Redevelopment of the River Club, Cape Town:

Visual Impact Assessment

Report Prepared for

Liesbeek Leisure Properties Trust

Report Prepared by

srk consulting

Report Number 478320/42A/2

July 2019

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SRK Project Number 509264/42A
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Profile and Expertise of Specialists

SRK Consulting (South Africa) (Pty) Ltd (SRK) has been appointed by Liesbeek Leisure Properties Trust (LLPT) to undertake the Basic Assessment (BA) process required in terms of the National Environmental Management Act 107 of 1998 (NEMA). SRK has appointed a team of professionals and specialists to conduct the Visual Impact Assessment (VIA) specialist study as part of the BA process.

SRK comprises over 1 300 professional staff worldwide, offering expertise in a wide range of environmental and engineering disciplines. SRK's Cape Town environmental department has a distinguished track record of managing large environmental and engineering projects, extending back to 1979. SRK has rigorous quality assurance standards and is ISO 9001 accredited.

In accordance with the Department of Environmental Affairs and Development Planning Environmental Impact Assessment (EIA) guidelines for specialists (Brownlie, 2005) and NEMA, the qualifications and experience of the key individual specialists involved in the study are detailed below.

Project Review: Christopher Dalgliesh, BBusSc (Hons); MPhil (EnvSci)

Certified with the Interim Board for Environmental Assessment Practitioners South Africa (CEAPSA)

Chris Dalgliesh is a Partner and Principal Environmental Consultant with over 24 years' experience, primarily in South Africa, Southern Africa, West Africa and South America (Suriname). Chris has worked on a wide range of projects, notably in the natural resources, Oil & Gas, waste, infrastructure (including rail and ports) and industrial sectors. He has directed and managed numerous Environmental and Social Impact Assessments (ESIAs) and associated management plans, in accordance with international standards. He regularly provides high level review of ESIAs, frequently directs Environmental and Social Due Diligence studies for lenders, and also has a depth of experience in Strategic Environmental Assessment (SEA), State of Environment Reporting and Resource Economics. He holds a BBusSci (Hons) and M Phil (Env) and is a Certified Environmental Practitioner of South Africa (CEAPSA).

Specialist Consultant: Scott Masson, BSc (Hons) (EnvMan); MLA (L.Arch.)

Registered Professional Landscape Architect with the South African Council of the Landscape Architecture Profession

Scott Masson is an Environmental Consultant and has been involved in the environmental and landscape architectural field for the past 9 years. His expertise includes Visual Impact Assessments, Environmental Impact Assessment, Environmental Management Plans and Environmental Control Officer work, Integrated Water and Waste Management Plans, environmental planning and sensitivity studies; and landscape architectural planning and design. Scott holds a BSc (Hons) in Environmental Management, a MLA in Landscape Architecture, is a Certified Environmental Practitioner of South Africa and is a registered Professional Landscape Architect with the South African Council of the Landscape Architecture Profession.

Statement of SRK Independence

Neither SRK nor any of the authors of this Report have any material present or contingent interest in the outcome of this Report, nor do they have any pecuniary or other interest that could be reasonably regarded as being capable of affecting their independence or that of SRK.

SRK has no beneficial interest in the outcome of the assessment which is capable of affecting its independence.

Disclaimer

The opinions expressed in this report have been based on the information supplied to SRK by LLPT. SRK has exercised all due care in reviewing the supplied information, but conclusions from the review are reliant on the accuracy and completeness of the supplied data. SRK does not accept responsibility for any errors or omissions in the supplied information and does not accept any consequential liability arising from commercial decisions or actions resulting from them. Opinions presented in this report apply to the site conditions and features as they existed at the time of SRK's investigations, and those reasonably foreseeable. These opinions do not necessarily apply to conditions and features that may arise after the date of this Report, about which SRK had no prior knowledge nor had the opportunity to evaluate.

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Acronyms and Abbreviations

BA	Basic Assessment
DEA&DP	Department of Environmental Affairs and Development Planning
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
ha	hectares
GIS	Global Information Systems
GPS	Global Positioning System
LLPT	Liesbeek Leisure Properties Trust
msl	Mean sea level
NEMA	National Environmental Management Act 107 of 1998
PRASA	Passenger Rail Agency of South Africa
SDF	Spatial Development Framework
SRK	SRK Consulting (South Africa) (Pty) Ltd
ToR	Terms of Reference
TRUP	Two Rivers Urban Park
VAC	Visual Absorption Capacity
VIA	Visual Impact Assessment

Glossary

Aspect	The direction a slope faces with respect to the sun.
Landscape Integrity	The relative intactness of the existing landscape or townscape, whether natural, rural or urban, and with an absence of intrusions or discordant structures (Oberholzer, 2005).
Landscape Unit	Portion of an area with similar morphological characteristics.
Sense of Place	The unique quality or character of a place, whether natural, rural or urban. Relates to uniqueness, distinctiveness or strong identity. Sometimes referred to as genius loci meaning 'spirit of the place' (Oberholzer, 2005).
Viewshed	The topographically defined area from which the project *could* be visible.
Visibility	The area from which the project components would actually be visible and which depends upon topography, vegetation cover, built structures and distance.
Visual Absorption Capacity	The potential for an area to conceal a proposed development or other features.
Visual Character	The elements that make up the landscape including geology, vegetation and land-use of the area.
Visual Exposure	The zone of visual influence or viewshed. Visual exposure tends to diminish exponentially with distance.
Visual Impact	A description of the effect of an aspect of the development on a specified component of the visual, aesthetic or scenic environment within a defined time and space (Oberholzer, 2005).
Visual Intrusion	The nature of intrusion of an object on the visual quality of the environment resulting in its compatibility (absorbed into the landscape elements) or discord (contrasts with the landscape elements) with the landscape and surrounding land uses.
Visual Obtrusion	Occurs when an object is introduced into the very near foreground and impedes valued views.
Visual Quality	The experience of the environment with its particular natural and cultural attributes.
Visual Receptors	Individuals, groups or communities who are subject to the visual influence of a particular project (Oberholzer, 2005).

1 Introduction

1.1 Background

The Liesbeek Leisure Properties Trust (LLPT) operates the River Club property in Observatory, and is proposing to redevelop the property (the site) (Figure 1-1) for commercial, residential and institutional use (the project).

SRK Consulting (South Africa) (Pty) Ltd (SRK) has been appointed by LLPT to undertake the Basic Assessment (BA) process required in terms of the National Environmental Management Act 107 of 1998 (NEMA), and the Environmental Impact Assessment (EIA) Regulations, 2014. A Visual Impact Assessment (VIA) of the project is one of the investigations commissioned for the BA process.

The VIA will consider both the magnitude of the visual impact (rated according to visual assessment criteria) and the significance of the visual impact (rated according to standard EIA rating methodology, as prescribed in the Terms of Reference [ToR]).

1.2 Terms of Reference

The primary aims of the VIA are to describe the visual baseline, assess the visual impacts of the project and identify effective and practicable mitigation measures. More specifically, the ToR for the VIA are as follows:

- Collect and review required data, including project information and data on topography, vegetation cover, land-use and other background information;
- Conduct fieldwork, comprising an extensive reconnaissance of the study area;
- Undertake visual ‘sampling’ using photography from various viewpoints to illustrate the likely zones of influence and visibility;
- Determine the zone of influence using:
  - A GIS model to calculate the viewshed based on the dimensions, particularly the elevations, of project components;
  - Field observations at key viewpoints to determine the likely distance at which visual impacts will become indistinguishable;
- Identify potential impacts of the project on visual resources and receptors;
- Assess the direct, indirect and cumulative impacts (pre- and post-mitigation) of the project on visual resources in the study area using the prescribed impact assessment methodology;
- Recommend practicable mitigation measures to avoid and/or minimise/reduce impacts and enhance benefits; and
- Recommend and draft a monitoring campaign to ensure the correct implementation and adequacy of recommenced mitigation and management measures, if applicable.

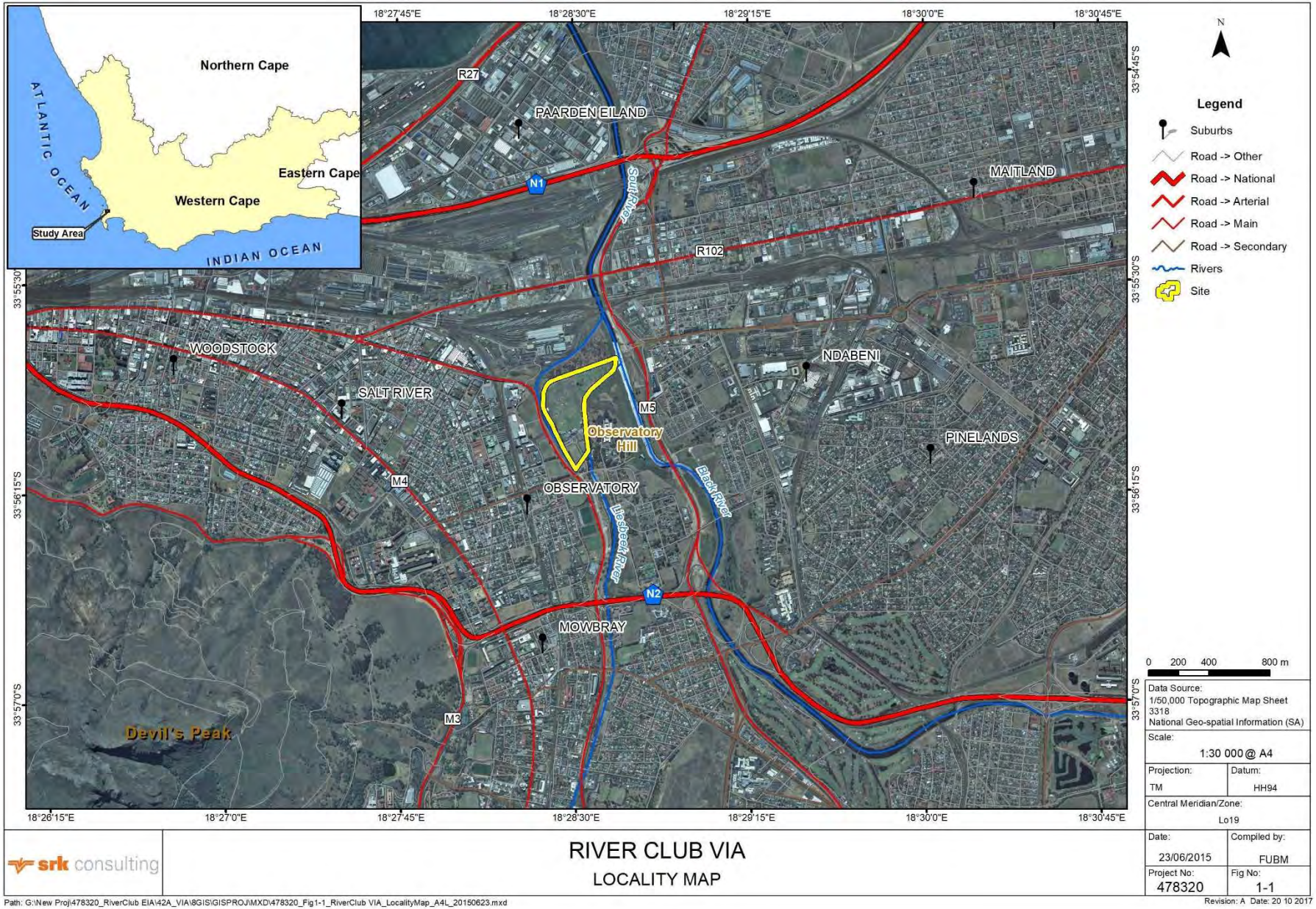

Figure 1-1: Location of the site

2 Approach and Method

Visual impacts are a function of the physical transformation of a landscape on account of the introduced object, and the experiential perceptions of viewers.

Given the subjective nature of visual issues, assessing the visual impacts of a development/site in absolute and objective terms is not achievable. Thus, qualitative as well as quantitative techniques are required. In this VIA, emphasis has therefore been placed on ensuring that the methodology and rating criteria are clearly stated and transparent. The focus of the baseline study is to determine the character and sensitivity of the visual environment, the visual catchment area and identify visual receptors and viewing corridors. For impact assessment, all ratings are motivated and, where possible, assessed against explicitly stated and objective criteria.

There are very few guidelines that provide direction for visual assessment; the most relevant are the Landscape Institute's "Guideline for Landscape and Visual Impact Assessments" and the Department of Environmental Affairs and Development Planning's "Guideline for Involving Visual and Aesthetic Specialists in EIA Processes" (2005), both of which have been considered in this VIA.

2.1 Approach

The approach to the VIA was selected to be as accurate and thorough as possible. Analytical techniques are selected so as to endorse the reliability and credibility of the assessment.

