

CHAPTER 4: EERSTERUST URBAN VISION GROUP FRAMEWORK

INTRODUCTION

During the course of 2013, three architectural MProf students created a group framework and design proposal for the Era Brick Works site as a large-scale urban strategy and vision.

The Eersterust Urban Vision Group consisted of Jacques Pansengrouw, Carla Taljaard and Carlheinz Von Geysso, who developed a framework and design proposal as a platform for their individual architectural design proposals.

The developed framework and proposals that came from the group have been evaluated and taken into consideration when approaching the landscape design intervention proposed in this project.

EERSTERUST URBAN VISION GROUP APPROACH

The intention behind the project was the introduction of social and ecological value introduced to a site with an industrial heritage.

There is a strong focus on the rehabilitation process for the quarry itself, allowing for the integration of industrial, ecological and social aspects to coexist, making all relationships as a result of these aspects apparent.

The main approach to the urban intention of the project deals with the concept of currency, defined by the urban vision group as: currency (n.) “1650’s, condition of flowing, from Latin currency, present participle of currere, to run, the sense of flow or course extended 1699 (by John Locke) to circulation of money.” These currencies are seen as avenues of flow, determined to be either apparent such as the flow of labour and raw material, or non-apparent, such as human capital and natural systems. These currencies tend to be forgotten and disregarded through various processes, resulting in areas where they previously occurred to transform into spatial and social voids (Pansengrouw 2014).

The urban intentions for the space were focused on the increase in biodiversity and establish a connection with the Eersterust residential suburb, dissolving the physical and perceptible boundaries previously existing between industry and society. (Taljaard 2014).

Both the tangible and intangible networks of Era Bricks are considered through the

understanding of the various currencies of the site. The non-apparent currencies are considered to be low value yet are fundamental in the support and integration of the apparent currencies which are perceived to be of high value, for example the exchange between different end products.

The intention of the urban vision was the possibility of industry to become a converter between apparent and non-apparent currencies, the focus falling upon the relationships between industries, ecologies and compromised environments. (EUVG 2013)

The urban vision proposes to address the quarry in terms of natural industries, reflective of and emergent from naturally occurring processes, or industries which extract and work with raw materials in a mutually beneficial manner, aiming to further the potential of Era Bricks as a premise of natural industries. (Von Geysso 2013)

The park is intended to be an ecological and industrial catalyst which manages and activates the site through exploration and reinterpretation of the attributes presented on site. (EUVG 2013)

Each individual design proposal was based on the main intervention principle that any proposed interventions should be based on apparent and non-apparent natural industries, which are focused in dealing with the relationships between man and the ecological environments. The master plan proposal included three

architectural interventions which made use of the existing buildings on site as well as the development of additional structures as the interventions required.

Each industry involved natural materials and processes within the industrial ecology and the interdependency of the various products and systems.

The three architectural interventions were:

1. A natural fibre processing plant acts as a translator and creates spaces of interaction with old, new and natural industries, enhancing the significance of each. (Pansengrouw 2013)
2. An incubator for ceramic-based industries becomes an architectural solvent for natural, industrial and social endeavours. (Taljaard, 2013)
3. An apiary and honey-processing facility becomes a transitional exploration from enclosure to opening, revealing the totality of the post-industrial terrain. (Von Geysso, 2013)

THE MASTER PLAN PROPOSAL EVALUATION AND CRITIQUE

After the evaluation of the masterplan proposed by *The Eersterust Urban Vision Group*, there are a number of interventions which have been addressed and evaluated as necessary for the implementation of a landscape design proposal, evaluation of the master plan was conducted in the manner as any other existing site would have been, opportunities and constraints as well as possible alterations have been developed.

Individual Architectural Design Analysis

The individual designs have been taken into consideration and all proposed functions and activities have been accepted as existing. The water strategies proposed by both the fibre processing industry and the ceramic production industry are both accepted. Both industries have proposed roof harvesting of water which provides sufficient water for all requirements, these roofs and water demands have been excluded from the landscape intervention water strategies and calculations.

In terms of the Apiary and honey processing industry, the water harvesting from the roof was sufficient to meet all water demands, however the incorporation of an indoor wetland and UV filtration process in one of the existing structures reconsidered for the incorporation into the larger water strategy to be proposed by the landscape intervention.

The roof of the apiary will be the only roof water harvested to contribute to the overall stormwater management strategy of the site and the only industrial water

demand to be considered.

The decision for the incorporation of *The Eersterust Urban Vision Group* proposal for the Era Brick Works as the existing infrastructure and activities to which the landscape intervention needs to respond, allows for the activation of the site in terms of an urban infrastructural aspect.

The notion of the incorporation of and transition in the direction of natural industries and processes for production as well as the integration of the site with the bordering ecological and residential environments, addresses the ecological, economic and social aspects which form the platform of an inclusive and balanced design.

The challenge of the landscape design intervention will be the connection of the site to the surrounding environments through the creation of a dynamic landscape which will draw people through the space while allowing for integration between the industrial and natural environment, focusing on the incorporation of rehabilitation and restoration of the bordering river systems.

The incorporation of the river systems as both a resource and a design informant for the creation of public space and production will recapture the important role and significance of water systems within the urban context.

