

Figure 5.1: Regenerative Framework Foci (Author 2019)

Spatial dualism

During the settlement of Pretoria, the Apies river played an important part in the daily lives of its people. The river was not only a physical source for freshwater and productive food systems, but also a place of spiritual and social fulfilment (Jeppe 1906:7). As an effect of Pretoria's positivist development, the Apies river has been modified to such an extent that today, it is unrecognisable as a river that once had such a strong spiritual and productive affinity (Goodman 1992). Due to this change, the citizens of Pretoria are physically detached from the Apies, unable to connect with the river on a spiritual and productive level. To address the disconnect, the CoT's has identified the regeneration of the Apies river as a crucial part to achieve its vision of a social, economic and environmental resilient city (City of Tshwane 2015).

According to the CoT (Open space management zone 2007:52), their Open Space Framework's development goal is to regenerate the Apies river by removing the modification that was made and, in the process, rehabilitating it back to its natural state. By regenerating the Apies river, new spiritual and productive connections with the river is possible. The regenerative framework specifies that both the Apies river's potential social function as well as its infrastructural function be addressed, through appropriate uses and interfaces (City of Tshwane 2007:7). According to the CoT's Regenerative Framework (City of Tshwane 2013), these new connections provide socio-economic and environmental place-making opportunities that have the potential to redefine the city's lost sense of place.

The celebration of everyday rituals and man's reconnection with nature through sensory experiences, as researched in this document, have the potential to make place and foster new lived experiences. Combining the CoT's Regenerative Framework's strategies with place-making strategies, appropriate programmes and functions for the architecture has been identified.

The selection of programmes was largely influenced by the three foci of the Regenerative Framework, namely to achieve economic, social and environmental resilience through new spiritual and productive connections to the Apies river.

Economic resilience

The issue: spatial dichotomy

Everyday rituals that are present in Trevenna are mostly economically driven activities and have the potential to strengthen the city's economy. But there is a dichotomy in the spatial practices of those everyday rituals, as some activities, classified as the 'formal', prescribe to how spaces were conceived i.e, retail/shops and offices, whereas other activities, called the 'informal', appropriate space as they see fit i.e, street traders. According to Lutizo (2016:9) this antithetical approach to how both spatial practices are perceived, impedes the opportunity for interaction and exchanges between these two spheres on an economic, social and spatial level. According to Bromley (2000:1,11) street

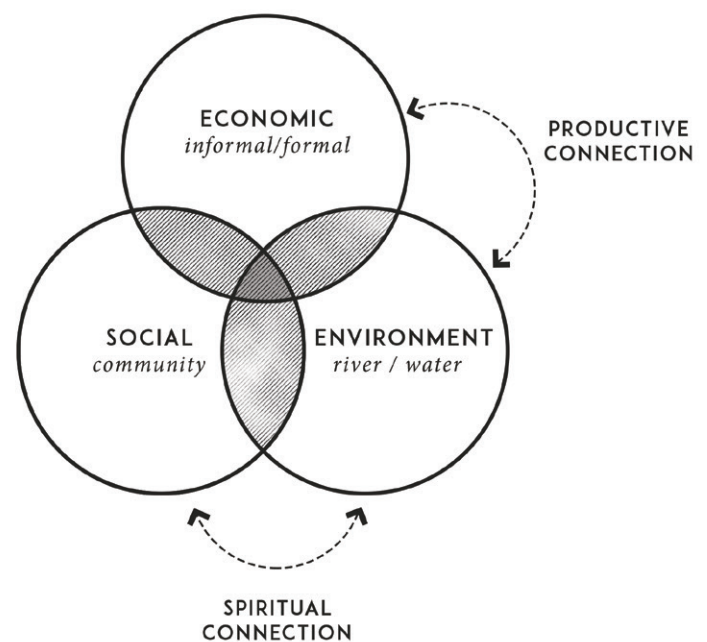


Figure 5.2: Top: Robert Sobukwe economic activity (Visco[city] 2019)

Figure 5.3: Mid: Economic activity traffic island (Visco[city] 2019)

Figure 5.4: Bottom: Programmes influences by Regenerative Framework foci (Author 2019)

Figure 5.5: Top Right: Pedestrian movement in Robert Sobukwe (Visco[city] 2019)

