

Document Information

Report Title:	Detailed Master Plan and Urban Design Report for CBD1, CBD2 and Kimicanga
Project Title:	Kigali City Sub-areas Planning
Project Ref No:	310-02-01-0001
Client:	Kigali City Council, Rwanda
Submission Date:	February 2010
Location Saved:	S:\SUPG Projects\MP\Rwanda\Kigali-Sub Area Planning\Reports\CBD Report\Final Report – Feb 2010

Approvals	Name	Designation	Date
Author	Anandan Karunakaran	Sr. Urban Planner	20-01-2010
Author	Hrydhal Damani	Urban Planner	22-01-2010
Reviewer	Djoko Prihanto	Sr. VP	26 -01-2010

Number of copies issued: 03

Document Status

Version No.	Date Issued	Details	Approved for Issue
1	28-05-2009	Draft Report	Djoko Prihanto
2	08-02-2010	Final Report	Djoko Prihanto
3			
4			
5			

TABLE OF CONTENTS

Preface	i		
Acknowledgements	ii		
Executive Summary	iii		
Chapter 1: Introduction	1-1		
1.1 Background and Purpose	1-1		
1.2 Guiding Principles	1-1		
1.3 Planning Process	1-1		
1.4 Organisation of the Report	1-1		
Chapter 2: Existing Context, Opportunities, Constraints and Threats	2-1		
2.1 Existing Context	2-1		
2.1.1 Location	2-1		
2.1.2 Planning Areas	2-2		
2.1.3 Historical Context	2-3		
2.1.4 Regional Context	2-3		
2.1.5 Existing Site Context	2-3		
2.1.6 Socio-economic Context	2-6		
2.1.7 Environmental Context	2-7		
2.2 Opportunities, Constraints and Threats	2-8		
Chapter 3: Vision	3-1		
3.1 The Visioning Process	3-1		
3.2 The Vision Framework	3-1		
3.3 Proposed Vision	3-2		
3.4 Proposed Goals, Objectives, Strategies and Recommendations	3-3		
3.5 Development Programme	3-7		
Chapter 4: Concept Plan	4-1		
4.1 Development of the Concept Plan	4-1		
4.2 Option 1: Mixed Use Spine Concept	4-2		
4.3 Option 2: Green Fingers Concept	4-8		
4.4 Option 3: Compact City Concept	4-14		
4.5 Options Comparison	4-15		
4.6 Options Assessment	4-16		
4.7 Recommended Concept Option	4-17		
Chapter 5: Detailed Master Plan and Urban Design	5-1		
5.1 Kigali CBD - Proposed Structure Plan	5-1		
5.2 Planning Areas	5-2		
5.3 Kigali CBD – Road and Transportation Plan	5-5		
5.4 Kigali CBD – Pedestrian Network Plan	5-7		
5.5 Kigali CBD – Heritage and Conservation Plan	5-9		
5.5.1 Religious Buildings with Historic Significance	5-9		
5.5.2 Buildings with Historic Significance	5-10		
5.5.3 Conservation Areas	5-10		
5.6 Muhima CBD - Detailed Master Plan and Urban Design Plan	5-12		
5.6.1 Muhima CBD - Urban Design Concept	5-12		
5.6.2 Muhima CBD - Land Use Plan	5-14		
5.6.3 Muhima CBD - Parcellation Plan	5-14		
5.6.4 Muhima CBD - Public Facilities Plan	5-14		
5.6.5 Muhima CBD - Green and Open Spaces Plan	5-14		
5.6.6 Muhima CBD Urban Design Recommendations	5-19		
5.6.7 Kigali CBD Phase 1	5-23		
5.6.8 New CBD Core	5-25		
5.6.9 Nyabugogo Transport Hub and Market	5-27		
5.6.10 Kigali CBD Wetland Park	5-29		
5.7 Nyarugenge CBD - Detailed Master Plan and Urban Design	5-30		
5.7.1 Nyarugenge CBD - Urban Design Concept	5-30		
5.7.2 Nyarugenge CBD Land Use Plan	5-35		
5.7.3 Nyarugenge CBD Parks and Open Space Plan	5-35		
5.7.4 Nyarugenge CBD Urban Design Recommendations	5-39		
5.7.5 Nyarugenge CBD – Centre Ville Roundabout Redevelopment	5-43		
5.7.6 Nyarugenge Heritage Village	5-45		
5.7.7 Statehouse Site Redevelopment	5-47		
5.8 Kimicanga - Detailed Master Plan and Urban Design Plan	5-48		
5.8.1 Kimicanga Concept Plan	5-48		
5.8.2 Kimicanga Land Use Plan	5-49		
5.8.3 Kimicanga Urban Design Recommendations	5-50		
Chapter 6: Proposed Implementation Mechanism	6-1		
6.1 Implementation of Zoning Plan	6-1		
6.2 Capital Improvement Plan (CIP)	6-1		
6.3 Special Projects	6-1		
6.4 Proposed Phasing Plan	6-3		
6.5 Phase 1 (2009 - 2014):	6-3		
6.6 Phase 2 (2014 - 2019) & Phase 2+3 (2014-2024)	6-3		
6.7 Phase 3 (2019-2024)	6-3		
6.8 Subsequent Phase (2024 onwards):	6-3		
Chapter 7: Capital Improvement Plan	7-1		
7.1 Introduction	7-1		
7.2 Capital Improvement Plan	7-1		
7.2.1 General Public Facilities Projects	7-1		
7.2.2 Transportation Projects	7-1		
7.2.3 Utility Projects	7-1		
Chapter 8: Follow Up Measures	8-1		
8.1 Introduction	8-1		
8.2 Establishment of Policy Framework:	8-1		
8.3 Monitoring and Evaluation:	8-1		
8.4 Establishment of Planning Manual	8-1		
8.5 Development of Special Control Guidelines	8-1		
8.6 Capacity Building and Recruitment:	8-1		

Appendix 1: Planning Analysis

A1.1	Introduction	A1-1
A1.2	Military Camp Area	A1-2
A1.3	Civic and Administrative Site	A1-3
A1.4	Central Prison Site	A1-5
A1.5	Nyabugogo Taxi Park Site	A1-5
A1.6	Sainte Famille Church Site	A1-6
A1.7	Cleared Site at Muhima	A1-7
A1.8	Kimicanga	A1-7
A1.9	Low Rise Villa Development Site	A1-8

Appendix 2: Central Business District Case Studies

A2.1	CBD Physical Development Case Studies	A2-1
A2.2	CBD Transit Case Studies	A2-5
A2.3	CBD Parcellation Case Studies	A2-8

Appendix 3: Wetland Planning

A3.1	Introduction	A3-1
A3.2	Case Studies	A3-1
A3.2.1	Case Study 1: Hong Kong Wetland Park	A3-1
A3.2.2	Case Study 2: The Putrajaya Lake & Wetland	A3-3
A3.2.3	Case Study 3: Melbourne Wetlands Project	A3-4

Appendix 4: Key Features in Muhima Sector

A4.1	Planning Areas	A4-1
A4.2	Kigali CBD Phase 1	A4-2
A4.2.1	Introduction	A4-2
A4.2.2	Context	A4-2
A4.2.3	Kigali CBD Phase 1 Opportunities, Constraints and Threats	A4-2
A4.2.4	Concept Plan	A4-7
A4.3	New CBD Core	A4-9
A4.3.1	Introduction	A4-9
A4.3.2	Context	A4-9
A4.3.3	New CBD Core – Opportunities, Constraints and Threats	A4-11
A4.3.4	Concept Plan	A4-14
A4.4	Nyabugogo Transport Hub and Market	A4-16
A4.4.1	Introduction	A4-16
A4.4.2	Existing Context	A4-16
A4.4.3	Nyabugogo Transport Hub and Market Opportunities, Constraints and Threats	A4-18
A4.4.4	Concept Plan	A4-21

A1-1

A1-1

A1-2

A1-3

A1-5

A1-5

A1-6

A1-7

A1-7

A1-8

A2-1

A2-1

A2-5

A2-8

A3-1

A3-1

A3-1

A3-1

A3-3

A3-4

A4-1

A4-1

A4-2

A4-2

A4-2

A4-7

A4-9

A4-9

A4-9

A4-11

A4-14

A4-16

A4-16

A4-18

A4-21

A4.5 Kigali CBD Wetland Park

A4.5.1 Introduction

A4.5.2 Context

A4.5.3 Opportunities, Constraints and Threats

A4.5.4 Concept and Structure Plan

Appendix 5: Key Features in Nyarugenge Sector

A5.1 Planning Areas

A5.2 Centre Ville Roundabout Redevelopment

A5.2.1 Introduction

A5.2.2 Context

A5.2.3 Centre Ville Roundabout Redevelopment – Opportunities, Constraints and Threats

A5.2.4 Concept Plan

A5.3 Nyarugenge Heritage Village

A5.3.1 Introduction

A5.3.2 Context

A5.3.3 Concept Plan

A5.4 Statehouse Site Redevelopment

A5.4.1 Introduction

A5.4.2 Context

A5.4.3 Opportunities, Constraints and Threats

A5.4.4 Concept Plan

Bibliography

A4-23

A4-23

A4-23

A4-24

A4-27

A5-1

A5-2

A5-2

A5-2

A5-4

A5-7

A5-9

A5-9

A5-9

A5-13

A5-15

A5-15

A5-15

A5-17

A5-20

LIST OF TABLES

Table 2.1: Planning Areas.	2-2
Table 2.2: Kigali City Climatic Data.	2-7
Table 2.3: Kigali CBD - Opportunities, Constraints and Threats.	2-8
Table 3.1: Goal 1 - To be the Premier Financial Hub of Central African Region.	3-3
Table 3.2: Goal 2 - To be the Landmark Activity Node of Rwanda.	3-4
Table 3.3: Goal 3 - To be the Main Tourist Destination in Kigali City.	3-5
Table 3.4: Goal 4 - To be a Sustainable and Green CBD.	3-6
Table 3.5: Breakdown of Land Area and GFA Quantum as per Different Commercial Uses.	3-7
Table 3.6: Land Area Comparison for CBD and CBD Core.	3-10
Table 3.7: Commercial Quantum Comparison for CBD.	3-11
Table 3.8: Proposed Development Programme for Kigali CBD.	3-12
Table 4.1: Comparison of Concept Options.	4-16
Table 5.1: Kigali CBD - Planning Areas.	5-2
Table 5.2: Heritage Sites in Kigali CBD.	5-9
Table 5.3: Muhima CBD Land Use Data.	5-14
Table 5.4: Nyarugenge CBD Land Use Data.	5-35
Table 5.5: Kimicanga Land Use Data.	5-49
Table 7.1: Development of Public Facilities for Phase 1 & 2.	7-2
Table A 2.1: CBD Physical Development Summary	2-4
Table A 2.2: Parcellation Sizes Comparison.	2-11
Table A 4.1: Kigali CBD Phase 1 - Opportunities, Constraints, and Threats.	4-4
Table A 4.2: New CBD Core - Opportunities, Constraints and Threats.	4-11
Table A 4.3: Nyabugogo Transport Hub and Market - Opportunities, Constraints, and Threats.	4-18
Table A 4.4: Kigali CBD Wetland Park - Opportunities, Constraints and Threats.	4-24
Table A 5.1: Centre Ville Roundabout Redevelopment - Opportunities, Constraints and Threats.	5-4
Table A 5.2: Statehouse Site Redevelopment - Opportunities, Constraints, and Threats.	5-17

LIST OF FIGURE

Figure 1: Signing Ceremony at Kigali City Office, September 2008.	i	Figure 4.24: The Recommended Concept Plan.	4-17
Figure 1.1: The Planning Process for the Detailed Master Plan and Urban Design for CBD1, CBD2 and Kimicanga.	1-2	Figure 5.1: Kigali CBD – Structure Plan.	5-1
Figure 2.1: Location of Existing CBD in Kigali.	2-1	Figure 5.2: Kigali CBD – Planning Area Boundaries.	5-2
Figure 2.2: Planning Area Boundaries for CBD1, CBD2 and Kimicanga.	2-2	Figure 5.3: Kigali CBD – Illustrative Plan.	5-3
Figure 2.3: Muhima (CBD 1).	2-3	Figure 5.4: Kigali CBD – Aerial Perspective.	5-4
Figure 2.4: Nyarugenge (CBD2).	2-3	Figure 5.5: Kigali CBD–Proposed Road Concept.	5-5
Figure 2.5: Kimicanga.	2-3	Figure 5.6: Kigali CBD – Proposed Road Network Plan.	5-6
Figure 2.6: Cleared Area, CBD1.	2-3	Figure 5.7: Muhima CBD - Section of Wetland Promenade.	5-7
Figure 2.7: The Relation of CBD Areas with Other Important Urban Areas of Kigali City.	2-3	Figure 5.8: Muhima CBD - Section of Pedestrian Arcades.	5-7
Figure 2.8: Areas with Steep Slopes.	2-3	Figure 5.9: Muhima CBD – Pedestrian Network Illustration.	5-8
Figure 2.9: The Topography of the CBD Areas.	2-3	Figure 5.10: Kigali CBD – Recommended Heritage and Conservation Plan.	5-11
Figure 2.10: Kigali CBD - Building Typologies.	2-4	Figure 5.11: Muhima CBD – Urban Design Concept.	5-12
Figure 2.11: Kigali CBD Areas Context Plan.	2-4	Figure 5.12: Muhima CBD – Proposed Skyline along the Wetlands.	5-13
Figure 2.12: Kigali CBD Existing Land Use Map.	2-5	Figure 5.13: Muhima CBD – Proposed Skyline across the Slope.	5-13
Figure 2.13: The Nyabugogo River and the Intake from Yanze River.	2-7	Figure 5.14: Muhima CBD - Proposed Skyline Illustration.	5-13
Figure 2.14: Developments Within the Wetlands along Muhima CBD.	2-7	Figure 5.15: Muhima CBD – Proposed Land Use Plan.	5-15
Figure 2.15: Opportunities Plan.	2-9	Figure 5.16: Muhima CBD - Proposed Parcellation Plan.	5-16
Figure 2.16: Constraints Plan.	2-10	Figure 5.17: Muhima CBD - Proposed Public Facilities Plan.	5-17
Figure 3.1: Interrelationship of the Visions at the City Level.	3-1	Figure 5.18: Muhima CBD – Proposed Parks and Open Space Plan.	5-18
Figure 3.2: Strategic Framework for the Development of the Proposed Kigali CBD.	3-1	Figure 5.19: Urban Design Recommendations for the Central Plaza.	5-19
Figure 3.3: Kigali CBD – Vision.	3-2	Figure 5.20: Urban Design Recommendations for Saint Famille Park.	5-20
Figure 3.4: Existing Key Commercial Developments.	3-8	Figure 5.21: Urban Design Recommendations for the Green Fingers.	5-21
Figure 3.5: Key Commercial Projects Under Construction or Under Consideration.	3-9	Figure 5.22: Urban Design Recommendations for the Transit Parks.	5-22
Figure 3.6: Kigali CBD – Vision.	3-10	Figure 5.23: Kigali CBD Phase 1 Illustration.	5-24
Figure 4.1: The Concept Plan.	4-1	Figure 5.24: New CBD Core and Central Plaza Illustration.	5-26
Figure 4.2: Mixed Use Spine Concept Option - Structure.	4-2	Figure 5.25: Nyabugogo Market Illustration.	5-28
Figure 4.3: Mixed Use Spine Concept Option - Impression of the Central Plaza in the New CBD Core.	4-2	Figure 5.26: Nyarugenge CBD - Proposed Skyline across the Slopes.	5-31
Figure 4.4: Mixed Use Spine Concept Option - Massing and Skyline.	4-2	Figure 5.27: Nyarugenge CBD – Proposed Skyline Illustration.	5-31
Figure 4.5: Mixed Use Spine Concept Option - Proposed Land Use Plan.	4-3	Figure 5.28: Nyarugenge CBD – Precincts Plan.	5-32
Figure 4.6: Mixed Use Spine Concept Option - Proposed Road Network Plan.	4-4	Figure 5.29: Nyarugenge CBD - Landmarks and Key Features Plan.	5-33
Figure 4.7: Mixed Use Spine Concept Option - Illustrative Layout.	4-5	Figure 5.30: Nyarugenge CBD Landmarks - Historic / Cultural Developments.	5-34
Figure 4.8: Mixed Use Spine Concept Option - Pedestrian Connectivity.	4-6	Figure 5.31: Nyarugenge CBD Landmarks - Existing Developments.	5-34
Figure 4.9: Mixed Use Spine Concept Option - Impression of Phase 1 Development	4-7	Figure 5.32: Nyarugenge CBD Landmarks - New Developments.	5-34
Figure 4.10: Green Fingers Concept Option - Structure.	4-8	Figure 5.33: Nyarugenge CBD – Proposed Land Use Plan.	5-36
Figure 4.11: Green Fingers Concept Option - Impression of the Central Plaza in the New CBD Core.	4-8	Figure 5.34: Nyarugenge CBD – Public Facilities Plan.	5-37
Figure 4.12: Green Fingers Concept Option - Massing and Skyline.	4-8	Figure 5.35: Nyarugenge CBD – Proposed Parks and Open Space Plan.	5-38
Figure 4.13: Green Fingers Concept Option - Proposed Land Use Plan.	4-9	Figure 5.36: Streetscape Improvement Recommendations for Major Avenues.	5-39
Figure 4.14: Green Fingers Concept Option - Proposed Road Network Plan.	4-10	Figure 5.37: Streetscape Improvement Recommendations for Pedestrian Oriented Commercial Streets and Plazas.	5-39
Figure 4.15: Green Fingers Concept Option - Illustrative Layout.	4-11	Figure 5.38: Streetscape Improvement Recommendations for Residential Streets.	5-39
Figure 4.16: Green Fingers Concept Option - Pedestrian Connectivity.	4-12	Figure 5.39: Nyarugenge CBD – Streetscape Improvement Plan.	5-41
Figure 4.17: Green Fingers Concept Option - Impression of Phase 1 Development.	4-13	Figure 5.40: Nyarugenge CBD -- Public Arts Project Plan.	5-42
Figure 4.18: Compact City Concept Option - Structure.	4-14	Figure 5.41: Centre Ville Roundabout Illustration.	5-44
Figure 4.19: Compact City Concept Plan – Impression of Key Public Spaces.	4-14	Figure 5.42: Nyarugenge Heritage Village Illustration.	5-46
Figure 4.20: Compact City Concept Option - Massing and Skyline.	4-14	Figure 5.43: Kimicanga CBD – Urban Design Concept.	5-48
Figure 4.21: Mixed Use Spine Concept Option - Structure Plan.	4-15	Figure 5.44: Kimicanga CBD - Proposed Land Use Plan.	5-49
Figure 4.22: Green Fingers Concept Option - Structure Plan.	4-15	Figure 5.45: Kimicanga CBD – Proposed Parks and Open Space.	5-50
Figure 4.23: Compact City Concept Option - Structure Plan.	4-15	Figure 5.46: Kimicanga CBD – Arts and Entertainment Centre Illustration.	5-51
		Figure 6.1: Proposed Special Projects Plan.	6-2
		Figure 6.2: Proposed Phasing Plan.	6-4
		Figure 7.1: Capital Improvement Plan.	7-3