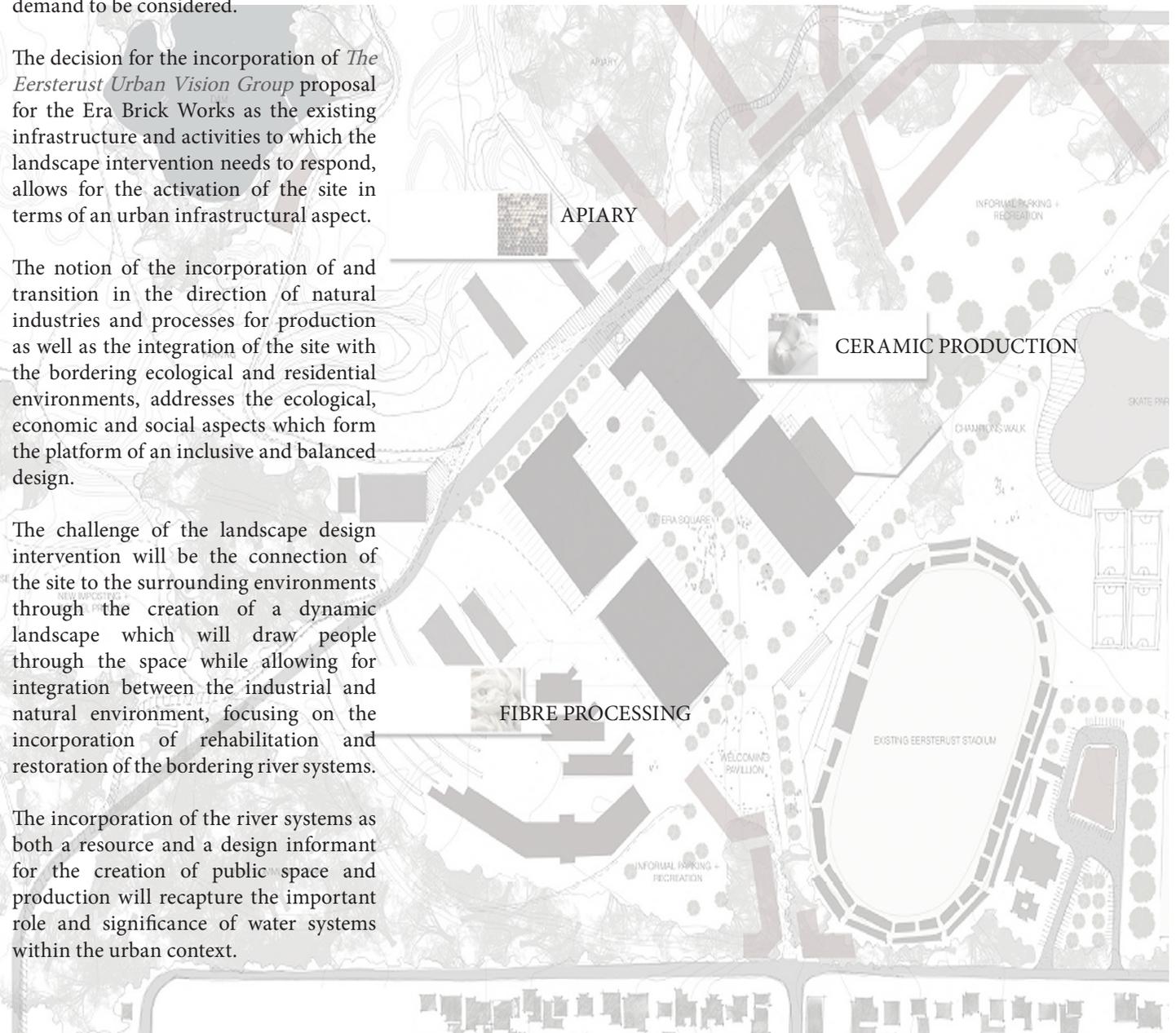


Figure 2.4.1: Eersterust Urban Vision Group Master Plan proposal⁶⁷
(Taljaard, Von Geyso and Pansengrouw, 2013)

INDIVIDUAL DESIGN EVALUATION: APIARY (CARLHEINZ VON GEYSO)