The approach to and reporting of the VIA study comprises three major, phased elements (as summarised in Figure 2-1 below):

1. A description of the visual context;
2. The identification and discussion of the potential visual impacts; and
3. An assessment of those potential impacts.

Visual impacts are assessed as one of many interrelated effects on people (i.e. the viewers and the impact of an introduced object into a particular view or scene) (Young, 2010). In order to assess the visual impact the project has on the affected environment, the visual context (baseline) in which the project is located must be described. The inherent value of the visual landscape to viewers is informed by geology/topography, vegetation and land-use and is expressed *as Visual Character* (overall impression of the landscape), *Visual Quality* (how the landscape is experienced) and *Sense of Place* (uniqueness and identity).

Visual impact is measured as the change to the existing visual environment caused by the project as perceived by the viewers (Young, 2010). The visual impact(s) may be negative, positive or neutral (i.e. the visual quality is maintained). The magnitude or intensity of the visual impacts is determined through analysis and synthesis of the visual absorption capacity (VAC) of the landscape (potential of the landscape to absorb the project), viewshed (zone of visual influence or exposure), visibility (viewing distances), compatibility of the project with landscape integrity (congruence), and the sensitivity of the viewers (receptors).

Sources of visual impacts are identified for the construction and operational phases of the project. The significance of those visual impacts is then assessed using the prescribed impact rating methodology, which includes the rating of:

- Impact consequence, determined by extent, duration and magnitude/intensity of impact (see above);
- Impact probability;
- Impact significance, determined by combining the ratings for consequence and probability; and
- Confidence in the significance rating.

Mitigation measures recommended to avoid and/or reduce the significance of negative impacts, or to optimise positive impacts, are identified for the project. Impact significance is re-assessed assuming the effective implementation of mitigation measures.

2.2 Method

The following method was used to assess the visual baseline for the project:

1. Collect and review visual data, including data on topography, vegetation cover and land-use;
2. Conduct fieldwork to determine and groundtruth the existing visual character and quality of the landscape to understand the visual and to identify key viewpoints / view corridors;
3. Visual 'sampling' using photography was undertaken from viewpoints within approximately 1 km of the site to illustrate the likely zone of influence and visibility. The location of the viewpoints was recorded with a GPS; and
4. Undertake a mapping exercise to identify potential receptors to the proposed project.

The following method was used to assess the visual impact of the project:

1. Determine the visual zone of influence using a GIS model to calculate the viewshed based on the dimensions, particularly the elevations, of the buildings;
2. Determine the likely distance at which visual impacts will become indistinguishable using photographs from key viewpoints;
3. Rate impacts on the visual environment and sense of place based on a professional opinion and the prescribed impact rating methodology; and
4. Recommend practicable mitigation measures to avoid and/or minimise impacts and/or optimise benefits.

2.3 Assumptions and Limitations

As is standard practice, the VIA is based on a number of assumptions and is subject to certain limitations, which should be borne in mind when considering information presented in this report. These assumptions and limitations include:

- VIA is not, by nature, a purely objective, quantitative process, and depends to some extent on subjective judgments. Where subjective judgments are required, appropriate criteria and motivations for these are clearly stated;
- The assessment is based on technical information supplied to SRK, which is assumed to be accurate. This includes the proposed locations, dimensions and layouts of the project components;
- The viewshed calculations were undertaken using 5 m contour intervals. The viewshed depicts the area from which the project might be visible. The viewshed does not necessarily take localised undulations, vegetation and all existing man-made structures - which may obscure views - into account[1]. This means that the project is not necessarily visible from everywhere within the viewshed, i.e. from some places the project may be obscured;
- The simulated views are not intended to be artistic impressions of the proposed development, but are intended to indicate the position and built mass of the development in the landscape. The simulations are of unattractive block buildings with no redeeming architectural features which could mitigate impacts; and
- This study does not provide motivation for or against the project, but rather seeks to give insight into the visual character and quality of the area, its VAC and the potential visual impacts.

[1] The heights and footprints of the buildings bordering the site were taken into consideration when generating the viewshed to account for the screening effect of these buildings.

The findings of the VIA are not expected to be affected by these assumptions and limitations.

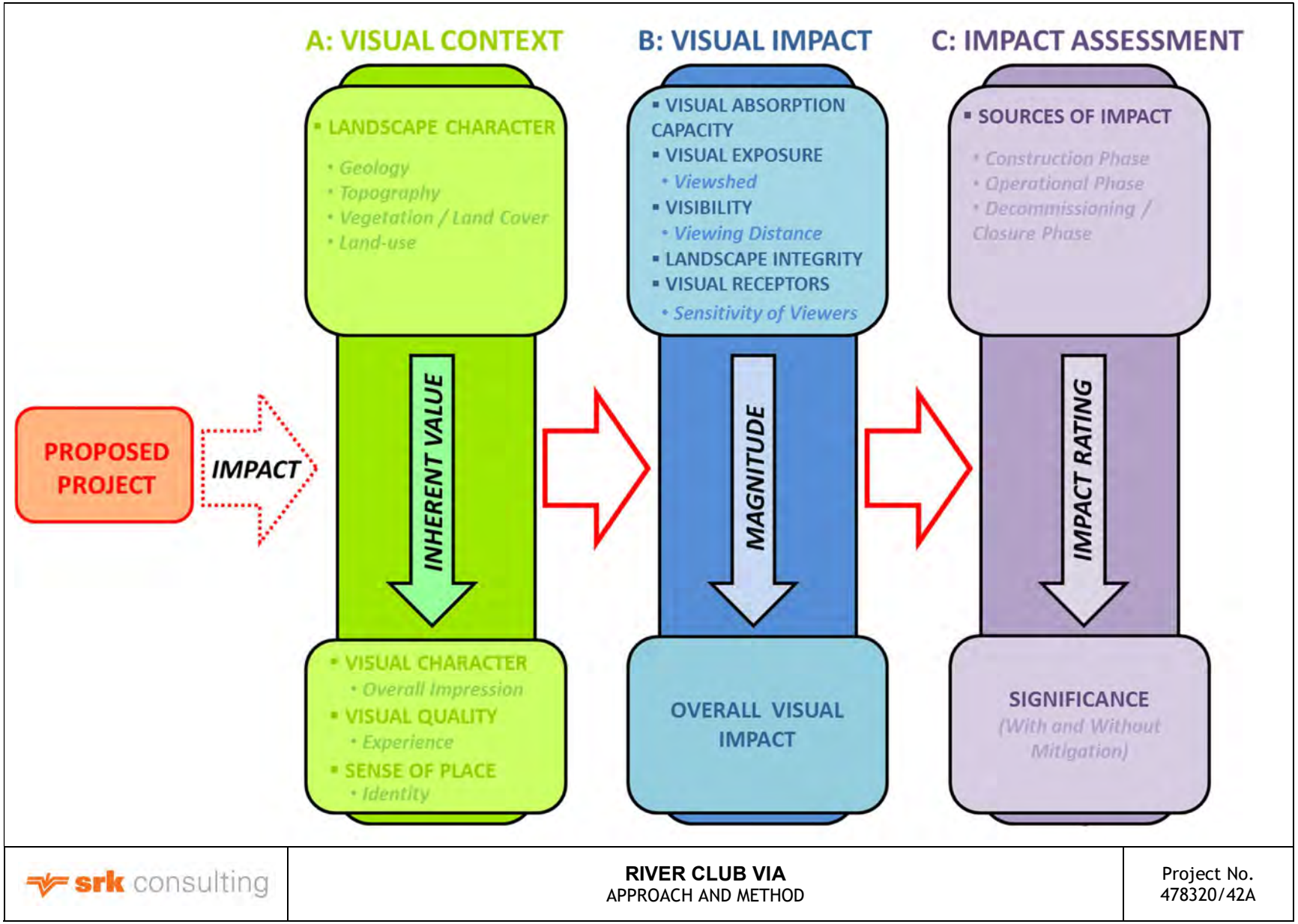

Figure 2-1: Approach and method of the VIA

3 Project Description

The LLPT proposes to redevelop ~7.4 ha of the ~15.7 ha site for retail, commercial, residential, institutional and associated uses (see Table 3-1). The remainder of the site, ~8.3 ha, will be landscaped and rehabilitated for recreational use, or retained as open space. Associated uses can also be considered, such as community facilities and schools. A cultural, educational, environmental and heritage centre is also proposed.

The LLPT state that they plan to develop the site as a "destination place" within Cape Town and as the western gateway to the Two Rivers Urban Park (TRUP), accommodating a medium to high density, mixed-use agglomeration of uses which supports the vision of 'live, work, play', while retaining certain recreational and ecological aspects. In this way, the proponents hope that the River Club can act as a catalyst project that can be used to help launch and implement the greater TRUP.

Development will occur in two precincts (Figure 3-1):

- Precinct 1, located in the southern portion of the site, provides ~65 000 m² of bulk, i.e. mixed-use floor space (office, retail, hotel, community and residential) in buildings 1-10 storeys high; and
- Precinct 2, located in the northern portion of the site, provides ~85 000 m² of residential and office floor space (bulk) in buildings 10-12 storeys high.

The development may be developed in two phases, where Precinct 1 forms part of Phase 1 and Precinct 2 forms part of Phase 2. Note that the precincts do not affect the VIA, which considers the development as one single precinct.

Table 3-1: Development footprint

Development Component	Footprint
Retail, commercial, residential, institutional and associated development	~4.2 ha
Hard landscaping (including covered pedestrian space, foot and cycle paths, and service infrastructure)	~3.7 ha
Roads and surface parking	~2.9 ha
Open space	~4.6 ha
Bridges	~0.3 ha
Total	**15.7 ha**

Two layout alternatives are considered in the impact assessment (Figure 3-1). Both alternatives have the same footprint extent and split between the various land uses. The alternatives differ as follows:

- For Alternative 1, the old Liesbeek River channel on the western site boundary will be infilled, leaving a vegetated stormwater swale along its existing course. Precinct 1 will be located closer to the western site boundary; and
- For Alternative 2, the old Liesbeek River channel on the western site boundary will be retained, and Precinct 1 will be located closer to the eastern site boundary and the Liesbeek channel (and Observatory complex).

LLPT proposes to rehabilitate the eastern Liesbeek River channel in both layout alternatives and proposes an east-west "ecological" corridor through the site. The ecological corridor is marginally wider in the Alternative 1 layout.

3.1.1 The No-Go Alternative

The No-Go Alternative will retain the status quo. In other words, the River Club will remain a recreation and conference facility for the foreseeable future. However, this does not mean that the River Club site will not be developed in the future.

Alternative 1 – Precinct 1 shifted towards Black River Park

Alternative 2 – Precinct 1 shifted towards the Observatory complex

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Figure 3-1: River Club development alternatives 1 and 2

4 Visual Context (Affected Environment)

The following description of the affected environment focuses on the *visual character* of the area surrounding and including the project (the study area) and discusses the *Visual Quality* and *Sense of Place*[2]. This baseline information provides the context for the visual analysis.

4.1 Landscape Character

Landscape character is the description of the pattern of the landscape, resulting from particular combinations of natural (physical and biological) and cultural (land use) characteristics. It focuses on the inherent nature of the land rather than the response of a viewer (Young, 2000). Each of the key characteristics is discussed below.

Refer to Plate 4-1 to Plate 4-8 for visual representations of the landscape character.

4.1.1 Geology and Topography

The geology and topography of the area, together with the Mediterranean climate, provide the framework for the basic landscape features and visual elements of the study area (Figure 4-1).

The site is located at the confluence of the Black and Liesbeek Rivers to the east of Table Mountain and Devils Peak – steep and rugged sandstone formations of the Table Mountain Group (Plate 4-1). The project is located at the foot of Devils Peak on shale of the Malmesbury Group overlayed with quaternary alluvium deposits consisting of loamy and sandy soils.

The site is located between the transformed natural channel of the Liesbeek River (west and north) (Plate 4-2), the canalised channel of the Liesbeek River (east) (Plate 4-3) and the Black River (north-east) (Plate 4-4). The Liesbeek River and Black River merge to become the Salt River which flows into Table Bay approximately 2 km north of the site.

The site is approximately 3 - 8 m above mean sea level (msl) and is relatively flat (0 - 5 degrees) with local topographical variations at the driving range / golf course. A minor ridgeline (Observatory Hill) runs in a north-south direction south-east of the site. The highest point of this ridgeline is approximately 12 m above msl.

The topographical landscape of the area surrounding the site has been very significantly modified by the urban environment e.g. canalised rivers, major roads and bridges (M5, Liesbeek Parkway), industrial areas, large commercial developments, and railway lines.

4.1.2 Vegetation

The site is located within the Cape Floristic Kingdom and the Fynbos Biome and in the original extent of the following vegetation types (SANBI, 2010):

- Cape Flats Dune Strandveld in the northern portion of the site and extending north towards the coastline;
- Cape Flats Sand Fynbos along the eastern edge of the site and further east; and
- Peninsula Shale Renosterveld in the southern portion of the site, extending south and east onto the lower slopes of Devils Peak.