Figure A 1.1: Planning Analysis.	A1-1	Figure A 2.13: Bogotá Urban Transportation in 1990.	A2-5
Figure A 1.2: Military Camp Area Study Area.	A1-2	Figure A 2.14: Bogotá Urban Transportation now 2006.	A2-5
Figure A 1.3: Military Camp Area - Land Use.	A1-2	Figure A 2.15: Bogotá Transmilenio System 2016.	A2-5
Figure A 1.4: Military Camp Area - Building Heights and Massing.	A1-2	Figure A 2.16: Bogotá Urban Transportation Imagery.	A2-5
Figure A 1.5: Military Camp Area – Opportunities.	A1-2	Figure A 2.17: Bogotá CicloRuta System.	A2-6
Figure A 1.6: Civic and Administrative Site Study Area and Existing Context.	A1-3	Figure A 2.18: Bogotá Car Free Event Day.	A2-6
Figure A 1.7: Civic and Administrative Site - Axis and Views.	A1-3	Figure A 2.19: Bogotá Bicycle Station.	A2-6
Figure A 1.8: Civic and Administrative Site - Opportunities.	A1-4	Figure A 2.20: San Francisco Grid Pattern Road System.	A2-6
Figure A 1.9: Civic and Administrative Site - Building Heights and Massing.	A1-3	Figure A 2.21: San Francisco Sloped Road Systems Imagery.	A2-7
Figure A 1.10: Central Prison Site - Study Area and Existing Context.	A1-5	Figure A 2.22: San Francisco Public Transport.	A2-7
Figure A 1.11: Central Prison Site - Building Heights and Massing.	A1-5	Figure A 2.23: San Francisco Pedestrian Programs.	A2-7
Figure A 1.12: Central Prison Site - Opportunities.	A1-5	Figure A 2.24: Singapore CBD Plan View.	A2-8
Figure A 1.13: Nyabugogo Taxi Park Site - Opportunities.	A1-5	Figure A 2.25: Singapore CBD Aerial View.	A2-8
Figure A 1.14: Nyabugogo Taxi Park Site - Study Area & Existing Condition.	A1-6	Figure A 2.26: Singapore CBD Parcel Sizes.	A2-8
Figure A 1.15: Nyabugogo Taxi Park Site - Building Heights and Massing.	A1-6	Figure A 2.27: Hong Kong CBD Plan View.	A2-9
Figure A 1.16: Sainte Famille Church Site - Opportunities.	A1-6	Figure A 2.28: Hong Kong CBD Aerial View.	A2-9
Figure A 1.17: Sainte Famille Church Site - Study Area & Existing Conditions.	A1-6	Figure A 2.29: Hong Kong CBD Parcel Sizes.	A2-9
Figure A 1.18: Sainte Famille Church Site - Building Heights & Massing.	A1-7	Figure A 2.30: Los Angeles CBD Plan View.	A2-10
Figure A 1.19: Cleared Site at Muhima Study Area & Existing Conditions.	A1-7	Figure A 2.31: Los Angeles CBD Aerial View.	A2-10
Figure A 1.21: Cleared Site at Muhima Study - Opportunities.	A1-7	Figure A 2.32: Los Angeles CBD Parcel Sizes.	A2-10
Figure A 1.22: Kimicanga Study Area and Existing Conditions.	A1-7	Figure A 2.33: Barcelona CBD Plan View.	A2-11
Figure A 1.20: Cleared Site at Muhima Study Building Heights and Massing.	A1-7	Figure A 3.1: Hong Kong Wetland Park - Layout.	A3-1
Figure A 1.23: Kimicanga Building Heights and Massing.	A1-7	Figure A 3.2: Hong Kong Wetland Park - Study Area.	A3-1
Figure A 1.24: Kimicanga Opportunities.	A1-8	Figure A 3.3: Integration with Adjacent Natural Wetlands.	A3-2
Figure A 1.25: Low Rise Villa Development Site Opportunities.	A1-8	Figure A 3.4: Hong Kong Wetland Park - Recreational and Landscape Feature.	A3-2
Figure A 2.1: La Défense CBD Development Time Line.	A2-1	Figure A 3.5: Hong Kong Wetland Park - Attractions.	A3-2
Figure A 2.2: La Défense Location Plan.	A2-1	Figure A 3.6: Hong Kong Wetland Park - Use of Passive Technologies for Lighting and Ventilation.	A3-2
Figure A 2.3: La Défense CBD before 1950.	A2-1	Figure A 3.7: Hong Kong Wetland Park - Use of Local and Recycled Materials for Construction.	A3-2
Figure A 2.4: La Défense CBD now 2000.	A2-1	Figure A 3.8: Putrajaya Lake and Wetland Park - Study Area.	A3-3
Figure A 2.5: La Défense CBD Core Area Illustration.	A2-2	Figure A 3.9: Putrajaya Lake and Wetland Park - Multi-cell System.	A3-3
Figure A 2.6: CBD Hong Kong Location Plan.	A2-2	Figure A 3.10: Putrajaya Lake & Wetland Park - Recreational & Landscape Feature.	A3-3
Figure A 2.7: CBD Hong Kong Core Area.	A2-2	Figure A 3.11: Putrajaya Lake and Wetland Park - Flooded Zone.	A3-3
Figure A 2.8: Shanghai CBD Development Timeline.	A2-3	Figure A 3.12: Putrajaya Lake and Wetland Park - Cross Sections.	A3-3
Figure A 2.9: Shanghai CBD Location Plan.	A2-3	Figure A 3.13: Melbourne Wetlands Project - Working System.	A3-4
Figure A 2.10: Shanghai CBD before 1990.	A2-3	Figure A 3.14: Melbourne Wetlands Project - Flooded Zone.	A3-4
Figure A 2.11: Shanghai CBD now 2008.	A2-3	Figure A 3.15: Melbourne Wetlands Project - Network.	A3-4
Figure A 2.12: Bogotá Road Layout Plan.	A2-5		

Figure A 4.1: Kigali CBD – Key Feature Areas in Muhima Sector.	A4-1	Figure A 5.14: Statehouse Site Redevelopment – Location Plan.	A5-16
Figure A 4.2: CBD Phase 1 – Location Plan.	A4-2	Figure A 5.15: Statehouse Site Redevelopment – Context Plan.	A5-17
Figure A 4.3: Kigali CBD Phase 1 - Context Plan.	A4-3	Figure A 5.16: Statehouse Site Redevelopment - Opportunities Plan.	A5-19
Figure A 4.4: Kigali CBD Phase 1 - Opportunities Plan.	A4-5	Figure A 5.17: Statehouse Site Redevelopment - Constraints Plan.	A5-20
Figure A 4.5: Kigali CBD Phase 1 - Constraints Plan.	A4-6	Figure A 5.18: Statehouse Site Redevelopment – Concept Plan.	A5-21
Figure A 4.6: Kigali CBD Phase 1 - Constraints Plan.	A4-7		
Figure A 4.7: Kigali CBD Phase 1 – Key Section.	A4-8		
Figure A 4.8: New CBD Core – Location Plan.	A4-9		
Figure A 4.9: New CBD Core – Context Plan.	A4-10		
Figure A 4.10: New CBD Core – Opportunities Plan.	A4-12		
Figure A 4.11: New CBD Core – Constraints Plan.	A4-13		
Figure A 4.12: New CBD Core – Concept Plan.	A4-14		
Figure A 4.13: New CBD Core – Key Section.	A4-15		
Figure A 4.14: Nyabugogo Transport Hub and Market – Location Plan.	A4-16		
Figure A 4.15: Nyabugogo Transport Hub and Market – Context Plan.	A4-17		
Figure A 4.16: Nyabugogo Transport Hub and Market – Opportunities Plan.	A4-19		
Figure A 4.17: Nyabugogo Transport Hub and Market – Constraints Plan.	A4-20		
Figure A 4.18: Nyabugogo Transport Hub and Market – Concept Plan.	A4-21		
Figure A 4.19: Nyabugogo Transport Hub and Market – Key Section.	A4-22		
Figure A 4.20: Kigali CBD Wetland Park – Location Plan.	A4-23		
Figure A 4.21: Kigali CBD Wetland Park – Opportunities Plan.	A4-25		
Figure A 4.22: Kigali CBD Wetland Park – Constraints Plan.	A4-26		
Figure A 4.23: Kigali CBD Wetland Park – Concept Plan.	A4-27		
Figure A 4.24: Kigali CBD Wetland Park – Structure Plan.	A4-28		
Figure A 5.1: Kigali CBD – Key Feature Areas in Nyarugenge Sector.	A5-1		
Figure A 5.2: Centre Ville Roundabout Redevelopment – Location Plan.	A5-2		
Figure A 5.3: Centre Ville Roundabout Redevelopment – Context Plan.	A5-3		
Figure A 5.4: Centre Ville Roundabout Redevelopment – Opportunities Plan.	A5-5		
Figure A 5.5: Centre Ville Roundabout Redevelopment – Constraints Plan.	A5-6		
Figure A 5.6: Centre Ville Roundabout Redevelopment –Concept Plan.	A5-7		
Figure A 5.7: Centre Ville Roundabout Redevelopment – Key Sections.	A5-8		
Figure A 5.8: Nyarugenge Market and Heritage Area – Location Plan.	A5-9		
Figure A 5.9: Nyarugenge Market and Heritage Area – Context Plan.	A5-10		
Figure A 5.10: Nyarugenge Market and Heritage Area – Opportunities Plan.	A5-12		
Figure A 5.11: Nyarugenge Market and Heritage Area – Constraints Plan.	A5-13		
Figure A 5.12: Nyarugenge Heritage Village –Concept Plan.	A5-14		
Figure A 5.13: Nyarugenge Heritage Village – Key Section.	A5-15		

PREFACE

Planning Context

Rwanda, commonly referred to as a land of thousand hills, is witnessing rapid economic growth and development, effectuated by its political stability and progressive policies. “Vision 2020” envisages Rwanda as a modern and economically strong nation and a regional leader of development in Africa¹.

Kigali City, the national capital, which celebrated the 100th year of its founding in 2007, is one of the fastest growing cities in Africa and has the highest rate of urbanisation². Such growth, however, needs to be complemented with comprehensive and long term planning that guides the physical development.

In view of this, Rwanda’s Ministry of Infrastructure undertook the development of the Kigali Conceptual Master Plan (KCMP), which has been recently approved in 2008. The KCMP lays down the long range vision for Kigali City and provides the development framework for its growth in the next 50-100 years.

The KCMP also stipulates the need to develop detailed master plans for each of the three districts as well as the key areas of Kigali City, which, in conjunction with KCMP, would form the Kigali Comprehensive Plan³. Based on this objective, the City of Kigali has initiated several planning projects for various sub-areas in Kigali.

Commissioning and Project Scope

In order to address the need to develop detailed master plans, on 1st September 2008, the City of Kigali engaged the joint team of Singapore Cooperation Enterprise and Surbana International Consultants Pte. Ltd. (SCE-Surbana) for the development of a Detailed Master Plan for the Nyarugenge District, Detailed Master Plan and Urban Design for the Central Business District (CBD) areas and Detailed Master Plan for the Residential Township in Kinyinya – collectively referred to as the ‘Kigali City Sub-areas Planning Project’.

As part of this planning project, SCE-Surbana will also provide additional services such as capacity building as well as assistance in the tendering and implementation processes.



Figure 1: Signing Ceremony at Kigali City Office, September 2008.
Source: Surbana

Objectives

The key objective of the Kigali City Sub-areas Planning Project is to translate the vision and recommendations set in the KCMP, as well as the aspiration of the City into detailed master plans which would serve as the physical development blueprint for the City’s sub-areas over the next 10-20 years. The City envisages its CBD to be a vibrant state-of-the-art business and financial destination, an economic leader in the east-African region. As such, the objectives of the Master Plan for Kigali CBD are:

- To guide short, medium and long term physical development, based on the economic vision for the CBD and the City.
- To create state-of-the-art, attractive commercial and office spaces in the CBD which will help launch Kigali City as a regional hub.
- To provide comprehensive mix use and housing components within the CBD.
- To support development with efficient transportation and infrastructure facilities.
- To conserve and enhance the natural and built assets.
- To ensure adequate allocation of land for commercial, residential, infrastructure and public facilities in order to create sustainable and high quality working and living environments.

Approach and Process

The principle approach for the master planning project is to anticipate the future development needs of the City and devise a Master Plan which will ensure adequate reservations of land; timely provision of infrastructure and public facilities; as well as recommend effective implementation strategies.

The process adopted to develop the master plans for the various sub-areas involves several key stages, such as, data collection; existing conditions and future needs analysis; establishment of vision and development concept; development of detailed master plan, transportation and infrastructure plans and zoning guidelines; preparation of the development phasing plans; and proposing recommendations for implementation and monitoring. The master planning process is supported by the concurrent GIS activities, such as, preparation of base plan, development of the database design and packaging of the master plan in GIS format for the City’s ease of use, control and maintenance in the long term.

Participation Process

In order to ensure that the Master Plan is inclusive and addresses the needs of all concerned, several participatory meetings have been organised at different key stages of the project. These include regular consultations with the City’s Technical Team and the Steering Committee. Public participation is ensured through a series of Focus Group Discussions, Stakeholders’ Meetings and Public Exhibitions.

Project Organisation and Schedule

The total duration of the project was scheduled to be 14 months which included 7 working sessions. The project is divided into 2 phases. Due to the urgency of developing the CBD areas (Muhima, Nyarugenge and Kimicanga), the planning for these areas was prioritised and carried out in the first phase of the project. The detailed planning for the whole Nyarugenge District was carried out in the second phase of the project.

This first phase comprised of two stages - concept stage, which dealt with master plan concept development, and draft stage during which the concept was refined and developed into the final Master Plan.

Deliverables

The Master Plan for Kigali CBD is presented in the form of two reports, namely, this report - the Detailed Master Plan and Urban Design Report for CBD1, CBD2 and Kimicanga, and the Detailed Transportation and Infrastructure Master Plan Report for CBD1, CBD2 and Kimicanga.

Further to this, Design & Build Contract Documents for CBD1 - Phase 1 are also prepared to help the City tender out the start-up project for the CBD.

¹ Rwanda Vision 2020, July 2000.

² Kigali Economic Development Strategy, 2001

³ Kigali Conceptual Master Plan, November 2007, pp XIV and XVI

ACKNOWLEDGEMENTS

We would like to acknowledge and thank the following people for their significant contribution to the successful completion of the Detailed Master Plan and Urban Design Report for CBD1, CBD2 and Kimicanga:

Ministry of Finance

- James Musoni, Minister of Finance (former)

Ministry of Infrastructure

- Linda Bihire, Minister of Infrastructure (former)

City of Kigali

- Dr. Aisa Kirabo Kacyira, Mayor
- Alphonse Nizeyimana, Vice Mayor - Finance and Economic Development
- Jeanne D' Arc Gakuba, Vice Mayor - Social Affairs
- Albert Mwanafunzi, Director of Planning and Economic Development

Nyarugenge District

- Kamali Berchmas, Acting Mayor
- Origene Rutaisire, Mayor (former)
- Kamali Berchmas, Vice Mayor - Finance and Economic Development
- Brigitte Mukarunyana, Vice Mayor - Social Affairs

Gasabo District

- Ndizeye Willy, Acting Mayor, Gasabo District
- Claudine Nyinawagaga, Mayor (former)
- Ndizeye Willy, Vice Mayor - Finance and Economic Development
- Ndagijimana Narcisse, Vice Mayor - Social Affairs

Kicukiro District

- Paul Jules Ndamage, Mayor
- Rutaisire Georgette, Vice Mayor - Finance and Economic Development
- Florence Kayiraba, Vice Mayor - Social Affairs

National Land Centre

- Eugene Rurangwa, Registrar of Land Titles

Electrogaz

- Charles Kanyamihigo, Head of Generation and Power Operations, Power Department
- Theoneste Minani, Head of Section Planning and Studies, Water Department
- Amandine Umukeshu, GIS In-charge

ATRACO

- El Hadji Ngeze Issa, Vice President, ATRACO

Private Sector Federation

- Emmanuel Hategeka, Secretary General

Swedesurvey

- Dr. Nils Viking, Team Leader, Rwanda Land Use and Development Master Plan
- Dr. Emmanuel Nkurunziza, Technical Assistant Team Leader, Rwanda Land Use and Development Master Plan

OZ Architecture

- Carl A. Worthington, Director of Urban Design and Planning
- Stephen G. Brooks, Principal
- Donna Rubinoff, Project Facilitator Planning and Development for Rwanda

Tetra Tech

- Becky Eustice, Manager Civil Engineering & Land Planning Department
- Catherine A. Leslie, Senior Project Manager

Sincere gratitude is also due to the City of Kigali's project team for their guidance and assistance rendered to us in the completion of this important milestone:

Project Manager

- Liliane Uwanziga Mupende, Director of Land Use Management and GIS Department
- Marcel Munyaneza, Acting Director of Land Use Management and GIS Department

Project Coordinator

- Thomas E. Wheeler, director of Infrastructure Department (former)

Members of the Technical Advisory Committee

Land Use and GIS Department

- Justine Kayiraba, Urban Planner
- Felix Sugi, Urban Planner
- Emmanuel Radi, GIS Technician
- Camille Nyamihana, GIS Technician
- Jean Baptist Ndahimana, Civil Engineer
- Joshua Ashimwe - Urban Planner
- Justine Asiimwe, Urban Planner
- Doreen Mutoni, Economic Analyst
- Sosthène Nsabimana, ICT Technician

Infrastructure Department

- Reuben Akimbisibwe, Director
- Sandro Nsengiyumra, Water & Sanitation In-charge
- Evode Ntsusi, Energy In-charge
- Salmon Kalimunda, Road Construction Engineer

District Offices

- Emmanuel Engabire, District Land Officer, Nyarugenge District
- John Rukabu, District Land Officer, Gasabo District
- Claude Rwakazina, District Land Officer, Kicukiro District
- Jean Luc Mutagoma, Land Officer, Nyarugenge District
- Desire Ngabonziza, Land Officer Nyarugenge District

EXECUTIVE SUMMARY

Background

Rwanda's progressive government and enterprising population aspire to position the country as the economic and financial hub of Central Africa. They envision their Capital City, Kigali as a global city with a thriving economy, a vibrant social setting and attractive housing options. In light of recent government policies, Kigali is witnessing a rapid commercial growth. Numerous businesses, both local and international are vying for commercial space in the City, and more so in the existing Central Business District (CBD). Attracted by the economic opportunities, a large number of people are moving to the City. Such growth needs to be supplemented with careful and timely planning to ensure that the City is able to address the increasing real estate demand in an organised and controlled manner, and capitalise on this to position itself as a regional commercial centre.