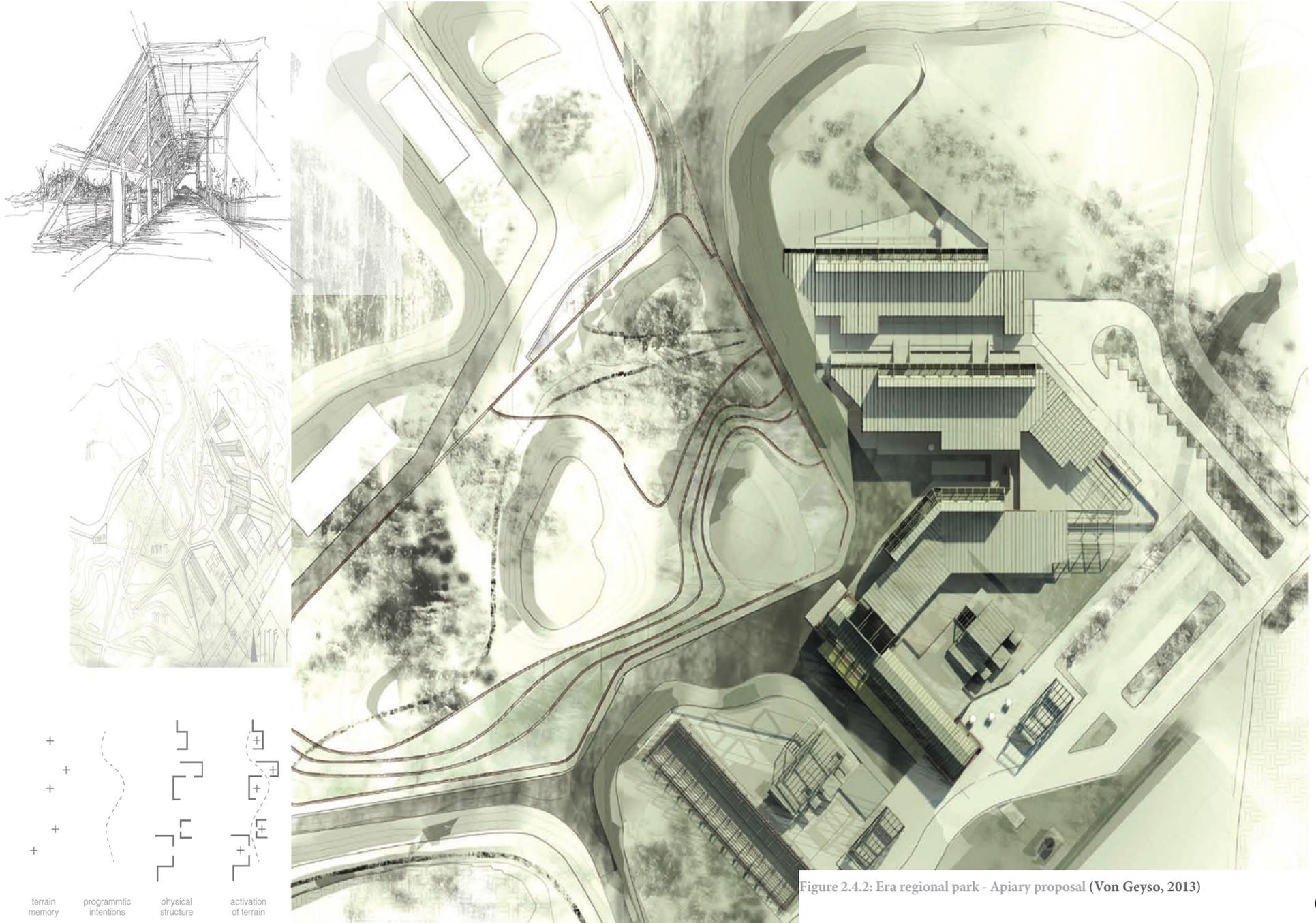


Figure 2.4.2: Era regional park - Apiary proposal (Von Geysso, 2013)

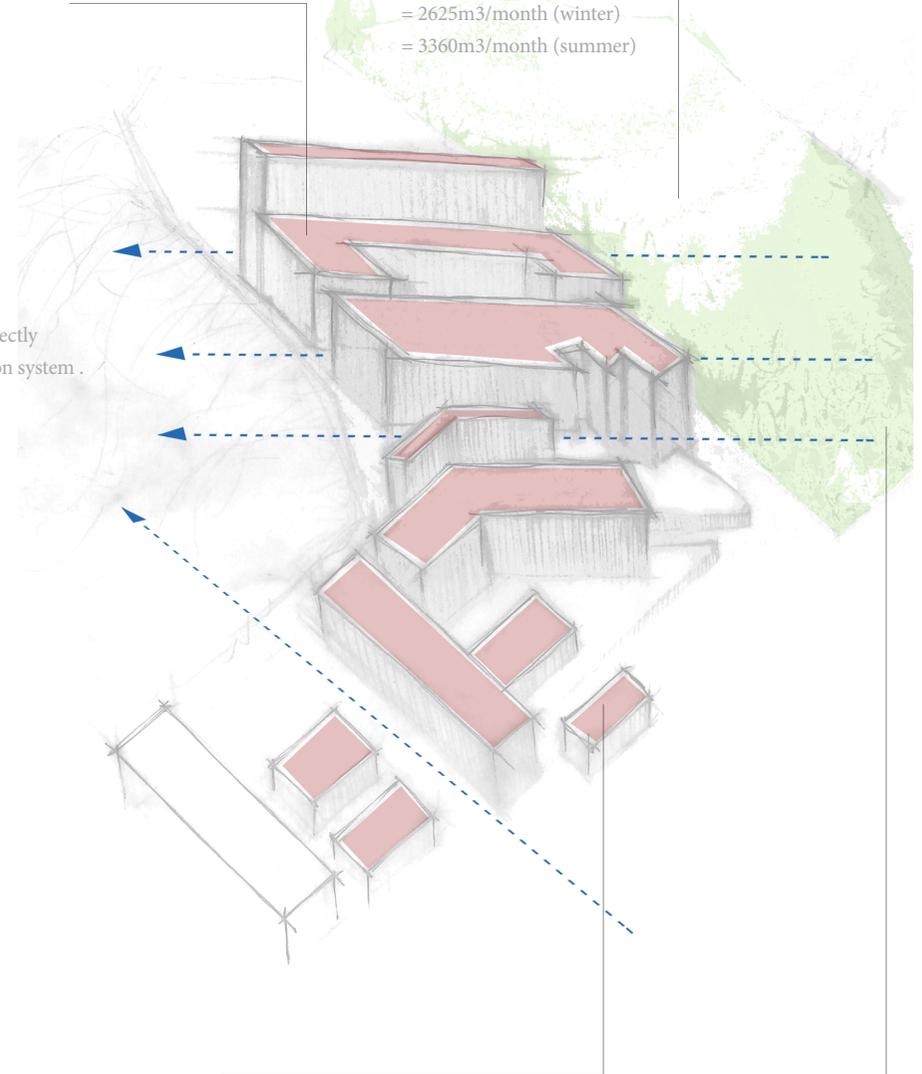


All rainwater harvested from the roofs will be used in the systems and processes in the Apiary; No water will be contributed to the stormwater runoff system.

Bee garden irrigation is included in the stormwater management system. The total demand for the bee garden is 35 910m³

- = 2625m³/month (winter)
- = 3360m³/month (summer)

Runoff directed into quarry. Directly related to stormwater purification system .



Water purification in a closed system incorporated into the existing buildings on site. The water needs to be purified to a potable water quality.

Bee garden runoff will drain directly into the quarry purification system.
Bee garden runoff = 5284m³/year.



