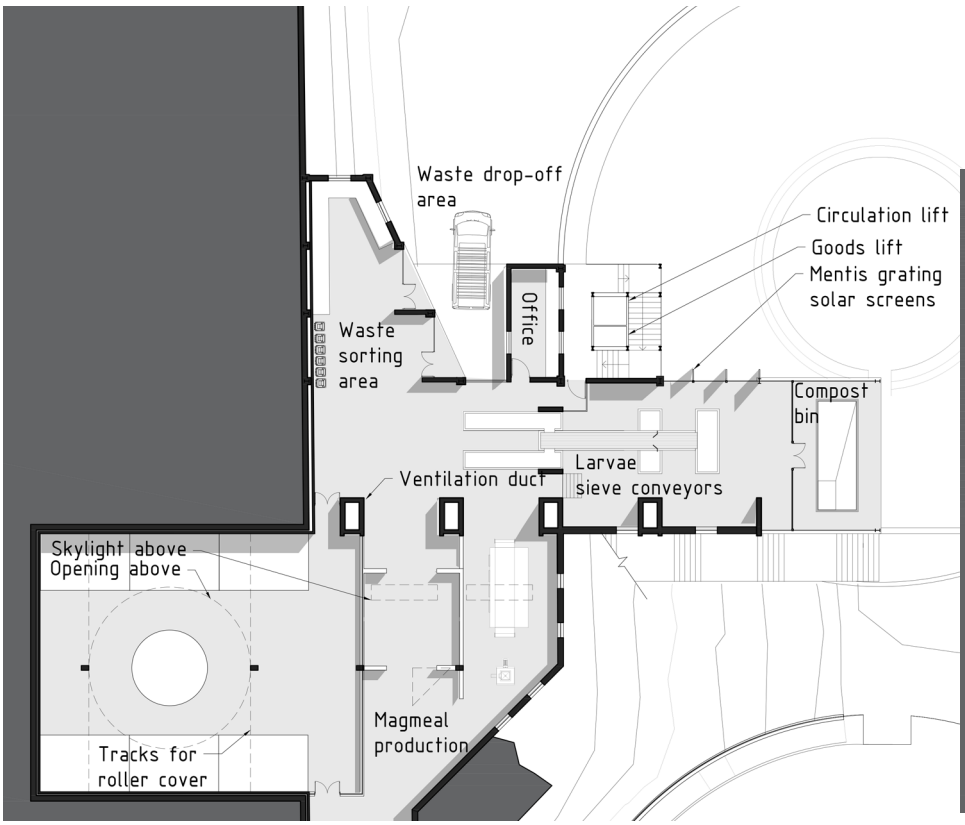


Figure 103 Building 2 service level plan (Author, 2017)

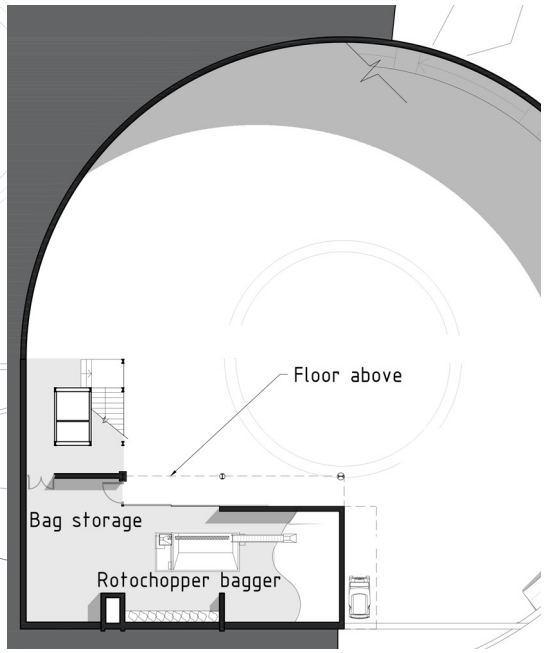


Figure 104 Building 2 park level plan (Author, 2017)