In view of this increasing demand for quality commercial developments, the City of Kigali has undertaken the revitalization and extension of its CBD for the creation of a larger, more vibrant and diverse business district. This comprises of Nyarugenge CBD (CBD2) - the existing CBD, and Muhima CBD (CBD1) - marked for CBD expansion, and Kimicanga - a parcel of land strategically located in the middle of the City's important developments.

Planning Objectives

The City of Kigali was established as the capital of Rwanda by the German colonists on Nyarugenge Hill as a small outpost housing a few civic and commercial developments. The development eventually spreaded across the City. The Nyarugenge CBD, however, remains as the current CBD, with a number of key government and bank buildings. Its historic, predominantly low-rise, low-density character needs to be preserved, while important heritage developments and landmarks need to be conserved and integrated into the master plan.

Muhima is located adjacent to the Nyarugenge CBD on the slopes that extend to the wetlands and currently comprises of high to medium-density mixed use developments. Muhima is expected to be developed as the new CBD for Kigali. For this purpose, the City has recently cleared about 55 ha of land in the area for commercial development.

The area around the Centre Ville Roundabout represents the current City Centre, with numerous high-rise commercial developments existing and under construction here. This core area needs to be retained and a new CBD core needs to be developed in anticipation of the growing demand for modern high-end commercial spaces in the future.

Across the wetland from the cleared site, Kimicanga sits at the entry point to the CBD areas from the International Airport. It lies in the middle of the Nyarugenge, Kacyiru and Kimihurura hills, all of which house the City's important civic and commercial buildings. It could be developed as an entertainment and recreation district serving and integrating all the surrounding developments.

Existing Site Conditions

The Kigali CBD is located 7km west of the Kigali International Airport, within which the Nyarugenge CBD is found on the top of Nyarugenge Hill, covering an area of 450 ha. It houses important civic, office and bank buildings, the Nyarugenge market, the good-class low-rise residential zone and a few industrial developments.

The Muhima CBD located to the north of Nyarugenge CBD covers an area of 230 ha and houses key developments such as the regional Nyabugogo Taxi Park, St. Famille Church and the Central Prison. The area of the cleared site is 55 ha.

Kimicanga which sits at the base of Kimihurura Hill, largely comprises of informal settlements, and covers an area of 35 ha.

2 major roads, Boulevard de l'OUA and Avenue des Poids Lourdes connect the CBD areas to the Airport and other national and international urban nodes. About a quarter of the land within the Nyarugenge CBD and a third of land within Muhima CBD lies within areas of steep slopes and are unbuildable. The CBD areas are surrounded in the north by extensive wetlands and the Nyabugogo River.

Vision

Based on the overall planning objectives and the opportunities and constraints of the site, a vision is developed for Kigali CBD – a set of goals, objectives, strategies and recommendations will help realise this vision. The proposed vision for Kigali CBD is:

Kigali CBD:

'The Green Financial Hub of Central Africa'

Kigali CBD is envisioned to be the **premier financial hub of Central African Region**, offering a modern and conducive environment for business and finance. It will also be a **landmark activity node** for the City and the Country, offering a mix of commercial, retail and residential uses with parks, public plazas, cultural facilities and wetland promenades. It will be the **main tourist destination of Kigali City** offering vibrant destinations for the community and visitors for entertainment, cultural activities, food and shopping. It will be a place for major festive events and celebrations. Most importantly, it will be a **sustainable and green CBD** which ensures that growth and prosperity go hand in hand with environmental sustainability and a preservation of nature's resources.

The **Green Financial Hub of Central Africa** will be an attractive destination where people from within and around the region would want to work, stay, visit and recreate.

In order to achieve the above vision, the 730 ha of land available in Kigali CBD is envisioned to house between 1-2 million sqm of office space and 0.7 million sqm of hotel, retail, entertainment and other complementary uses. In order to ensure vibrancy in the CBD at all times, as well as to promote a compact mix use development, 2.4 sqm of residential space is also proposed to be developed in the CBD. In order to develop a holistic and self-supporting CBD, sufficient land is proposed to be reserved for the development of key public facilities related to governance, arts, culture, recreation, transport and infrastructure.



Concept

The key strategies proposed for the development of Kigali CBD include:

- The development of the new CBD and CBD Core in Muhima
- The development of the start-up phase in the 55 ha cleared site in Muhima CBD
- The promotion of mix-use areas within the new CBD, to ensure vibrancy
- The densification of existing areas in Nyarugenge CBD
- The redevelopment of the existing City Centre as a prime commercial destination
- The revitalization of the good class housing area in Kiyovu to preserve its character and real estate value
- The conservation and revitalisation of key historic developments to preserve as well as leverage upon their heritage value
- Development of Kimicanga as a cultural and entertainment district to complement the business and commercial activities.

Based on the feedback received from the Steering Committee and the Stakeholders, the concept has been refined and developed into the detailed Master Plan and Urban Design for Kigali CBD.

Detailed Master Planning

While the entire Kigali CBD is expected to have a cohesive overall structure, each of the 3 planning areas have been assigned a distinct role it has to play in order to realise the vision for Kigali CBD.

Muhima: The Modern CBD Core of Kigali

A “mixed-use spine” is proposed to traverse across the new CBD in Muhima which will offer vibrant retail, residential and public spaces in the CBD, as well as link and integrate the various developments in the CBD. A set of “green-fingers” originating from the wetlands ascending towards the Nyarugenge CBD will bring public green and open spaces into the CBD. Located along steep slopes and natural swales, these green connectors will take on a dual function of offering outdoor recreational and refreshment spaces in the CBD, as well as offering pedestrian connectivity across the developments. The prime office spaces, forming the CBD core is proposed to be located near the wetlands, as an extension of the existing revitalised City Centre. The area near the Nyabugogo Taxi Park, due to its regional connectivity, is proposed to be a warehouse and big-box retail zone.

Nyarugenge: The Historic CBD of Kigali

While the new CBD is proposed to be developed as a high-end, contemporary development accommodating large-scale business, the existing Nyarugenge CBD is in general expected to retain its historic, low-rise medium-density character. The civic-institutional-commercial precinct located on the ridge of the Nyarugenge hill, together with the good class residential area, is expected to be redeveloped through a light intensification of use. The Nyarugenge Market, currently functioning as the City’s regional wholesale trading centre, as well as the industrial activities to the west of the Market, is seen as having incompatible uses with the CBD development, and hence is proposed to be relocated. The fine-grained organic developments of the Market area, can none the less be preserved and redeveloped for cultural and tourism related uses. Other key landmarks and heritage buildings such as the soon-to-be vacated Central Prison site and the Kandt House are proposed to be redeveloped into hospitality and cultural uses.

Kimicanga: The Entertainment District

Kimicanga located in the middle of the City’s prime commercial and civic areas will house many complementary facilities such as cultural and convention centres auditoriums and amphitheatres, as well as retail, F&B, outdoor dining and refreshment venues. It will be the prime entertainment hub of the City.

Urban Design

The existing site for Muhima CBD and Kimicanga are proposed to be completely redeveloped. A series of axes and view corridors physically and visually linking the key developments within and around the site are proposed. Gateways, announcing the approach of the CBD along important routes, landmarks which enhance the value of key areas, and a distinctive skyline are proposed for the CBD. A well-laid out system of parks and green connectors, coupled with the fenceless developments within the CBD allow seamless pedestrian connectivity.

As Nyarugenge CBD has many existing important developments, its enhancement is achieved through the definition and enrichment of the existing precincts as well as of the overall low-rise skyline and human-scaled character. Existing historic developments are proposed to be conserved and new landmarks are proposed to be developed. The well-developed road network is proposed to be enhanced through streetscape development projects to enhance legibility and create a sense of identity.

Several key areas within Kigali CBD are selected for detailed urban design due to their strategic locations or significant commercial, recreational or heritage values.

CBD Phase 1 Development

The cleared site in Muhima is selected for the development of Phase 1 of the CBD – the City’s first experience in developing large-scale commercial development. This site has been marked for high-end commercial and mix use developments, supported by high-quality public spaces and facilities. A central green space flanked by high-rise retail and office blocks mark the core of the development.

Roundabout and CBD Core Area Redevelopment

The existing City Centre around Centre Ville Roundabout in Nyarugenge CBD coupled with the CBD core proposed in Muhima will form the new CBD core of Kigali CBD. The existing developments around the Roundabout are proposed to be redeveloped. A pedestrian link connecting these developments as well as offering connectivity around the Roundabout is proposed. The St. Famille Church site is proposed to be redeveloped as a heritage and cultural site. An iconic hotel development is proposed to be developed at the northern base of the Roundabout in the steep slope area adjacent to the Church.

Statehouse Site Redevelopment

The current Statehouse is proposed to be relocated, creating an opportunity for the redevelopment of the Statehouse site and its surroundings. The Statehouse site is proposed to be developed as a historic museum coupled with an exclusive club serving the high-end residences in the neighbourhood. The residential parcels around the Statehouse site are proposed to be developed into exclusive communities of high-end townhouses, which have state-of-the art shared facilities and amenities, a distinctive architectural character, and are expected to attract high class locals and expatriates.

Kigali Wetland Park Development

The wetlands abutting Muhima CBD are proposed to be developed as the Kigali Wetland Park, which will complement the modern CBD, provide attractive venues for recreational and educational activities as well as help in waste and storm water management of the surrounding areas. The first phase of the park is proposed between the CBD Phase 1 site and Kimicanga and is expected to be comprehensively developed alongside these sites.



Transportation

The key strategies adopted for the CBD's transportation plan include the expansion and improvement of the existing road network; the improvement and development of an efficient public transport system so as to sustain the current public transport modal share of 75%; to develop comprehensive parking management policies; as well as, to ensure seamless and safe pedestrian and bicycle connectivity.

Based on the existing conditions, available standards and conventions as well as the design intent for the CBD, a new road network system is proposed for Kigali CBD. The avenue along the wetlands on the northern edge of Muhima CBD is expected to be widened into an expressway, forming the east-west corridor offering ready connectivity to the CBD with the City's other key nodes. A frontage road abutting the expressway serves the high-rise, high-density development proposed as part of the new CBD core. A slow-traffic transit corridor is proposed to wind through the "mixed-use spine" offering access and mass movement through this people-intensive area. Road gradient standards and road alignments are proposed to allow comfortable vehicular circulation within the CBD with minimum earthworks. The existing well-developed roads in Nyarugenge CBD are proposed to be enhanced through redevelopment and integral streetscape improvement.

A gradual upgrading from the mini-bus system, with low-carrying capacity, to a high-volume modern bus transit system is proposed for the CBD, in line with the current government policies. A new public transport hub is proposed in Muhima CBD to the east of the Phase 1 site, which will ease off the pressure from the existing taxi park and offer greater regional connectivity to the CBD.

A demand management strategy governs the development of a comprehensive parking policy and parking standards for the CBD areas, allowing adequate parking in private developments and at the same time encouraging the use of public transport. For existing areas, such as the area near the Centre Ville Roundabout, which are deficient in parking spaces, public parking facilities have been proposed.

An extensive pedestrian and bicycle network, which comprises of the dedicated pedestrian and bicycle lanes along all roads, the connectors across the "green fingers", the extensive pedestrian walkways along the wetlands and the foot-bridges across the wetlands to neighbouring hills, has been proposed.

Infrastructure

In planning for infrastructure in Kigali CBD, a systematic approach is adopted by first identifying the existing utility services that would be able to support the proposed CBD development in the initial stages. From the existing network of utilities, progressive extension is then proposed in consultation with the various utility services providers. The principles and requirements set out in the various feasibility studies and master plans guiding the City are also taken into consideration, so that what is proposed for the CBD would be integrated with the entire infrastructure development of the city. For ease of maintenance in the future, pipelines and cables are proposed to be constructed within the side-tables of the roads as much as possible. For practical reasons and economical viability, materials and technologies that are more easily available locally are considered so as to achieve sustainable development in the long run.

Implementation Mechanism

The implementation of the Master Plan for the Kigali CBD is estimated to take about 20 years.

The implementation of the Zoning Plan and Regulations proposed for the CBD areas is expected to encourage and guide redevelopment of land parcels within Kigali CBD, by encouraging land owners to realise the value of their land.

A multi-year Capital Improvement Plan (CIP) is proposed for the development of Kigali CBD, which focuses on the development of the infrastructure, the parks and open spaces as well as the public facilities. This CIP is prepared based on a phasing plan which is proposed to guide the systemic development of the CBD in 3-4 phases over the span of the next 20 years.

A few 'special projects' within key development areas have been identified, which need to be initiated by the government and are recommended to be executed through a public private partnership. These projects will set the standards for quality and design in the CBD. One such project is the CBD's Phase 1 development which has been proposed to be implemented through a design and build scheme.

Follow-up Measures

In order to ensure the effective implementation of the proposed Master Plan, the establishment of a legal policy framework which will govern approval and review of the Master Plan, is proposed. A planning manual which will dictate the approval, assessment and updating procedures is also required. In addition the establishment of a regular monitoring and evaluation process, which will ensure the continual contextual relevance of the Master Plan, is recommended.

Further to the zoning and urban design guidelines which have been proposed to guide development in the CBD, additional special guidelines such as sustainable green building guidelines and heritage conservation guidelines, are recommended to be developed and applied at City level.

The task of developing the CBD is humungous, and the project team, though highly motivated, is limited in terms of man power. A comprehensive capacity building and training programme coupled with a staff recruitment programme is highly recommended for the purpose of developing Kigali CBD.

Kigali CBD is the embodiment of the City's and its people's aspirations. A systematic planning and efficient management will help realise the vision for Kigali CBD and mark it as the Regional Hub of Central Africa.



CHAPTER 1: INTRODUCTION

1.1 Background and Purpose

The government of Rwanda aspires to position Kigali City as the regional commercial and financial hub of Africa. Vision 2020 lays down the key principles for guiding the development in Rwanda, which include improved global and regional connectivity, economic vitality, technological innovation, social harmony and environmental sustainability. The Kigali Economic Development Strategy aligns with the Vision 2020 and emphasises on three key strategies for the development of Kigali City, namely, global competitiveness, promotion of business and industries, and improved quality of life.

The Central Business District (CBD) of Kigali City, which includes three areas - Muhima (CBD1), Nyarugenge (CBD2) and Kimicanga has a large role to play in positioning Kigali as the business and financial centre of the region. A part of the Kigali Sub-areas Planning project includes the development of a Detailed Master Plan and Urban Design for the CDB areas, which is presented in this report.

The *Detailed Master Plan and Urban Design Report for CBD1, CBD2 and Kimicanga* provides the existing context analysis, the vision and development concepts, the proposed land use plans and urban design plans as well as the implementation strategies for the three CBD areas, which together are envisioned to become the main activity centre of Kigali City.

1.2 Guiding Principles

The Kigali Conceptual Master Plan (KCMP) postulates three principles of sustainability - economy, equity and ecology for guiding the planning and development of Kigali City. Derived from these principles, the planning of the CBD is based on the principles described below:

Economic Advancement

The CBD needs to provide venues for contemporary business and commercial activities complete with complementary business support facilities, which will attract regional and foreign investment to the City, bring about economic progress and help position the City as a leading urban centre of the region.

People Oriented

The CBD should be a place for all. It should offer vibrant residential options and attractive public and recreational spaces which cater to all classes and groups of people and communities. Sites of historic and cultural importance need to be preserved and local culture, lifestyle and identity should be enhanced.

Ecological Sustainability

While promoting economic progress, it needs to be ensured that the environmental qualities of the site are not compromised. Effective solutions that help conservation of wetlands, prevention of soil erosion and provision of natural green and landscaped areas need to be promoted. Efficient public transport systems need to be put in place to reduce vehicular emissions. Management of energy, water and waste needs to be ensured to minimise impact to the environment.

1.3 Planning Process

The planning process adopted for the preparation of the Detailed Master Plan and Urban Design for CBD1, CBD2 and Kimicanga is as explained below:

- **Urban Context and Site Analysis** - A detailed assessment of the existing conditions on the ground as well as the visions and guidelines set in KCMP are undertaken. The key opportunities, constraints and threats of the site are identified. Research and case studies on various planning aspects related to CBD planning are conducted to draw comparisons and determine the planning strategies.
- **Vision and Development Programme** - Based on the analysis, research as well as the aspirations of the City, a developmental vision for the site is set. A set of goals, objectives and strategies and recommendations, which will help realise that vision, are formulated. This is translated into a development programme which lists down the development projects to be undertaken for the fulfilment of the vision.
- **Structure and Concept Options** - To translate the vision into a physical development plan, three structure plan and concept options are developed.
- **Public Participation Meeting and Evaluation** - Structure plan and concept options will be presented to the City's technical team, steering committee and stakeholders for their evaluation. A preferred option will be selected at this stage.
- **Detailed Master Plan and Urban Design Development** - Based on the feedback, the selected concept option is refined and developed to form the Proposed Detailed Master Plan and Urban Design, which forms the basis for infrastructure planning, marketing and implementation.
- **Transportation and Infrastructure Planning** - The schematic proposals for transport and infrastructure are further developed to form the detailed Transportation Plan and Infrastructure Plans.