Figure 2.4.3: Apiary investigation and design proposal (Von Geyso, 2013)

INCLUSION OF APIARY IN LANDSCAPE INTERVENTION

The water strategy proposal for the Apiary is successful due to the fact that it is able to harvest sufficient water from its roofs to be able to provide for the domestic water demand.

The water strategy includes the transformation of one of the existing buildings on site into an indoor wetland, the use of this building to house a natural system is not encouraged and rather proposed to be incorporated as an outdoor interactive and experiential element within the landscape.

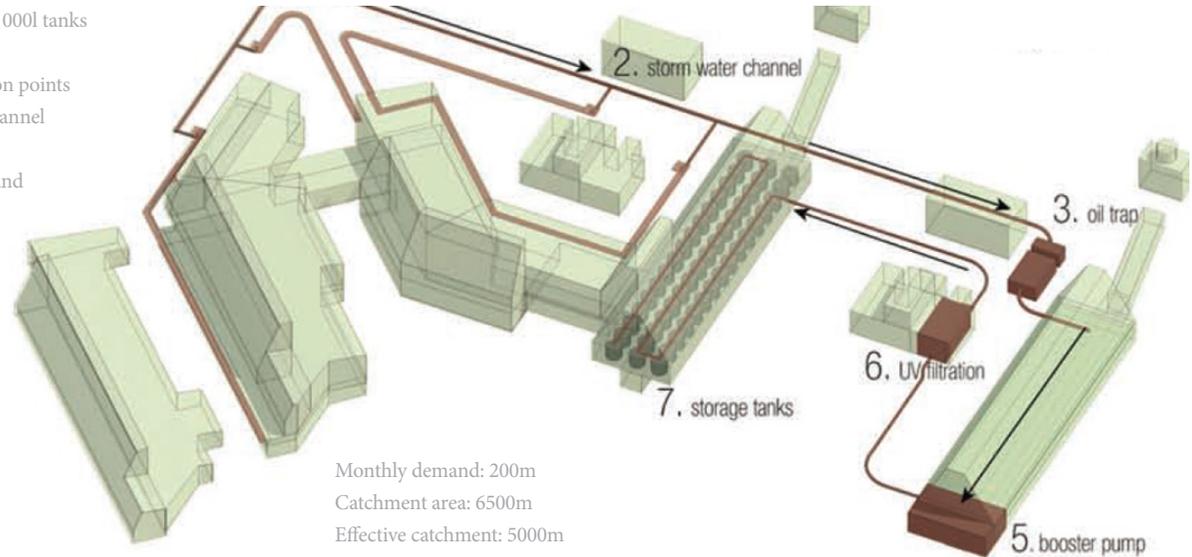
The indoor wetland is to be incorporated into the authors proposed water strategy and purification system and thus, the water demand for the apiary needs to be taken into consideration in the authors water calculations.

The rest of the water system will remain the same as stated in the proposal for the Apiary.

The irrigation of the bee garden has not been taken into consideration in the water strategy and therefore needs to be incorporated into the overall water demand for the site which will be provided for by the landscape intervention water strategy.

Proposal: 70 x 10 000l tanks

1. runoff collection points
2. storm water channel
3. oil trap
4. artificial wetland
5. booster pump
6. UV filtration
7. storage tanks



Monthly demand: 200m
 Catchment area: 6500m
 Effective catchment: 5000m
 Accumulative water remaining in tanks: 700m

Effective irrigation: 10 000m
 Total area for irrigation: 21 000m
 Water requirement per month (summer): 3360m
 Water requirement per month (winter): 2625m
 Approximate reservoir size: 1200m

- a. clay pit and water body
- b. sludge pump
- c. water reservoir
- d. water channel and sluices
- e. detention pond
- f. discharge pipe

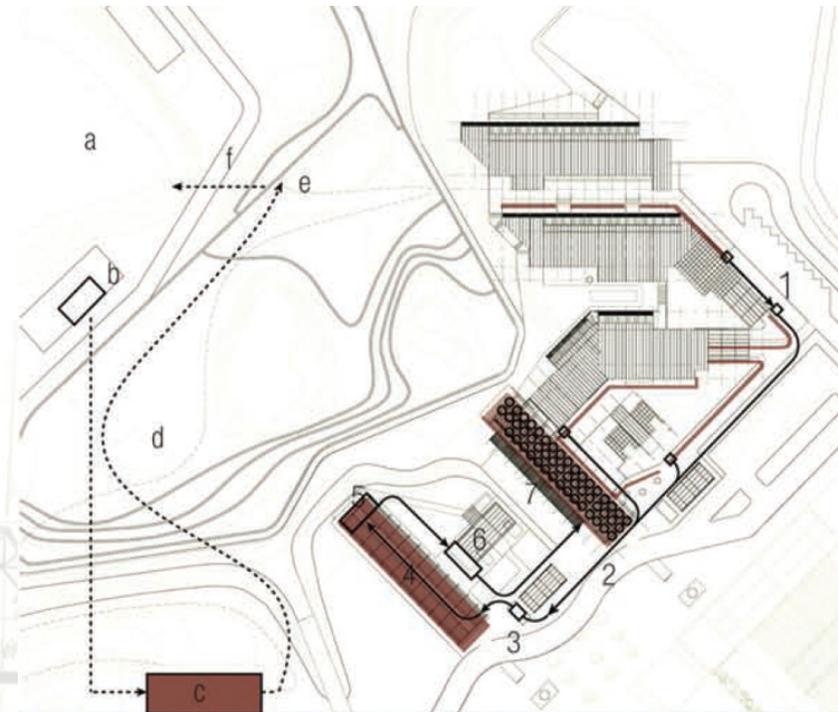
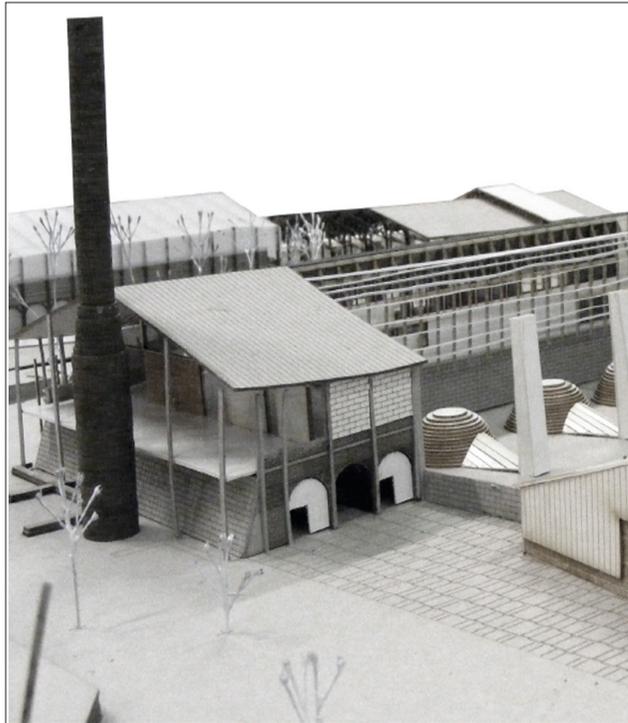


