



## INTRODUCTION TO THE SITE THROUGH CONCEPTUAL FRAMEWORKS

The Apies River was one of the main reasons for the founding of Pretoria. The river historically formed the edge between the city and the adjoining farmlands that later became the suburbs of Sunnyside and Arcadia (Bolsman, 2001, p. 170). This natural boundary has been enhanced by the addition of Nelson Mandela Drive as main connectivity spine from Fountains Valley to the city centre. The combination of a main connectivity spine and

the river channel fragments the city. Urban planning and open space planning schemes have tried to address this gap in the urban fabric.

A number of planning initiatives have addressed Nelson Mandela Drive and the Apies River. Figure 1 overlays these initiatives. These include among other: (Loots, 2007, pp. 10-11)

- Apies River Urban Design framework - 1999
- Tshwane Inner City Development Framework - 2004
- Tshwane Crossing (Kopanong) – 2005
- Mandela Development Corridor – 2005
- Tshwane Inner City Local Open Space Plan (LOSP) – 2007



FIGURE 1. OVERLAY OF MUNICIPAL FRAMEWORKS

The 1999 Apies River Urban Design Framework by Holm Jordaan provides a vision where “...the river [represents] a beautiful natural and cultural asset, bringing and breathing life, human joy and prosperity, which is accessible to all.” (Holm Jordaan Group, 2001)

In 2009, in an urban design exploration, a group of Architecture students from the University of Pretoria, with whom the author collaborated, identified the Apies River as a vibrant linear spine for a public open space network in the future. This spine of public open space will include numerous soft green spaces, public squares along with passive and active recreation. The framework approaches the development of Nelson Mandela Drive as a series of nodes or ‘buttons’ that focuses on east-west integration, to figuratively button the rip in the urban fabric. Figure 2 diagrammatically illustrates cultural and institutional nodes along with active and passive recreation nodes. Selected projects in the nodes, of which this thesis project is part of, will be catalysts for future development along Nelson Mandela Drive.

The Apies River channel must be made safe and must provide the user of the city with a visual and emotional link with water and nature. The natural and cultural history surrounding the river must be celebrated through interventions that commemorate its history and educate the city user on the significance of the Apies River.

- LEGEND
- Tshwane Crossing: extent
  - MDC: area densify
  - MDC: public square
  - MDC: public square
  - Tshwane Innercity LOSP: Brown node - Park
  - Tshwane Innercity LOSP: Red node - Gateway
  - Tshwane Innercity LOSP: Blue way with Promenade