[2] These terms are explained in the relevant sections below.

However, most of the natural vegetation in the area has been lost to urban development. The natural vegetation cover on the slopes of Devils Peak has remained intact due to its unsuitability for development and the proclamation of the Table Mountain National Park.

According to the Cape Town Biodiversity Network (2017), the banks of the Liesbeek and Black Rivers, including the Raapenberg Bird Sanctuary, are identified as proclaimed protected areas. The open land to the north of the site is identified as "natural vegetation…in good, fair or restorable condition" (Bionet, 2017) although the Department of Environmental Affairs and Development Planning has confirmed that no natural vegetation remains. A small patch of critically endangered vegetation to the east of the site and within the Raapenberg Bird Sanctuary has been proclaimed as a Critical Biodiversity Area (CBA1d).

There are very few trees in the areas surrounding the site, especially to the north and east of the site where the predominant land use is industrial. Dense tree copses surrounding the Observatory complex buildings on the ridgeline to the south-east of the site. Riverine vegetation, although much of it exotic, is found along the banks of the rivers. Street trees have been planted along Liesbeek Parkway, and trees planted around the sportsfields to the west of the site provide protection from the wind.

The site itself is mostly grassed (lawn) with scattered trees. Dense reed beds are located on the eastern edge of the site along the Black River.

4.1.3 Land Use

The site is located less than 5 km from the Cape Town Central Business District. There is a variety of land uses surrounding the site with residential, commercial, institutional and industrial activities interspersed with open spaces for passive and recreational activities (Figure 4-2).

The Passenger Rail Agency of South Africa (PRASA) rail yard is located north of the site (Plate 4-5) with related industrial activities further north. The land immediately north of the site (but on the River Club "island") also belongs to PRASA and has recently been cleared.

Liesbeek Parkway runs immediately adjacent to the site's western boundary with sports fields (Malta Park) and the Black River Park, a commercial development, beyond that (Plate 4-6). A railway line, light industry and the residential areas of Observatory and Salt River are located further west.

The Raapenberg Bird Sanctuary Nature Reserve, along the Black River, borders the site to the immediate east (Plate 4-7). The M5 freeway runs along the eastern edge of the site beyond the Black/Salt River with - north to south - the industrial areas of Maitland and Ndabeni, a commercial development (M5 Park) (Plate 4-7), the Alexandra Institute and the Maitland Garden Village located east of the M5. The Alexandra Mill (Nieuwe Molen), South Africa's oldest surviving windmill (The Heritage Portal, 2017) is located in the grounds of the Alexandra Institute.

The South African Astronomical Observatory is situated on the ridgeline immediately east of the southern portion of the site (Plate 4-6). The Observatory complex is centred around the original 1827 observatory building, which commands a dominating position on the observatory Hill (Aikman, 2002). The trees on Observatory Hill do however screen much of the observatory building from surrounding receptors. The layout of the complex is informal and buildings are loosely arranged in a parklike setting (Aikman, 2002). Valkenberg West, part of the Valkenberg Hospital complex, is located further south.

Liesbeek Parkway from the N2 (south), Albert Road (north-west) and Station Road from Main Road (west) provide access to the site. Although the M5 runs almost adjacent to the site, access from the M5 is not currently possible.

The site itself is predominantly used as a golf driving range with a "mashie" 9-hole golf course in the north-east of the site. The River Club, built in 1939, has been converted into a recreational and conference facility. A number of surrounding buildings on the property are rented to business owners. The River Club parking area is to the south of the building with the main access to the River Club from the south off Observatory Road.

4.2 Visual Character

Visual character is descriptive and non-evaluative, which implies that it is based on defined attributes that are neither positive nor negative. A change in visual character cannot be described as having positive or negative attributes until the viewer's response to that change has been taken into consideration. The probable change caused by the project is assessed against the existing degree of change caused through development.

Typical character attributes, used to describe the visual character of the affected area and to give an indication of potential value to the viewer, are provided in Table 4-1.

The basis for the visual character of the area is provided by the topography, vegetation and land use of the area, giving rise to a predominantly urban environment of mixed land use surrounding a large open space with low intensity activities, influenced by the rivers traversing the space and vehicular and rail routes serving to delineate and confine the space. Historical institutions, such as the Observatory complex, also add to the visual character of the area.

Although most of the area surrounding the site can be described as a substantially developed landscape (*highly transformed landscape*), the site and the immediate surrounds can be defined as an *"isolated" transition landscape* associated with the interface between highly developed urban areas and modified natural elements.

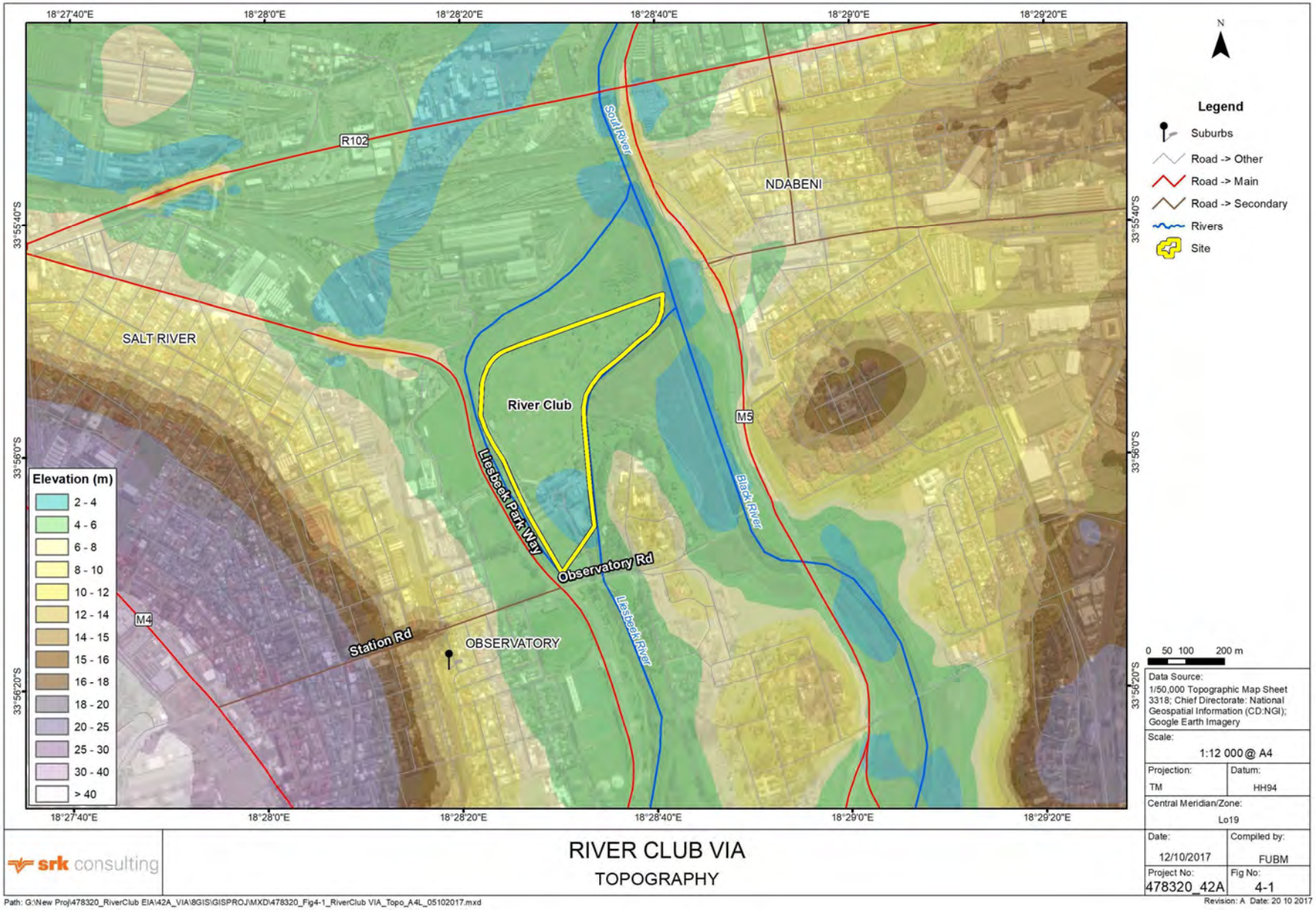

Figure 4-1: Topography of the study area

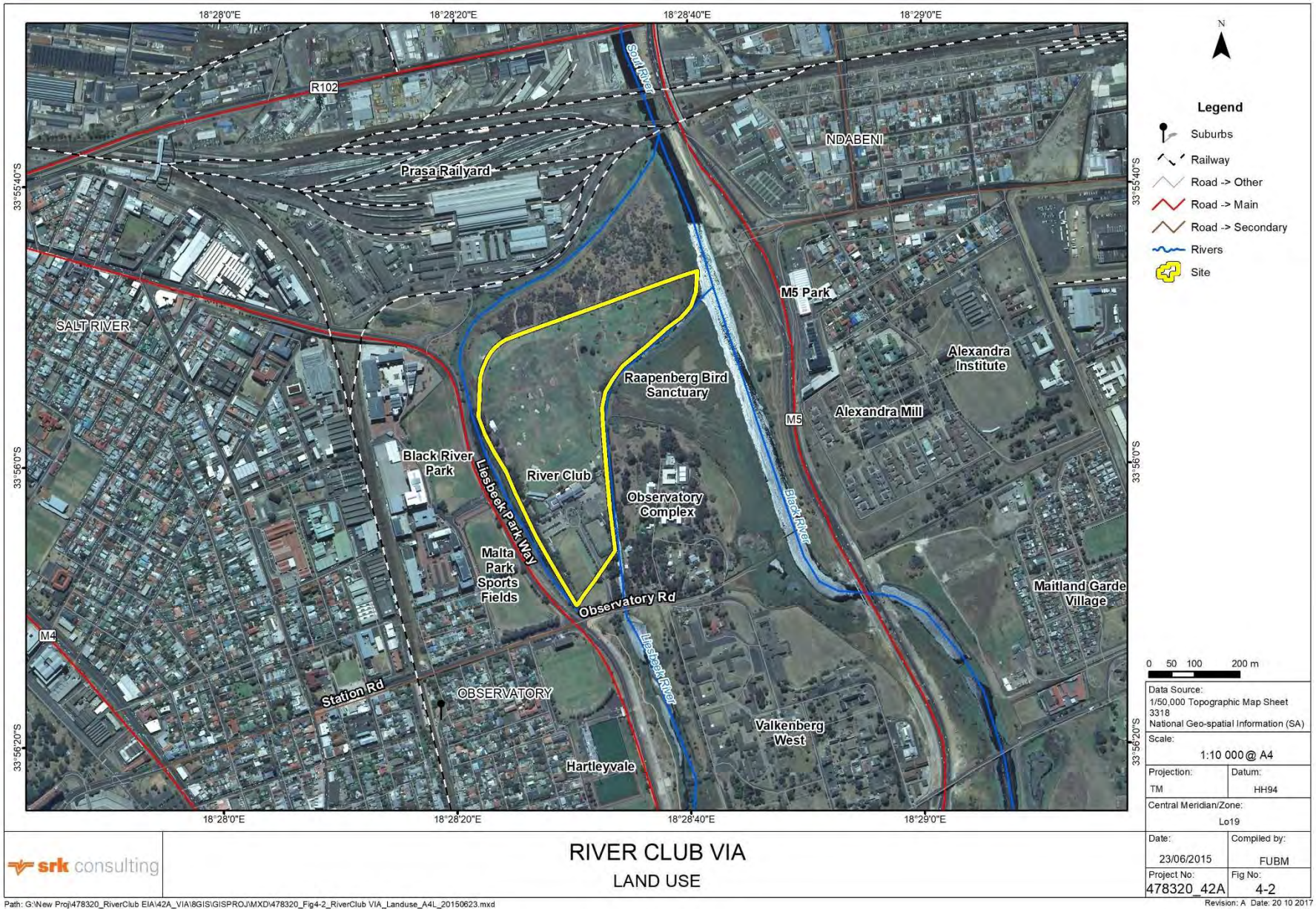

Figure 4-2: Land use of the study area

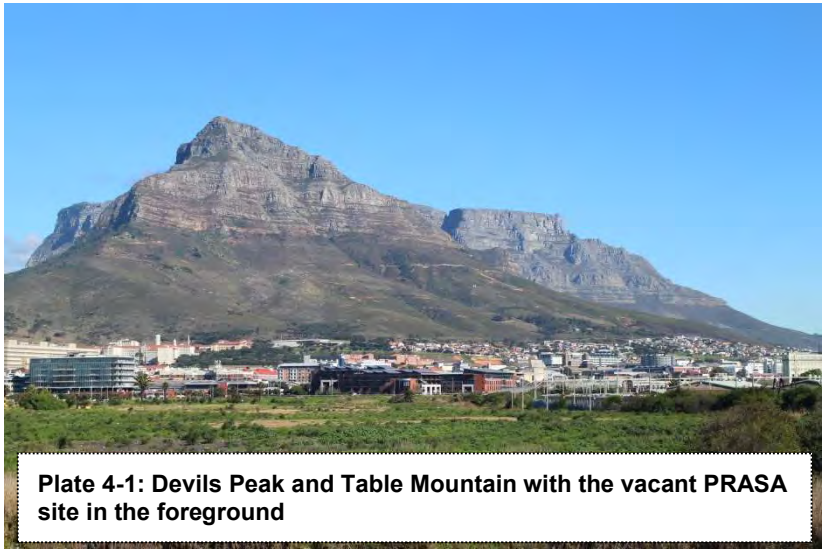

Plate 4-1: Devils Peak and Table Mountain with the vacant PRASA site in the foreground