Figure 2.4.4: Apiary systems and processes (Von Geyso, 2013)



Roof harvested water is not included in landscape water calculations, all water is used in system to meet demands and requirements for ceramic production and domestic demand.

Stormwater runoff for ground surface water has not been addressed for the ceramic production area. The hardscaping surrounding buildings will be included in authors stormwater calculations for landscape intervention.

Total water demand: 1582.7m³

Total roof area used for water harvesting: 3148m² into the existing buildings on site. The water needs to be purified to a potable water quality.

Water demand for ceramic production:

- Clay mixing
- Extruding and wheel
- Ablutions
- Restaurant
- Water therapy
- Cleaning

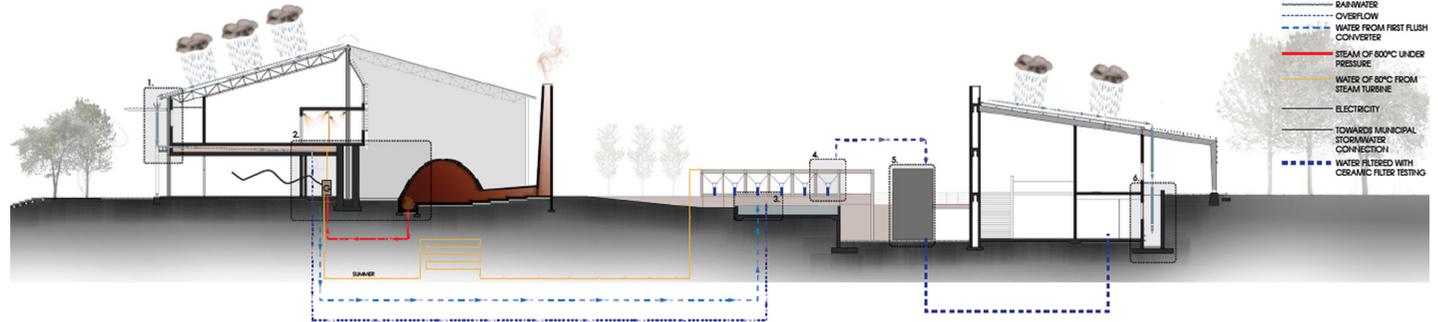
Soaking ponds act as water overflow management.

Stormwater runoff from hardscaping added to water purification system and used for irrigation.

Figure 2.4.6: Ceramic plant evaluation (Taljaard, 2013)

INCLUSION OF CERAMIC PRODUCTION IN LANDSCAPE INTERVENTION

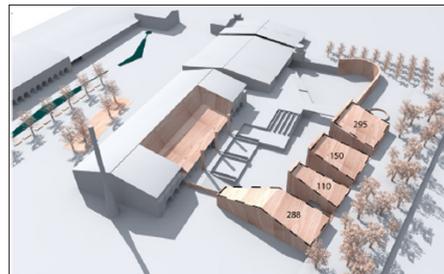
The ceramic production plant is not taken into consideration for the authors landscape water calculations in terms of demand, the water demand is met by the water harvested from the roofs of the buildings. The ground surface runoff however has not been incorporated into the river strategy and will be included in water harvesting calculations.



