7.0 TECHNICAL CONCEPT

CHAPTER 07 TECHNICAL CONCEPT

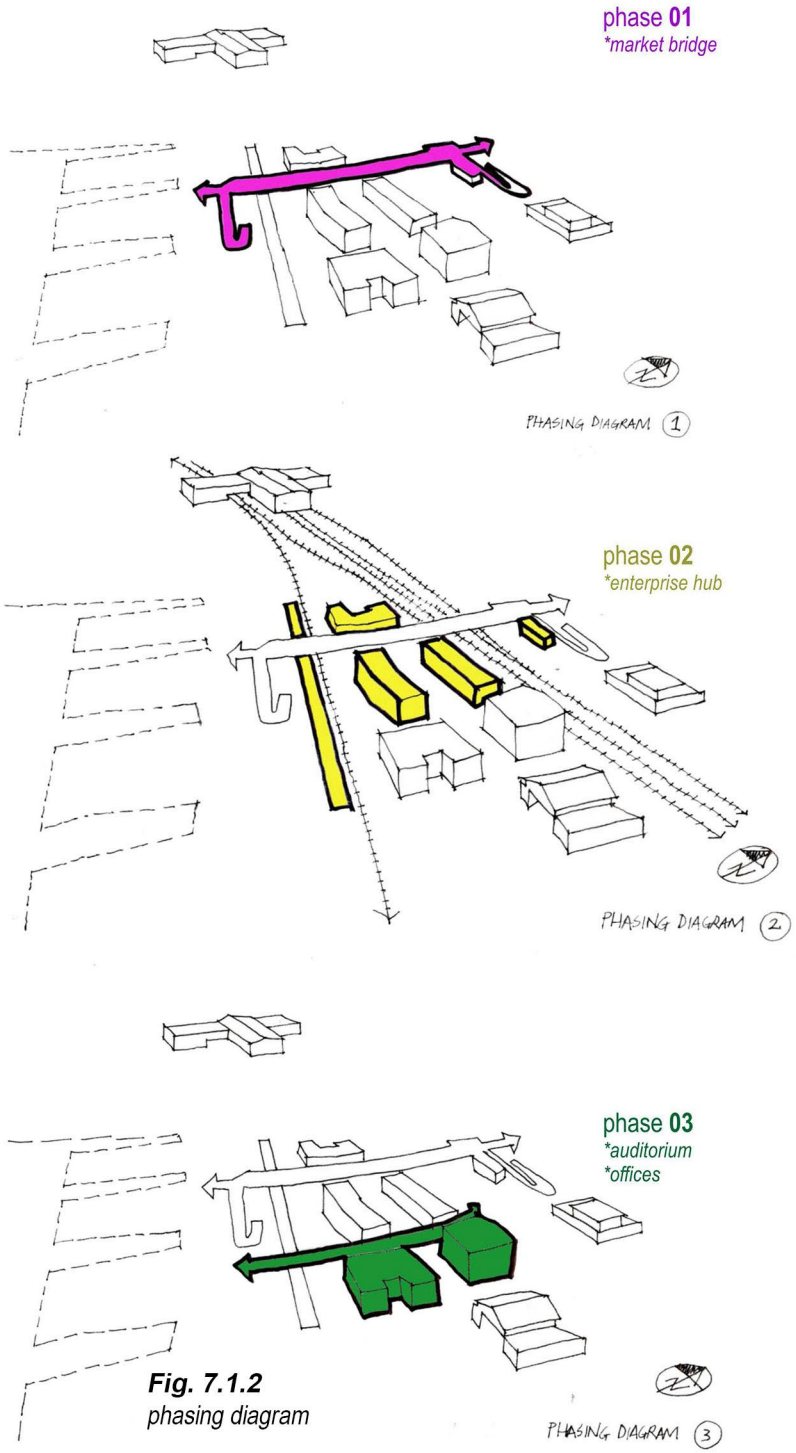


Fig. 7.1.2
phasing diagram

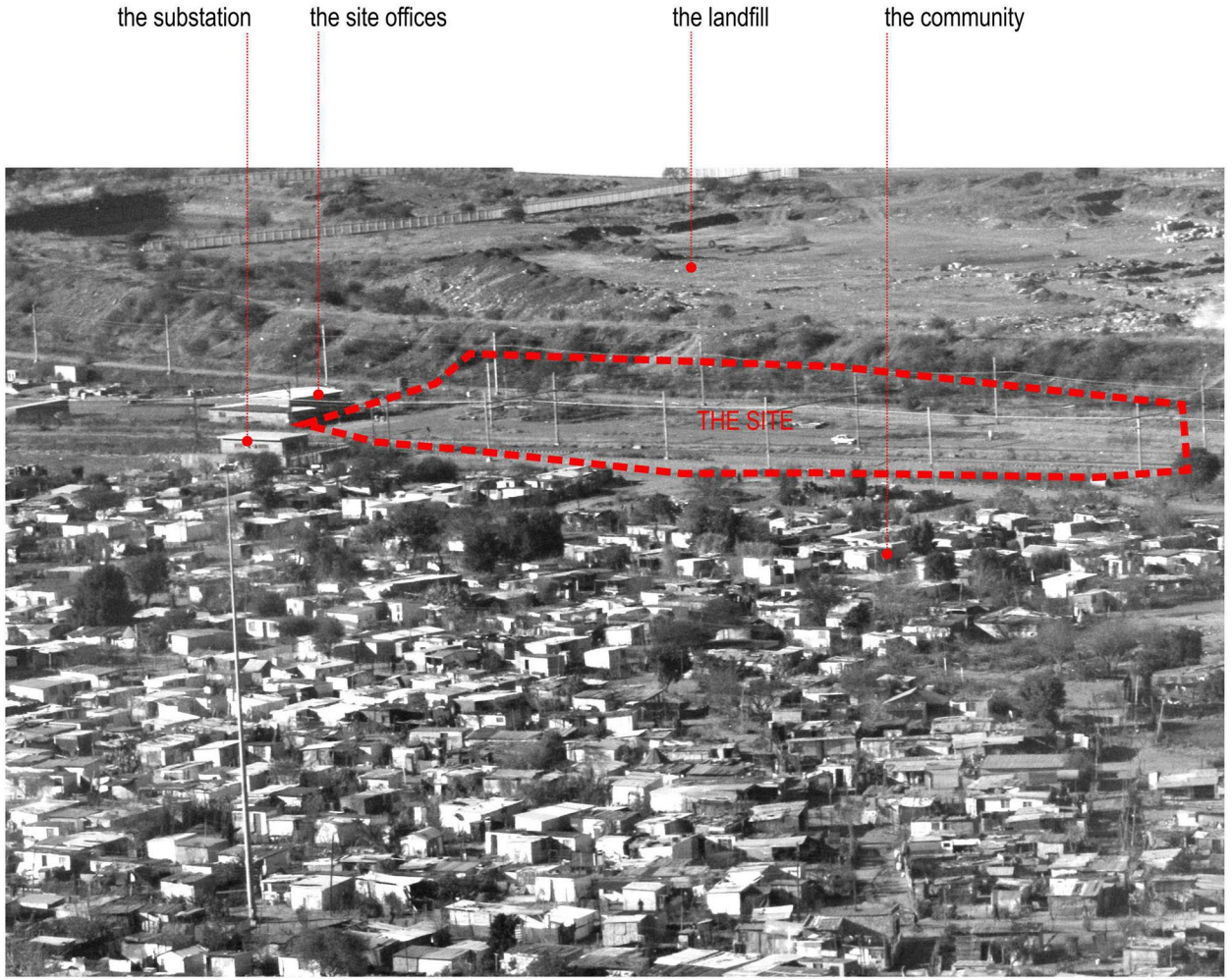


Fig. 7.1.2
Aerial image of Phumolong (Randall, 2015)