Figure 5.6: Bottom Right: Sidewalk appropriation (Visco[city] 2019)



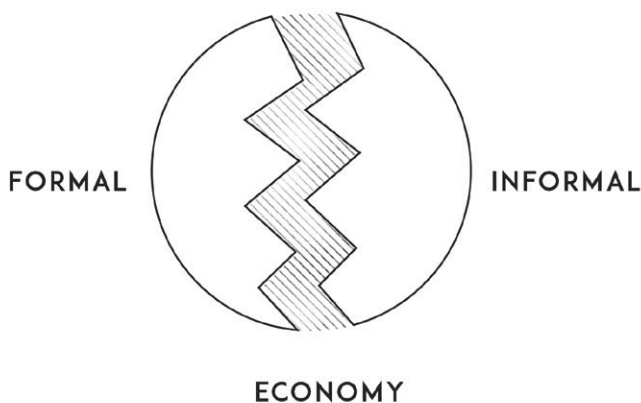
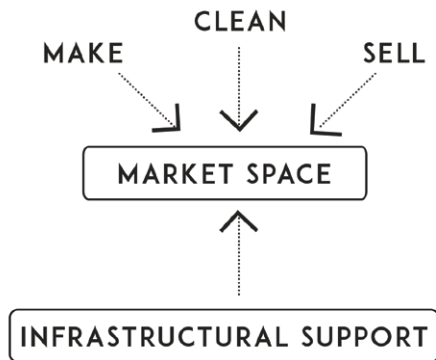


Figure 5.7: Top: Inclusive economy (Author 2019)

Figure 5.8: Mid: Infrastructural support (Author 2019)

Figure 5.9: Bottom: formal vs informal (Author 2019)

trading should be just another occupational group that supports the vitality of the streetscapes by producing and promoting social interactions as well as contributing to the economy.

The traditional perspectives of appropriation through street trading are portrayed within cities as untidy, unregulated and inefficient and thus having little value (Lutizo 2016:7). The argument against street trading is often further strengthened by the perception that street traders are a manifestation of poverty and underdevelopment. This notion has resulted in street traders being marginalised and excluded from future city development frameworks (Bromley 2000: 12-16). The integration of the growing workforce is hindered due to the lack of infrastructural transformation of our cities. Hernando de Soto (1989:14), a Peruvian economist, adds that it is exactly this lack of provision and support from the government that forces people into employment within the informal sector where they work as day labourers, selling goods on street corners without the necessary support or facilities.

The opportunity: Infrastructural and entrepreneurial support

For the city to become more resilient, it should foster an inclusive economy and support communities through quality infrastructure (City of Tshwane 2015:3). Lutizo (2016:11) believes that through architecture, a liminal space can be created where exchanges take place. For this to happen both spatial practices should be embraced, transcending the dichotomy and enabling the programme to become a platform for interactions, yielding richer lived experiences (Kretz and Salewski 2014:174). Rieniets (2014:181) suggests that public space is a key component in developing relationships as it connects seemingly different people without eliminating their differences. It can therefore be assumed that by creating a public market space, it can act as a liminal space that supports the everyday rituals with the necessary infrastructure, encourage exchanges between parties and fosters an inclusivity. Through a public market space, the everyday rituals are not only facilitated but also celebrated as they contribute towards public place-making which improves the lived experiences within the city.

A public market space will strengthen the economic

resilience of the city by providing the necessary infrastructure for both formal and informal rituals to function, allowing for exchanges and interactions to take place and thus promoting socio-economic inclusivity. The market will allow for appropriation by street vendors as it provides spaces to sell, make, clean and store their good. Combined within street trading, the market will also accommodate formal retail spaces coupled with their own preparation and storage areas to make the process of selling more accessible to entrepreneurs. Last but not least, the market space should be robust enough to allow for public events.

In order to grow a labour-absorbing economy, building infrastructure for formal and informal economic activities to take place as well as to allow for interactions and exchanges, is not quite enough. Individuals/entrepreneurs need to be equipped and empowered to take advantage of economic opportunities (City of Tshwane 2019:46). The CoT's Integrated Development Plan 2019 acknowledges the important role Small, Medium and Micro Enterprises (SMMEs) play within the city's economy and prioritises their promotion and development as they are key drivers for economic growth (Seda 2016:5).