FIRING KILN BUILDING - EAST

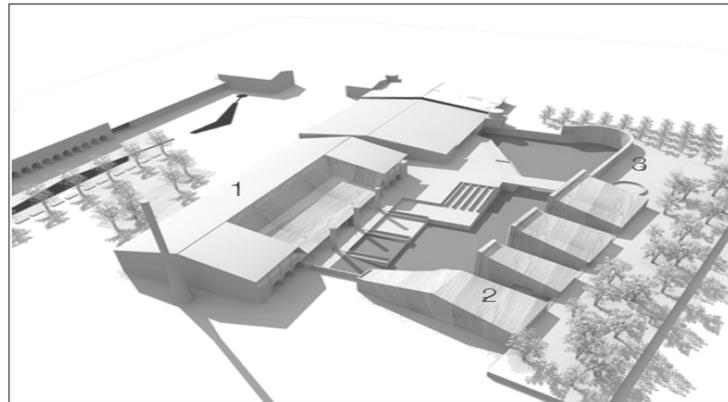


FIRING KILN BUILDING - WEST



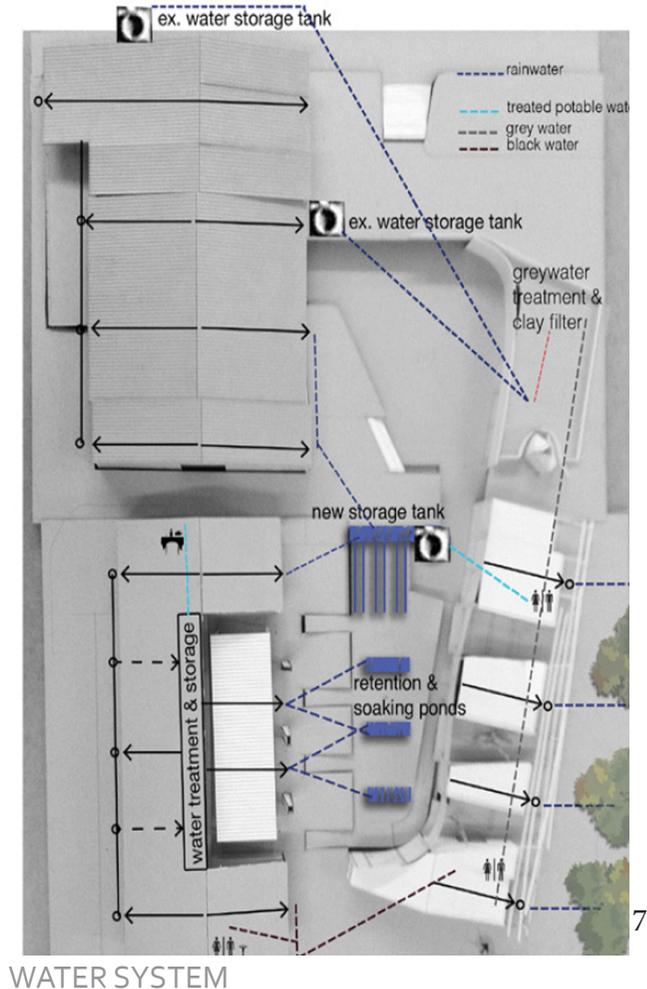
EASTERN ADDITION

1. 3350l of water per tonne of cermaic product produced.
2. 2800l can be reused as greywater.
3. Production aim - 4 - 4.5 tonnes of ceramic products per day = 15kl of water per day.
4. Water not required to be potable, but must be oil free.
5. Old drying shed roof harvesting of water.
6. Stored in existing water tanks on site.
7. Relies on gravity flow for transportation.
8. Firing kiln roof harvesting - stored in service core and underground tanks. Used for restaurant, offices and public ablutions.
9. Ceramic filters - indirect filtration process - used for showers, sinks and flushing.



Approach to Systems:

1. Old firing kilns which now house offices and retail spaces located to the west, with new batch firing kilns located to the east.
2. The basement grinding and mixing workshops.
3. The studio, workshops and employee services building.



WATER SYSTEM

Figure 2.4.7: Ceramic plant system and process investigation (Taljaard, 2013)

INDIVIDUAL DESIGN EVALUATION: FIBRE PROCESSING PLANT (JACQUES PANSENGROUW)