Plate 4-2: Transformed natural channel of the Liesbeek River

Plate 4-3: Canalised channel of the Liesbeek River

Plate 4-4: Black River

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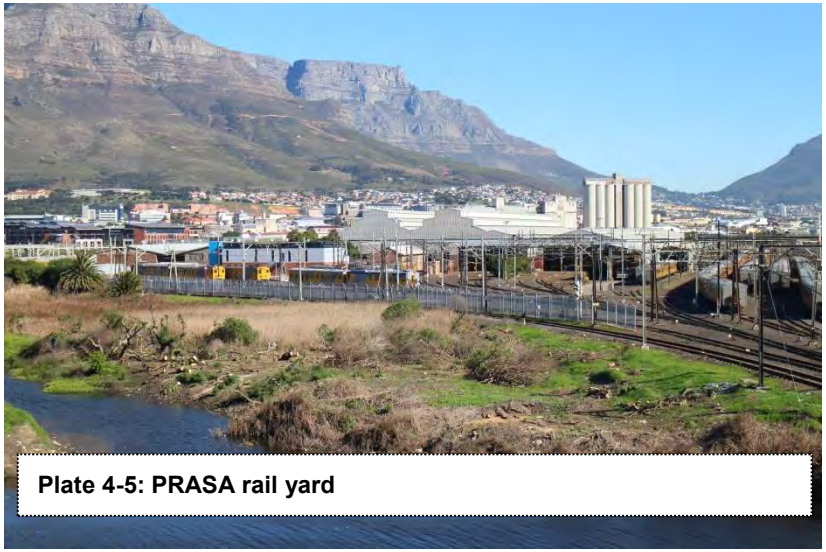

Plate 4-5: PRASA rail yard

Plate 4-6: Black River Park and Malta Park sports fields

Plate 4-7: M5 Park (left) and Alexandra Institute (right) with the M5 in the foreground

Plate 4-8: The Observatory complex

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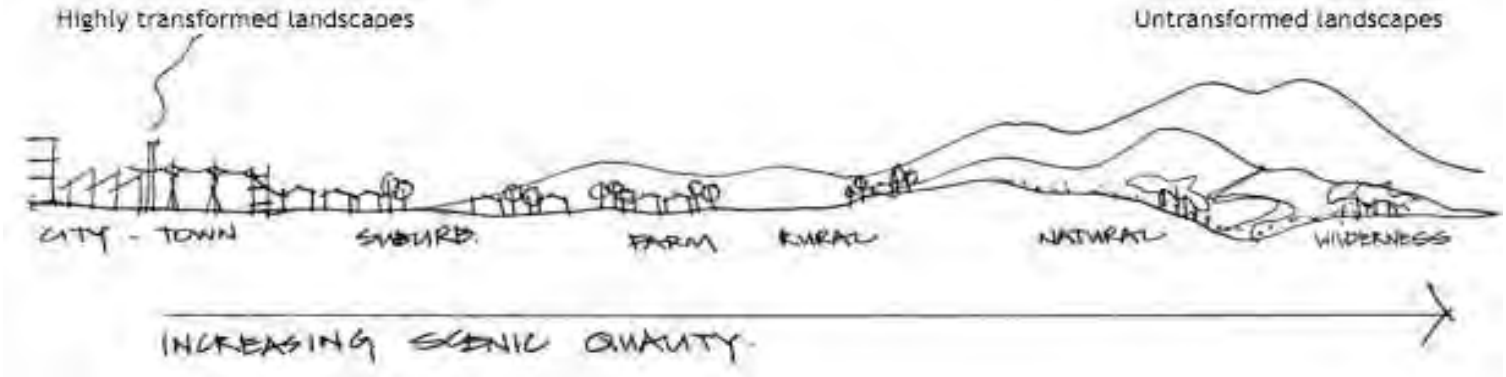
Table 4-1: Typical visual character attributes

Highly Transformed Landscape – Urban/Industrial	Transition Landscape	Modified Rural Landscape	Natural Transition Landscape	Untransformed Landscape – Natural
Substantially developed landscape. High levels of visual impact associated with buildings, factories, roads and other related infrastructure (e.g. powerlines).	Transitional landscape associated with the interface between, rural, agricultural area and more developed suburban or urban zones.	Typical character is rural landscape, defined by field patterns, forestry plantations and agricultural areas and associated small-scale roads and buildings.	A changing landscape character associated with the interface between natural areas and modified rural / pastoral or agricultural zones.	No / minimal impact associated with the actions of man. National parks, coastlines, pristine forest areas.



Source: CNDV, 2006

http://www.shandinglu.org

http://www.nightjartravel.com

http://www.boschkloof.com

4.3 Visual Quality

Aesthetic value is an emotional response derived from our experience and perceptions. As such, it is subjective and difficult to quantify in absolute terms. Studies in perceptual psychology have shown that humans prefer landscapes with higher complexity (Crawford, 1994). Landscape quality can be said to increase when:

- Topographic ruggedness and relative relief increases;
- Water forms are present;
- Diverse patterns of grasslands, shrubs and trees occur;
- Natural landscape increases and man-made landscape decreases; and
- Where land use compatibility increases.

The visual quality of the overall area is largely ascribable to the built-up urban environment with an island of green open space. The rivers provide interest in the landscape thereby enhancing the visual quality. The remarkable views of Devils Peak in the west contribute to the visual quality of the area. The (mostly obscured) Observatory located on the hill between the rivers adds visual interest in the landscape. Because of its location on a raised platform and set back behind buildings along the M5 freeway, views of the Alexandra Mill are obstructed the Mill therefore does not provide noticeable visual interest in the landscape.

The visual quality of the area can be experienced through a number of views. These views include (see Plate 4-9 to Plate 4-13):

- Views west towards Devils Peak;
- Views across the relatively open, green site;
- Views towards the Observatory complex on Observatory Hill;
- Views across Raapenberg Bird Sanctuary and Black River; and
- Views along Liesbeek River.

There are elements that detract from visual quality in the study area, notably the derelict and industrial land to the north and the M5 freeway to the east.

4.4 Sense of Place

Our sense of a place depends not only on spatial form and quality, but also on culture, temperament, status, experience and the current purpose of the observer (Lynch, 1992). Central to the idea of ‘sense of place’ or *Genius Loci* is identity. An area will have a stronger sense of place if it can easily be identified, that is to say if it is unique and distinct from other places. Lynch defines ‘sense of place’ as “the extent to which a person can recognise or recall a place as being distinct from other places – as having a vivid or unique, or at least a particular, character of its own” (Lynch, 1992:131).

It is often the case that sense of place is linked directly to visual quality and that areas/spaces with high visual quality have a strong sense of place. However, this is not an inviolate relationship and it is plausible that areas of low visual quality may have a strong sense of place or – more commonly – that areas of high visual quality have a weak sense of place. The defining feature of sense of place is uniqueness, generally real or biophysical (e.g. trees in an otherwise treeless expanse), but sometimes perceived (e.g. visible but unspectacular sacred sites and places which evoke defined responses in receptors). Tourism can sometimes serve as an indicator of sense of place insofar as it is often the uniqueness (and accessibility) of a space/place which attracts tourists.

The site itself does not necessarily have an immediately recognisable sense of place although the River Club building is a distinguishable landmark on the site.

The sense of place of the study area is strongly influenced by the rivers, and an "island" of green open space (Figure 4-3) in a highly developed and evolving urban environment[3] of mixed land use.

The dramatic views of Devils Peak and the dominant east-facing ridgeline also add to the sense of place of the study area (Figure 4-4).

Figure 4-3: Green open space as experienced by receptors

Figure 4-4: Black River Park in the foreground and Devil's Peak in the background

One's connection or relationship to a place when defining sense of place is also important. Cross (2011) defines six categories of relationships with place (Table 4-2): biographical, spiritual, ideological, cognitive, narrative and dependent.

The relationship of receptors in the study area (refer to Section 5.3) to place is likely to be predominantly cognitive or narrative. For example, receptors in the area may have chosen to live or locate their business in the study area because they were enticed by the green open space or scenic characteristics of the area (rivers, mountain views, Raapenberg Sanctuary, Observatory hill). Or, a person visiting the area may have a narrative connection to the area through the cultural/historic aspects of the landscape. Although these aspects are mostly intangible, the visitors may have learned of their significance through historical accounts or stories (e.g. the history of the Khoikhoi nation, the First Frontier or the Observatory).

[3] For instance, the Black River Park (developed between 2003 and 2006) was a departure from the predominantly residential nature of Observatory.

It is recognised that there may be receptors who consider the study area to have a “negative” sense of place (e.g. receptors experience a sense of discomfort in a harsh, windy environment). But, for the purposes of this assessment and taking the precautionary principle into account, it is assumed that the study area has an overall “positive” sense of place to receptors.

Table 4-2: Relationship to place

Type of Relationship	Process
Biographical (historical and familial)	Being born in and living in a place. Develops over time.
Spiritual (emotional, intangible)	Feeling a sense of belonging.
Ideological (moral and ethical)	Living according to moral guidelines for human responsibility to place. Guidelines may be religious or secular.
Cognitive (based on choice and desirability)	Choosing a place based on a list of desirable traits and lifestyle preferences.
Narrative	Learning about a place through stories, family histories, political accounts and fictional accounts.
Dependent	Constrained by lack of choice, dependency on another person or economic opportunity.

Source: Adapted from Cross, 2011

Plate 4-9: Views west from the site towards Devils Peak

Plate 4-10: Views south-west across the River Club site from the M5

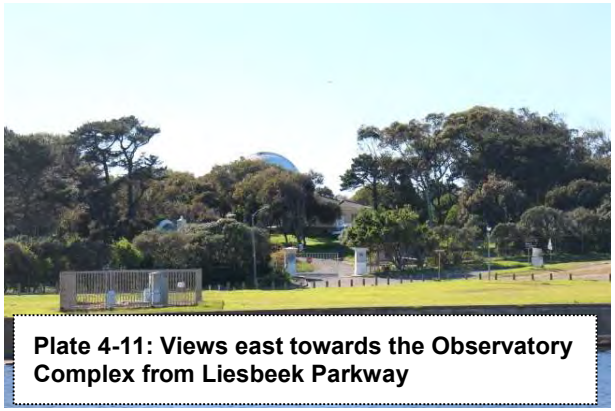


Plate 4-11: Views east towards the Observatory Complex from Liesbeek Parkway

Plate 4-12: Views south across Raapenberg Bird Sanctuary and Black River from the M5

Plate 4-13: Views north along the Liesbeek River (western channel)

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478320/42A

5 Analysis of the Magnitude of the Visual Impact

The following section outlines the analysis that was undertaken to determine the **magnitude or intensity** of the overall visual impact of the project. Various factors were considered in the assessment, including:

- Visual exposure;
- Visual absorption capacity;
- Potential visual receptors;
- Visibility and viewing distance; and
- Compatibility with the existing landscape / townscape integrity.

The analysis of the magnitude or intensity of the visual impact, as described in this section, forms the basis for the assessment and rating of the impact as documented in the next section (Section 6).

5.1 Visual Exposure

Visual exposure is determined by the zone of visual influence or viewshed. The viewshed is the topographically defined area that includes all the major observation sites from which the project *could* be visible. The boundary of the viewshed connects high points in the landscape and demarcates the zone of visual influence.

The method used to determine the zone of influence included GIS modelling based on 5 m contours and the heights of the proposed buildings above the new ground level.

The viewshed analysis assumes maximum visibility of the project in an environment stripped bare of vegetation and structures. However, for the purposes of this study, the heights and footprints of the buildings bordering the site were taken into consideration when generating the viewshed to account for the screening effect of these buildings.