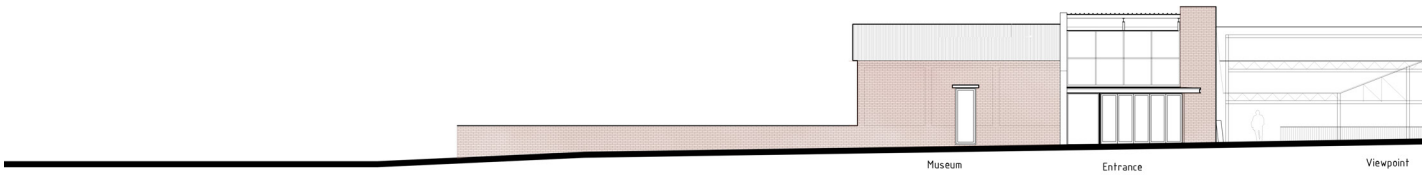


Figure 105 Southwestern elevation (Author, 2017)

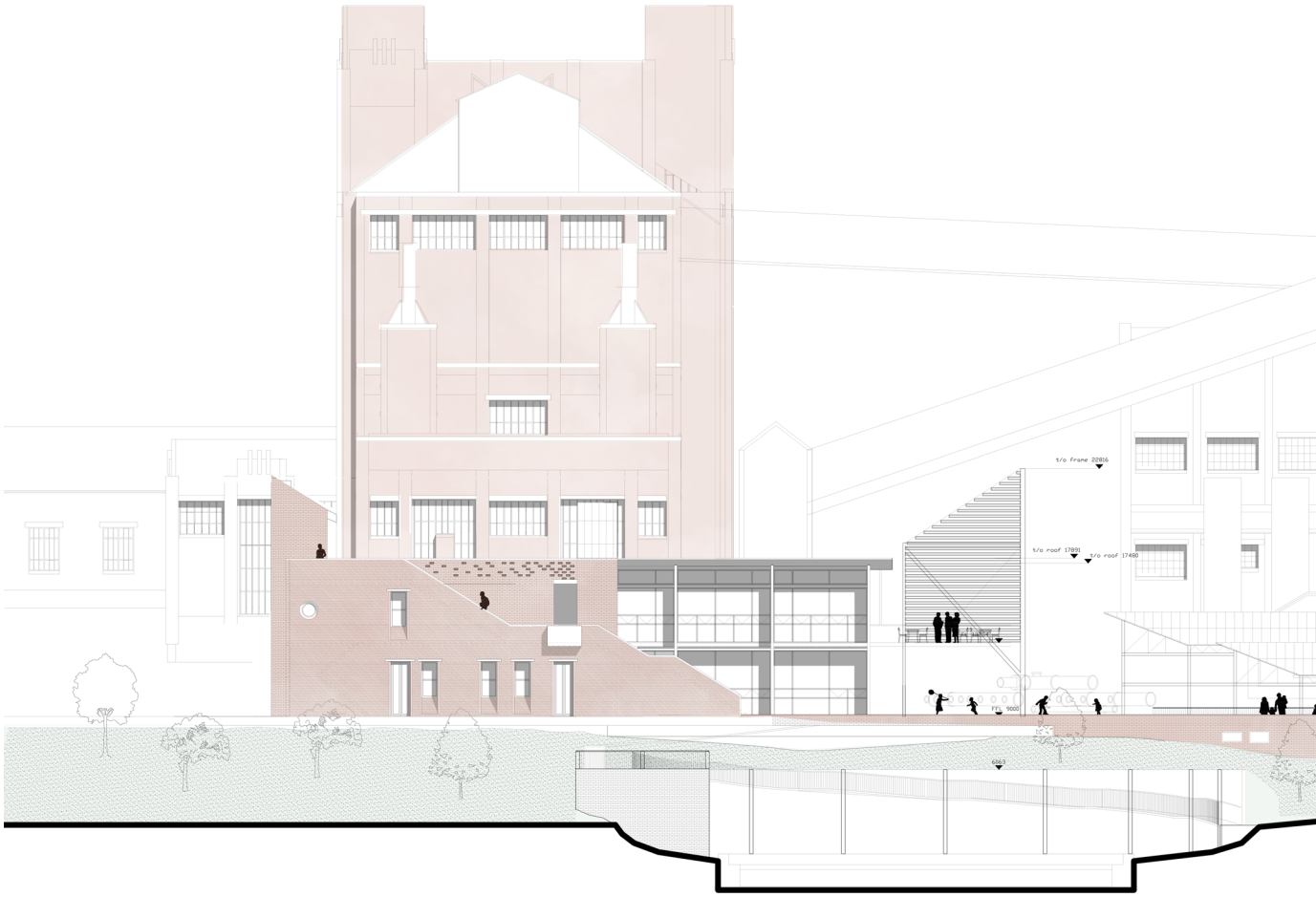
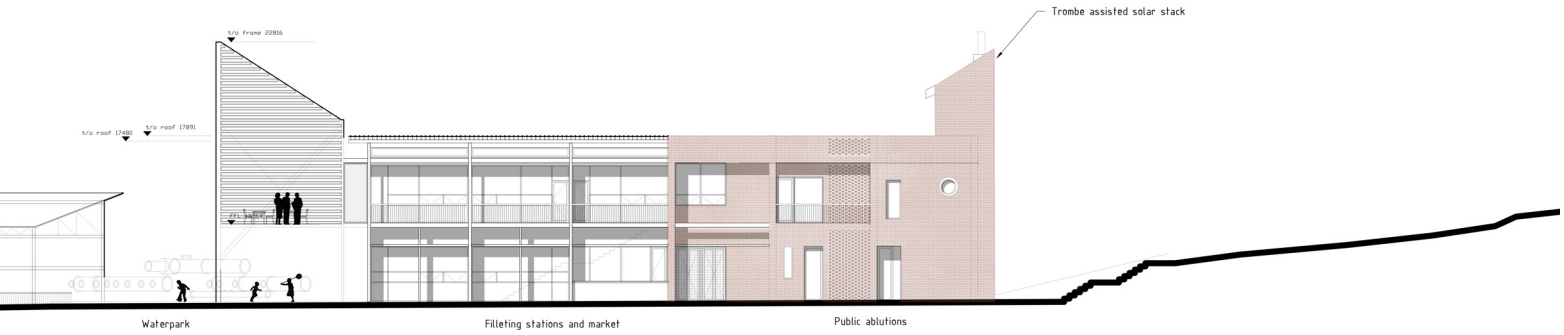
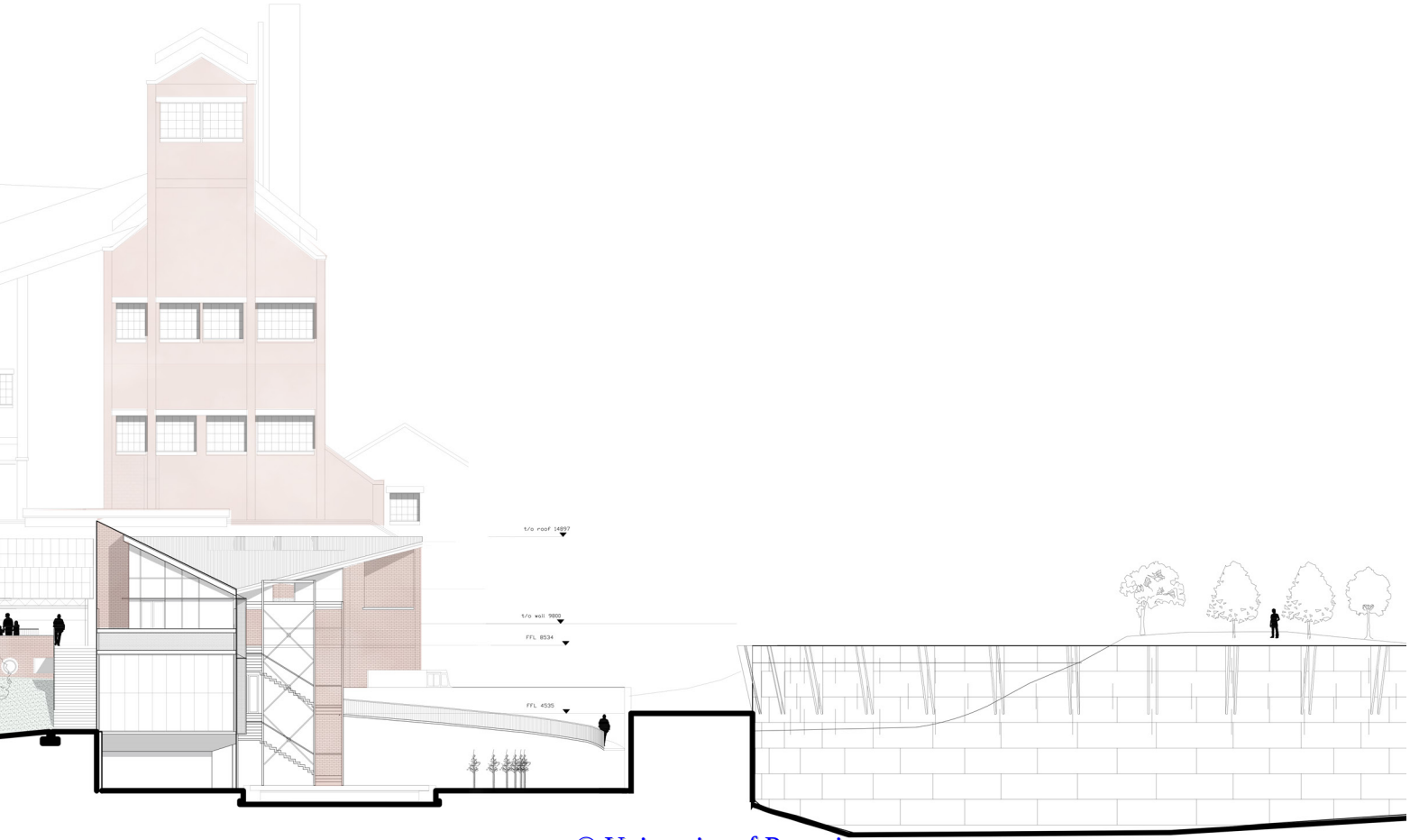