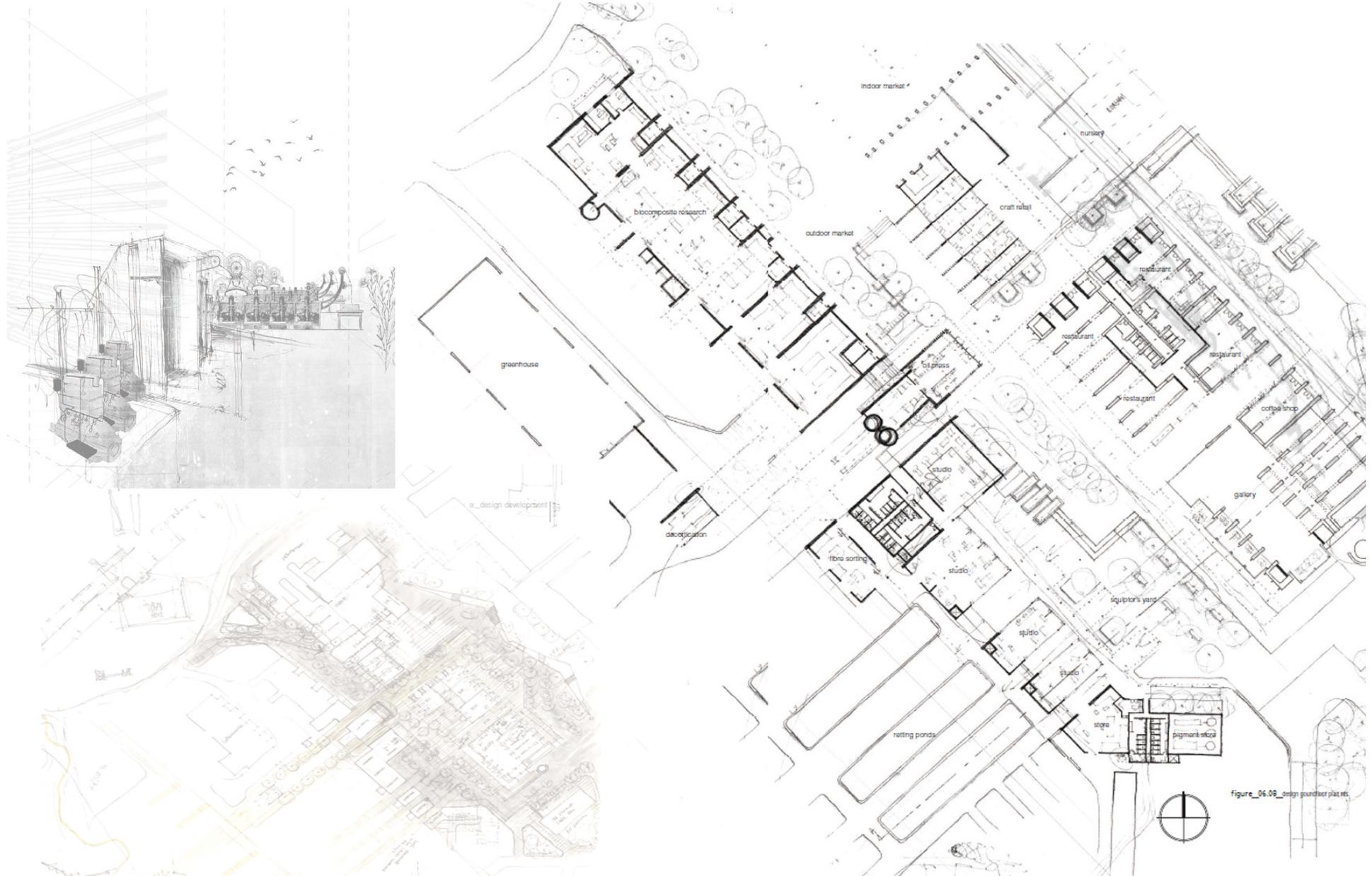
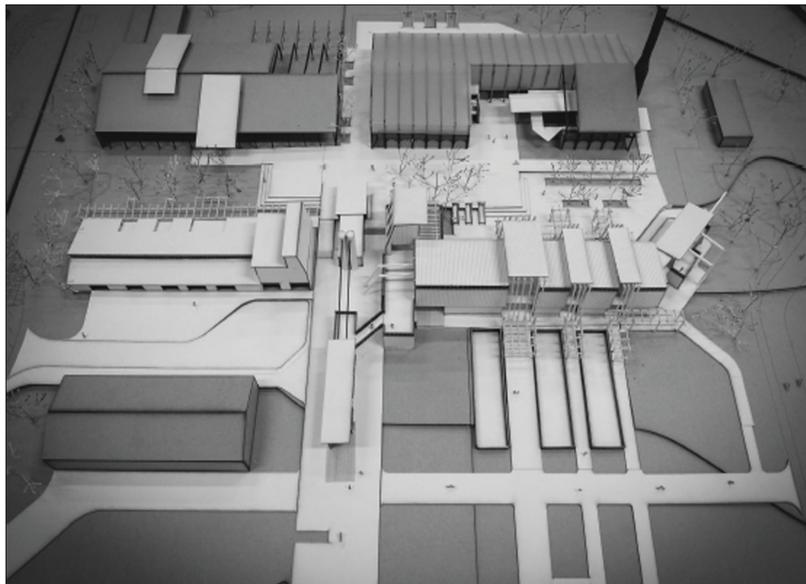
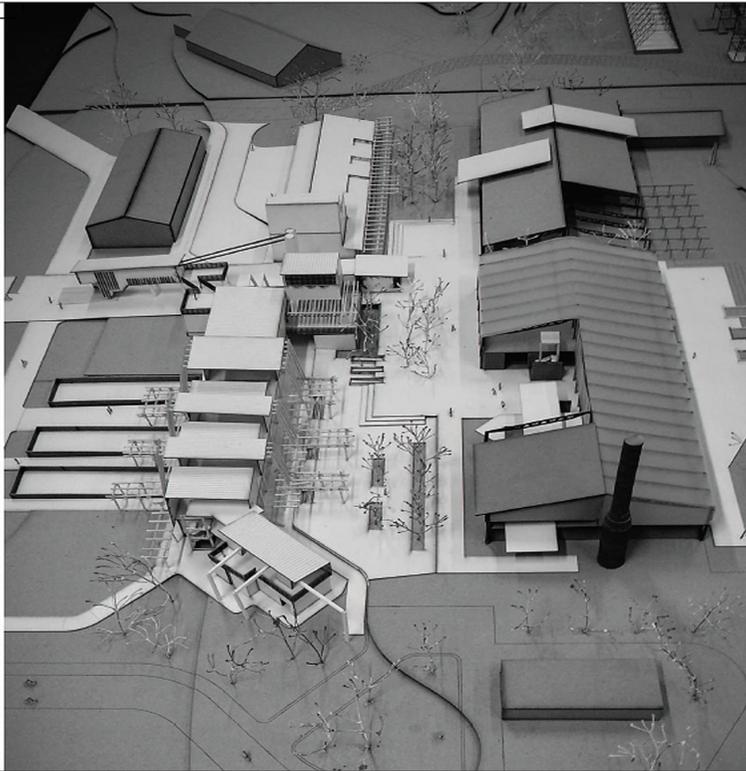


Figure 2.4.8: Fibre processing plant investigation and design proposal (Pansengrouw 2013)



All rainwater harvested from the roofs will be used in the systems and processes in fibre processing plant. No water from roofs will be contributed to the stormwater runoff system.

High irrigation demand for the growth of flax and Bamboo. This demand will be included in authors water calculations.

Water demand from systems and processes involved in fibre processing will be provided for by water harvested from roofs.

Stormwater runoff not taken into consideration for authors calculations. Stormwater is naturally directed towards the Moreleta River and will be included in calculations regarding river system.

Agricultural demand for irrigation. Area = 8442m²

Retting ponds - aspect of fiber processing which acts as water storage area.



Figure 2.4.9: Fibre processing plant evaluation (Pansengrouw 2013)

INCLUSION OF FIBRE PROCESSING IN LANDSCAPE INTERVENTION

The fibre processing plant is able to supply all water demands from the water harvested from the roofs of the buildings. No water from roofs will be taken into consideration during the authors water calculations.

The ground surface runoff from surrounding hardscape will not be included in stormwater calculations directly but will automatically be included in water calculations regarding the river system as the water stormwater naturally drains into the Moreleta spruit.