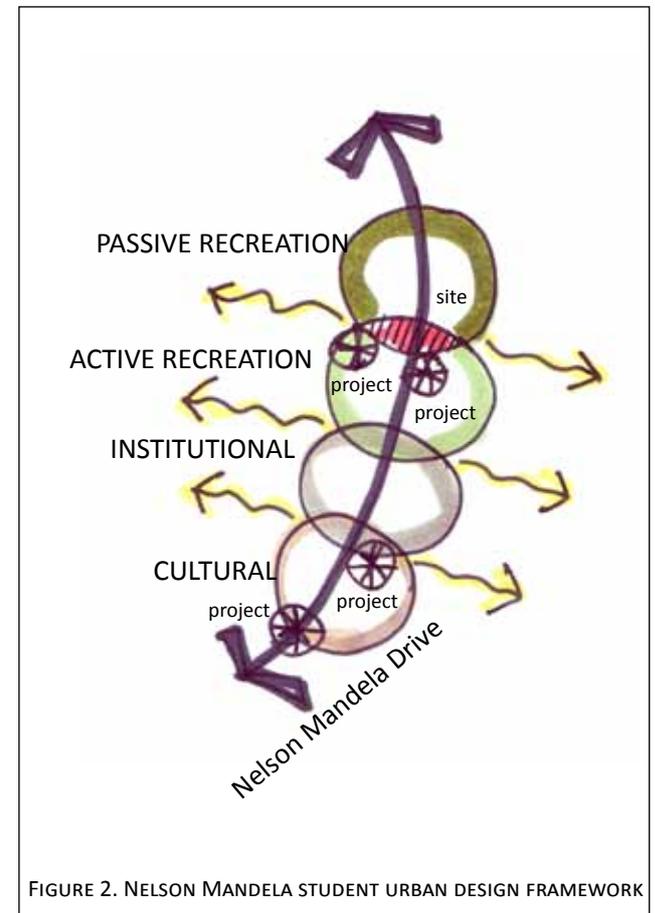


FIGURE 2. NELSON MANDELA STUDENT URBAN DESIGN FRAMEWORK



FIGURE 3. SITE AS LINK IN URBAN PEDESTRIAN MOVEMENT NOT TO SCALE

## SITE SELECTION

The proposed site on Nelson Mandela Drive provides the following attributes:

- Relevant Business and Public Open Space zoning
- Identification of the site as a future local park by the Tshwane Inner City LOSP (Loots, 2007, p. 77)
- The channel that bisects the Apies River
- The site has brown field status

The site lies within the passive recreation node that has been identified in the Nelson Mandela Student Urban Design Framework (figure 2).

## CONTEXTUAL OVERVIEW

The site forms an important east-west pedestrian link in movement along open spaces in the city. It fills the gap between Lillian Ngoyi Square and the gardens of the Union Buildings as illustrated in Figure 3.

In the chosen study area (figure 4), the site lies central to educational, medical, commercial, cultural and institutional areas.

Primary and secondary users for the Urban Water Centre were identified.

**Primary users:**

- Students from two Tshwane University of Technology campuses and the Tshwane North College
- School children from Primary and Secondary schools in the immediate vicinity
- School children from the region for educational purposes (periodically)
- Researchers working at the Urban Water Centre
- Local residents that will utilize the site as a neighbourhood park

**Secondary users**

- Purpose bound pedestrians
- Business people on lunch
- Tourists and visitors from nearby facilities (proposed functions from M.Arch Prof students)
- Users of on site retail facilities

## DESIGN BRIEF

The brief calls for the design of a public open space along Nelson Mandela Drive that connects the city users with the Apies River. The connection must be established through celebrating the river and water in the urban context and through experiences and learning opportunities. The role of water in green design and sustainability must be obvious. The project must include amenities for school children, students, pedestrians, business people and tourists that visit Nelson Mandela Drive as a cultural destination.



## DESIGN OBJECTIVES

Design objectives will address the following citywide and Site specific issues:

**Citywide**

- Implement the vision of the Nelson Mandela Student Urban Design Framework (group work of the author 2009) for the Apies River with this project as a catalyst

**Site specific**

- Design a vibrant public open space that entices use throughout the day

- Enhance and protect the openness of the site
- Apies River
  - Establish a metaphysical connection between people and the Apies River
  - Retrofit the Apies River to improve safety
  - Utilize the base flow of the river and improve the quality of the water so it can be used for interaction and ecological experiences
- Expose the ecological, historical and cultural memory of the site by relating to what was on site, how it has changed and how it could be in the future
- Ecology
  - Utilizes the introduced system components to create diverse ecosystem components

- Public park that:
  - provides spaces for students to rest, read and socialize
  - has safe and accessible play areas and facilities for kids that focus on encounters with water
  - provides for the needs of pedestrians, nearby residents and visitors
  - establishes a metaphysical connection between the city dweller and the river
  - Celebrates the Apies river and its history
  - Provides opportunity for meaningful contact with water
  - Celebrates the different qualities and emotions associated with water
  - is safe with adequate security and lighting at night
- An urban plaza bordered by retail facilities
- A pavilion with tuck shop for students, school children and visitors
- Restaurants that take advantage of the location
- Offices for a government water quality / conservation / research facility

## A POSSIBLE PROGRAM

The project proposes an Urban Water Centre that

- Expresses and celebrates the natural and culture significance of water
- Shows the importance of rivers in nature and in the city
- Educates children and adults on water conservation, water management and water quality in urban environments
- Expresses the importance of water in sustainable resource management and open space design through making the on site water systems visible

### The following program arises

- An information centre
- Educational facilities, including a multi- functional outdoor classroom
- The inclusion of visible on site water treatment through
  - Functional constructed wetlands
  - Rainwater harvesting, storing and cleaning
  - Storm water attenuation, use and infiltration

Table 1 represents the project components along with their scale and area of expertise. Guidelines and massing for the Architectural and Interior Architectural components will be addressed.