Figure 106 Northeastern elevation (Author, 2017)





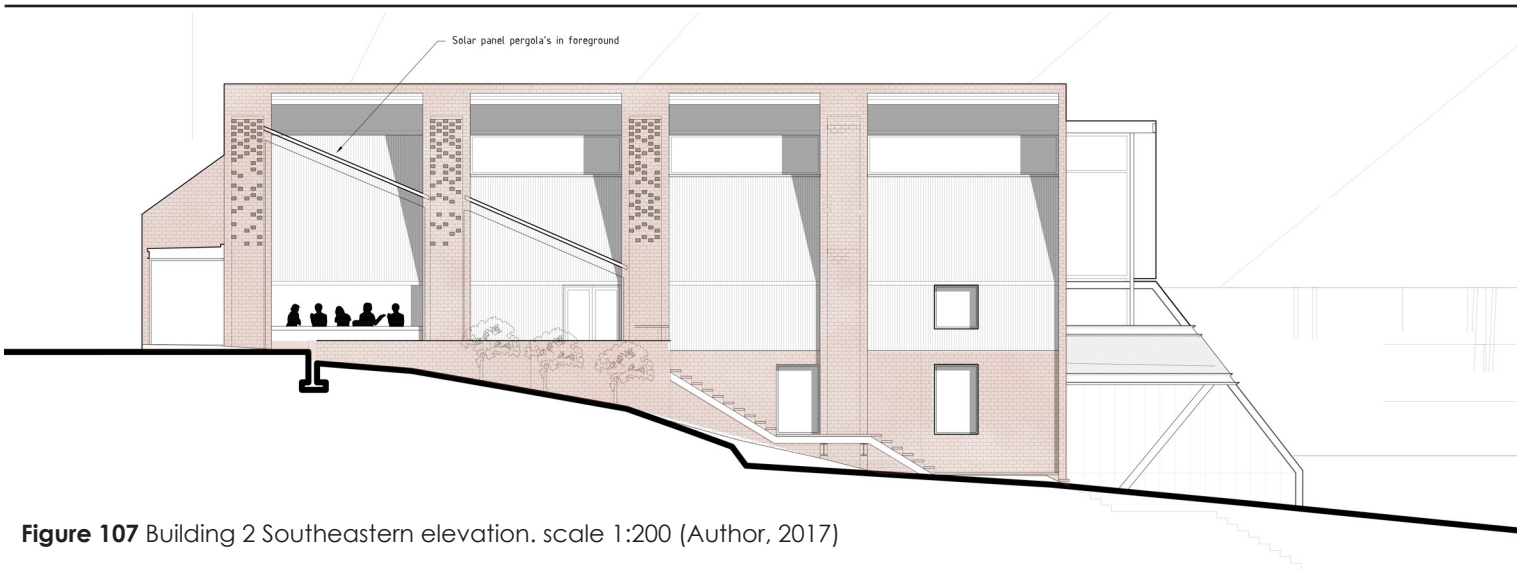


Figure 107 Building 2 Southeastern elevation. scale 1:200 (Author, 2017)