Fig. 7.2
site plan and programme

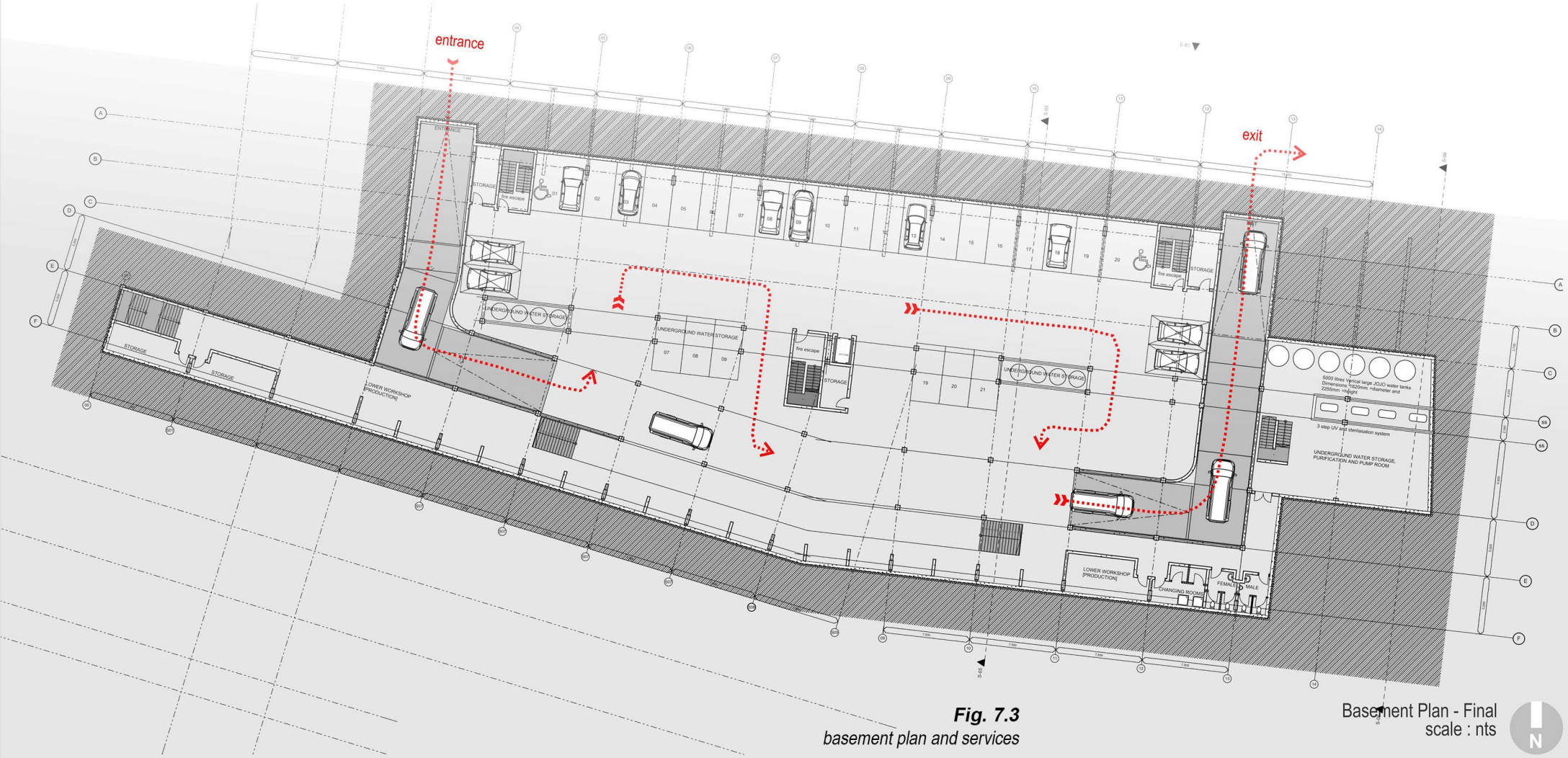


Fig. 7.3
basement plan and services

Basement Plan - Final
scale : nts

Fig. 7.4
ground floor plan

Fig. 7.5
sketch (SMITH, 2015)