In the 1995 government policy on SMMEs development was documented which focused on not only improving infrastructure but also increasing non-financial and financial support as well as creating a demand for services and products provided by SMMEs (Seda 2016:6). In line with the government policy and the National Small Business Amendment Act (Act 29 of 2004), institutions such as The Small Enterprise Development Agency (SEDA) and The Small Enterprise Finance Agency (SEFA) were established with the responsibility of business development and support (The DTI 2008). According to SEDA (Seda 2016:7) apart from poor infrastructure, access to financing, a lack of credit history, the inability to produce a business plan as well as poor market research and business ideas are some other limitations that hinder the success of SMMEs. Constraints such as limited entrepreneurship capacity and the shortage of skills hinder the potential of economic growth possible (The DTI 2008). That is why it is such an important task to provide support through the means of a

business incubator as entrepreneurs and SMMEs have the potential to really contribute towards a more economically resilient city.

According to Merriam Webster dictionary an incubator is defined as a place or organisation that supports new and/or developing businesses by providing shared services, management assistance or subsidised commercial space (Merriam Webster 2019). Linking the business incubator with the Department of Trade and Industry's (DTI) existing Enterprise Investment Programme (EIP) increases the potential to strengthen the economic development of the SMMEs (The DTI 2014:2). The business incubator will encourage partnerships between different enterprises (big and small), skills transfers, allow opportunity for networking, access to funding and ongoing mentorship (The DTI 2014:2).

The incubator provides the opportunity for entrepreneurs to receive support from a variety of professionals. They will form part of a network of business owners that can help support and educate younger businesses. Through its connection with DTI, entrepreneurs share in DTI's resources and business development expertise. Thus, the incubator is a platform for SMMEs that provides infrastructural, financial and non-financial services that supports their development with the aim to create a more stable environment for businesses to be established and grow.

The business incubator strives to provide both non-financial support and financial support. The non-

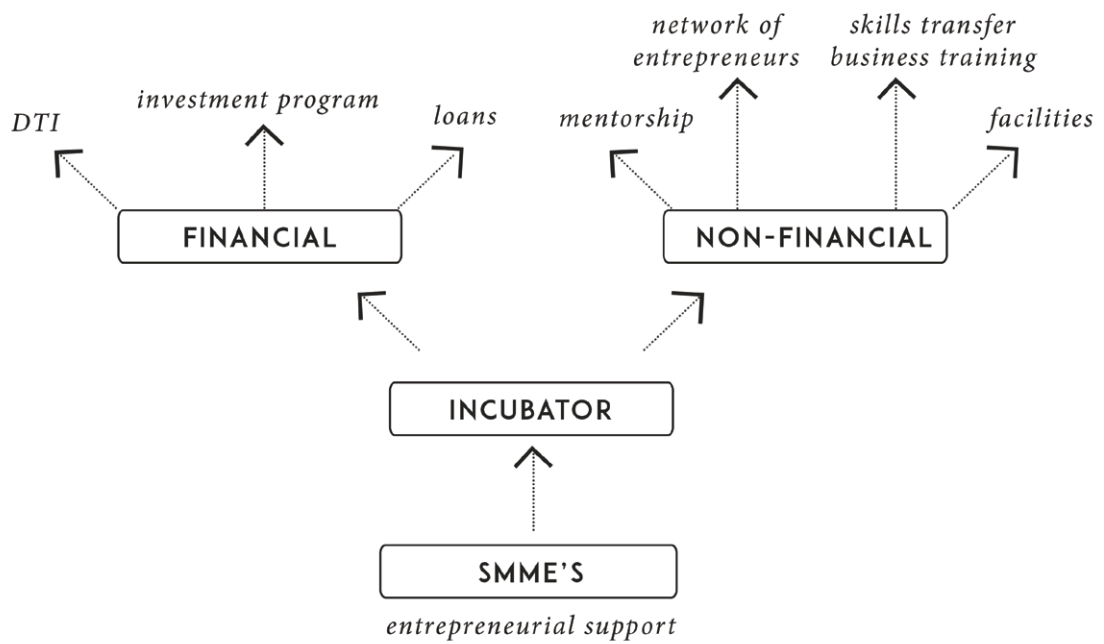


Figure 5.10: Entrepreneurial support (Author 2019)