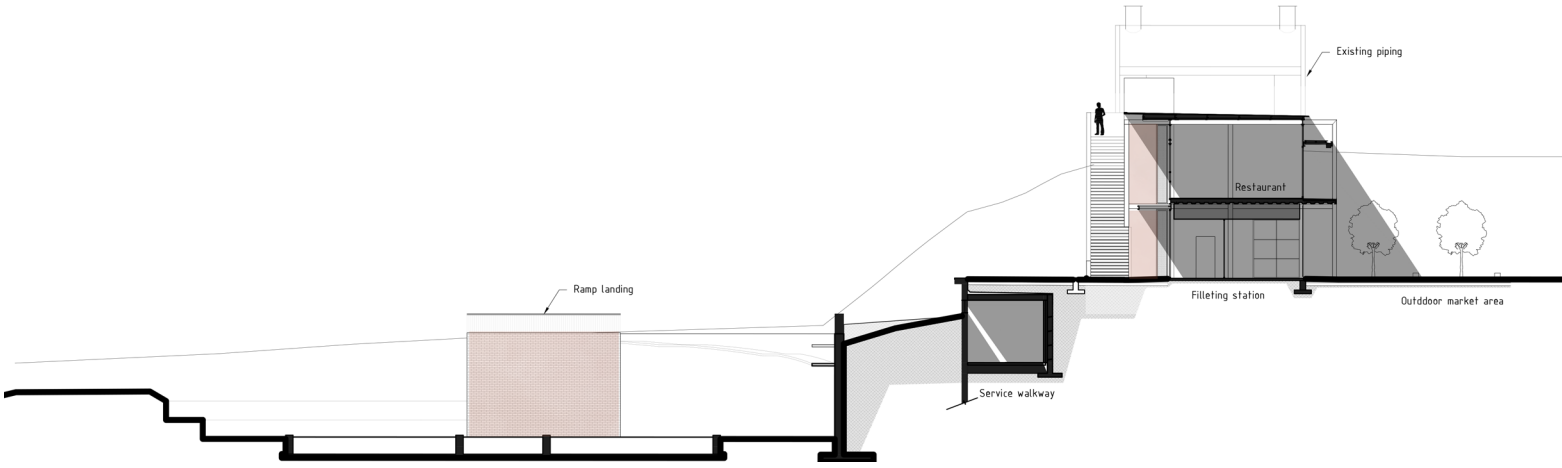


Figure 108 Building 1 cross section (Author, 2017)

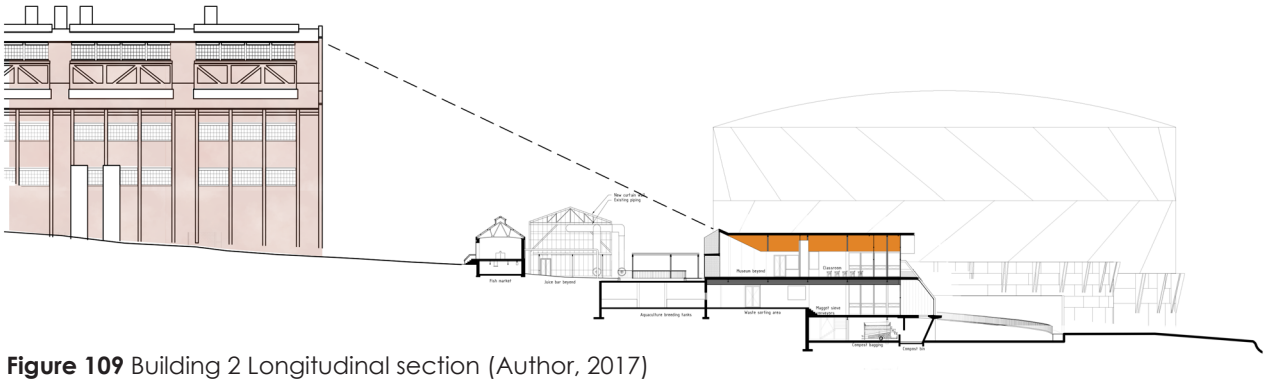


Figure 109 Building 2 Longitudinal section (Author, 2017)