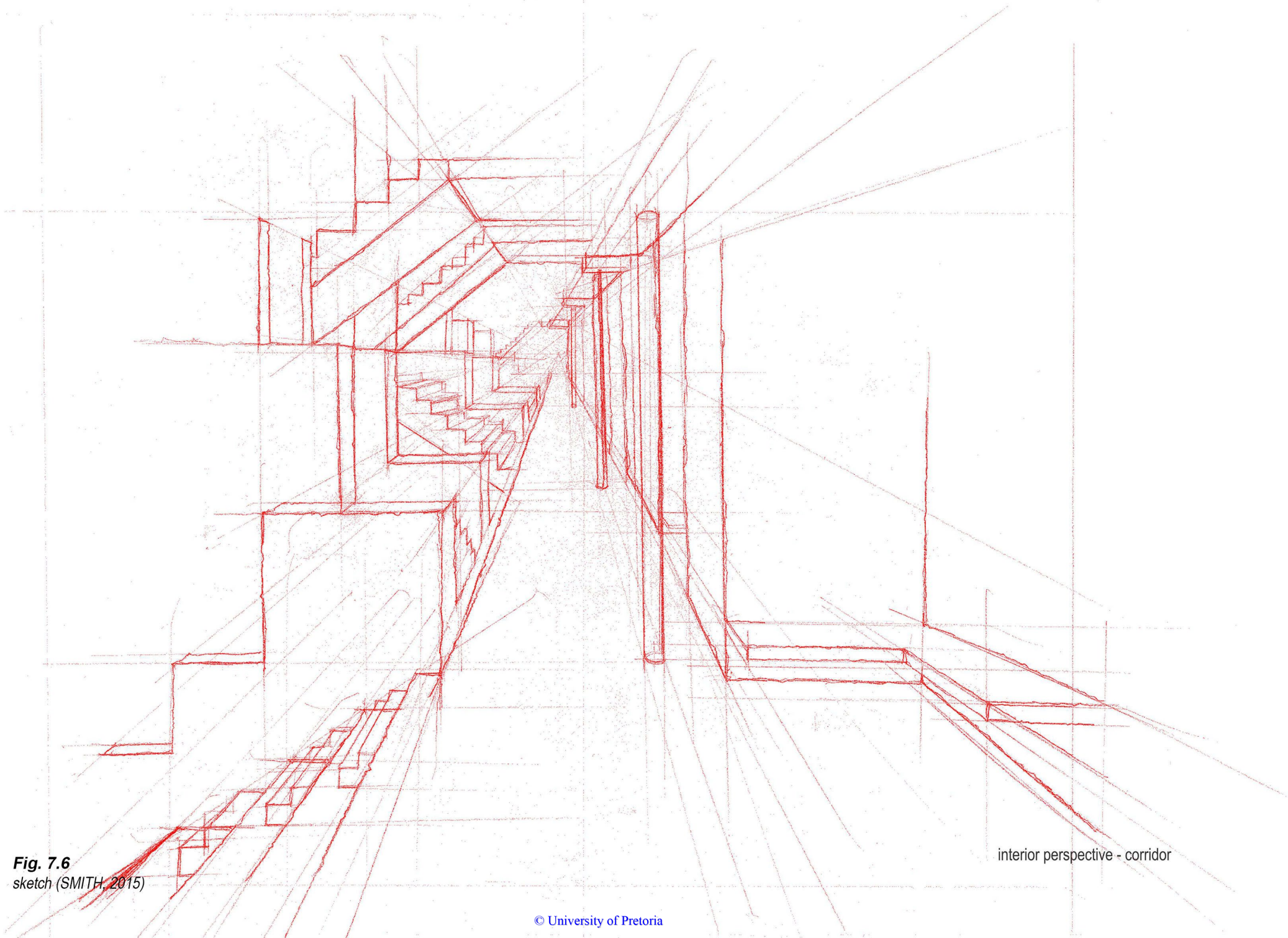
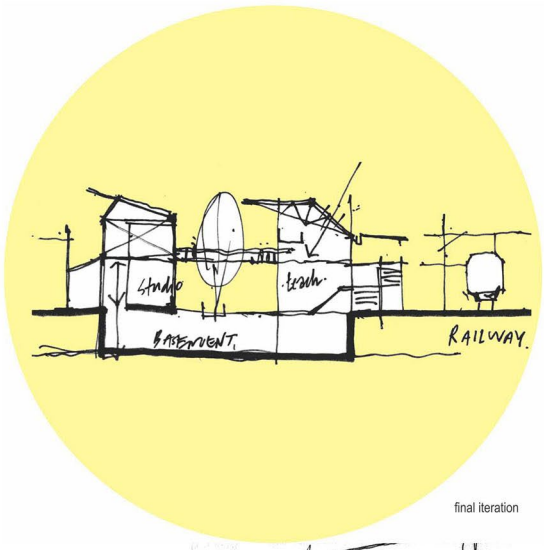


Fig. 7.6
sketch (SMITH, 2015)



final iteration

SOLAR COLLECTORS

A solar thermal collector collects heat by absorbing sunlight. A collector is a device for capturing solar radiation. Solar radiation is energy in the form of electromagnetic radiation from the infrared (long) to the ultraviolet (short) wavelengths.