It is important to remember that the project is ***not necessarily visible from all points within the viewshed*** as views may be obstructed by obtrusive elements such as trees, dense scrub, built structures and/or localised variations or irregularities in topography (see visibility from specific viewpoints in Section 5.4).

The viewshed also considers the visibility of the development based on the distance of the viewer from the object (in this case, the development)[4]. Viewing distance and visibility are discussed further in Section 5.4.

A viewshed was generated for Alternative 1 only as the viewshed for Alternative 2 is not expected to be materially different. Analysis of the viewshed of Alternative 1 (Figure 5-1) is instructive and leads to the following observations:

- Based on topography only, the development would be exposed and would be visible across large areas of the City;
- Observatory hill provides partial visual screening to receptors to the south-east; and
- With the inclusion of the large buildings adjacent to the site in the viewshed, the zone of visual influence is reduced considerably as these buildings provide very effective visual screening.

[4] This method, known as the Fuzzy Viewshed, is based on work conducted by Ogburn (2006) and calculates the maximum distance of clear visibility and the distance at which visibility drops to 50%.

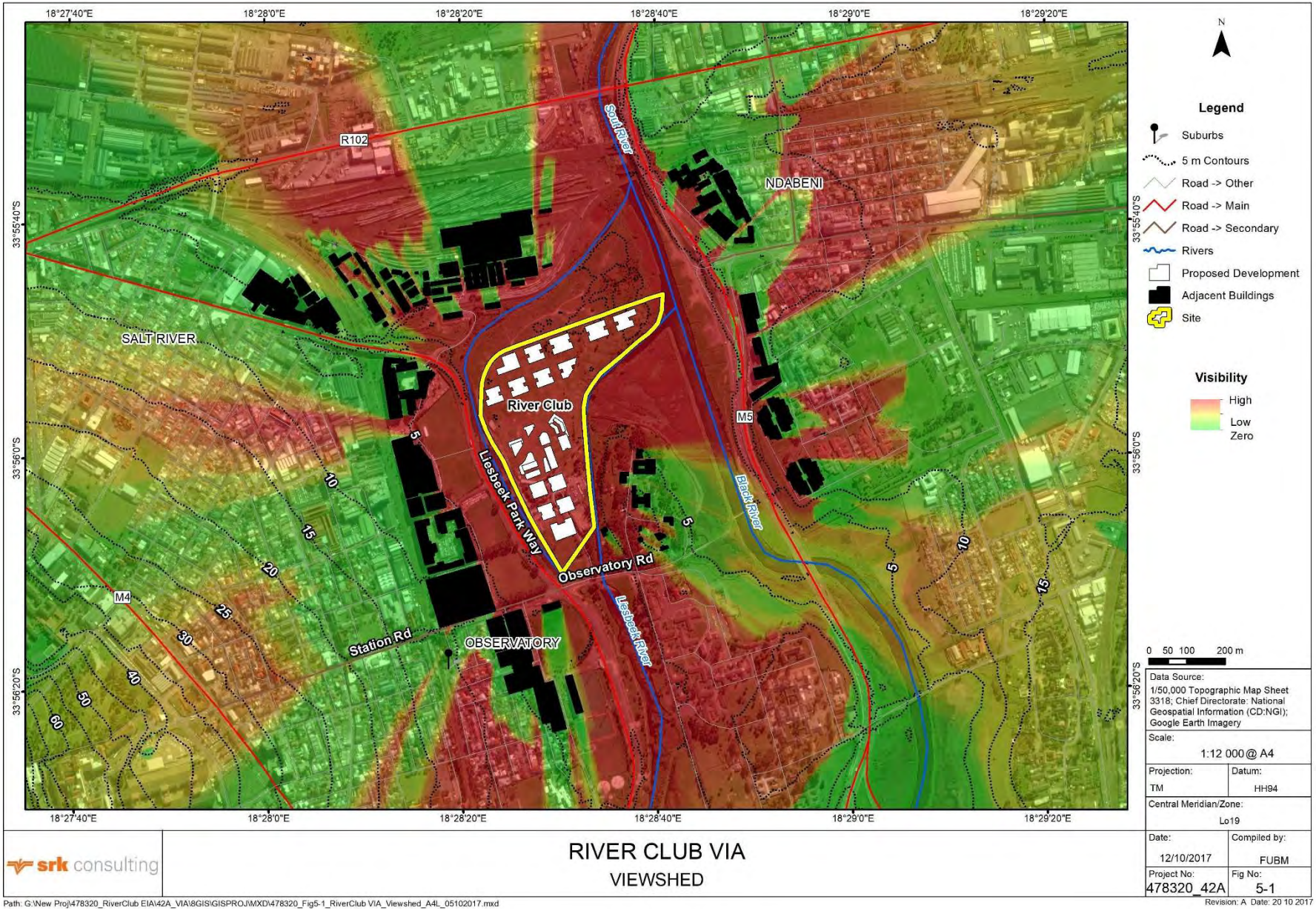

Figure 5-1: Viewshed (Alternative 1)

Table 5-1: Visual absorption capacity criteria

High	Moderate	Low
The area is able to absorb the visual impact as it has: • Undulating topography and relief • Good screening vegetation (high and dense) • Is highly urbanised in character (existing development is of a scale and density to absorb the visual impact).	The area is moderately able to absorb the visual impact, as it has: • Moderately undulating topography and relief • Some or partial screening vegetation • A relatively urbanised character (existing development is of a scale and density to absorb the visual impact to some extent.	The area is not able to absorb the visual impact as it has: • Flat topography • Low growing or sparse vegetation • Is not urbanised (existing development is not of a scale and density to absorb the visual impact to some extent.)
 *http://www.franschhoek.co.za*	 *http://wikipedia.org*	 *http://www.butbn.cas.cz*
 *http://commons.wikimedia.org*	 *http://blogs.agu.org*	 *http://fortheinterim.com*

5.2 Visual Absorption Capacity

The VAC is the potential for the area to conceal the proposed project. Factors contributing to the VAC include:

- Topography and vegetation that is able to provide screening and increase the VAC of a landscape;
- The degree of urbanisation compared to open space. A highly urbanised landscape is better able to absorb the visual impacts of similar developments, whereas an undeveloped rural landscape will have a lower VAC; and
- The scale and density of surrounding development.

These factors frequently apply at different scales, by influencing the VAC in the foreground (e.g. dense bush, small structures), middleground and background (e.g. tall forests, hills, cityscapes). Criteria used to determine the VAC of the affected area are defined in Table 5-1.

The VAC is increased by the built fabric of the surrounding development areas particularly the PRASA rail yard to the north, the commercial buildings of Black River Park to the west, and the industrial buildings and M5 Park (on a raised platform) to the east. Local variations in topography also increase the VAC.

The dense urban fabric of Observatory and Salt River obstruct views beyond the very immediate foreground thereby increasing the VAC of these areas.

The large trees, the Observatory complex, and the institutional buildings on the ridgeline east and south of the site provide partial visual screening.

5.3 Visual Receptors

Receptors are important insofar as they inform visual sensitivity. The sensitivity of viewers is determined by the number of viewers and by how likely they are to be impacted upon. Potential viewers include the following (Plate 5-1 to Plate 5-4):

- **Motorists**: The site is visible to users travelling passed on Liesbeek Parkway and on the M5. Viewers along these roads are transient (and moving at speed) and so are exposed to visual impacts for a relatively short period.
- **Employees and Residents**: Visibility from individual households is likely to be low, since the urban fabric obstructs views of the development except for those in the very immediate foreground. Employees in Black River Park (west) and M5 Park (east) have clear views of and across the site from elevated viewpoints. The development will be visible to employees/residents at Alexandra Institute, which is elevated above the site.
- **Visitors**: Visitors to the Observatory complex view the site from a raised vantage point although large trees do provide visual screening. The site is also visible to visitors to Raapenberg Bird Sanctuary east of the site, users of the sports fields west of the site and passive users of the open space e.g. dog-walkers, bird-watchers and pedestrians along the Liesbeek River.

The sensitivity of viewers or visual receptors potentially affected by the visual impact of the development is considered to be moderate (see Table 5-2) because the location of the proposed development in the city will increase the exposure factor, although receptors may attach a low value to private open space compared to housing and employment opportunities. However, some receptors (e.g. residents of Observatory) may attach a high value to the visual open space provided in an urban environment.

Table 5-2: Receptor sensitivity criteria

Sensitivity	Criteria
Number of people that will see the project (exposure factor)	
High	Towns and cities, along major national roads (i.e. thousands of people)
Moderate	Villages, typically less than 1000 people
Low	Less than 100 people (i.e. a few households)
Receptor perception of the visual landscape hosting the project	
High Value (cherished)	People attach a high value to aesthetics - in or around national parks, coastlines, pristine forest areas.
Moderate Value	People attach a moderate value to aesthetics - smaller towns where natural character is still plentiful.
Low Value (uninterested)	People attach a low value to aesthetics, when compared to employment opportunities (e.g. industrial areas, cities, towns).

Source: Adapted from Golder Associates, 2012

5.4 Viewing Distance and Visibility

The distance of a viewer from an object (in this case the development) is an important determinant of the magnitude of the visual impact. This is because the visual impact of an object diminishes/attenuates as the distance between the viewer and the object increases. Thus the visual impact at 1 000 m would, nominally, be 25% of the impact as viewed from 500 m. At 2 000 m it would be 10% of the impact at 500 m (Hull and Bishop, 1988 in Young, 2000).

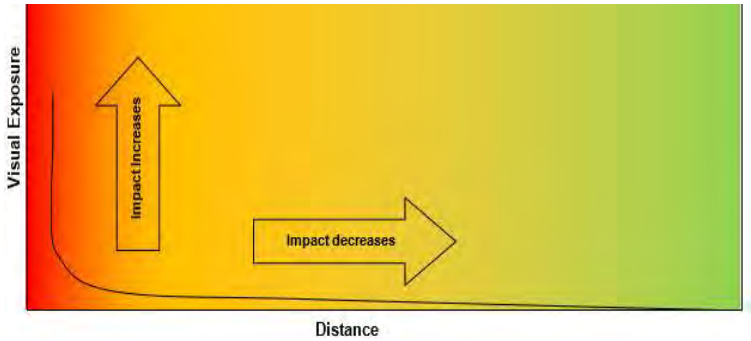

Figure 5-2: Visual exposure vs distance
Source: Adapted from Hull and Bishop, 1998

Three basic distance categories can be defined for a project of this scale (as discussed and represented in Table 5-3):

- Foreground;
- Middleground; and
- Background.

Table 5-3: Distance categories

FOREGROUND (0 – 1 km)	The zone where the proposed project will dominate the frame of view. The project will be *highly visible* unless obscured.
MIDDLEGROUND (1 km – 3 km)	The zone where colour and line are still readily discernible. The project will be *moderately visible* but will still be easily recognisable.
BACKGROUND (> 3 km)	This zone stretches from 3 km to the point from where the project can no longer be seen. Objects in this zone can be classified as *marginally visible* to *not visible*.

A range of (reasonably) accessible viewpoints were selected from the surrounding areas, in order to provide an indication of the likely visibility of the development from local vantage points. The viewpoints were not randomly selected but were chosen because they are likely to afford optimal views of the development, i.e. the development is likely to be less visible from other accessible viewpoints, especially those further afield and at a similar elevation.

The selected viewpoints are shown in Figure 5-3, and views from these viewpoints are shown in the accompanying photographs included as Appendix A. Simulated views from selected viewpoints are also provided in Appendix A using 3D imagery. Simulations were only generated for Alternative 1 as the simulations for Alternative 2 are not expected to be materially different. These images are only intended to indicate the position and built mass of the development in the landscape.

The criteria used to determine the visibility of the development are set out in Table 5-4 and the visibility from each viewpoint is summarised in Table 5-5.