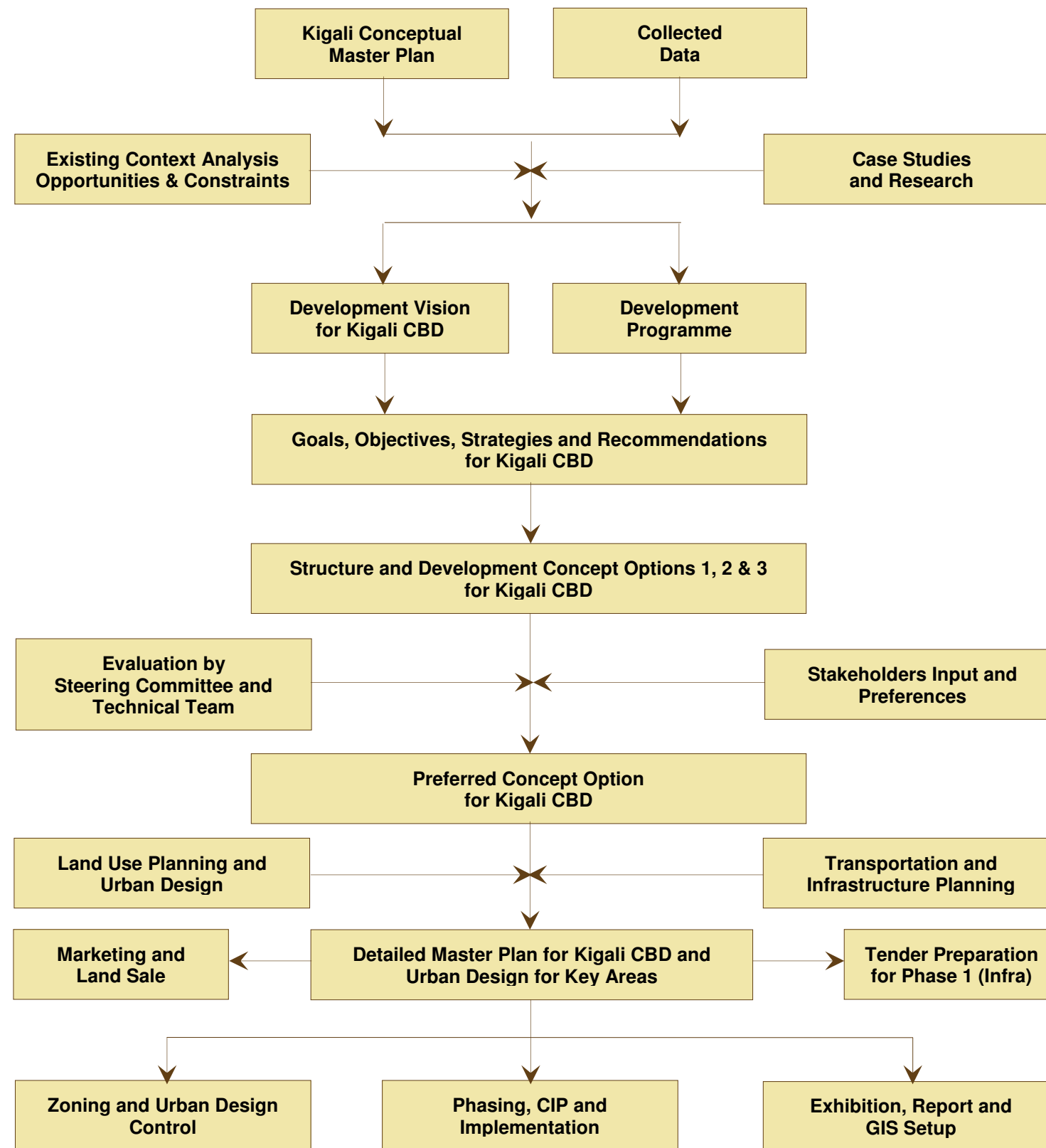
- **Zoning and Development Control** - Zoning and Urban Design Control Plans and Regulations are developed to guide future development in line with the Detailed Master Plan and Urban Design.
- **Implementation Plan** - The Development Phasing Plan, the Capital Improvement Plan and Follow-up Measures, which will ensure the effective implementation of the Detailed Master Plan and Urban Design, are proposed.
- **Exhibition, Report and GIS** - The final Detailed Master Plan and Urban Design for CBD1, CBD2 and Kimicanga are presented in the form of a public exhibition, as a report and in GIS format.

The planning process for the Detailed Master Plan and Urban Design for CBD1, CBD2 and Kimicanga is summarized in Figure 1.1.

1.4 Organisation of the Report

The Detailed Master Plan and Urban Design Report for CBD1, CBD2 and Kimicanga summarise all the activities and analysis undertaken and the plans and designs developed as a part of the planning process. It contains the following chapters:

- Chapter 1: **Introduction**
This chapter provides the background and purpose of the Report as well as explains the guiding principles and process adopted to develop the Detailed Master Plan and Urban Design.
- Chapter 2: **Context, Opportunities, Constraints & Threats**
Chapter 2 analyses the existing context in order to identify the constraints, opportunities and threats which will guide the design.
- Chapter 3: **Vision**
Chapter 3 presents the vision for the CBD and states the goals, objectives, strategies and recommendations, which will help realise this vision. The development programme listing specific projects is also developed.
- Chapter 4: **Concept Plan**
Based on the development programme set forth in Chapter 3, Chapter 4 presents three development concepts as well as their analytical comparison. Based on this analysis and the Stakeholders' inputs, the preferred option is presented.



Chapter 5: **Detailed Master Plan and Urban Design**
Based on the preferred concept option presented in Chapter 4, the Detailed Master Plan and Urban Design for CBD1, CBD2 and Kimicanga as well as the key areas within the CBD planning areas are prepared and presented in Chapter 5.

Chapter 6: **Detailed Urban Design and Urban Design Control for Key Areas**
Chapter 6 presents detailed urban design and urban design guidelines for key areas identified in CBD1 and CBD2.

Chapter 7: **Implementation Plan**
Chapter 7 presents the implementation mechanism and development phasing plan for the Detailed Master Plan and Urban Design.

Chapter 8: **Capital Improvement Plan**
Chapter 8 presents the Capital Improvement Plan which is proposed for the development of the Detailed Master Plan and Urban Design.

Chapter 9: **Follow Up Measures**
Chapter 9 presents the Follow up Measures which need to be undertaken by the City of Kigali for the development of the proposed design.

Appendix 1: **Planning Analysis**
Appendix 1 presents the detailed precinct by precinct analysis of the site, which is used to determine the opportunities and constraints as well as determine the development direction for the planning area.

Appendix 2: **CBD Case Studies**
Appendix 2 presents the research and case studies undertaken for understanding and comparing various issues pertinent to the CBD development.

Appendix 3: **Wetland Planning**
Appendix 3 presents the research and case studies undertaken for understanding various issues pertinent to the Wetland Planning.

Appendix 4: **Key Features in Muhima Sector**

Appendix 5: **Key Features in Nyarugenge Sector**
Appendix 4 & 5 presents the detailed analysis and concepts of the Key Areas in Kigali CBD.

Appendix 6: **Bibliography**

Figure 1.1: The Planning Process for the Detailed Master Plan and Urban Design for CBD1, CBD2 and Kimicanga.
Source: *Surbana*

CHAPTER 2: EXISTING CONTEXT, OPPORTUNITIES, CONSTRAINTS AND THREATS

This chapter presents the context and existing conditions of the Central Business District (CBD) areas, namely, Muhima CBD (CBD 1), Nyarugenge CBD (CBD2) and Kimicanga. It also identifies the opportunities, constraints and threats which will guide the urban design of these areas.

2.1 Existing Context

2.1.1 Location

The existing CBD of Kigali is located about 7km from the Kigali International Airport towards the west of the City (refer to Figure 2.1), covering an area of about 450 ha on the Nyarugenge Hill. It is surrounded by Kimihurura on the west and Kacyiru on the north; both civic and administrative areas. On the west lie high-density, informal housing areas such as Gitega, Kimisagara and Nyakabanda. On its south and south-west lie planned, high-density, mixed-use areas such as Rwezamenyo. It is bounded on the north by wetlands and the Nyabugogo River.

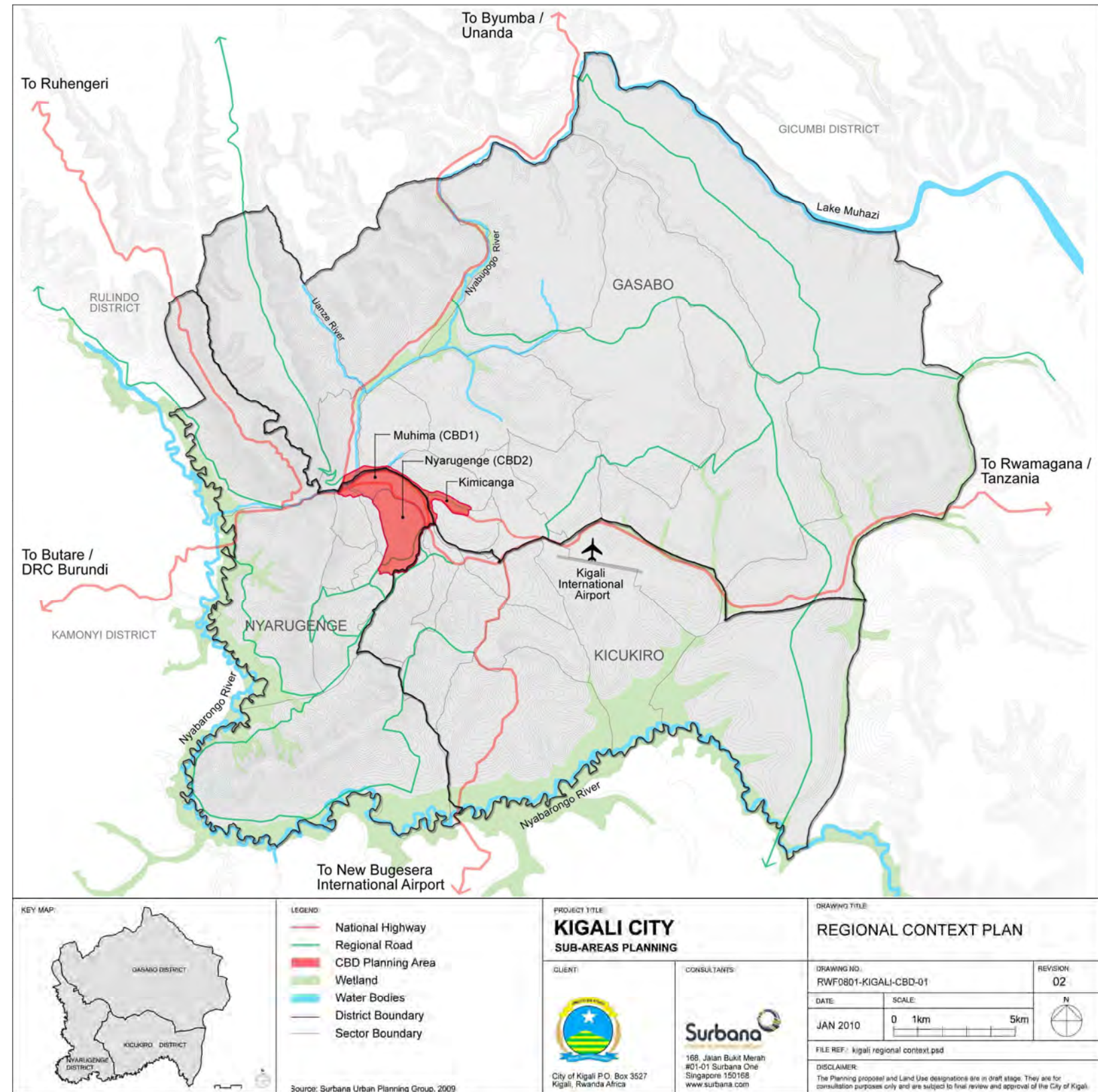


Figure 2.1: Location of Existing CBD in Kigali.
Source: Surbana

2.1.2 Planning Areas

Kigali City covers an area of approximately 732 km². The planning areas for the CBD areas and their sized are listed in Table 2.1 below, and shown in Figure 2.2 to Figure 2.6.

Table 2.1: Planning Areas.

Planning Area	Size
Muhima (CBD1)	373 ha
Nyarugenge (CBD2)	456 ha
Kimicanga	65 ha

Source: Surbana

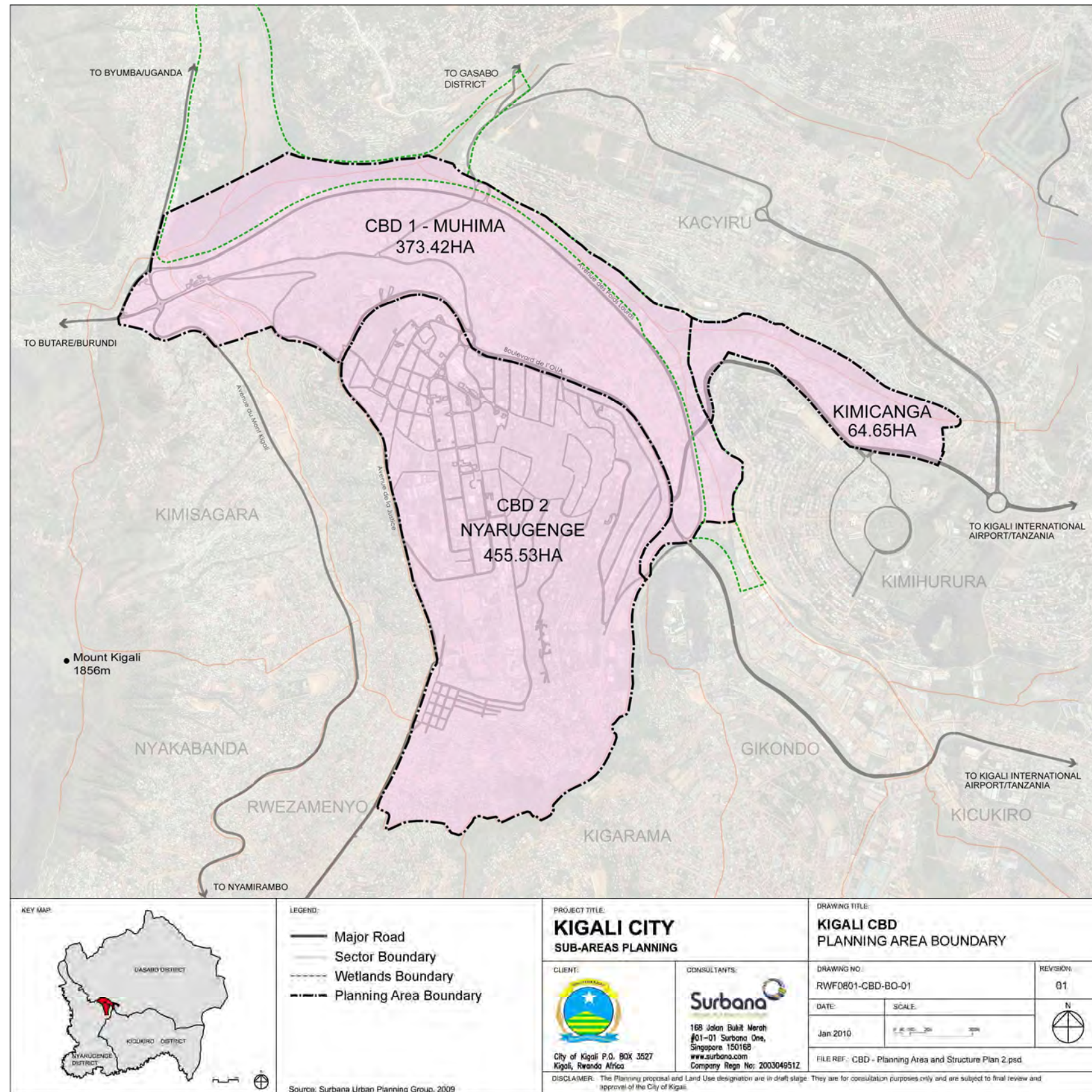


Figure 2.2: Planning Area Boundaries for CBD1, CBD2 and Kimicanga.
Source: Surbana

2.1.3 Historical Context

The City of Kigali was founded by German colonists in 1907. It started as a small urban settlement on the top of Nyarugenge Hill as clusters of housing, government buildings and a military camp. Since gaining independence on 1st July 1962, development in Nyarugenge increased rapidly, with the addition of numerous civic buildings, commercial offices and educational institutes along the ridge; a wholesale market and shopping centre on the western slopes; a good-class high-end housing area on the western slopes; and medium to low-end housing area on the southern slopes. Currently it functions as the country's main business and financial hub.

2.1.4 Regional Context

The CBD areas are abutted by two other important urban areas - Kimihurura and Kacyiru, the two hills where a number of important government buildings and embassies are located. Together these areas form the urban core of the City. Figure 2.7 shows the relation of the CBD areas to the other key urban areas.

The new City Centre proposed by the Kigali Conceptual Master Plan (KCMP) and the New Airport proposed at Bugesera are located 9 km and 24 km from the existing CBD, respectively.

2.1.5 Existing Site Context

The CBD areas are well connected to the rest of the country as well as to important cities in the neighbouring countries. The Nyabugogo Taxi Park, located on the western end of the Muhima CBD is a regional level terminus and offers connections to the key urban areas of the City such as Butare, Ruhengeri and Rwamagana; as well as to neighbouring cities such as Uganda, Tanzania and Burundi. Two roads of national importance pass through the CBD areas, namely, Avenue de Poids Lourdes, which runs at the base of Muhima along the wetlands and Boulevard de l'OUA which runs between the Muhima and Nyarugenge CBDs.

The planning areas are characterised by a hilly terrain (refer to Figure 2.8 and Figure 2.9). The KCMP stipulates a slope gradient cut-off value of 20% beyond which no buildings should be allowed to be constructed. Based on this 25% of land within the Nyarugenge CBD and 34% of land within Muhima CBD are unbuildable.

The Nyarugenge Hill constitutes the current city centre. The dominant land uses in Nyarugenge CBD include the high-density commercial core around the Centre Ville Roundabout; medium-density civic and office buildings along the north-south ridge, the market areas on the west, low-density residential areas on the east and high-density mixed use Muslim settlement on the south.

Key developments such as the Statehouse, the Nyarugenge Market, the Kigali Institute of Science and Technology, premium hotels, churches etc. are located here. The current CBD core is located around the Centre Ville Roundabout in Nyarugenge CBD with many existing and planned modern high-rise developments.

The Muhima area lies on the north of Nyarugenge CBD, on the slopes which connect to the wetlands. Currently, it is a mix of medium to low-end housing as well as mixed use retail and office developments. Two sites of historic importance, namely, the St. Famille Church and the Central Prison are also located here. The Kandt House, the first European settlement in Kigali, which is currently a natural history museum, is located adjacent to the Central Prison in Gitega Sector. About 45 ha of land on the eastern end has recently been acquired and cleared by the City for the development of new commercial and office spaces.

The Kimicanga area lies to the east of the Muhima CBD across the wetlands and on the north-western base of Kimihurura Hill. It comprise mostly of informal low-end housing settlements.

Figure 2.10 shows the building typologies existing in different parts of the CBD areas and Figure 2.11 presents the existing context of the planning areas. Figure 2.12 presents the existing Land Use Map for Kigali CBD.

A more detailed urban design analysis for the different precincts and land uses within the CBD areas is provided in Appendix 1.