upper loft

view of courtyard

hoist area

lower loft

pedestrian bridg

dispatch

workshop space

courtyard

planter

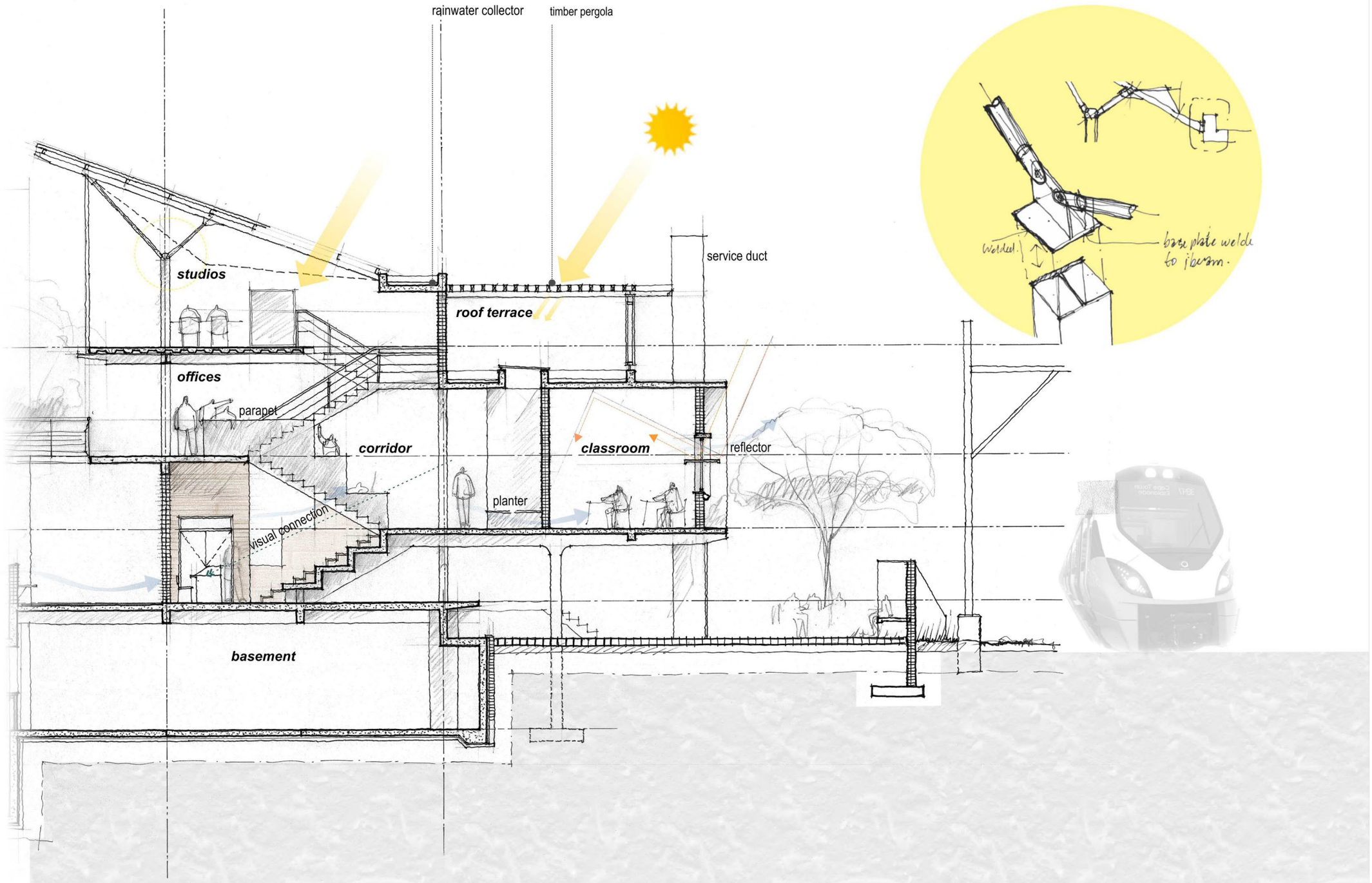
concrete sleeper paving

lower workshop

basement

compacted soil

Fig. 7.7
final section



Section - A A
scale : nts

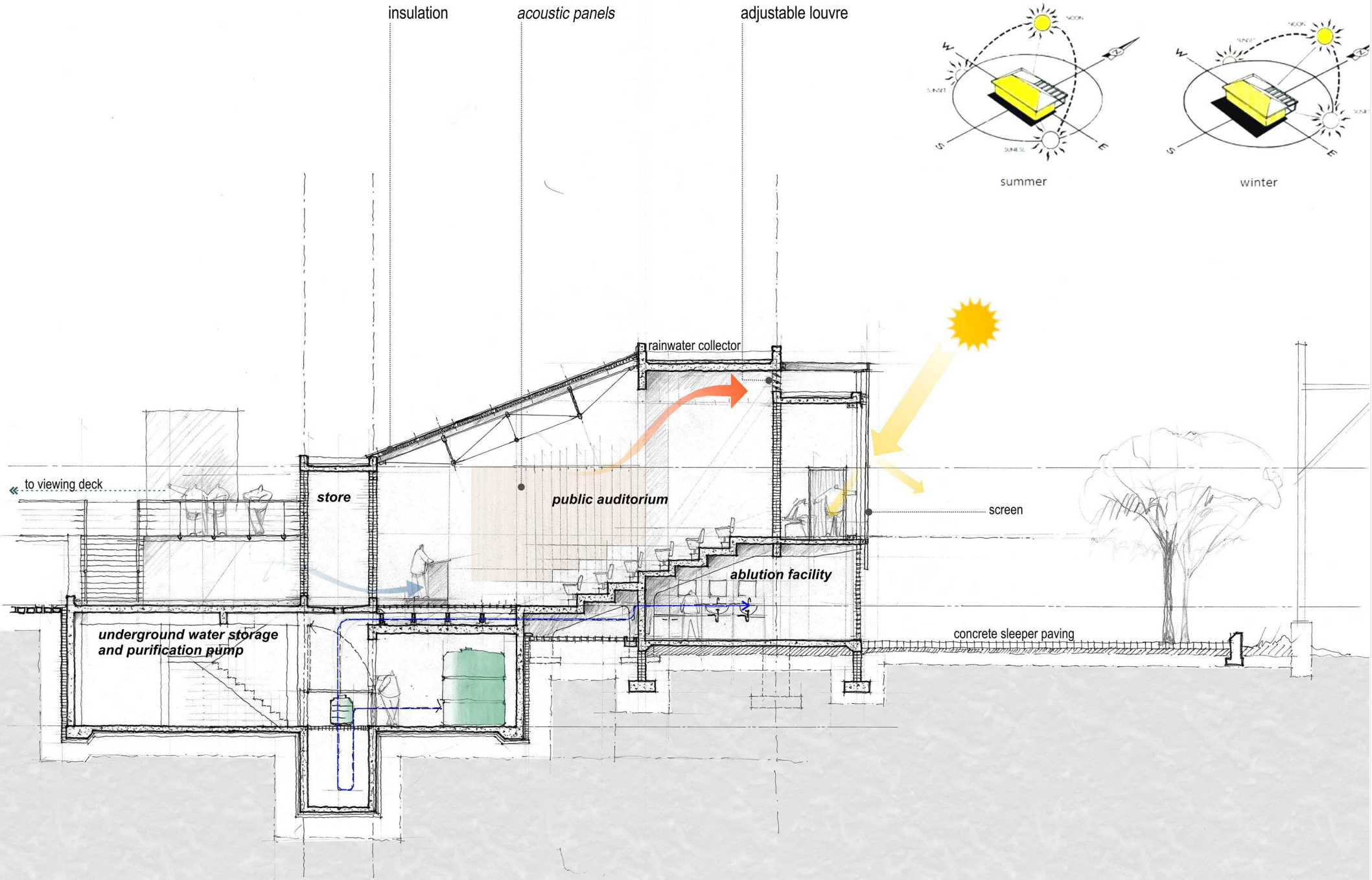


Fig. 7.9
auditorium section B B

Section - B B
scale : nts

Fig. 7.10
material and systems diagram

Section - A A
water harvesting strategy

7.0 TECHNICAL CONCEPT

The technification of the scheme is split into three parts: Primary, Secondary and Tertiary.