financial support will be through its business development training programme which require seminar rooms where training is provided by experts to budding entrepreneurs [learning]. As the business incubator encourages partnerships and skills transferring, workshop spaces are also provided where entrepreneurs can meet to develop and/or test their business ideas together [testing]. Studio spaces are also provided for those who need to work in private but also need to use the facilities of the incubator [making]. Lastly, the business incubator provides maker/preparation spaces that are linked to the subsidised retail

spaces of the public market to support and promote a business from inception to implementation.

As for the financial part of the business incubator, a public interface is important as it will allow any entrepreneurs to approach and make use of financial services. A public foyer and waiting area links with the administration and financing offices where entrepreneurs can apply for financial assistance (short term loans, daily loans), equipment rental as well as apply for subsidised retail space. A combination of smaller and larger meeting spaces are required for general daily applicants as well as larger public/private investment presentations. Apart from being part of DTI's investment programme, a physical link between the business incubator and DTI is required as most of the resources (financial and non-financial) are already present within DTI but not yet accessible to most.

Social and cultural resilience

The second focus of CoT's Regenerative framework is to create a socio-cultural resilient city. But due to the city's positivist development, its citizen's lived experiences have been negatively effected. Within Trevenna specifically, the chanalisation of the Apies, public space fragmentation and DTI's mono-functional and privatisation has led to a loss in the sense of place and has negatively effected the lived experiences within the city.

As an attempt to restore the cultural and social signifiance of the Apies river, a programme that allows for social interaction/exchanges between people is encouraged but also interaction with the Apies river. Apart from the public market space that is a platform for exchanges, an ancillary programme is required to foster a new relationship with the Apies river. By using the Cot's Regenerative vision as a framework for development, the latent event potential of both the natural river and Theosophical society a social and cultural catalyst for the site.

Suitable programmes that can act as a social and cultural catalyst whilst encouraging a physical and spiritual connection with the landscape is realised in the form of recreational programmes consisting of a public swimming pool, an event or gathering space as well as a cafe' and garden that serve both the public and private, as it will allow groups of people to come together and enjoy the river, as it once was - a source of social and spiritual fullfilment.

The swimming pool, gathering space and cafe' is public as it encourages interaction/engagement between people of different social and cultural backgrounds and is also part of the natural landscape, as it promotes a stronger relationship with the river through either a physical or visual connection with it.

Environmental resilience

The imminent water crisis looming over South Africa and the rest of the world, has increased the need for innovated ways to harvest, store and re-use water. Through the introduction of building functions such as water harvesting, water filtration, water purification and the re-distribution of water back into the city, the project aims to improve environmental resilience whilst providing a platform to re-establish a productive and spiritual connection between man and the Apies river.

Although the channelization of the Apies river was taken as a precautionary measure to future proof the city against potential flooding, the formalisation of this natural resource has led to a disconnect between the city dwellers and the natural environment. This disconnect, has resulted in a total disregard for water as a valuable source of life, leading to the current polluted state of the river.

What if, instead of formalising rivers to protect against flooding, we design buildings that embrace it and instead of losing the connection between man and nature, architecture becomes a mediating platform between the two? By re-evaluating what 21st century urban architecture looks like, this dissertation explores ways in which our buildings can improve natural urban environments and in so doing, catalyse environmental regeneration and induce positive change.

SANS spatial requirements

SPACE	FUNCTIONAL REQUIREMENTS	OCCUPANCY	AREA	TOTAL OCCUPANCY	TOTAL AREA
Public Market				243 Occupants	660
Retail		F2		28 personnel	350
Retail 1,2, 5		F2 - small retail - 1 per 15m ²	30m ² per shop	6 personnel	90
Retail 3		F2 - small retail - 1 per 15m ²	25m ² per shop	1 personnel	25
Retail 4		F2 - small retail - 1 per 15m ²	20m ² per shop	1 personnel	20
Informal trading space 1-10		1 person per 5m ²	10m ² per stand	20 personnel	100
Preparation area 1-10		1 person per 5m ²	10m ² per stand		100
Decanting room - equipment storage		J3 - low risk storage	15m ²		15
Open market space		A1 - Public assembly - 1 person per 1m ²	215m ²	215 public occupants	215
Public ablutions	< 250 occupants	50% Male/50% Female	95m ²		95
	Male: 2 W.C + 4 WHB + 3 Urinals Disabled: 1 W.C. + 1 WHB Female: 4 W.C + 4 WHB Disabled: 1 W.C. + 1 WHB 24 external cold water taps				