Component	Sub component	Scale and area of expertise		
		Landscape Architecture	Architecture	Interior Architecture
<i>Information centre</i>				
<i>Multi functional outdoor classroom / amphitheatre</i>				
<i>Research facilities</i>				
<i>Water management practices</i>	Functional constructed wetlands for water cleaning			
	Rainwater harvesting use and storing			
	Storm water attenuation, filtration use and infiltration			
<i>Public park</i>	that provides spaces for students to rest, read and socialize			
	that has safe and accessible playground and facilities for kids that focuses on encounters with water			
	that provides for the needs of pedestrians and visitors			
	that establishes a metaphysical connection between the city dweller and the river			
<i>Retrofitted river channel</i>				
<i>An urban plaza with economic activities</i>				
<i>A tuck shop for students, school children and visitors</i>				
<i>Restaurants that takes advantage of the location</i>				
<i>Offices for a government water quality / conservation / research facility</i>				

TABLE 1 - PROJECT COMPONENTS

## CLIENT

This project is an integration of users and functions, and the clients must reflect this multifaceted approach. The traditional view of clients needs to change to a system of patrons that aim to uncover the potential of the city.

Possible patrons:

- CTMM parks division
- Department of Water and Forestry (DWAFF):
  - Directorate of Water Conservation, Catchment Management and Water Quality Management
  - Directorate of Water Utilization
  - Directorate of Working for Water
- Water Research Council
- Private companies that works towards the conservation of water and the promotion of appropriate green technologies
- Schools in the area that will use the park as play-grounds (Interviews with headmasters)
- Developers of Retail amenities

## ASSUMPTIONS

- The Nelson Mandela Student Framework is to be implemented
- The proposed Master Plan will be implemented
- All Erfs and Erf portions that are considered will be available to be purchased at market related prices by willing sellers
- Interventions along the Apies River will be approved by council along with water use licenses where applicable
- Architecture on the site will be assumed to achieve a Green Star SA rating

## STUDY DELIMITATIONS

- The author acknowledges that he is not an architect and will only provide concepts and guidelines for building footprint, height and use
- The author acknowledges that he is not a specialist in terrestrial or aquatic ecology and will only aim to implement general ecologically sound principles in order to inform his decisions in a systemic design approach
- The author acknowledges that he is not a civil engineer and will calculate basic flood and runoff volumes

## METHODOLOGY

The study will be based on quantitative and qualitative research. The type of study requires sound and critical technical evaluation along with a subjective approach to human needs.

Table 2 sets out the research methodology.

<i>Research type</i>	<i>Typical source</i>	<i>Type of Information</i>	<i>Analysis approach</i>	<i>Interpretation</i>
<b>Quantitative context and site analysis</b>	GIS information from CTMM	Hydrological, cadastral and services information	<ul style="list-style-type: none"> <li>• Overlays and assumptions</li> </ul>	Opportunities and constraints
<b>Intuitive site and context analysis</b>	Observation and frameworks from council	Photographs, interviews, sketches, proposed development frameworks	<ul style="list-style-type: none"> <li>• Intuitive interpretation</li> <li>• Collage</li> </ul>	Interpret according to theory, draw diagrams
<b>Qualitative theoretical research</b>	Systems theory books and journal articles	Synopsis of theories and possible applications	<ul style="list-style-type: none"> <li>• Investigate relevance to site, project program and local environment</li> </ul>	Formulate and draw diagrams of strategies for application
<b>Qualitative precedents studies</b>	Journals, site visits	Written analytical and informative articles, Photographs, drawings	<ul style="list-style-type: none"> <li>• precedents for each part of analysis where applicable</li> <li>• Trace to remove glamour, draw diagrams and cycles</li> <li>• Relate to theories</li> </ul>	Spatial, relational and systems investigated

TABLE 2 - RESEARCH METHODOLOGY