1. The Primary Structure is the concrete basement, where the earth is excavated, then the concrete column and beam structure are constructed in order to serve as base for the multi-functional programme above.

2. The Secondary Structure is located on the ground floor, the structural elements are rigid (stereotomic) and serve as thermal mass and insulator of sound as this is where the teaching facilities are located.

3. The Tertiary method of construction is a light steel frame structure, designed as generic modular system in order to allow for future development vertically, should the original programme of the building change in the future.

The technological and sustainable systems have been integrated into the design process in order to allow the building to adapt to its context in robust and future proof manner. The sleepers scattered on site will be reused at structural and landscape elements in order to respond to the immediate environment and develop a new architectural language.

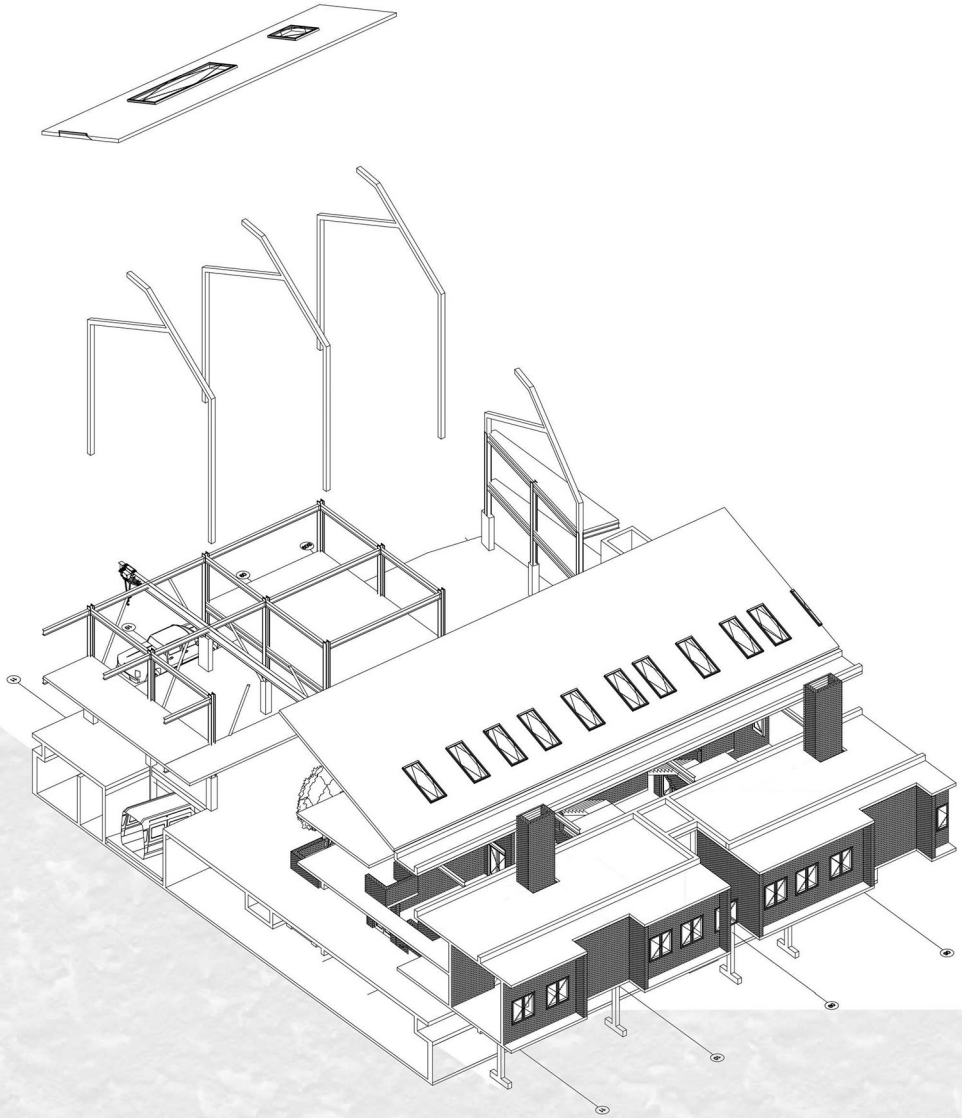


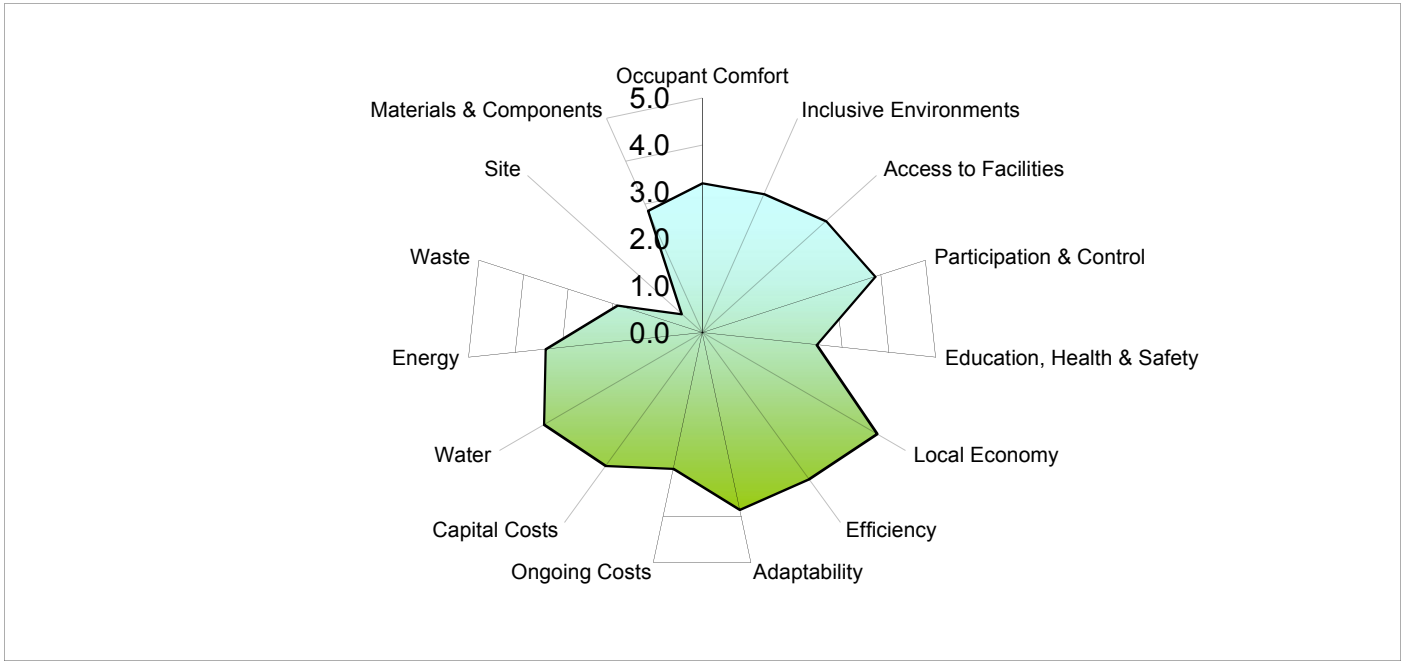
fig 7.11 exploded axo

exploded axonometric
structural analysis

7.12 SBAT RATING TOOL

SUSTAINABLE BUILDING ASSESSMENT TOOL (SBAT- P) V1

PROJECT		ASSESSMENT	
Project title:	The Mamelodi Youth Enterprise HUB	Date:	2015/12/10
Location:	Mamelodi	Undertaken by:	
Building type (specify):	Community	Company / organisation:	
Internal area (m2):	2100 mqs	Telephone:	Fax:
Number of users:	120	Email:	msizimkhize01@yahoo.com
Building life cycle stage (specify):	Design/Construction/Operation		