Plate 5-1: Motorists along Liesbeek Parkway

Plate 5-2: Motorists along the M5

Plate 5-3: Employees at Black River Park and users of the sports fields at Malta Park

Plate 5-4: Employees and residents adjacent to the M5

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Table 5-4: Visibility criteria

NOT VISIBLE	Project cannot be seen	
MARGINALLY VISIBLE	Project is only just visible / partially visible (usually in background zone)	
VISIBLE	Project is visible although parts may be partially obscured (usually in middleground zone)	
HIGHLY VISIBLE	Project is clearly visible (usually in foreground or middleground zone)	

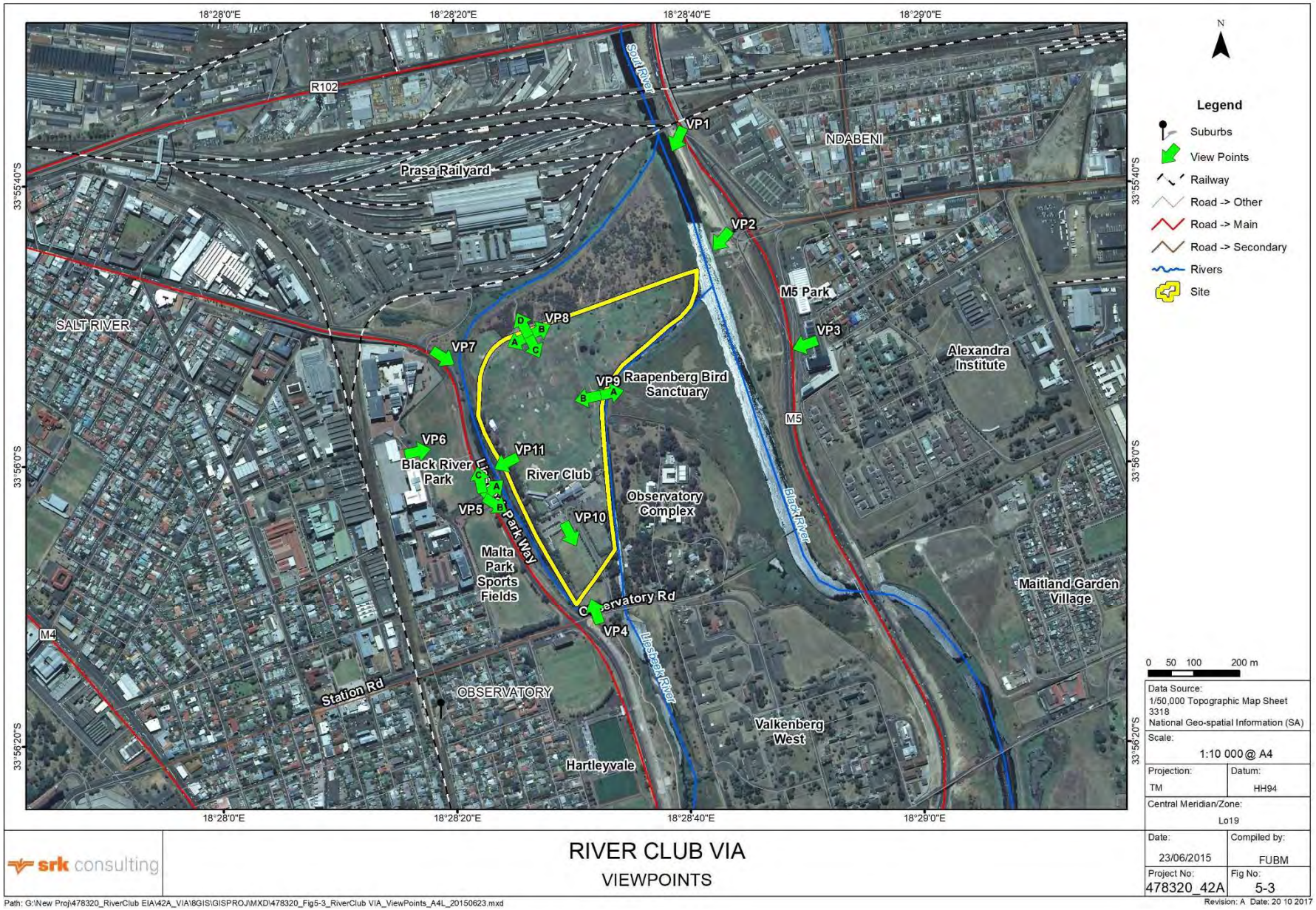

Figure 5-3: Viewpoints

Table 5-5: Visibility from viewpoints

View Point #	Location	Co-ordinates	Direction of view	Time Photograph Taken	Potential Receptors	Visibility
VP1	M5 north of site	33°55'36.67"S; 18°28'39.36"E	South-west	12:25pm	Motorists along the M5	Highly visible
VP2	Along the Black River at the Berkley Way on-ramp to the M5	33°55'43.82"S; 18°28'43.22"E	West	12:30pm	Motorists on Berkley Way	Highly visible
VP3	M5 Business Park	33°55'51.44"S; 18°28'50.47"E	West	12:35pm	Employees and visitors to M5 Park	Visible - although a portion of the northern extent of the site will be highly visible, much of the rest of the site is screened by Observatory Hill
VP4	Observatory Road near the intersection with Liesbeek Parkway	33°56'11.00"S; 18°28'32.11"E	North	12:52pm	Motorists along Observatory Road and Liesbeek Parkway as well as visitors to the Two Rivers Urban Park	Highly visible
VP5	Liesbeek Parkway at the entrance to Black River Park	33°56'2.10"S; 18°28'22.83"E	A: East B: South C: North	12:59pm	Motorists and pedestrains along Liesbeek Parkway	Highly visible
VP6	Black River Park	33°55'59.08"S; 18°28'16.62"E	East	1:11pm	Employees at Black River Park and users of the Malta Park sports fields	Highly visible
VP7	Malta Road / Liesbeek Parkway	33°55'52.49"S; 18°28'19.20"E	South-east	1:07pm	Motorists from Albert Road onto Liesbeek Parkway	Highly visible
VP8	River Club driving range	33°55'50.47"S; 18°28'27.20"E	A: West B: East C: South D: North	1:30pm	n/a	n/a
VP9	River Club mashie course on the bank of the Liesbeek River	33°55'52.44"S; 18°28'34.34"E	A: East B: West	1:34pm	n/a	n/a
VP10	River Club parking area	33°56'4.70"S; 18°28'29.65"E	South	1:20pm	n/a	n/a
VP11	River Club	33°56'1.01"S; 18°28'25.10"E	West	1:27pm	n/a	n/a

5.5 Compatibility with Landscape Integrity

Landscape (or cityscape) integrity refers to the compatibility of the development/visual intrusion with the existing landscape. The landscape integrity of the development is rated based on the relevant criteria listed in Table 5-6.

Table 5-6: Landscape integrity criteria

High	Moderate	Low
The project: • Is consistent with the existing land use of the area; • Is highly sensitive to the natural environment; • Is consistent with the urban texture and layout; • The buildings and structures are congruent / sensitive to the existing architecture / buildings; and • The scale and size of the development is similar to nearby existing development.	The project: • Is moderately consistent with the existing land use of the area; • Is moderately sensitive to the natural environment; • Is moderately consistent with the urban texture and layout; • The buildings and structures are moderately congruent / sensitive to the existing architecture / buildings; and • The scale and size of the development is moderately similar to nearby existing development.	The project: • Is not consistent with the existing land use of the area; • Is not sensitive to the natural environment; • Is very different to the urban texture and layout; • The buildings and structures are not congruent / sensitive to the existing architecture / buildings; and • The scale and size of the development is different to nearby existing development.

The proposed development is consistent with the existing land uses of the surrounding area (mainly the commercial and industrial activities towards the north of the site), although the scale and size of the development will be considerably larger than neighbouring developments. As the site is located wholly in an urban environment, the development is compatible with the overall cityscape of the area.

Although described as a “green” space, the site and the adjacent river systems are degraded. The development can therefore be considered to be somewhat sensitive to the “natural” environment, especially where LLPT proposes to rehabilitate the river systems.

Overall, the cityscape integrity of the proposed development is rated as *moderate* to *high* according to the criteria listed in Table 5-6.

6 Impact Assessment and Mitigation Measures

The following section describes the visual impacts during the construction and operational phases and assesses them utilising SRK’s impact rating methodology.

Direct visual and aesthetic impacts are likely to result from a number of project interventions and/or activities:

- Earthworks, resultant scarring and construction activities;
- Change in character of the site from an underdeveloped ‘green’ open site to a developed site;
- Built structures obtruding surrounding receptors’ views of visual resources; and
- Lighting to illuminate the development.

The visual and aesthetic impacts generated by the project are likely to be associated with changes to sense of place, visual intrusion (desecrating views) and visual obtrusion (impeding valued views).

6.1 Construction Phase

6.1.1 Altered Sense of Place and Visual Intrusion from Construction Activities

Visual impacts will be generated by construction activities such as vegetation stripping and earthworks (which can cause scarring), and from construction infrastructure, plant and materials on site (e.g. site camp, cranes and stockpiles). The high volume of trucks transporting fill material and other construction material to the site will also contribute to an altered sense of place (increased visual clutter, noise). Dust generated at the site will be visually unappealing and may further detract from the visual quality of the area.

Such impacts are typically limited to the immediate area surrounding the construction site and the construction period.

Loss of sense of place is expected during construction, especially in the foreground i.e. closer to Liesbeek Parkway and the M5, since construction and the change in the state of the site (scarring, construction equipment, construction traffic and dust generation) is incongruent with the current nature of the site *viz*. green open space and use of the site *viz.* recreation.

Construction will be undertaken in phases, commencing from the south of the site and advancing north. It is anticipated that construction will take over 2 years and construction activities would likely reduce the sense of place over the medium-term.

The impact for **both alternatives** is assessed to be of **medium** significance and with the implementation of mitigation, is reduced to **low** (Table 6-1).

Table 6-1: Significance of altered sense of place and visual intrusion during construction

	Extent	*Intensity*	*Duration*	*Consequence*	*Probability*	*Significance*	*Status*	*Confidence*
Without mitigation	Local	High	Medium-term	Medium	Definite	**MEDIUM**	-ve	High
	1	3	2	6				
Essential Mitigation Measures: • Limit and phase vegetation clearance and the footprint of construction activities to what is absolutely essential. • Clearly demarcate construction areas and dedicated access points to minimize disturbance to surrounding receptors. • Avoid excavation, handling and transport of materials which may generate dust under high wind conditions. • Consolidate the footprint of the construction camp(s) to a functional minimum. Screen the yard with materials that blend into the surrounding area. • Keep construction sites tidy and confine all activities, material and machinery to as small an area as possible.								
With mitigation	Local	Medium	Medium-term	Low	Definite	**LOW**	-ve	High
	1	2	2	5				

6.2 Operational Phase

6.2.1 Altered Sense of Place caused by the Change in Character of the Site

The proposed development is located in the midst of a wholly transformed urban environment, but has remained underdeveloped, conferring a more "natural" sense of place to surrounding (urban) receptors.

The development will change the character of the site from an underdeveloped green open space to a highly developed site. Although the River Club site is surrounded by urban development, due to the size of the proposed development, its location at the confluence of the Liesbeek River and Black River, and long-term status as a green open space, the change in character to a highly developed site may be experienced as a strong visual contrast for surrounding (urban) receptors and frequent visitors to the area.

Loss of sense of place is expected since the development and the change in the state of the site is mostly incongruent with the current nature of the site *viz*. green open space and use of the site *viz*. recreation.

The impact for **both alternatives** is assessed to be of **high** significance and with the implementation of mitigation, is reduced to **medium** (Table 6-2).

Table 6-2: Significance of altered sense of place caused by the change in character of the site

	Extent	*Intensity*	*Duration*	*Consequence*	*Probability*	*Significance*	*Status*	*Confidence*
Without mitigation	Local	High	Long-term	High	Definite	**HIGH**	-ve	High
	1	3	3	7				
Essential Mitigation Measures: • Provide a "green" setback along the banks of the Liesbeek River and the Black/Salt River. • Vegetation should be used to break up large expanses of hard surface. • Maintain visual links through the site by retaining visual (green) corridors connecting with the Black River. • Utilise (westerly) views towards Devils Peak, where possible. • Utilise (easterly) views across Raapenberg Bird Sanctuary. Create a visual link with the natural character of Raapenberg Bird Sanctuary with the portion of the site bordering the Sanctuary. • Investigate the material and tree planting palettes used for the existing intervention along Liesbeek Parkway to extend the green movement corridor along Liesbeek Parkway adjacent to the site. • Use large trees and vegetated berms to soften the interface between open spaces and buildings on site. • Where buildings are linked together, each unit should be individually expressed (with architectural details – insets, overhangs, range of visually compatible materials) to reduce the scale of the buildings and avoid large blocks; • Design roadways to be as narrow as practicably possible and paved with attractive materials to reduce vehicular speeds and to create pedestrian friendly environments. • Above-ground parking bays (if required) should be arranged in small groups rather than in large, unbroken lots, screened by buildings and vegetation as far as possible. • Be sensitive towards the use of glass or material with a high reflectivity in building designs which may cause glare and increase visual impacts (e.g. use anti-glare glass for glass facades). • Visually permeable green or black fencing (if required) may be incorporated into low walls. • Avoid visual clutter: o Minimise commercial signage; o Fix signs to walls or buildings rather than be free-standing; o Utilise low signs as they are less visually intrusive; and o Situate utilities (pipelines, cables) underground.								
With mitigation	Local	Medium	Long-term	Medium	Definite	**MEDIUM**	-ve	High
	1	2	3	6				

6.2.2 Visual Intrusion caused by the Development

New built structures will be visually intrusive and in some cases obtrude receptors' views of visual resources from surrounding vantage points. Visual resources are features which are aesthetically pleasing and enhance the visual landscape of an area. Visual resources also provide visual / scenic value to receptors. The following visual resources have been identified for the site and surrounds:

- Liesbeek River, the Black/Salt River, and the banks of these rivers;
- Raapenberg Bird Sanctuary;
- Observatory hill and the Observatory complex;
- Alexandra Mill;
- Existing (large) trees, albeit exotic; and
- Devils Peak.