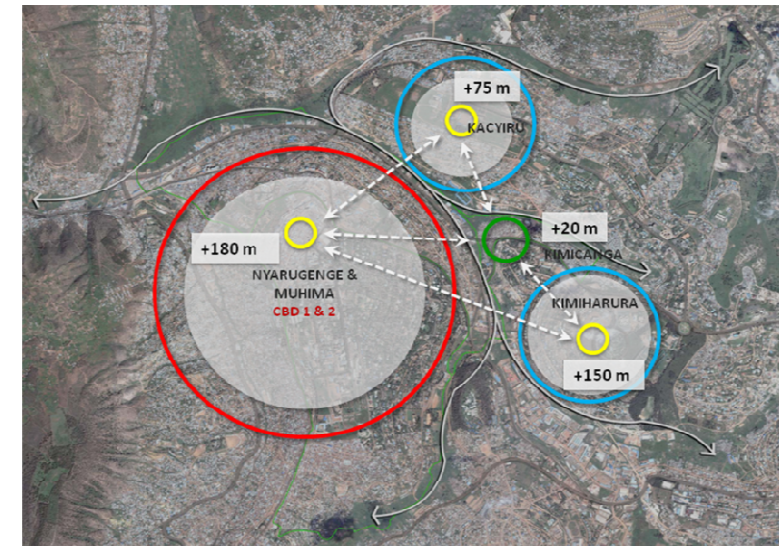


Figure 2.7: The Relation of CBD Areas with Other Important Urban Areas of Kigali City. Source: Surbana



Figure 2.8: Areas with Steep Slopes. Source: Surbana



Figure 2.3: Muhima (CBD 1). Source: Surbana

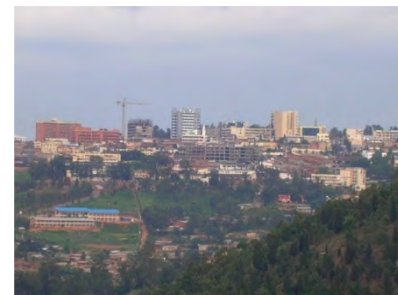


Figure 2.4: Nyarugenge (CBD2). Source: Surbana



Figure 2.5: Kimicanga. Source: Surbana



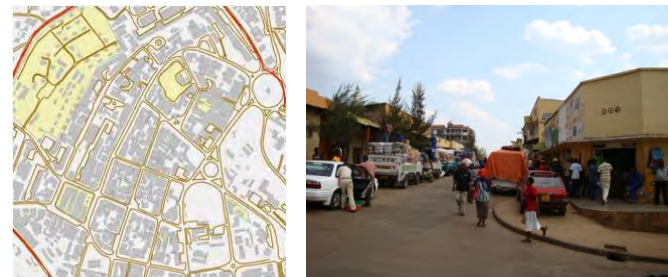
Figure 2.6: Cleared Area, CBD1. Source: Surbana



Figure 2.9: The Topography of the CBD Areas. Source: Surbana



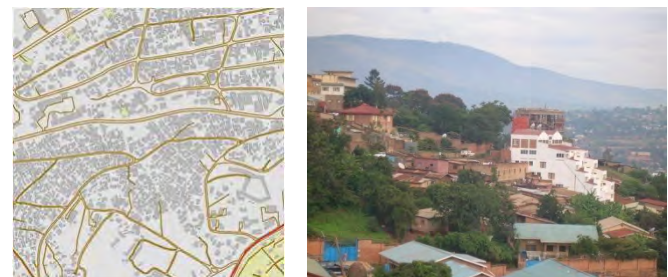
Low-Density Civic and Office Area (Nyarugenge CBD)



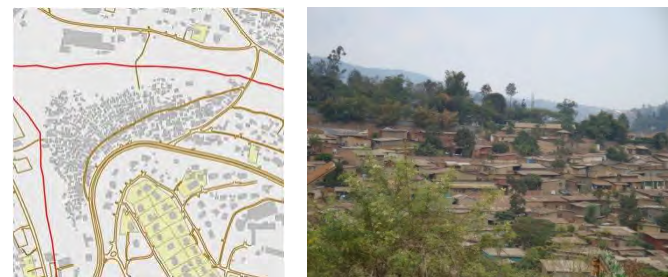
High-Density Wholesale Market & Shopping Centre (Nyarugenge CBD)



Low-Density Good-class Housing Area (Nyarugenge CBD)



High-Density Housing and Mixed Use Area (Muhima CBD)



High-Density Informal Housing Area (Kimicanga)
Figure 2.10: Kigali CBD - Building Typologies.
Source: Surbana

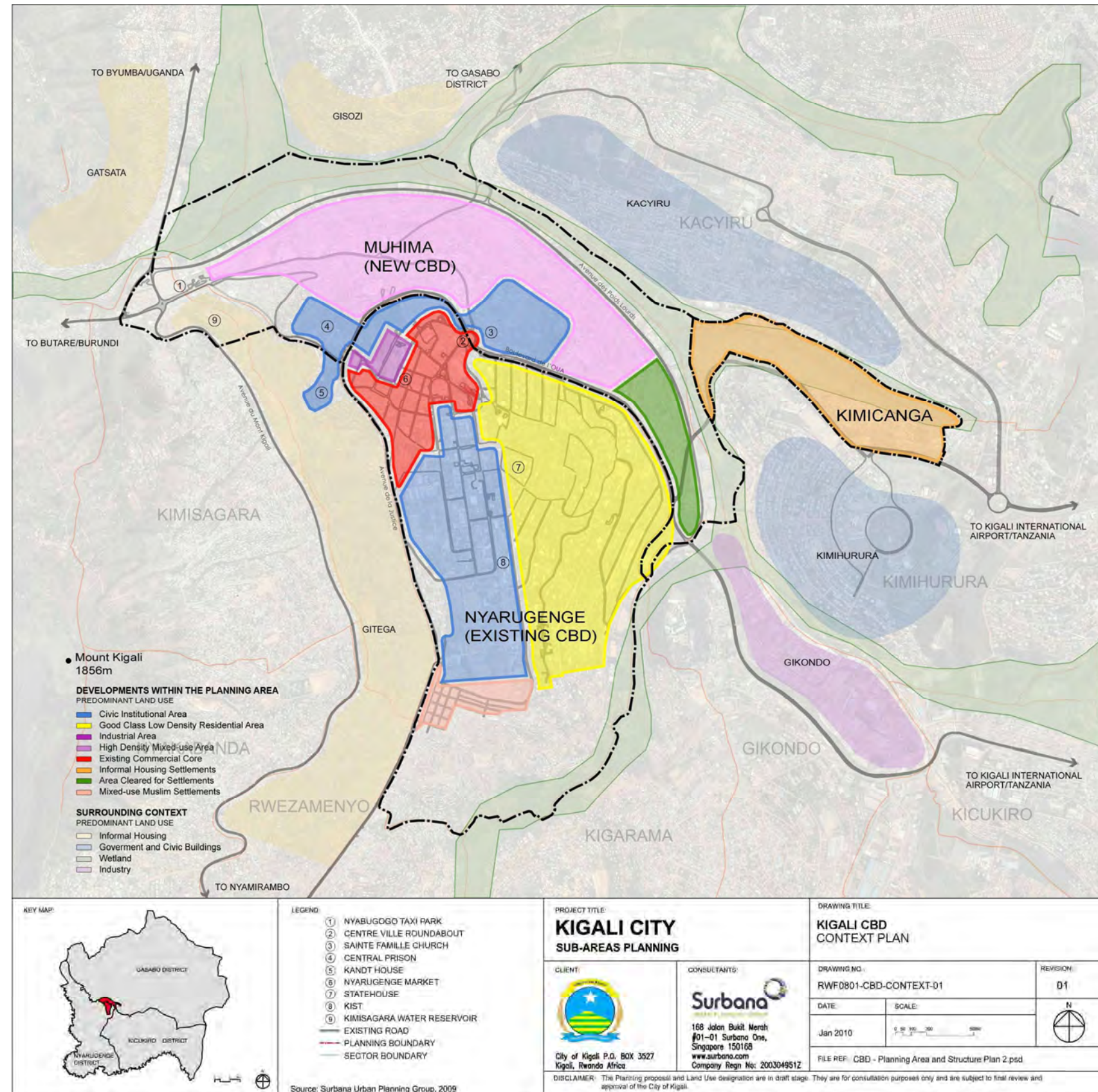


Figure 2.11: Kigali CBD Areas Context Plan.
Source: Surbana

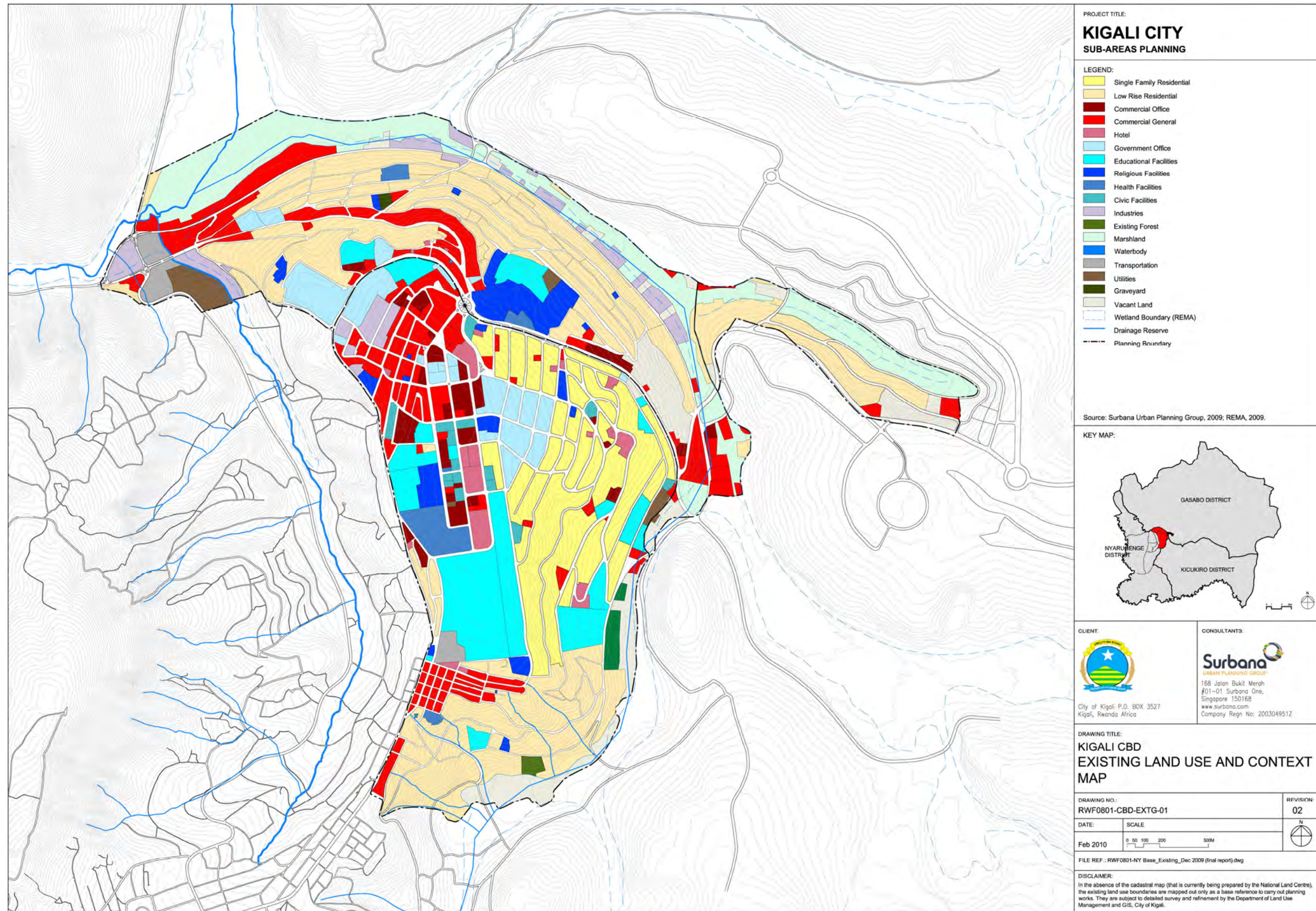


Figure 2.12: Kigali CBD Existing Land Use Map.
Source: Surbana

2.1.6 Socio-economic Context

A. Population

Rwanda is the most densely populated and fastest growing country in Africa with a growth rate 10.7%⁴. The country's total population is 8.6 million (2006), of which about 1 million live in Kigali City. According to the Kigali Concept Master Plan, the population in Kigali City is expected to increase to about 3 million by 2028.

The national centralisation policy encourages rural-urban migration. People are increasingly being attracted to the opportunities of the capital city. Since 1999, the population of Kigali City has been growing by 8%. In 2006 the City expanded its boundaries to cover an area of 732 km². As a result, the ratio of rural to urban land within the City became 90% to 10%, with 66.4% of the City's population living in urban areas⁴. The average density of Kigali's urban areas is 86 persons/ha and rural areas is 5-10 persons/ha.

B. Economy and Employment

Rwanda's per capita GDP (2005) is relatively low, at Rwf 165,000 (USD \$300). The Vision 2020 aims to achieve an annual per capita GDP of Rwf 495,000 (USD \$900) by the year 2020, which implies a growth rate of approximately 8 percent annually.

The current economic base of Rwanda is agriculture and tourism and majority of the population in Rwanda still rely on subsistence agriculture for survival. However, this is in contrast to the urban areas. Lately the service sector has increasingly gained importance in the urban areas, with banks and multinational organisations moving their offices to Kigali, capitalising on its low crime rate, political stability, good governance, cleanliness and pleasant living environment.

C. Real Estate Demand

Economic development in Rwanda has been very encouraging in the past few years. While there is no proper record available, the land price in Kigali in general, and in the CBD areas in particular have been increasing since the last few years.

As the property market in Kigali is still young, it is relatively difficult to track the real demand and supply situation in the City. At present however, as the City is attracting foreign investment to come to Kigali, the demand of commercial land is high. There is a shortage of office space and hotel rooms to meet the needs of the growth in economy and tourism.

Fuelled by this economic growth and a number of new multinational investments in Kigali, large scale commercial development are taking place in the CBD, such as the 13 storey RAMA building, the 6 storey CSR building, the 14 storey Insurance Plaza, the 17 storey Kigali City Tower, the Kigali Market redevelopment, 5 storey Vision Hotel as well as the 7 storey Nobilis Hotel. Besides these developments, many other government and private organization have acquired land and are preparing to develop their own offices.

In line with the government's policy to continue attracting foreign investment, there will be an increasing demand for high end commercial developments and supporting facilities in and around the CBD areas.

D. Housing

The present day housing scenario in Kigali shows predominantly two types of housing communities. The majority of people currently live in semi permanent, high-density houses scattered along the slopes of hills in and around the CBD areas. In contrast to this, there are prime residential areas, such as Kiyovu in Nyarugenge CBD2, which are mostly low-rise, single family houses catering to the upper classes of the population. The residents of these areas generally work in local or multi-national institutions or non-government organizations. There are a few medium-density housing areas at Muhima CBD1 that belong to lower and middle income groups of the community. The residents of these areas are generally engaged in the formal and informal employment sectors in the CBD. However, there is a lack of properly planned and well designed housing options for the mid-income group residents.

With the high numbers of foreign establishments in the CBD area, the living cost in the CBD is comparatively much higher than that in the outlying areas of the City. In the next 5 - 15 years, due to the implementation of the Master Plan, the land value in the CBD is expected to increase. Also, as the CBD is intended to be the place for international businesses, the living cost in the CBD is expected to increase further. As such it may not be viable to continue allowing conventional low-end medium-density housing in the CBD. This however doesn't mean that there will be no housing in the CBD. In line with the principles of compact city development, areas of high-density housing and mix-use residential areas will have to be developed to ensure vibrancy and vitality of the CBD at all times.

In view of this, it would be important to allocate alternate locations, such as Kinyinya, which would offer comprehensive and integrated affordable housing options to the lower income groups.

E. Role of CBD in Rwanda's Economic Development

The government envisions Kigali and a business and development hub of central Africa, and is currently undertaking many active measures to realise this vision. Some of the key sectors it is paying close attention to include, banking and financial services, transport and logistics, MICE and tourism, most of which are expected to be concentrated in the CBD areas.

In keeping with this, the CBD in Kigali needs to be further developed in the next 5 - 15 years, and transformed into a prime office area for multinational and local companies, offering banking and financial services, hotels, large scale shopping and entertainment centres. The existing and proposed land uses will need to be regulated to allow for meaningful and comprehensive development, with conflicting activities, such as the industrial and market areas, requiring to be relocated. Development regulations which encourage redevelopment and development controls which ensure that development occurs as per the stipulated plans need to be put in place.

Developments with heritage values need to be enhanced as well as vibrant public spaces for people to interact and recreate need to be developed to impart local character and identity to the CBD.

An efficient road network, an extensive public transport network as well as comfortable and attractive pedestrian and cycling facilities need to be developed. Adequate infrastructure services need to be provided to support the growing developments.

Sustainable and green development options need to be explored to ensure minimal impact to the environment.

Considering its strategic role in the economic development of Rwanda, the CBD will need to be developed as the showcase of Rwanda's commitment to provide an efficient, secure, pleasant and green environment conducive for business and economic development.

⁴ Kigali Conceptual Master Plan Existing Conditions Analysis.

2.1.7 Environmental Context

A. Natural Features

The Nyabugogo River, an important tributary of the Nyabarongo River, runs along the north of Muhima CBD. The Yanze River, the most important source of water in the City, connects to the Nyabugogo River at the north-west of Muhima CBD (refer to Figure 2.13).

The landscape in Kigali is characterized by a series of medium and low hills with a network of rivers and wetlands running in between. The wetlands perform a number of vital functions, such as providing water for the agricultural and industrial activities along their edges and carrying solid waste and storm water away from the CBD areas. However, the wetlands along the CBD areas have been severely compromised by over utilization, the presence of pollutive activities adjacent to the wetlands and direct discharge of untreated sewage and storm water run-off into the wetlands (refer to Figure 2.14).

Protection of wetlands is essential to preserve their ecological, economic, aesthetic and recreational value. Immediate measures, such as regulating the allowable uses, controlling the quality of discharges and managing the use of water therein, need to be taken.

B. Climate

Even though it is located in the equatorial region, Kigali enjoys a moderate climate, due to its high altitude.

It has two wet seasons spanning from October to April, with an average annual rainfall of 1,000 mm. Favourable climatic conditions such as mild temperatures, abundant sunshine, gentle winds coupled with a green, clean and orderly environment make Kigali a pleasant place to live in. The climatic data for the Kigali City is presented in Table 2.2.

Table 2.2: Kigali City Climatic Data.

Seasonal Cycles					
Months	Mar-May	Jun-Sep	Oct-Nov	Dec-Feb	Average Rainfall (mm)
Season	Wet	Dry	Wet	Dry	1000
Temperature					
	Max Temp	Min Temp	Average		
Temperature (°C)	28.69	16.86	21.64		
Humidity					
Months	Oct-May (wet months)			Jun-Sept (dry months)	
Humidity (%)	72			57	
Wind					
Months	Jan - Jun	Jul- Dec		Mean	Predominant Direction
Wind Speed (km/h)	4.5 to 5.5	5.0 to 7.9		5.71	Westerly
Daylight					
	Average Daylight Hours	Average Insolation Incident on Horizontal Surface (kWh/m ² /day)		Average Daylight Cloud Cover (%)	
	12.1	4.95		72.08	

Source: Kigali Conceptual Master Plan Existing Conditions Analysis



Figure 2.13: The Nyabugogo River and the Intake from Yanze River.
Source: Surbana



Figure 2.14: Developments within the Wetlands along Muhima CBD.
Source: Surbana

2.2 Opportunities, Constraints and Threats

Table 2.3 and the following Figure 2.15 and Figure 2.16 outline the key opportunities, constraints and threats which govern the proposed Master Planning and Urban Design of the CBD areas. More site specific opportunities, constraints and threats for each of the three CBD areas will be discussed separately in Chapter 5.

Table 2.3: Kigali CBD - Opportunities, Constraints and Threats.