Social	3.3	Economic	3.7	Environmental	2.5
		Overall	3.2		

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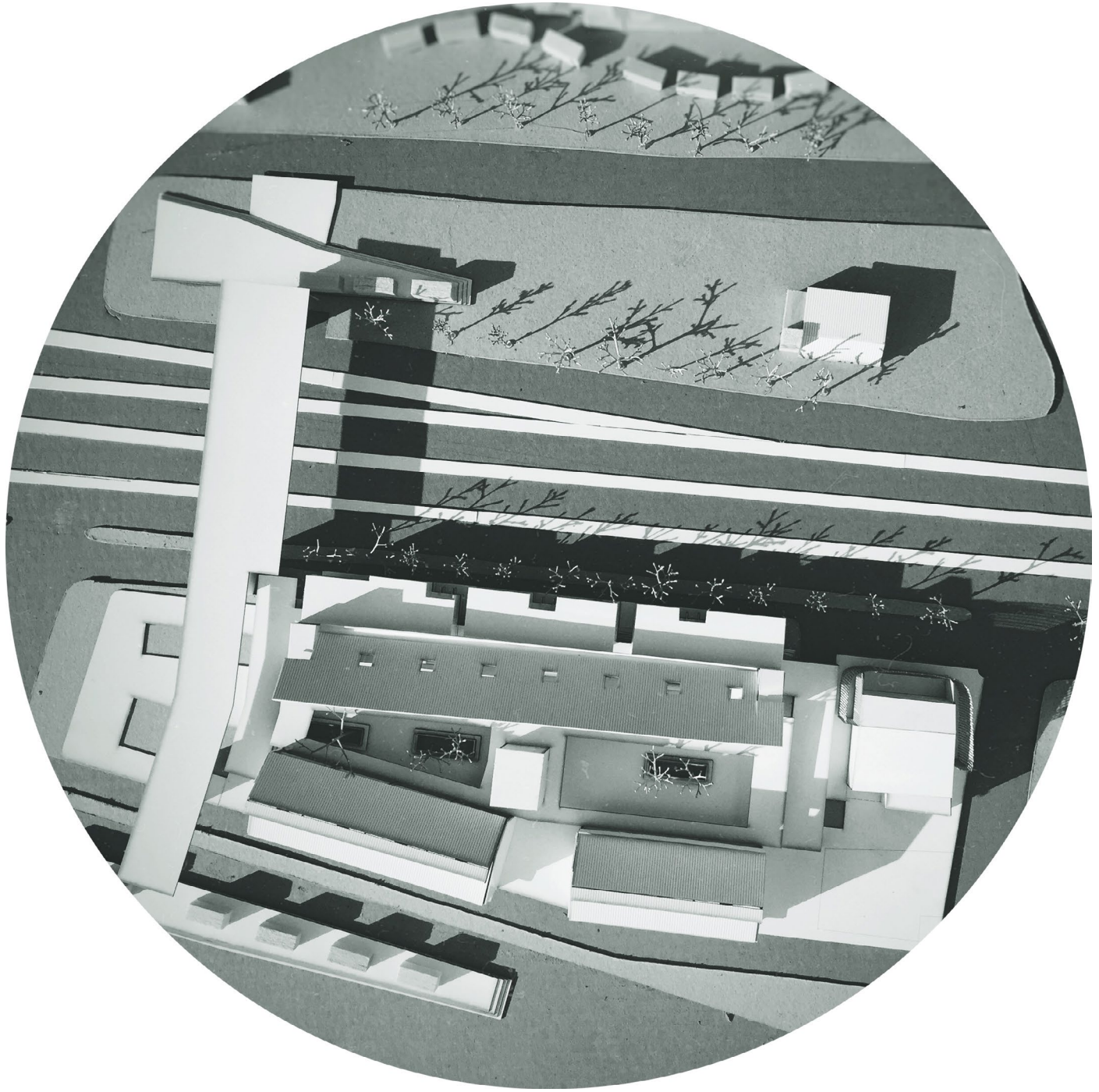
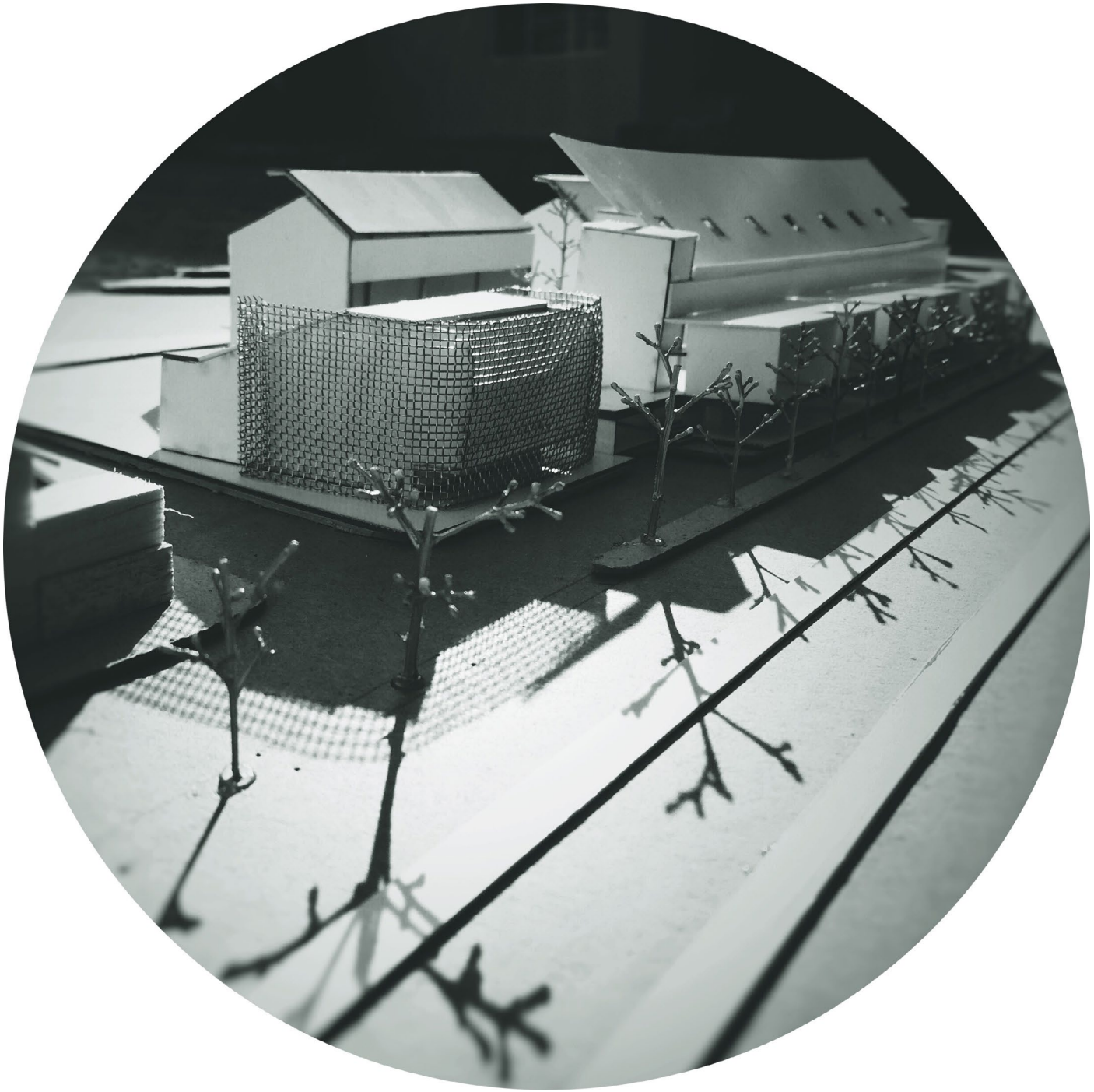
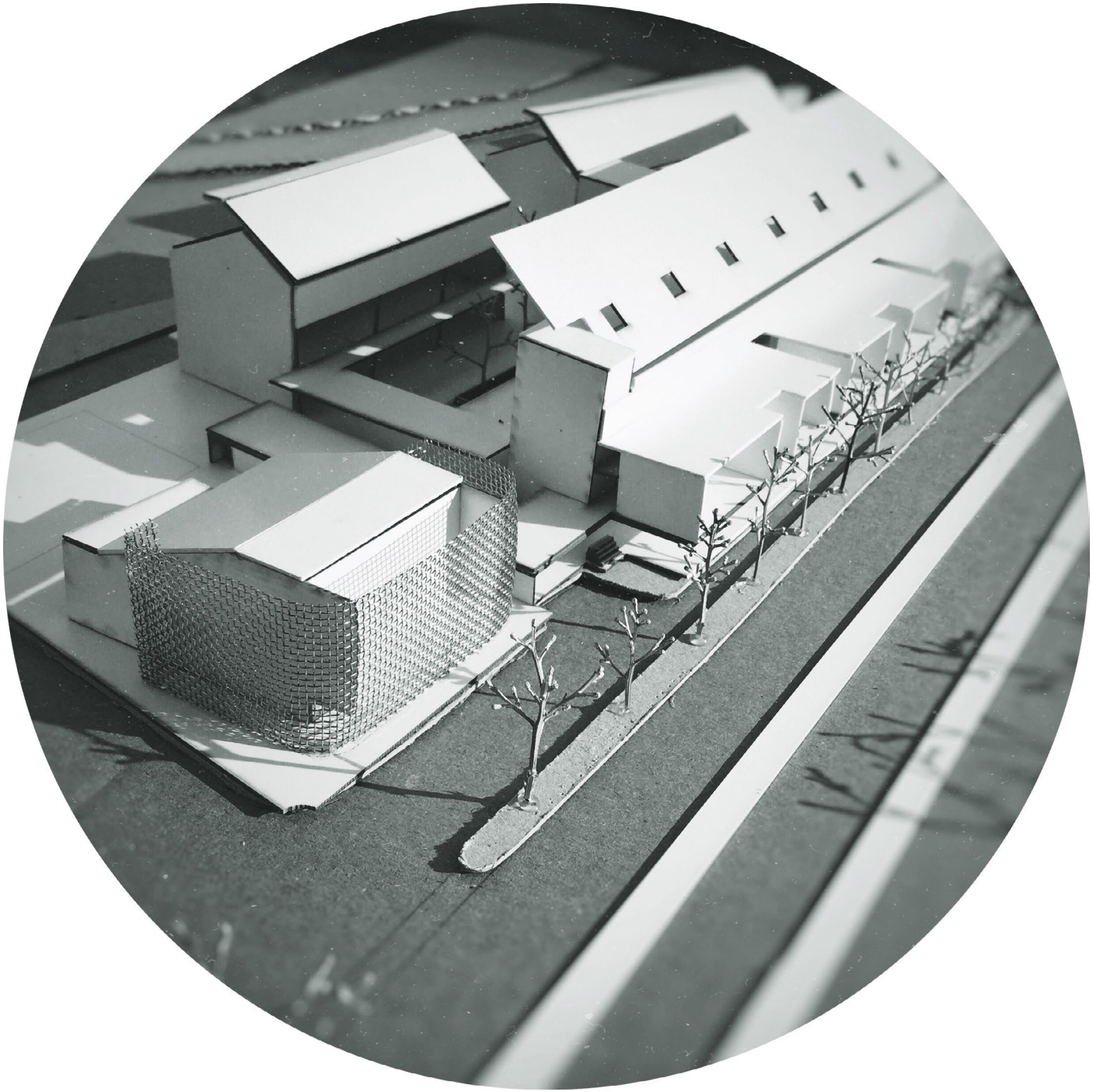
8.1 ABBREVIATIONS