Views of Devils Peak from the M5 freeway and immediately adjacent vantage points (e.g. M5 Park and Alexandra Institute) may be desecrated by new large buildings introduced in the foreground. Similarly, views from Black River Park will likely change from that of an open green expanse across to the Black/Salt River to large built structures in the foreground. The intrusion or obtrusion of receptor's views may reduce the scenic value of the site and its immediate surrounds to those receptors.

Unavoidably, the proposed development will significantly transform the site and very immediate surrounds. The visual impact may be lessened by the congruency of the proposed development with the surrounding land uses, mainly the commercial and industrial activities towards the north of the site rather than the more informal layout of the buildings to the south of the site.

The proposed development will be highly visible to receptors in the foreground (e.g. people in Black River Park, users of Liesbeek Parkway and the M5), but visibility will reduce substantially in the middleground and background because of the effective visual screening provided by the buildings adjacent to the site.

The impact for **both alternatives** is assessed to be of **high** significance and with the implementation of mitigation, is reduced to **medium** (Table 6-3).

Table 6-3: Significance of altered sense of place and visual intrusion from the development

	Extent	*Intensity*	*Duration*	*Consequence*	*Probability*	*Significance*	*Status*	*Confidence*
Without mitigation	Local	High	Long-term	High	Definite	**HIGH**	-ve	High
	1	3	3	7				
Essential Mitigation Measures: • Locate larger buildings to the north of the site. • Provide a "green" setback along the banks of the Liesbeek River and the Black/Salt River. • Vegetation should be used to break up large expanses of hard surface. • Maintain visual links through the site by retaining visual (green) corridors connecting with the Black River. • Utilise (westerly) views towards Devils Peak, where possible. • Utilise (easterly) views across Raapenberg Bird Sanctuary. Create a visual link with the natural character of Raapenberg Bird Sanctuary with the portion of the site bordering the Sanctuary. • Investigate the material and tree planting palettes used for the existing intervention along Liesbeek Parkway to extend the green movement corridor along Liesbeek Parkway adjacent to the site. • Use large trees and vegetated berms to soften the interface between open spaces and buildings on site. • Where buildings are linked together, each unit should be individually expressed (with architectural details – insets, overhangs, range of visually compatible materials) to reduce the scale of the buildings and avoid large blocks; • Design roadways to be as narrow as practicably possible and paved with attractive materials to reduce vehicular speeds and to create pedestrian friendly environments. • Above-ground parking bays (if required) should be arranged in small groups rather than in large, unbroken lots, screened by buildings and vegetation as far as possible. • Be sensitive towards the use of glass or material with a high reflectivity in building designs which may cause glare and increase visual impacts (e.g. use anti-glare glass for glass facades). • Visually permeable green or black fencing (if required) may be incorporated into low walls. • Avoid visual clutter: o Minimise commercial signage; o Fix signs to walls or buildings rather than be free-standing; o Utilise low signs as they are less visually intrusive; and o Situate utilities (pipelines, cables) underground.								
With mitigation	Local	Medium	Long-term	Medium	Definite	**MEDIUM**	-ve	High
	1	2	3	6				

6.2.3 Altered Sense of Place and Visual Quality caused by Light Pollution at Night

It is assumed that lighting will be extensively used by the proposed development (e.g. street lighting, outdoor lighting etc.). Although existing ambient lighting levels in the area are high, the development will increase light pollution at night or skyglow in the area and may alter night-time sense of place. Skyglow is a form of light pollution and refers to the brightening of the sky above populated areas. Skyglow cannot always be avoided and is always more noticeable in a previously unlit area, but is compounded by poor external lighting design and lighting fixtures that allow the upward spread of light into the atmosphere.

Lighting is not easily screened by vegetation, and receptors' experience of the impact is more intense.

The impact for **both alternatives** is assessed to be of **medium** significance and with the implementation of mitigation, is reduced to **low** (Table 6-4).

Table 6-4: Significance of altered sense of place and visual quality caused by light pollution at night

	Extent	*Intensity*	*Duration*	*Consequence*	*Probability*	*Significance*	*Status*	*Confidence*
Without mitigation	Local	Medium	Long-term	Medium	Definite	**MEDIUM**	-ve	High
	1	2	3	6				
Essential Mitigation Measures: • Limit high intensity lighting (e.g. make use of low-level lighting fixtures such as bollards, where possible, to avoid light spillage). • Establish and/or retain screening avenues of trees along internal roads to prevent light trespass. • Direct lighting inwards and downwards to avoid light spillage and trespass, where possible. External lights should be fitted with reflectors ("full cut-off" luminaires) to direct illumination downward and inward to the specific illuminated areas (see Figure 5-2). • Install down light luminaires to illuminate vertical structures or surfaces such as signs. If the only alternative is to up-light the element, the correct luminaire must be fitted to avoid light spillage. • Make use of low-level lighting fixtures such as bollards, where possible, to avoid light spillage. • Reduce the height of lighting masts as far as practicable.								
With mitigation	Local	Low	Long-term	Low	Definite	**LOW**	-ve	High
	1	1	3	5				

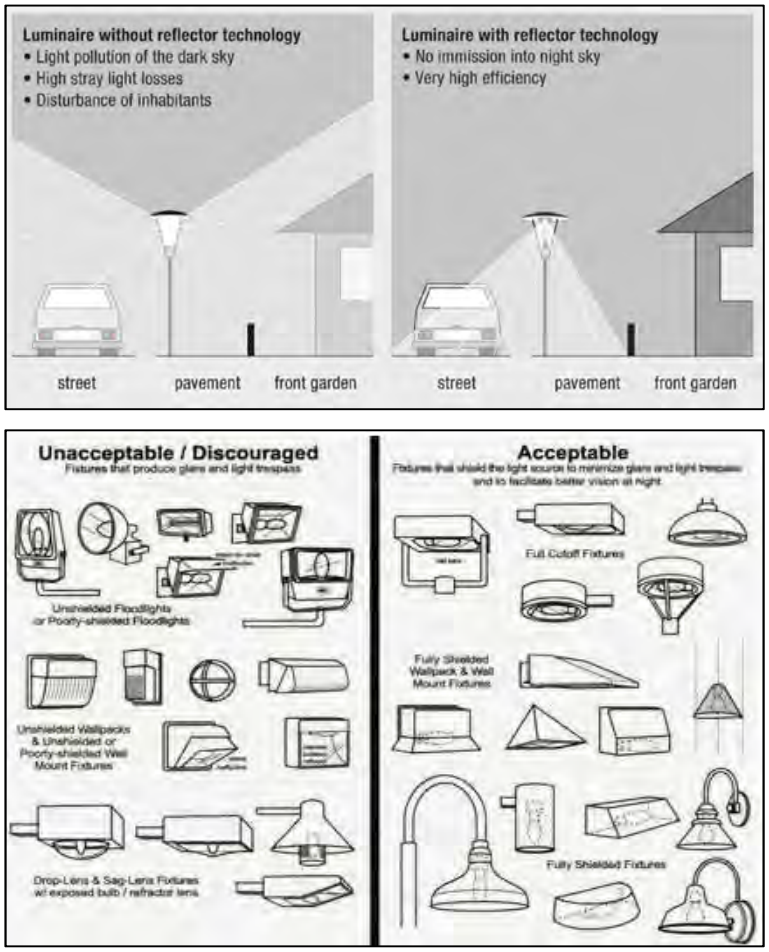

Figure 6-1: Lighting mitigation measures

Source: www.osram.com and changeobserver.designobserver.com

6.3 Cumulative Impact

Figure 6-2 presents the matrix used to evaluate the cumulative visual impacts of the project on the sense of place of the study area. This matrix presents the relationship between two quantities; severity of impacts (importance and magnitude) and extent of impact (geographic size).

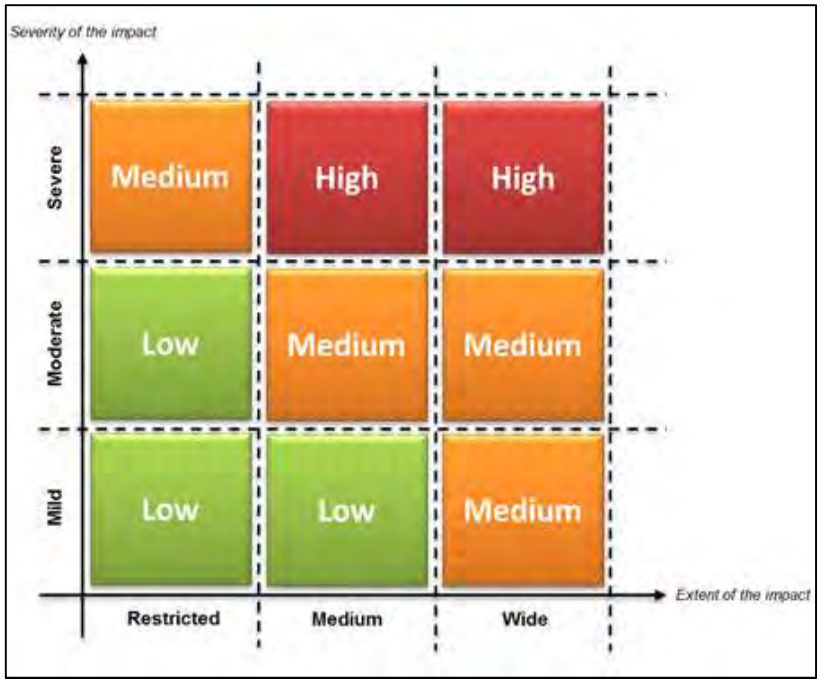

Figure 6-2: Cumulative impact evaluation matrix

The sense of place of the study area is strongly influenced by the rivers, and an “island” of open space in a highly developed urban environment of mixed land use. The area has experienced an increase in high-density development (commercial and residential) in recent years, owing to the proximity of the site to the CBD and good connectivity to a number of highways and major roads. Recent developments include the Black River Park and the redevelopment of

the M5 Business Park. The Square Kilometre Array building is also proposed to be constructed on the property immediately south of the River Club site.

The River Club development will add to the cumulative visual impact of high density developments in the area and the related loss of green open space in the city. However, there is an opportunity to convert the transformed private open space to higher quality, more accessible (albeit smaller) open space for the general public.

The *severity* of the impact on the visual landscape and sense of place is rated as moderate, and is assessed to be of a medium *extent*. The cumulative impact is thus assessed to be of ***medium*** significance.

7 Findings and Recommendations

The VIA describes and interprets the visual context or affected environment in which the project is located: this provides a visual baseline or template and aims to ascertain the aesthetic uniqueness of the project area. To better understand the *magnitude* or *intensity* of visual and sense of place impacts, the capacity of the project area and receptors to accommodate, attenuate and absorb impacts was analysed in considerable detail. To assess impact significance, the River Club development was "introduced" into the baseline, taking account of the attenuating capacity of the project area.

7.1 Findings

The following findings are pertinent:

- LLPT is proposing to redevelop the River Club property for commercial, residential and institutional use.
- The basis for the **visual character** of the area is provided by the topography, vegetation and land use of the area giving rise to a predominantly urban environment of mixed land use surrounding a large, isolated open space with low intensity activities, influenced by the rivers traversing the space and vehicular and rail routes delineating and confining the site.
- The **visual quality** of the overall area is largely ascribable to the built-up urban environment with an island of green open space. The rivers provide interest in the landscape thereby enhancing the visual quality. Views of Devils Peak and the Observatory complex contribute to the visual quality of the area.
- The **sense of place** of the study area is strongly influenced by the rivers, and an "island" of open space in a highly developed and evolving urban environment of mixed land use. The dramatic views of Devils Peak and the dominant east-facing ridgeline also add to the sense of place of the study area, while surrounding industrial areas and transport corridors detract.
- The **visual exposure** analysis indicates that buildings adjacent to the site will provide very effective visual screening of the development.
- The **VAC** is increased by the built fabric of the surrounding areas particularly the PRASA rail yard to the north, the commercial buildings of Black River Park to the west, and the industrial buildings and M5 Park (on a raised platform) to the east, as well as local variations in topography.
- **Receptors** include users travelling passed the site on Liesbeek Parkway and the M5, residents of surrounding suburbs, employees of adjacent business parks and visitors to the Observatory complex, the Raapenberg Sanctuary and passive users of the open space.
- **Visibility** of the development will be very high to receptors in the foreground, but visibility will reduce substantially in the

middleground and background because of screening provided by urban fabric.