Issues		Opportunities	Constraints	Threats
1. Site Context	<ul style="list-style-type: none"> • Land use and Developable Land 	<ul style="list-style-type: none"> • The existing developments in Nyarugenge CBD can be reinforced and densified. • The cleared site in Muhima CBD can be immediately developed as a start-up phase for the CBD development. • Due to its strategic and central location, Kimicanga can be developed as a landmark recreational and entertainment precinct. • Key government parcels are distributed all over the CBD areas and can be redeveloped and utilised for provision of public amenities. • Historic sites can be conserved and developed as heritage and tourism sites. 	<ul style="list-style-type: none"> • The industrial area and the Nyarugenge market with wholesale, retail and warehousing activities will conflict with the development of a modern CBD and need to be relocated. • A large portion of privately owned land needs to be acquired in Muhima and Kimicanga to allow for the development of new CBD areas. • Land in the current CBD areas is limited. After the CBD areas are fully developed, alternative locations will need to be sought for expansion of commercial activities. 	<ul style="list-style-type: none"> • Due to the growing demand for commercial spaces in the City, many new developments are coming up which are deficient in many important aspects such as setbacks, parking etc. These may conflict with the overall intent of the new master plans.
	<ul style="list-style-type: none"> • Topography 	<ul style="list-style-type: none"> • The hilly terrain can be leveraged upon for its scenic value. • Sloping sites allow for use of gravity for waste and water management. 	<ul style="list-style-type: none"> • Land within areas of steep slope cannot be built upon. 	<ul style="list-style-type: none"> • If not properly managed, steep slopes may aggravate the existing problems of land slide and soil erosion.
2. Environmental Context	<ul style="list-style-type: none"> • Natural Features 	<ul style="list-style-type: none"> • Wetlands on the north of CBD2 can be developed as attractive recreational venues which complement the development in the CBD areas. • Wetlands can be a source of water and can act as natural filter and purifiers in the City's waste and sewage management system. • ETZs with varying functions can be developed along the wetlands to manage the CBD's waste. 	<ul style="list-style-type: none"> • Existing developments in the wetlands need to be relocated and new developments need to be regulated. 	<ul style="list-style-type: none"> • Lack of management and protection of wetlands can cause large environmental damage. • Lack of appropriate building codes to counter the seismic activities may affect structural stability and restrict the allowable building heights. • Landslides and soil erosion are common occurrences and affect the quality of run-off water into the wetland as well as cause damage to property.

Source: Surbana

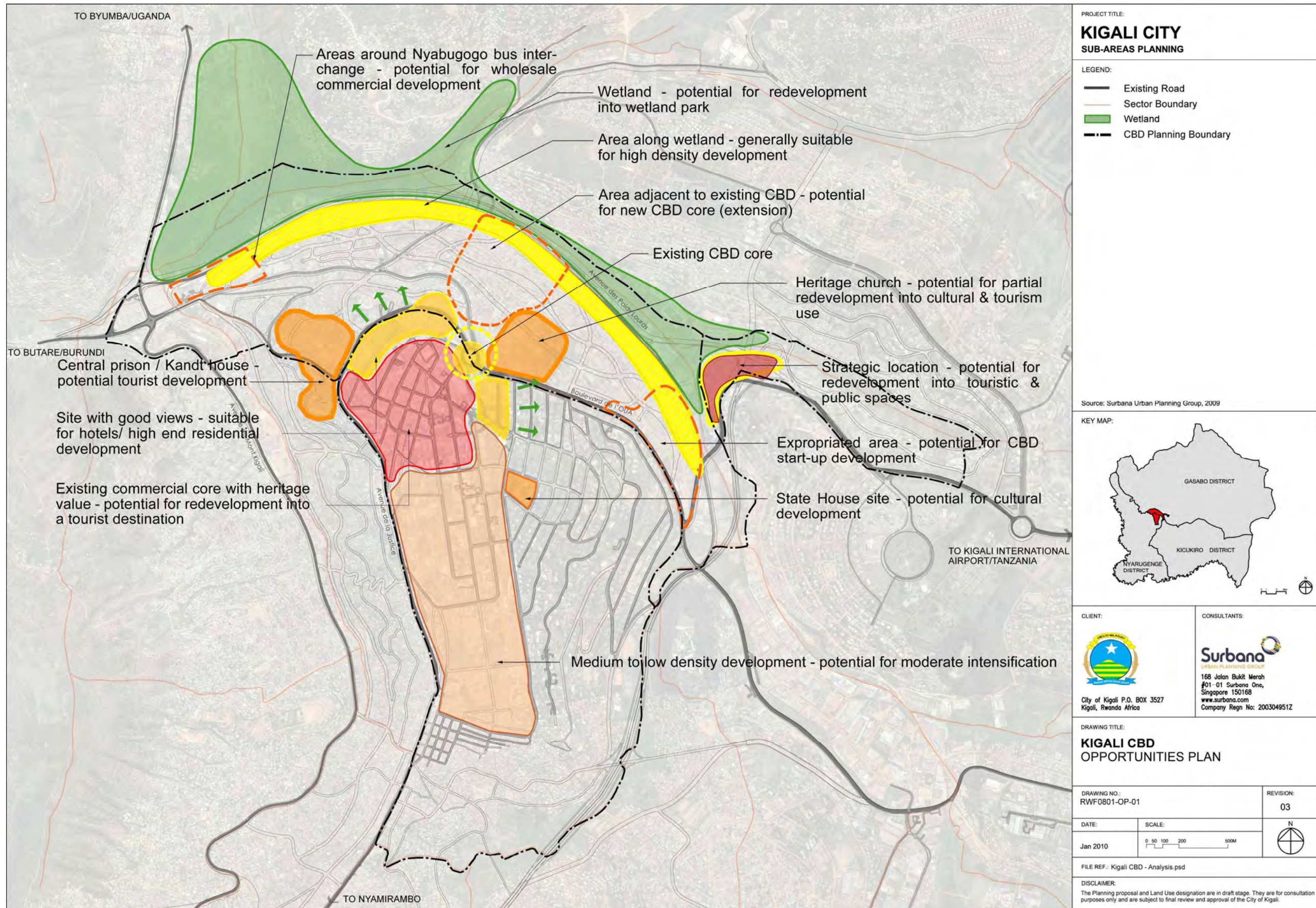


Figure 2.15: Opportunities Plan.
 Source: Surbana

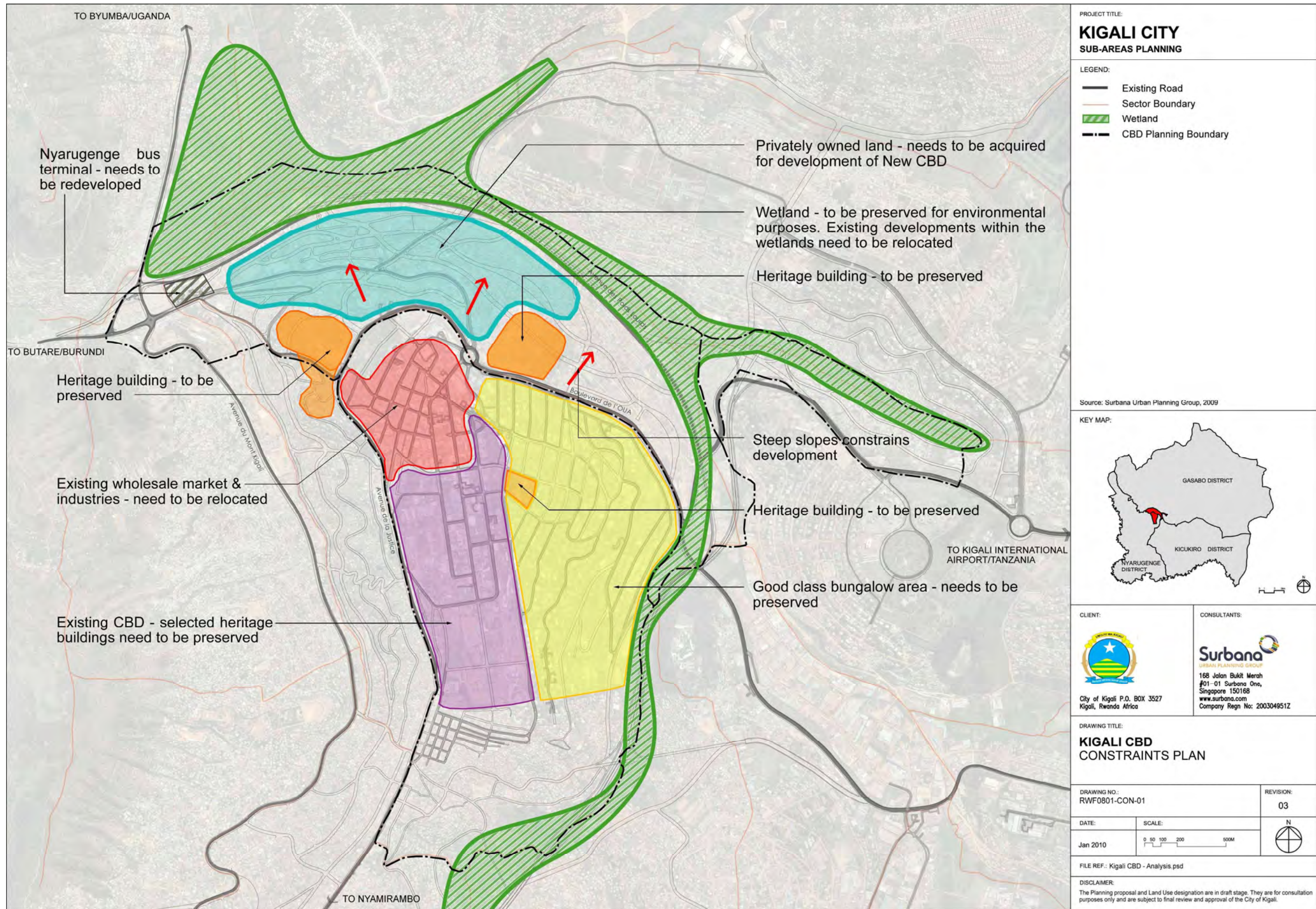


Figure 2.16: Constraints Plan.
 Source: Surbana

CHAPTER 3: VISION

This chapter presents the vision for Kigali CBD as well as describes the visioning process, the vision framework and the development programme proposed based on the vision for the CBD. The vision for Kigali CBD is tied to the overall visions for Kigali City, as illustrated in Figure 3.1.

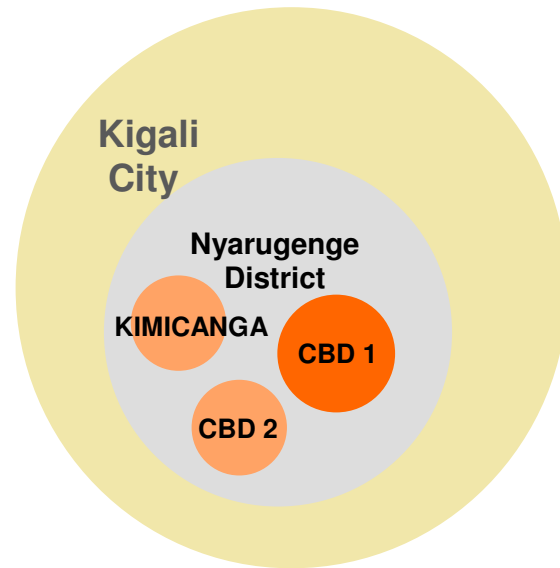


Figure 3.1: Interrelationship of the Visions at the City Level.
Source: *Surbana*

3.1 The Visioning Process

The vision proposed for Kigali CBD has been developed through a visioning process which involved discussions and workshops with the Stakeholder, various government agencies, the business community as well as other community representatives.

Many considerations for the setting of the vision were tabled for discussion to guide the Stakeholders and decision makers. Some of these considerations included the future socio-economic development of Rwanda, the positioning of Rwanda in Central African Region and the overall vision of Rwanda and Kigali City, the feasibility of the CBD project, and the incorporation of Rwandan culture and architecture in the Urban Design. These issues were debated upon in order to arrive at an understanding and agreement on the future direction of the CBD.

To facilitate and guide the discussion on the vision, a benchmarking study on different CBDs in comparable cities around the world was undertaken and has been presented to the stakeholders. This was done to give them an overview of CBD developments in different parts of the worlds. The analysis of this benchmarking study is presented in Section 3.5.

3.2 The Vision Framework

A visioning framework was prepared to help in structuring the stakeholders' aspirations. The visioning framework explains how the vision is translated into measurable and achievable goals, objectives, strategies and recommendations. Various proposals and aspirations from the Stakeholders have been incorporated in the visioning framework, for example, the making of Kigali CBD as a sustainable and green city, preserving the heritage buildings within the CBD, creation of real-estate investment opportunities, development of good infrastructure in the CBD including underground power and telecommunication cabling, modern sewerage system and network etc.

The Vision Framework for Kigali City is shown in Figure 3.2 and defined as follows:

- **Vision** is a holistic statement that encompasses the overall planning and urban design intent for the CBD.
- **Goals** are subsets of the vision. Each covers a particular planning and urban design aspect, relevant to the vision.
- **Objectives** are the measurable targets established to achieve the goals. They are physical aspirations that are based on stakeholders' inputs and address the planning and urban design challenges.
- **Strategies** are specific sets of physical planning and urban design actions developed to achieve the objectives.
- **Recommendations** are statements of the planning and urban design principles and intentions, which serve as a guide to the public officials, administrators, and citizens for day-to-day decision-making.

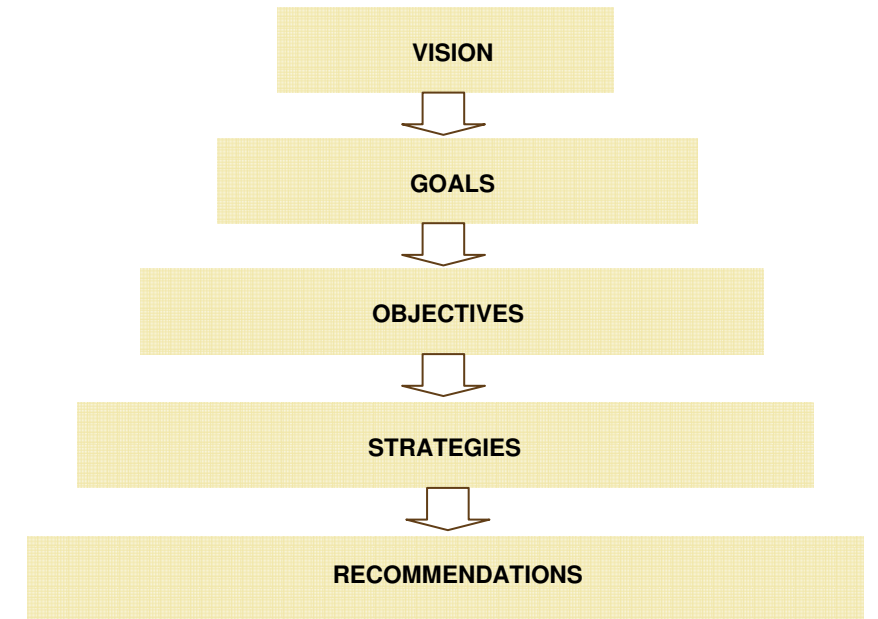


Figure 3.2: Strategic Framework for the Development of the Proposed Kigali CBD.
Source: *Surbana*

Based on the visioning process and vision framework described above, the vision for Kigali CBD is presented in Section 3.3 and Section 3.4 below.

3.3 Proposed Vision

Kigali CBD 'The Green Financial Hub of Central Africa'

- The Premier Financial Hub of Central African Region.
- The Landmark Activity Node of Rwanda.
- The Main Tourist Destination in Kigali City.
- A Sustainable and Green CBD.

Kigali CBD - The 'Green Financial Hub of Central Africa' will be a prosperous and vibrant destination. It will offer a modern, progressive environment conducive for business and financial growth. Besides this, it will also be a place for the community and visitors to visit for entertainment, food and shopping. It will be a place for major festive events and celebrations. Its pedestrian-friendly environment will be a mix of commercial, retail and residential uses with parks, public plazas, cultural facilities and wetland promenades. Essentially, this will be an attractive destination where people from within and around the region would want to work, stay, visit and recreate. Table 3.1 to Table 3.4 elaborate the vision framework for Kigali CBD.



Figure 3.3: Kigali CBD – Vision.
Source: *Surbana*

3.4 Proposed Goals, Objectives, Strategies and Recommendations

Goal 1: To be the Premier Financial Hub of Central African Region

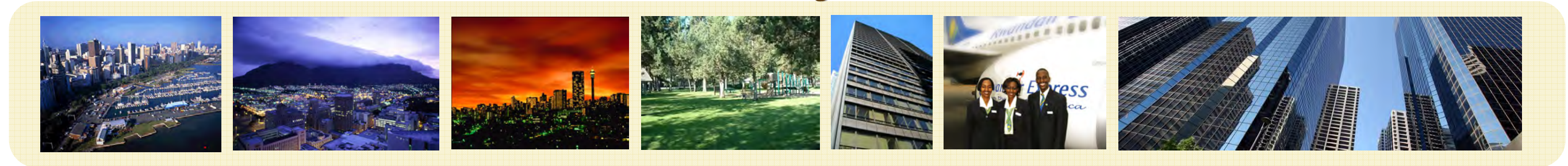


Table 3.1: Goal 1 - To be the Premier Financial Hub of Central African Region.

Goals	Objectives	Strategies	Recommendations
To be the Premier Financial Hub of Central African Region.	To attract top international and regional financial institutions to set-up office in Kigali CBD within 10 years period.	To develop an attractive, modern and compact Central Business District, complete with state-of-the-art technology and infrastructure.	Allocate sufficient quantum and premium development parcels to accommodate the demand for financial institutions in the next 10 -15 years.
			Allocate land for complementary activities that allow for one stop service pertaining to government's approval, immigration, travel, conferences etc.
			Introduce high-tech and eco friendly people mover system to serve the CBD.
		To develop a comprehensive range of vibrant business support and related facilities.	Make provisions for luxury hotels and serviced apartments for the business travellers.
			Make provisions for business meetings, convention and exposition facilities.
			Allow for ample retail and mix use developments which would cater to the needs of the business community in the CBD.
			Allow for a variety of entertainment and recreational facilities such as restaurants, pubs, outdoor dining areas, art galleries, museums, performing arts centres and parks to serve the working population in the CBD.
		To create liveable (clean, green and safe) environment for the international community in the CBD.	Provide premium land for good class residential development to accommodate expatriates as well as local professionals and businessmen.
			Provide comprehensive educational, health and community facilities for the international community living in the CBD.
			Provide strong network of parks and open spaces to create park-like environment and to encourage pedestrian movement within the CBD.
			Preserve and enhance the historic, high-end residential area in Kiyovu.