The agricultural demand for the growth of flax and bamboo has not been taken into consideration in the water strategy and will therefore be a water demand that will be provided by the authors landscape intervention and water strategy.

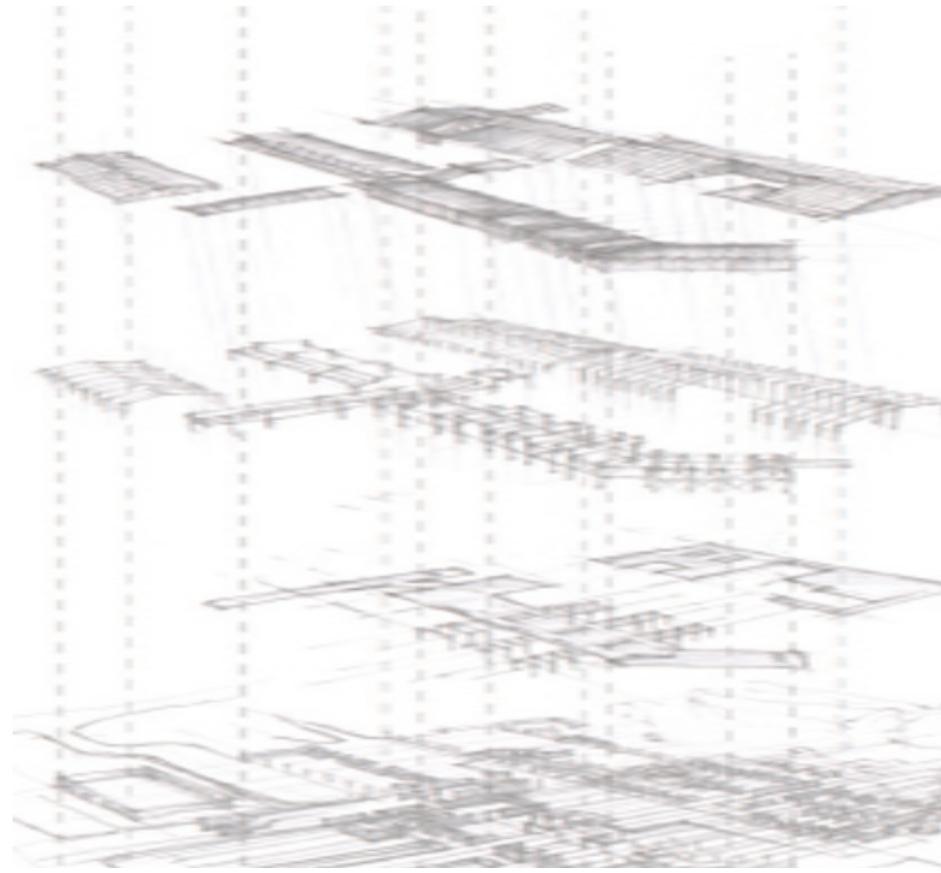
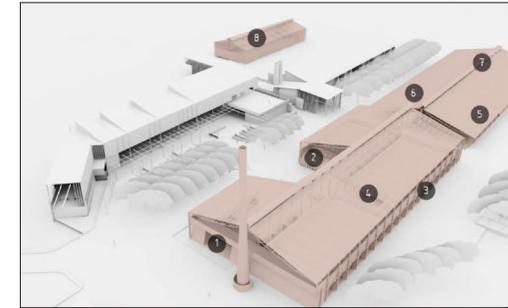


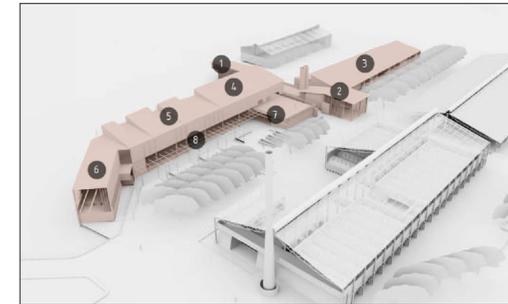
Figure 2.4.10: Fibre processing plant system and processes investigation (Pansengrouw 2013)

EXISTING BUILDING PROGRAMMATIC ORGANISATION



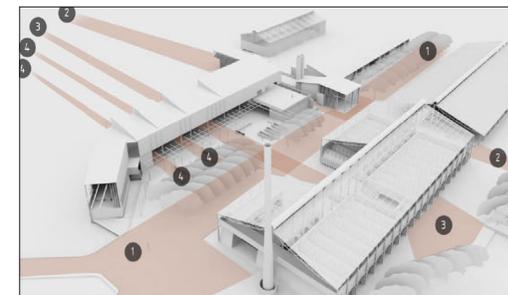
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|------------------|---------------|---------------|
| 1. Fibre Gallery | 4. Greenhouse | 7. Market |
| 2. Coffee shops | 5. Nursery | 8. Greenhouse |
| 3. Restaurant | 6. Retail | |

INTERVENTION PROGRAMMATIC ORGANISATION



- | | | |
|------------------|-------------|--------------------|
| 1. Decortication | 4. Spinning | 7. Sculptor studio |
| 2. Oil press | 5. Weaving | 8. Artist studio |
| 3. Biocomposites | 6. Dyeing | |

PUBLIC ROUTES



- | | |
|--------------|-----------------|
| 1. Primary | 3. Tertiary |
| 2. Secondary | 4. Semi-private |

EERSTERUST URBAN VISION GROUP MASTER PLAN PROPOSAL ANALYSIS: CONCLUSIONS

These proposals have been accepted into this dissertation to be the existing and the manner in which the landscape intervention will include and respond to the architectural and framework proposals. The buildings and related activities have been accepted as existing.

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