- **Landscape integrity** refers to the compatibility of the development with the existing landscape or cityscape. The proposed development is consistent with the existing land use of the surrounding area (commercial, industrial, institutional) although the scale and size of the development will be considerably larger than neighbouring developments.
- **During construction**, loss of sense of place is expected, especially in the foreground i.e. closer to Liesbeek Parkway and the M5, since construction and the change in the state of the site (scarring, construction equipment, construction traffic and dust generation) is incongruent with the current nature of the site *viz*. green open space and use of the site *viz*. recreation.
- **During operations**, Loss of sense of place is expected since the development and the change in the state of the site is mostly incongruent with the current nature of the site *viz*. green open space and use of the site *viz*. recreation.

  New built structures will be visually intrusive and in some cases obtrude receptors' views of visual resources from surrounding vantage points. The visual impact may be lessened by the congruency of the proposed development with the surrounding land uses, mainly the commercial and industrial activities towards the north of the site rather than the more informal layout of the buildings to the south of the site.

  Lighting will be extensively used to illuminate the proposed development which may drastically alter night-time sense of place.

7.2 Conclusion

Although the significance rating for both layout alternatives is the same, Alternative 1 is marginally preferred from a visual impact and sense of place perspective as more green (and landscaped) open space is accessible. During parts of the year, the original (western) channel of the Liesbeek River can be visually unappealing (when water levels are low the channel can appear polluted). For Alternative 1, the shift of Precinct 1 towards the western channel unlocks more open space along the eastern channel, which has the potential to become a visual amenity to the public if rehabilitated correctly. Furthermore, the ecological corridor for Alternative 1 is marginally wider than for Alternative 2, thereby increasing the green visual corridor across the site.

Though tools are available to more scientifically and dispassionately assess visual and sense of place impacts, VIAs require a large degree of professional, subjective judgment. This is more difficult for a project such as the River Club development, which is located in the midst of a wholly transformed urban environment on land very well located for development, but which has remained undeveloped and conferred a natural sense of place to surrounding (urban) receptors. In many respects, the visual impact is pronounced, but not inconsistent with a cityscape. However, the sense of place impact is more significant and difficult to mitigate. Receptor perceptions are also important: for some, retention of the open space might be critical to retaining the sense of place; for others, urban development, especially if celebrated by iconic structures, may be valued. The development could both alter sense of place and, at the same time, deliver a functional development with interesting structures with their own visual appeal.

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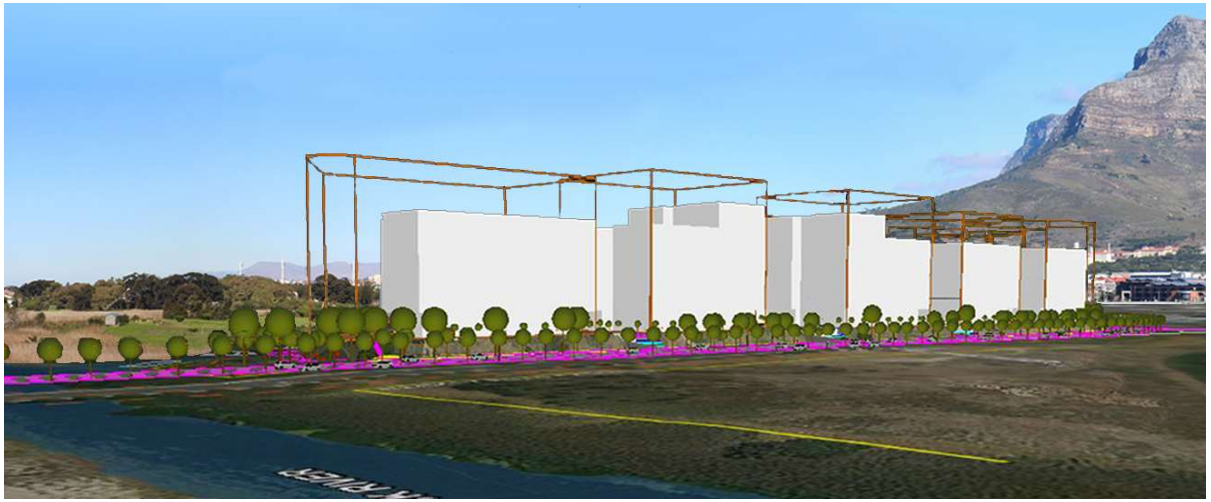
Appendices

Appendix A: Viewpoint Photographs



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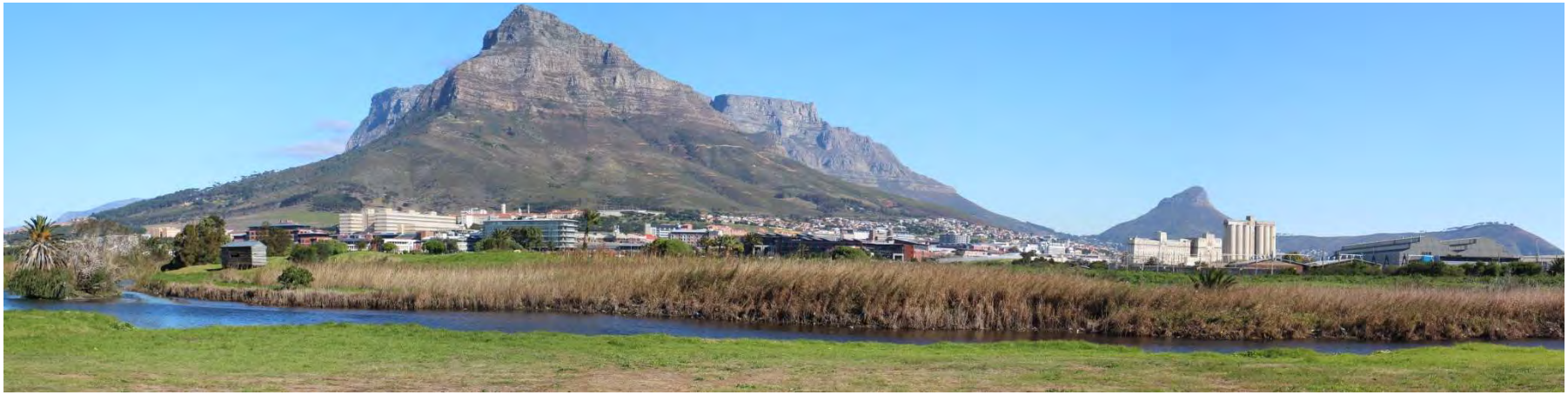

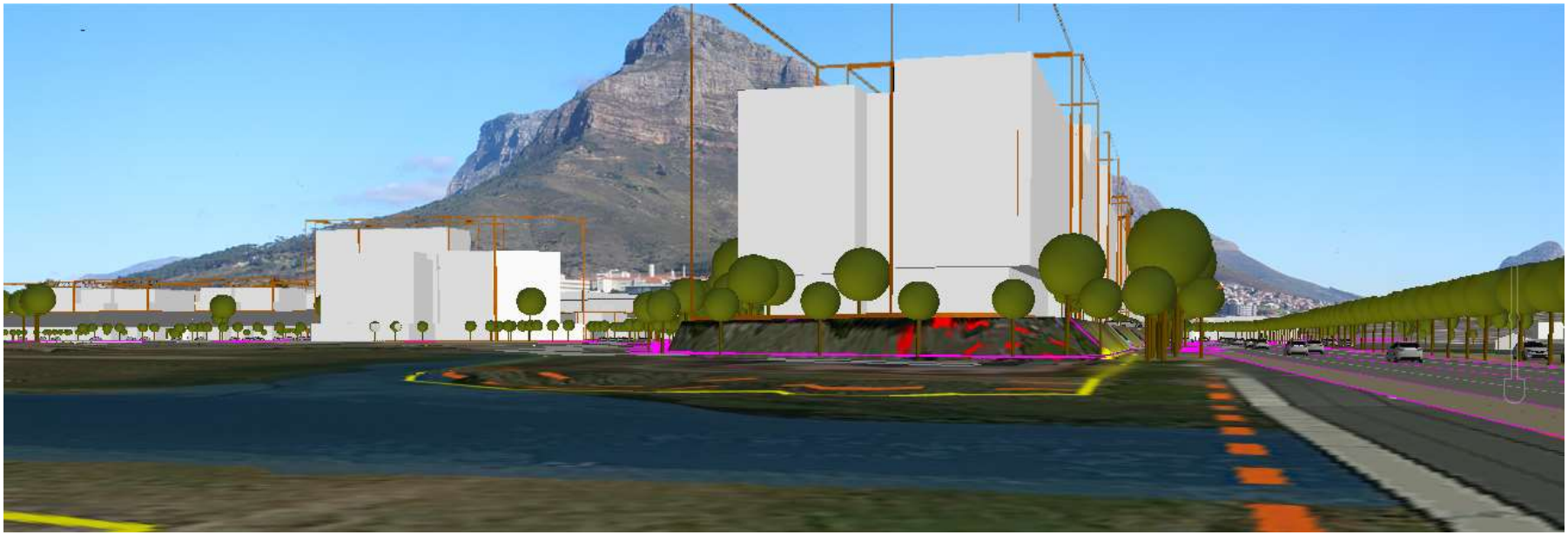

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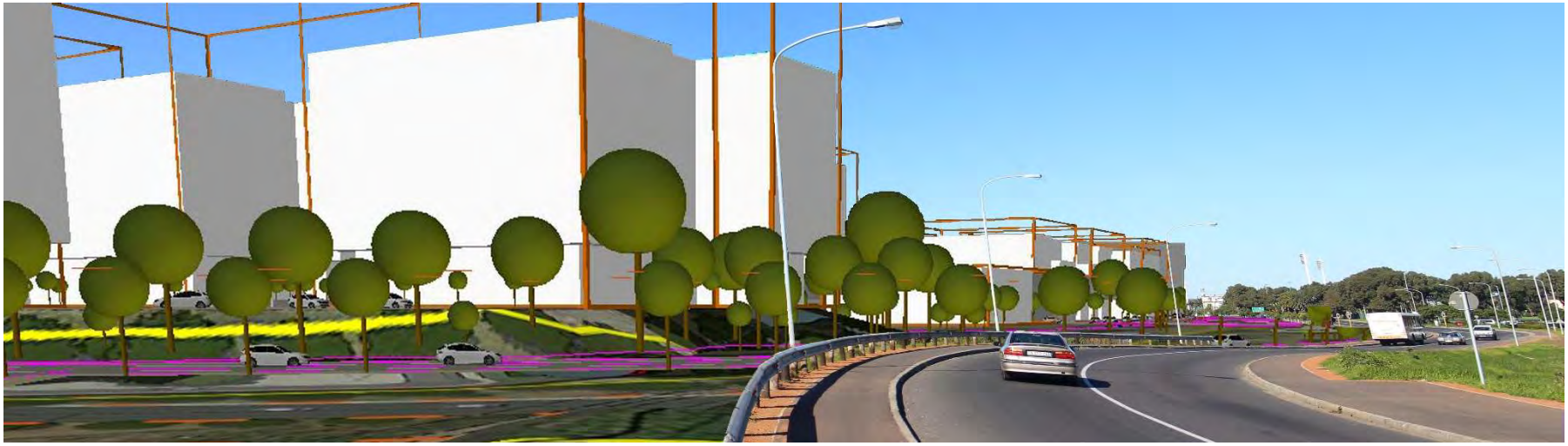
srk consulting	**RIVER CLUB VIA** Views from Viewpoint 3 – current view (top) and simulated view (bottom)	Project No. 478320/42A

srk consulting	**RIVER CLUB VIA** Views from Viewpoint 4 (top) and Viewpoint 5A (bottom)	Project No. 478320/42A

srk consulting	**RIVER CLUB VIA** Views from Viewpoint 5B (top) and Viewpoint 5C (bottom)	Project No. 478320/42A

srk consulting	**RIVER CLUB VIA** Views from Viewpoint 6 – current view (top) and simulated view (bottom)	Project No. 478320/42A



srk consulting	**RIVER CLUB VIA** Views from Viewpoint 7 – current view (top) and simulated view (bottom)[1]	Project No. 478320/42A

[1] Note that the proposed re-alignment of Liesbeek Parkway hasn't been factored into the simulation.

srk consulting	**RIVER CLUB VIA** Views from Viewpoint 8A (top) and Viewpoint 8B (bottom)	Project No. 478320/42A

srk consulting	**RIVER CLUB VIA** Views from Viewpoint 8C (top) and Viewpoint 8D (bottom)	Project No. 478320/42A

srk consulting	**RIVER CLUB VIA** Views from Viewpoint 9A (top) and Viewpoint 9B (bottom)	Project No. 478320/42A

srk consulting	**RIVER CLUB VIA** Views from Viewpoint 10 (top) and Viewpoint 11 (bottom)	Project No. 478320/42A

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