Source: Surbana

Goal 2: To be the New Landmark Activity Node of Rwanda

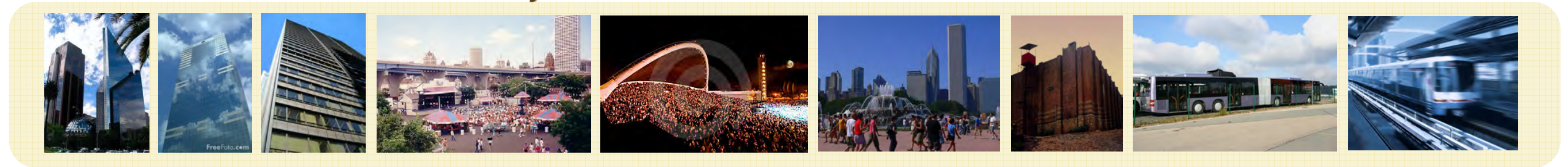


Table 3.2: Goal 2 - To be the Landmark Activity Node of Rwanda.

Goals	Objectives	Strategies	Recommendations
To be the New Landmark Activity Node of Rwanda.	To be the site of at least 5 iconic towers within 5 years period and at least 15 iconic buildings within 10 years period.	Create opportunities for development of iconic towers and an attractive skyline in both, the start-up area and the CBD core.	Develop iconic towers in the start-up area and make provision to allow for the tallest towers at the CBD core. Allow 30 storey towers in the CBD, higher than the current 18 storey developments.
			Allow sizeable parcel size to create an iconic development.
			Make provisions for other low-rise iconic building, such as art centre, convention centre and cultural centre.
	To be the main venue of main national events as well as a few international events in Kigali within 5 - 10 years period.	Create sizable and attractive city square and open pedestrian malls to cater to national and international outdoor events.	Develop a smaller city square in the start-up area.
			Develop the main (grand) city square at the CBD core area.
			Develop attractive pedestrian malls or streets for parades.
	To create a minimum of 4 attractive heritage areas (landmarks) within the CBD.	Create a multi-purpose convention centre to cater to various indoor events and conferences.	Develop convention centre close to CBD core and hotels.
			Develop and conserve key developments in the existing city centre to be an attractive landmark and tourist destination.
		To develop the older parts of the city and some heritage buildings into city landmark and activity nodes.	Develop and enhance the overall design of key heritage buildings such as the Kandt House, the Central Prison and St Familie Church.
			To promote the use of local art.

Source: Surbana

Goal 3: To be the Main Tourist Destination in Kigali City

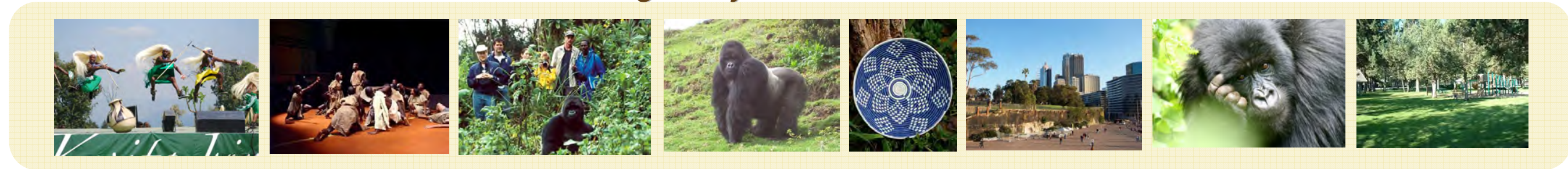


Table 3.3: Goal 3 - To be the Main Tourist Destination in Kigali City.

Goals	Objectives	Strategies	Recommendations
To be the Main Tourist Destination in Kigali City.	To attract local and international investors to invest and develop the CBD into an attractive and vibrant destination within 15 years period.	To create an attractive shopping district within the CBD.	Allocate a sizable area for a vibrant shopping district that will be able to offer and integrate both large shopping centres and smaller boutique shops. Allocate areas where informal shopping activities such as street bazaars could take place.
		To create a unique, must visit entertainment district within the CBD.	Allocate areas with good views and a relaxing environment as entertainment district, to incorporate a variety of food outlets and restaurants, karaoke lounges, pubs and bars, indoor and outdoor performing areas, souvenir shops etc. Design part of the entertainment district as a cultural centre showcasing Rwanda's local culture and heritage.
		To provide attractive public spaces (plazas, squares, lookout points and parks) as nodes within the CBD capitalising on hilly terrain and its extensive wetland.	Create attractive plazas, outdoor refreshment areas and lookout points capitalising on the hilly terrain. Develop an extensive pedestrian network that will encourage pedestrian movement within the CBD.
		To provide land for wide variety of hotels (accommodations) for both local and international tourist.	Encourage the development of 5 star hotels on the prime lands and, exclusive high points with good views. Encourage the development of 4 star hotels within or around the office parks and shopping district. Encourage the development of low or medium-rise 3 stars hotel, lodging, bed and breakfast at the existing City Centre and heritage areas.
		To renovate and redevelop heritage buildings into a tourist attraction.	Assess the possibility of adaptive reuse for the heritage buildings and to develop it as a tourist attraction. Maintain the pleasant character of the old Kigali city (Nyarugenge hill) as an attractive tourist place.

Source: Surbana

Goal 4: To be a Sustainable and Green CBD

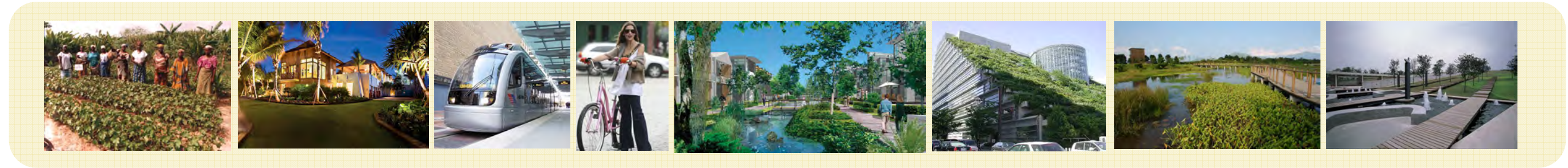


Table 3.4: Goal 4 - To be a Sustainable and Green CBD.

Goals	Objectives	Strategies	Recommendations
To be a Sustainable and Green CBD.	To be the most eco-friendly CBD (CBD with lowest carbon footprint) in the region.	Establish green building guidelines and incentives to encourage the incorporation of eco-friendly practices in private developments.	Reward building design which demonstrates a lower carbon footprint and use of alternative energy with development benefits.
			Promote use of passive light and ventilation through the building regulations.
			Promote east-west orientation of buildings to cut-off direct sunlight and take advantage of the predominant north-east wind for natural ventilation.
		Use eco friendly technologies in the development of public spaces as well as the transportation and infrastructure systems, wherever appropriate.	Limit car traffic and corresponding carbon emission in the CBD. Develop eco friendly people mover system to serve the CBD.
			Develop an attractive and extensive pedestrian network within the CBD.
			Promote establishment of eco-sensitive water, and waste and management system
			Promote use of alternative energy in the provision of lighting in public areas.
			Promote the use of various eco-friendly construction and building technologies.
		Conserve the environmentally sensitive wetlands abutting the CBD sites.	Remove existing development and restrict new developments within the wetlands boundaries.
			Maintain a buffer of 20m from the wetlands boundaries for all developments.
			Retain and promote the environmental and aesthetic qualities of the wetland through adaptive reuse for educational and recreational activities.

Source: Surbana

3.5 Development Programme

Based on the recommendations derived from the vision framework, as well as the benchmarking study of other CBD developments a Development Programme has been prepared, which lists down the various projects and implementation actions that need to be undertaken for the Kigali CBD. The development programme forms the basis for guiding development of the CBD as per the Master Plan.

The following activities need to be undertaken for the preparation of the Development Programme:

- Estimating the commercial quantum and land take up required for the development of the Kigali CBD in anticipation of future demand of prime commercial spaces in the CBD.
- Estimating the development mix within the CBD and the “features” that could be proposed for the Kigali CBD. Features refer to a unique development within the CBD that make Kigali CBD different from other CBD.

To determine the quantum and development mix for the development of Kigali CBD, the following approach and processes need to be undertaken:

- To take stock of existing and proposed commercial spaces in Kigali CBD. This is to understand the extent (distribution and quantum) of the existing commercial developments as well as the current development trend in the CBD.
- To conduct a comparative study of CBDs in other comparable cities around the world. This is to understand the development quantum and development mix provided in other CBDs and its relevance to Kigali CBD.
- To conduct regional context study. This is to understand the types of facilities that are already allocated outside the CBD and the new facilities that need to be incorporated in Kigali CBD.

3.5.1 Inventory of Existing and Proposed Commercial Spaces in Kigali CBD

Banks, multi-storey offices, hotels and shopping centres are among the existing key building in the CBD. These are mainly concentrated in the area near Centre Ville Roundabout in Nyarugenge CBD. The location and land take-up of the existing key commercial buildings within the CBD are tabulated and shown in Figure 3.4.

As per the table provided in Figure 3.4, the total land area taken up by these developments is about 12 ha. Assuming an average plot ratio of 1.5 to 1.7, the total existing commercial quantum in the CBD is estimated to be around 200,000 sqm.

Having assessed the existing commercial development, it is also important to understand the estimated commercial quantum of developments expected to be realized in the CBD in near future. The recent years has seen some large and rapid developments in Kigali CBD. A sizeable number of development applications seeking approval for the construction of commercial, office, mix-use and hotel developments have been submitted the City for approval, some of which have been approved and the others being under consideration. Currently there are three large-scale development projects ongoing in the existing City Centre. The location and land take-up of large-scale commercial developments under construction or under consideration within the CBD are tabulated and shown in Figure 3.5.

As per the table provided in Figure 3.5, the total land area taken up by these developments is about 26.5 ha. Assuming an average plot ratio of 1.7 to 2.0, the total existing commercial quantum in the CBD is estimated to be around 520,000 sqm.

The above inventory of existing and potential commercial developments in the CBD does not include the retail shops and wholesale developments of Nyarugenge Market, which constitute the current trading centre of the City. It is assumed that these activities will be relocated outside the CBD and the small shops would be redeveloped for other commercial or mixed-uses.

In addition the above inventory also do not include the small restaurants and shops that are distributed within the low-rise residential areas and around the Nyabugogo Taxi Park, as these development only serve the population in the neighbourhood and do not really form part of the CBD.

Based on the above information, the total GFA of prime existing and potential commercial spaces in the CBD to date are about 720,000 m² and the total land take-up of the same is about 38.5ha. The breakdown of land area and GFA as per different commercial uses is presented in Table 3.5.

Table 3.5: Breakdown of Land Area and GFA Quantum as per Different Commercial Uses.

Land-Use	Land Area (sqm)	%
Commercial General	13,455	3
Commercial Office	47,786	12
Government Office	37,500	10
Commercial Hotel	195,268	51
Mix-use	90,481	24
Total	384,490	100

Source: *Surbana*

3.5.2 Comparative Study of CBDs of Other Cities

The Central Business District or CBD represents the financial heart of a City, usually characterized by compact, high-end commercial developments that cater primarily to the key financial institutions, both national and multinational.

For the purpose of making a comparative study, CBD of different cities in Asia, Australia, Europe and Africa have been selected, focusing on aspects such as land take-up, commercial quantum, and development mix. These would form the basis for estimating the quantum and mix for Kigali CBD.

A detailed background study on CBD development is also presented in Appendix 2.

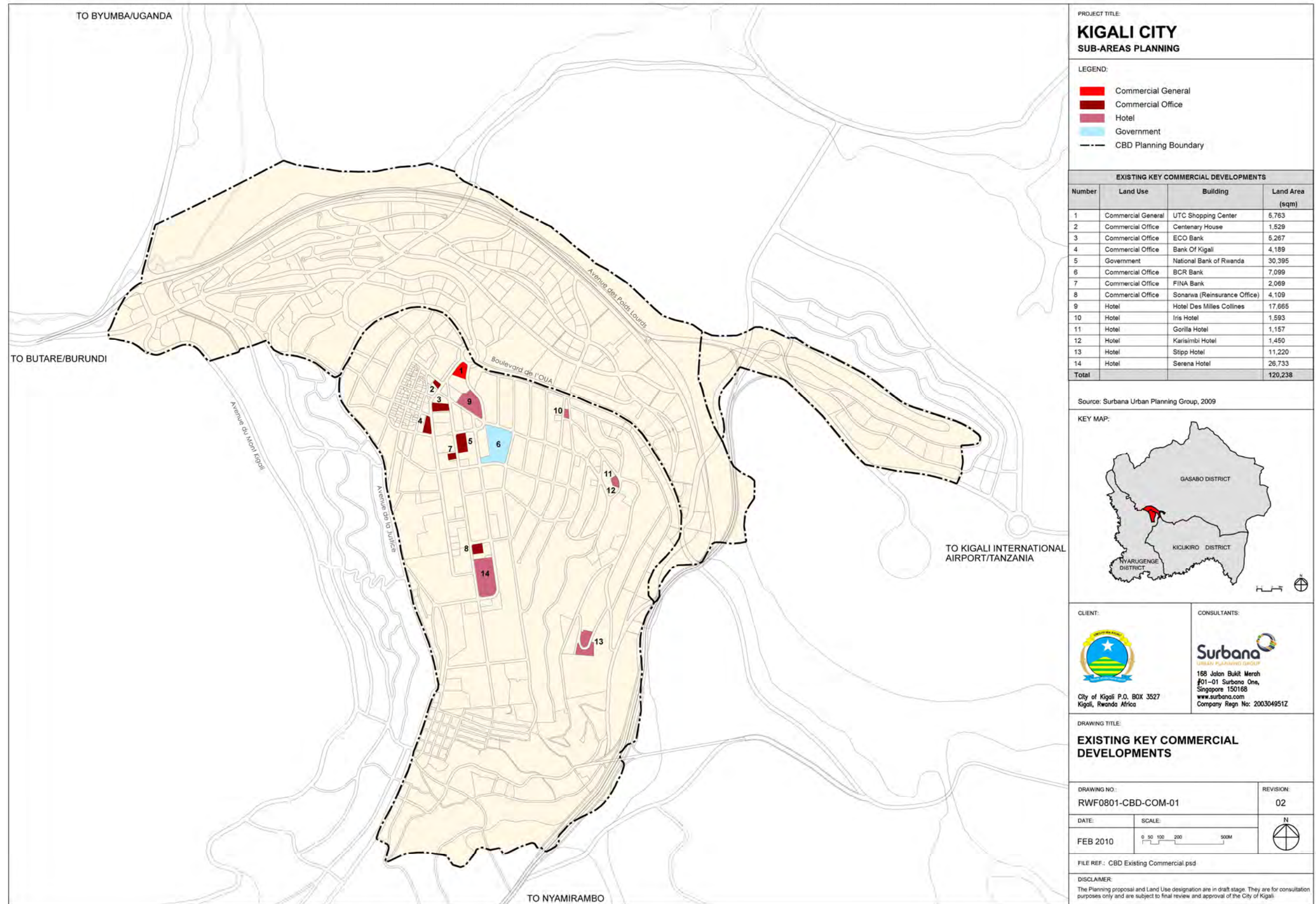


Figure 3.4: Existing Key Commercial Developments.
Source: Surbana

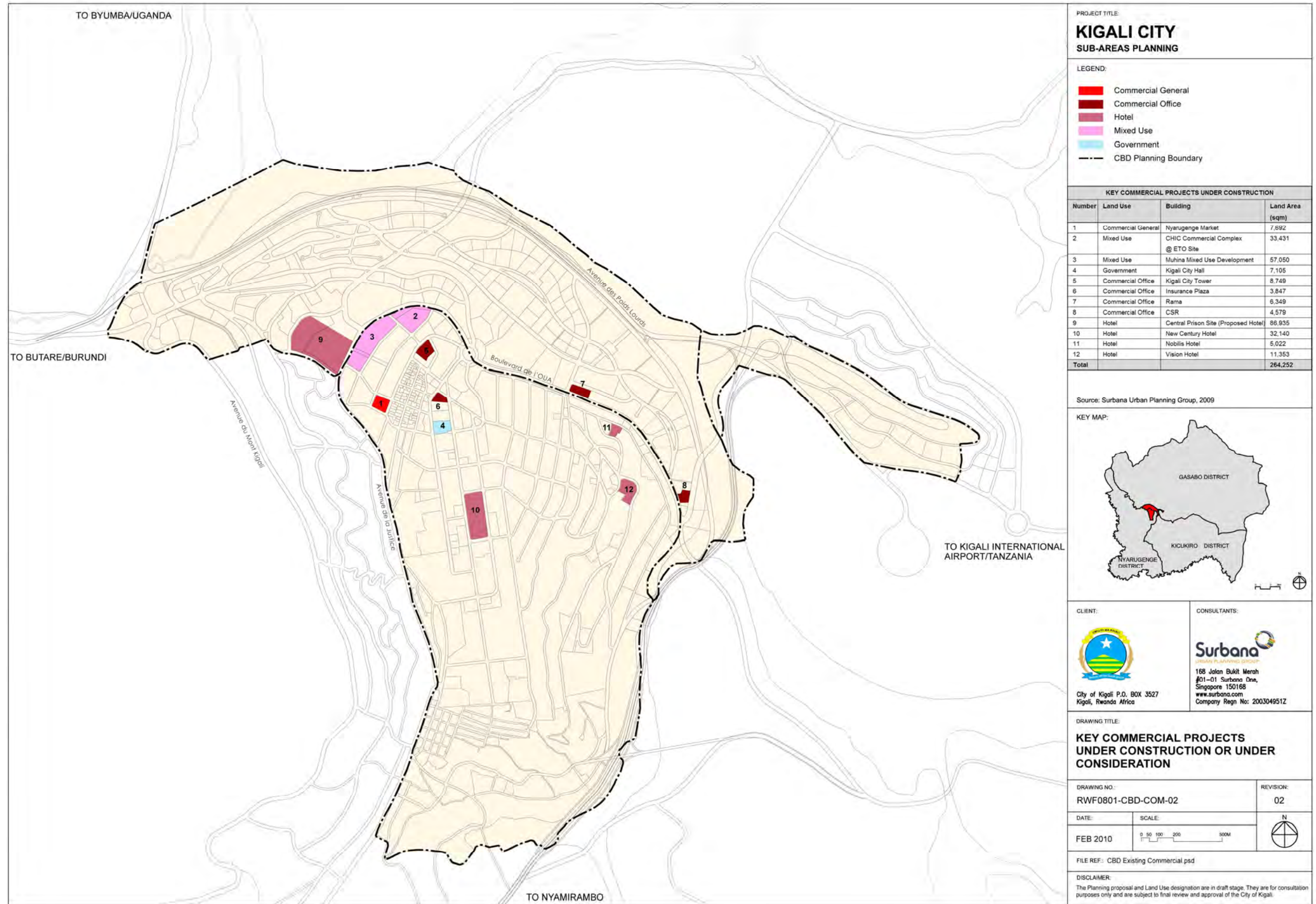


Figure 3.5: Key Commercial Projects Under Construction or Under Consideration.
Source: Surbana

A. CBD Size and CBD Core Area

Most CBDs has a core area, which is usually the geographic centre, typified by tall buildings which maximise the high land value. The CBD core has distinct land uses, with a high concentration of offices, hotels and retail outlets. Due to the concentrated nature of activities, the CBD core also has a high concentration of vehicular and pedestrian traffic as well as a high capacity public transport system.