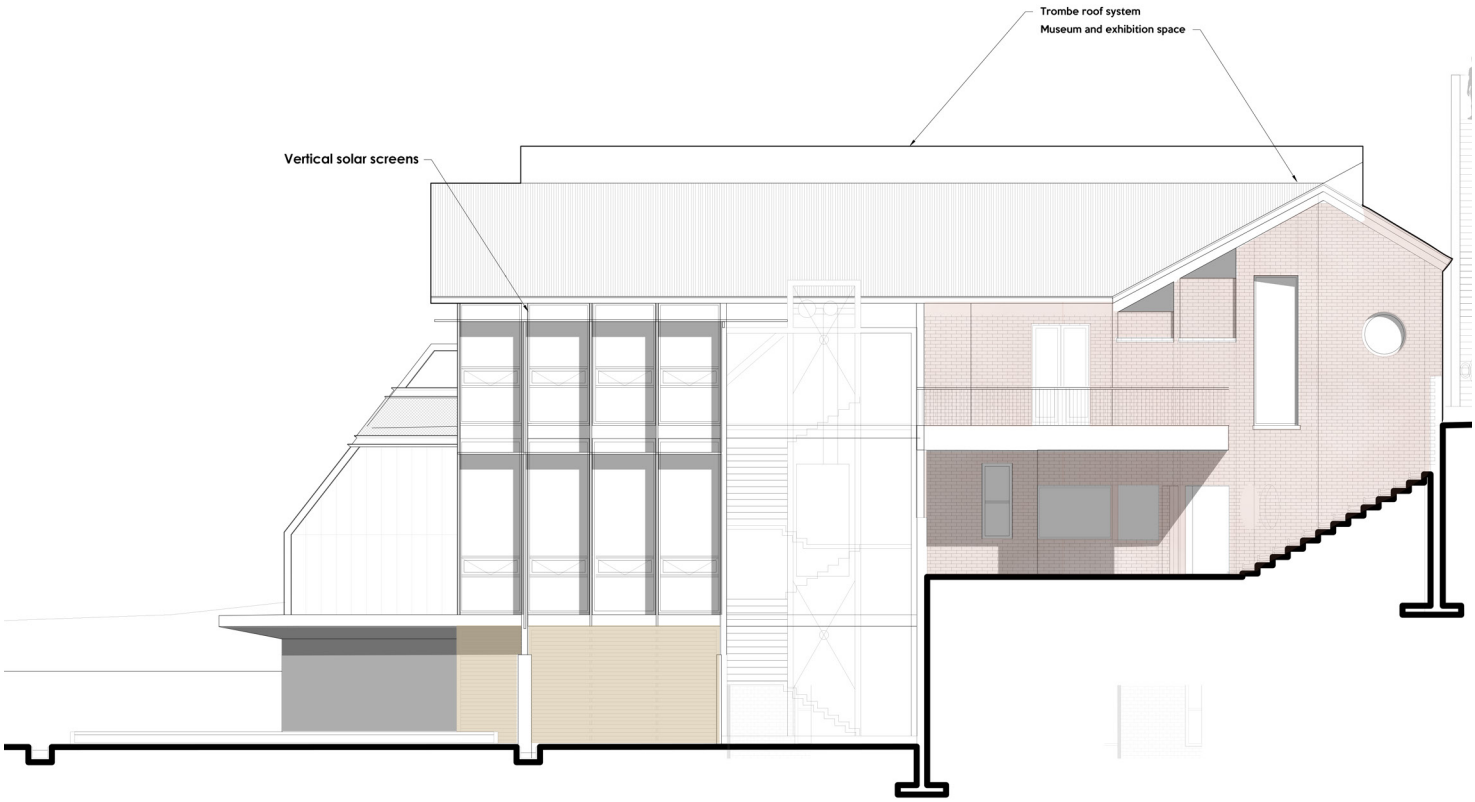


Figure 110 Northwestern elevation. scale 1:200 (Author, 2017)