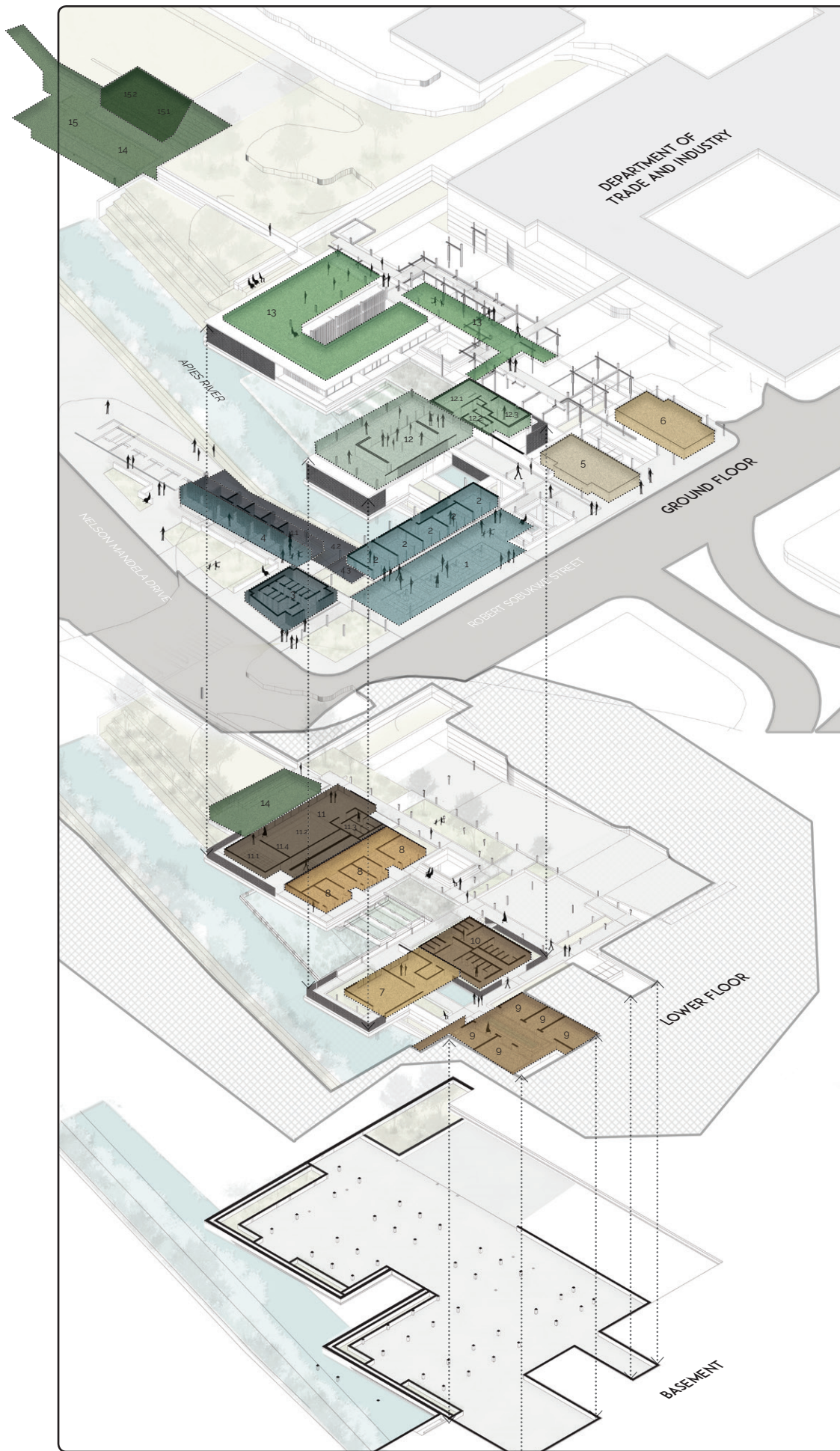
SPACE	FUNCTIONAL REQUIREMENTS	OCCUPANCY	AREA	TOTAL OCCUPANCY	TOTAL AREA
Restaurant				83 Occupants	285
Coffee shop		A1 - Entertainment and public assembly - 1 person 1 seat	200m ²	77 people	
Seating internal		45 seats	140m ²	45 people	140
Seating external		32 seats	60m ²	32 people	60
Kitchen		B3 - Light commercial - 1 person per 15m ² = 6 Personnel	40m ²		40
Storage dry			20m ²		20
Storage cold			5m ²		5
Refuse area			5m ²		5
Toilets			15m ²		15
	Unisex: 2 W.C + 2 WHB Disabled: 1 W.C. + 1 WHB				