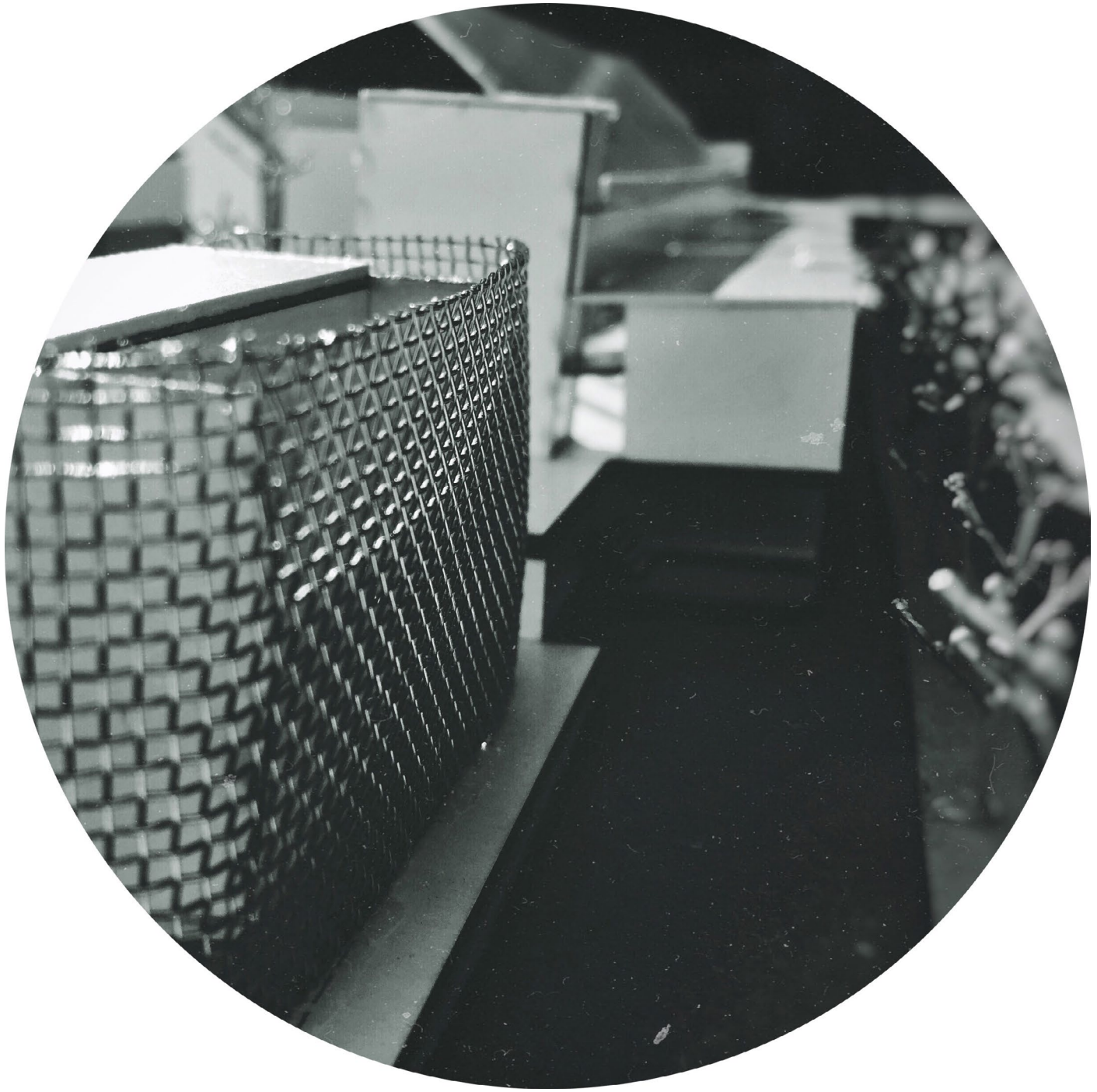
Statics South Africa	STATS SA
National Treasury	DNT
The National Development Plan	NDP
Spatial Development Framework	SDF
Transit Orientated Development	TOD
South African Cities Network	SACN

9.0 PHOTOS OF MODEL









10. LIST OF FIGURES