SPACE	FUNCTIONAL REQUIREMENTS	OCCUPANCY	AREA	TOTAL AREA
Incubator				
Administration		G1 - Offices - 1 person per 15m ² = 18 Occupants		271,5
Foyer + Waiting area (GF)			48m ²	48
Reception (GF)			12,5m ²	12,5
Administration office (GF)			10m ²	10
Financing office 1, 4 (FF)			23m ²	23
Financing office 2 (FF)			12,5m ²	12,5
Financing office 3 (FF)			12,5m ²	12,5
Consulting small (GF)			12,5m ²	12,5
Consulting small (GF)			12,5m ²	12,5
Boardroom large (GF)			40m ²	40
Kitchenette + lounge (FF)			50m ²	50
Boardroom small (FF)			23m ²	23
Ablutions (GF)			15m ²	15
	Unisex: 2 W.C + 2 WHB Disabled: 1 W.C. + 1 WHB			
Learning/Teaching		A3 - Place of instruction - 1 Person per 5m ² = 60 occupants		297
Studio spaces 1-6			15m ²	90
Lecture room 1			70m ²	70
Lecture room 2			50m ²	50
Meeting room			20m ²	20
Outdoor amphitheatre				
Equipment storage			10m ²	10
Foyer + Waiting area			15m ²	15
Office			12,5m ²	12
Ablutions			30m ²	30
	Male: 1 W.C + 2 WHB + 3 Urinals Female: 2 W.C + 2 WHB			
Testing/Making		B3 - Light commercial/industrial - 1 person per 15m ² = 30 occupants		437
Maker's space 1			29m ²	29
Maker's space 2			19m ²	19
Maker's space 3,4			40m ²	80
Maker's space 5			29m ²	29
Storage 1			10m ²	10
Storage 2			10m ²	10
Kitchenette + lounge			25m ²	25
Workshop			95m ²	95
Ablutions + changeroom			140m ²	140
	Male: 2 W.C + 4 WHB + 3 Urinals + 3 showers + 15 lockers Disabled: 1 W.C. + 1 WHB Female: 4 W.C + 4 WHB + 3 showers + 15 lockers Disabled: 1 W.C. + 1 WHB			

Figure 5.11: SANS spatial requirement
(Author 2019)

Figure 5.12: Layering programme on site
(Author 2019)

Programme placement



- PUBLIC MARKET 
- MARKET SQUARE  1
- RETAIL  2
- ABLUTIONS  3
- VENDING STALL  4
- CLEANING/PREP  1
- GROWING  2
- DECANTING  3
- BUSINESS INCUBATOR 
- ADMINISTRATION  5
- FINANCE OFFICE  6
- WORKSHOP  7
- STUDIOS  8
- MAKER'S SPACE  9
- ABLUTIONS/CHANGING ROOMS  10
- TRAINING CENTRE  11
- LECTURE ROOM  11
- SEMINAR ROOM  11
- ABLUTIONS  11
- STORAGE  11
- GATHERING SPACE 
- RESTAURANT  12
- KITCHEN  12.1
- STORAGE  12.2
- ABLUTIONS  12.3
- GARDENS  13
- EVENT SPACE  14
- SWIMMING POOL  15
- ABLUTIONS  15
- CHANGING ROOM  15