Table 3.6 lists down the size, whereas Figure 3.6 shows the extent and type of developments of the CBD and CBD cores of Singapore, Lagos, Johannesburg, Melbourne and Auckland.

Table 3.6: Land Area Comparison for CBD and CBD Core.

City	CBD Area ⁵ (ha) approx	CBD Core Area (ha) approx
Singapore ⁶	266 ha	30 ha
Lagos ⁷	870 ha	60 ha
Johannesburg	350 ha	50 ha
Melbourne	354 ha	32 ha
Auckland	450 ha	66 ha

Source: *Surbana*

The land area of the CBD depends on the development mix and density allowed in the CBD itself. The higher the development density in the CBD, the smaller its land take-up would be.

Based on the above tables, it can be seen that the sizes of the CBD range from 250 - 870 ha, whereas the sizes of the CBD core area range from 30 - 70 ha. Based on current trends, Kigali is expected to have a relatively lower development density than the Asian cities. Hence, the size of the CBD in Kigali is estimated to be ranged between on 400 - 600 ha and that of the CBD core is estimated to be 30 - 60 ha.

The combined area of Muhima, Nyarugenge and Kimicanga which are identified to comprise Kigali's CBD is about 730 ha. This implies that the quantum of land is capable of accommodating the future demand of commercial development as well as other complementary facilities. Moreover, as Muhima, with having an area of 230 ha is expected to be completely redeveloped, there would also be enough land to accommodate the development of the CBD core.

⁵ The CBD boundary is normally set by the local authority and thus may not reflect the true extent of activities in the CBD.

⁶ Singapore CBD is currently being expanded and have a total area of about 360 ha and a core area of about 70 ha.

⁷ The area of 870 ha is the area of the entire Lagos Island which includes areas of mixed-use developments along with the CBD developments.



Auckland CBD and CBD Core

Figure 3.6: Kigali CBD – Vision.
Source: *Surbana*

B. Commercial Quantum and Mix

The commercial quantum (gross floor area or GFA) in the CBD reflects the actual demand of prime commercial spaces in the city. The CBD is the central district of a city. It usually has a mix of prime developments, such as a concentration of commercial office and hotel uses with other supporting facilities like retail, high-density residential, entertainment, civic, and religious uses. Table 3.7 presents the commercial GFA and the land use mix in the CBDs of Singapore, Hong Kong, Shenzhen, Paris (La Défense), Melbourne, Nairobi and Lagos.

Singapore, Hong Kong, Shenzhen, Melbourne and Paris (La Défense) are regional financial hubs serving regions with much higher economic activities and GDP as compared to the Kigali CBD. The CBDs of these cities have a commercial quantum of about 3 million m². In view of this, the Kigali CBD office quantum could be slightly less than 3 million m². The commercial space demand in the Kigali CBD is assumed to reach up to 2.5 million m², based on which an estimated prime office space is about 1.85 million m² is needed to be safeguarded in the new Kigali CBD.

As can be seen from the case of Shenzhen, La Défense, Melbourne and Hong Kong, the commercial floor space for supporting uses such as hotel and retail activities ranges between 10-50% of the total office quantum. Currently Kigali does not have any shopping and entertainment district. Hence, the quantum proposed for retail, entertainment and hotel spaces in Kigali is estimated on a higher side as 35% of the office space, equating to 650,000 m², to be integrated in the CBD.

In terms of development mix, large scale offices, hotels and convention centres will be the prime uses, which will be integrated with residential development and entertainment facilities introduced to inject vibrancy in the CBD areas after office hours. In addition, administrative buildings, cultural centres and key civic facilities will also be featured in the CBD. Public transport facilities to address the high expected volume of traffic will be an integral part of CBD planning.

Table 3.7: Commercial Quantum Comparison for CBD.

City	Commercial GFA	Land Use Mix	Remarks
Singapore	3.6 million m ² (mainly office spaces with some F&B outlets and small quantum of retail space)	<ul style="list-style-type: none"> • Prime offices • Residential (high end) • F&B outlet & entertainment centre • Convention centre • Arts centres • City Hall • City Square • Museum • Transport hub 	<ul style="list-style-type: none"> • A new "Integrated Resort" with casino is added to create vibrancy in the CBD • Shopping district is outside the CBD • Residential development is the trend to complement prime offices development • Marina promenade, art and convention centre is the key feature of the CBD
Hong Kong	3.2 million m ² (prime offices and 0.35 million retail space)	<ul style="list-style-type: none"> • Prime Offices • Retail • Hotels • Convention Centre 	<ul style="list-style-type: none"> • Waterfront promenade is the feature of the CBD
Shenzhen	3 million m ² (prime office space and 1.5 million of retail, hotel and other commercial spaces)	<ul style="list-style-type: none"> • Prime offices • F&B outlets • Convention centre • Shopping centres • Concert hall • Library • City Hall • Residential (high & medium end) • Administrative & cultural centre • Transport hub 	<ul style="list-style-type: none"> • Shopping district is outside the new CBD • City central park is the feature of the CBD
Paris (La Défense)	3.4 million m ² (prime office space and 0.4 million, retail/ hotel & convention)	<ul style="list-style-type: none"> • Prime offices • Retail • Residential • Convention / exhibition • Community plazas 	<ul style="list-style-type: none"> • Shopping district is outside the new CBD • City plaza and iconic gateway building is the key feature of La Défense
Melbourne	3 million m ² office 0.5 million m ² retail 0.4 million m ² hotel 0.37 million m ² entertainment	<ul style="list-style-type: none"> • Prime offices • Hotel • Supreme Court • Museums • Library • Art galleries • Botanic garden • Local government offices • Entertainment • Residential • Performances & event plazas 	<ul style="list-style-type: none"> • Riverfront promenade is the feature of Melbourne CBD
Nairobi	Not available	<ul style="list-style-type: none"> • Prime offices • Hotel • Retail • Convention centre • Parliament building • City Hall • City square • Bus terminal 	Not available
Lagos	Not available	<ul style="list-style-type: none"> • Prime offices • Hotel • Retail (markets) • Residential • Local government offices 	<ul style="list-style-type: none"> • Population is estimated at about 200,000 • Its waterfront area is the key feature of the CBD

Source: *Surbana*

3.5.3 Regional and Urban Context Study

Having estimated the commercial quantum for offices, hotels, retail and entertainment spaces, it is also important to understand the requirement and distribution of key public facilities and other commercial spaces necessary for the future development of Kigali City. Based on this, new facilities that need to be incorporated in the CBD would be proposed.

A. The Role of the Kigali CBD and the New City Centre

The Kigali Conceptual Master Plan envisions the growth of the City towards the future international airport in Bugesera. It proposes a New City Centre to the south of the City which will have a downtown, a government centre, a cultural centre, a technological centre, a medical centre and a university district.

In view of this, the redevelopment of existing CBD and surrounding areas, which are expected to be developed in the next 5-15 years, should focus mainly on the provision of financial and services related activities. Other new future economic developments should be developed and integrated in the New City Centre, where a larger area of land is available for development.

B. Decentralisation of facilities

The government's decentralisation policy stipulates the distribution of public facilities throughout the City, instead of being concentrated in the CBD areas. According to Kigali Concept Master Plan, public facilities/developments that are located or proposed to be located outside the CBD are:

- Government/Administrative Centre (Kimihurura)
- Convention Centre (Kimihurura)
- New Sport Centre (proposed in the Gasabo District)
- Education City (proposed in new city centre)
- Medical Hub (proposed in new city centre)
- Statehouse (proposed in Gasabo District)

As these facilities have been distributed in different parts of the City, they would not be integrated as part of the CBD.

Excluding the developments mentioned above, other public facilities that would complement the CBDs commercial developments, such as public libraries, museums, cultural centres, a City Square and public plazas, parks and outdoor refreshment areas, educational developments, government buildings such as the City Hall, etc. are proposed to be integrated in Kigali CBD.

3.5.4 Proposed Development Programme

Based on the analysis of the existing development trends, the estimated land take-up for the CBD and the CBD Core, the estimated commercial quantum and mix, and the requisite key facilities; as well as the recommendation made in the visioning process, the following key components are proposed to be included in Kigali CBD:

- Prime office space (in addition to existing quantum)
- Hotel space (in addition to existing quantum)
- Shopping, leisure and entertainment district (currently non-existent)
- Residential development (to be encouraged within the CBD)
- Convention & conference centre (may be considered to complement the existing one in Kimihurura).
- Public library and cultural centre / art centre / concert hall (currently non-existent)
- The City Square (currently non-existent)
- City Park (currently non-existent)
- Transportation hub (in addition to existing Nyabugogo Taxi Park)
- Reserve sites (to be safeguarded for future unanticipated uses)

The above components are translated into the Development Programme proposed for Kigali CBD, which is presented in Table 3.8.

In addition to the above, existing public facilities that are compatible with the commercial and residential uses in the CBD should be retained, subject to the analysis at physical planning stage. These include the religious institutions, healthcare facilities, transportation facilities, educational facilities and government offices.

Other existing developments that are incompatible with the uses in the CBD should be relocated outside the CBD. This includes the wholesale trading centre, manufacturing and warehousing, central prison and graveyard.

Table 3.8: Proposed Development Programme for Kigali CBD.

Land Use	Quantum	Type	Estimated Land take-up	Remarks
Office	1.5 to 2 million m ²	-	75 ha	In addition to the 150,00 m ² office space already available
Hotels	200,000 to 300,000 m ²	3 to 5 star hotels	15 ha	2,000 to 3,000 rooms in addition to the existing hotels
Retail / Entertainment District	300,000 to 500,000 m ²	Shopping centres, shopping bazaars, entertainment district	30 ha	-
Residential	2.4 million m ²	24,000 units medium and high-end apartments	100 ha	To serve 20% of the estimated 120,000 employments generated in the CBD
Convention / Conference Centre	50,000 m ²	-	2 ha	To complement the existing convention centre
Civic and Community Facilities	6 sites @ 5,000 to 6,000 m ² each	National library, museum, art and design centre, cultural centre	3 ha	-
City Square	1 ha (min)	Open space / plaza for key events and ceremonies	1 ha	-
City Park	10 ha (min)	Green open space	10 ha	The 3km long wetland abutting Muhima area is proposed to be the future City Park
Transportation	25,000 m ²	Transport hub	5 ha	In addition to the existing Taxi Park in Nyabugogo
	2-3 sites of 4,000 m ² each	Reserved for car park complexes	1.2 ha	Proposed for CBD2 where existing buildings do not provide sufficient car parking facilities

Source: *Surbana*

CHAPTER 4: CONCEPT PLAN

Based on the vision and the development programme set forth in the previous chapter, three Concept Plan options for the CBD development is presented. A comparative analysis is also done for all three options. It also presents the preferred Concept Plan option based on the feedback from the Steering Committee and the Stakeholders.

4.1 Development of the Concept Plan

The formation of the Concept Plan for Kigali CBD was guided by the following processes:

- Analysis of Opportunities and Constraints, Vision, Needs and Aspirations:**

The opportunities and constraints and the vision and recommendations presented in the previous chapters; along with the concerns and aspirations of the various stakeholders are analysed. Based on this, a broad Concept Plan for the development of the CBD is derived, as presented in Figure 4.1. As per this Concept Plan, a new CBD and CBD core is proposed to be developed in Muhima CBD, whereas, the existing civic, administrative and residential development in the Nyarugenge CBD will be conserved and intensified. The cleared site in Muhima will be the site for the start-up phase for the CBD development project.

- Development of CBD Concept Plan Options:**

Based on this broad concept, three options for the manner in which the CBD development could take place, are developed. A comparative analysis for three CBD Concept Plan options in terms of land use, density distribution, accessibility and linkages and key features is undertaken to determine how effectively each concept fulfilled the vision for the Kigali CBD.

- Finalisation of CBD Concept Plan:**

Based on the brainstorming sessions with the Technical Team and feedback received from the Steering Committee and Stakeholders, the preferred CBD Concept Plan is selected. This preferred CBD Concept Plan option is further analysed, reviewed and refined to produce the final CBD Concept Plan.

The following sections elaborate the three Concept Plan options, their comparative analysis and the final Concept Plan.

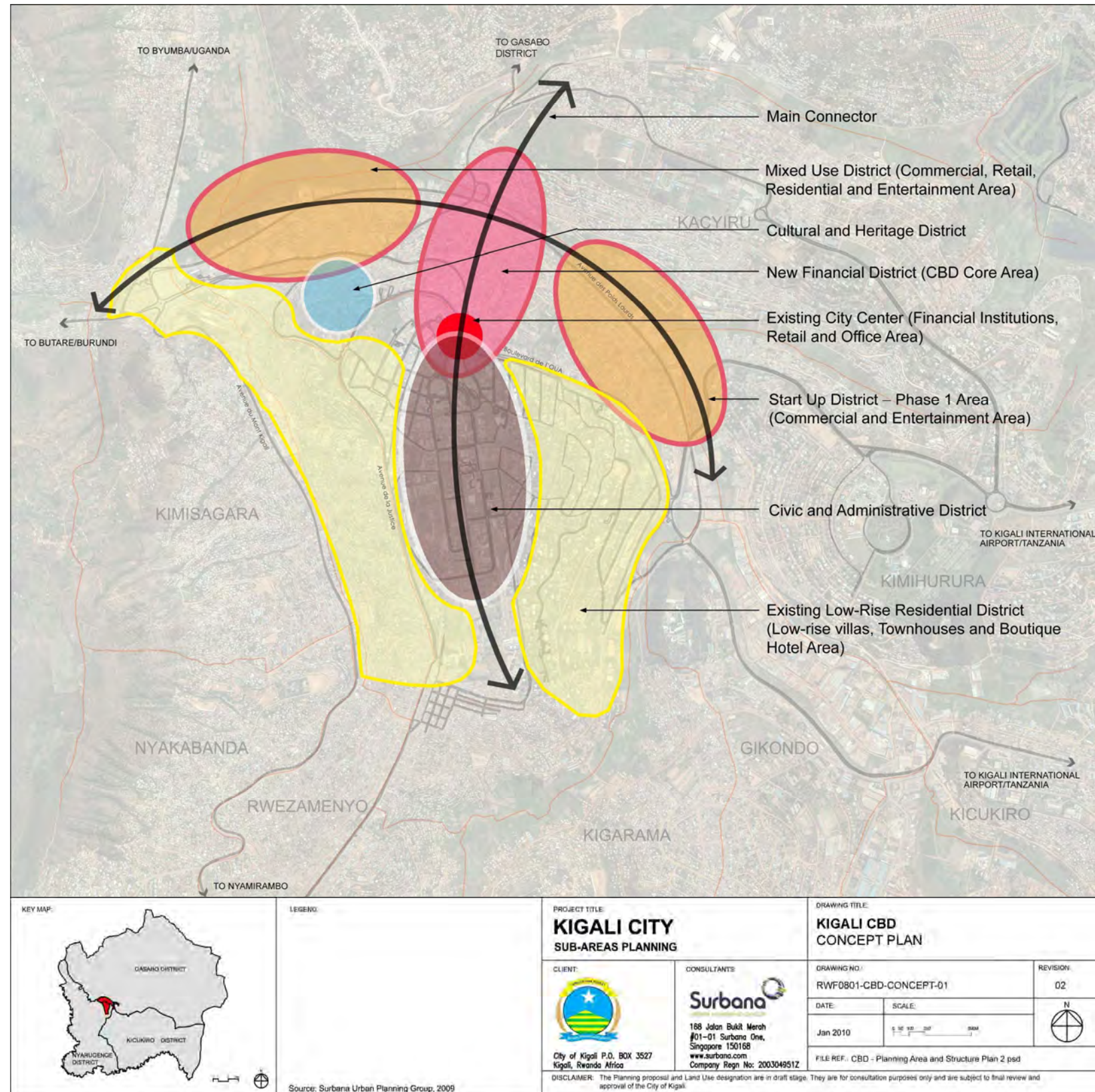


Figure 4.1: The Concept Plan.
Source: Surbana

4.2 Option 1: Mixed Use Spine Concept

The key feature of this concept option is the Mixed Use Spine which is a linear stretch of commercial and mixed use developments, interspersed with vibrant green and public spaces, and runs along the new CBD at Muhima connecting its different districts. The objective is to develop a 'green commercial corridor' which runs through the different areas of the new CBD, adopting the character of those areas as well as creating vibrant public spaces in those areas (refer to the Figure 4.4). The salient features of this concept option are:

- The existing CBD core in Nyarugenge CBD is extended further down into the wetlands as the new CBD core, thus ensuring a seamless connection of the 2 CBD cores.
- The areas along the wetland are developed for commercial uses, which benefit from the location next to the frontage road.
- The mixed use developments act as a transition zone between the commercial and residential developments.
- The wetlands are reserved for cultural and entertainment activities in an environmentally sensitive way.
- Developments in the existing civic centre are densified, while ensuring that their character is retained.
- Kimicanga is developed as an entertainment hub.

Figure 4.2 illustrates the proposed CBD structure, open space strategy and broad land use as per the Mixed Use Spine Concept Option.

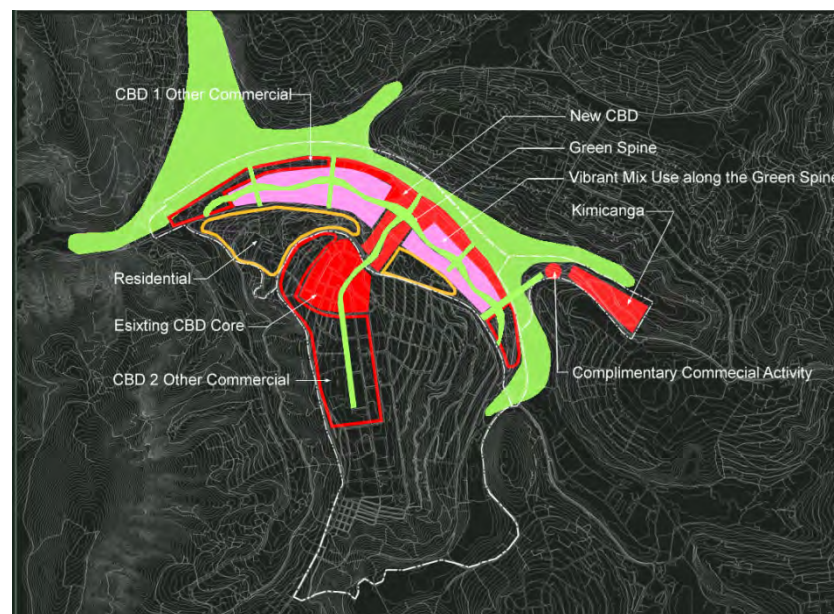


Figure 4.2: Mixed Use Spine Concept Option - Structure.
Source: *Surbana*



Figure 4.3: Mixed Use Spine Concept Option - Impression of the Central Plaza in the New CBD Core.
Source: *Surbana*

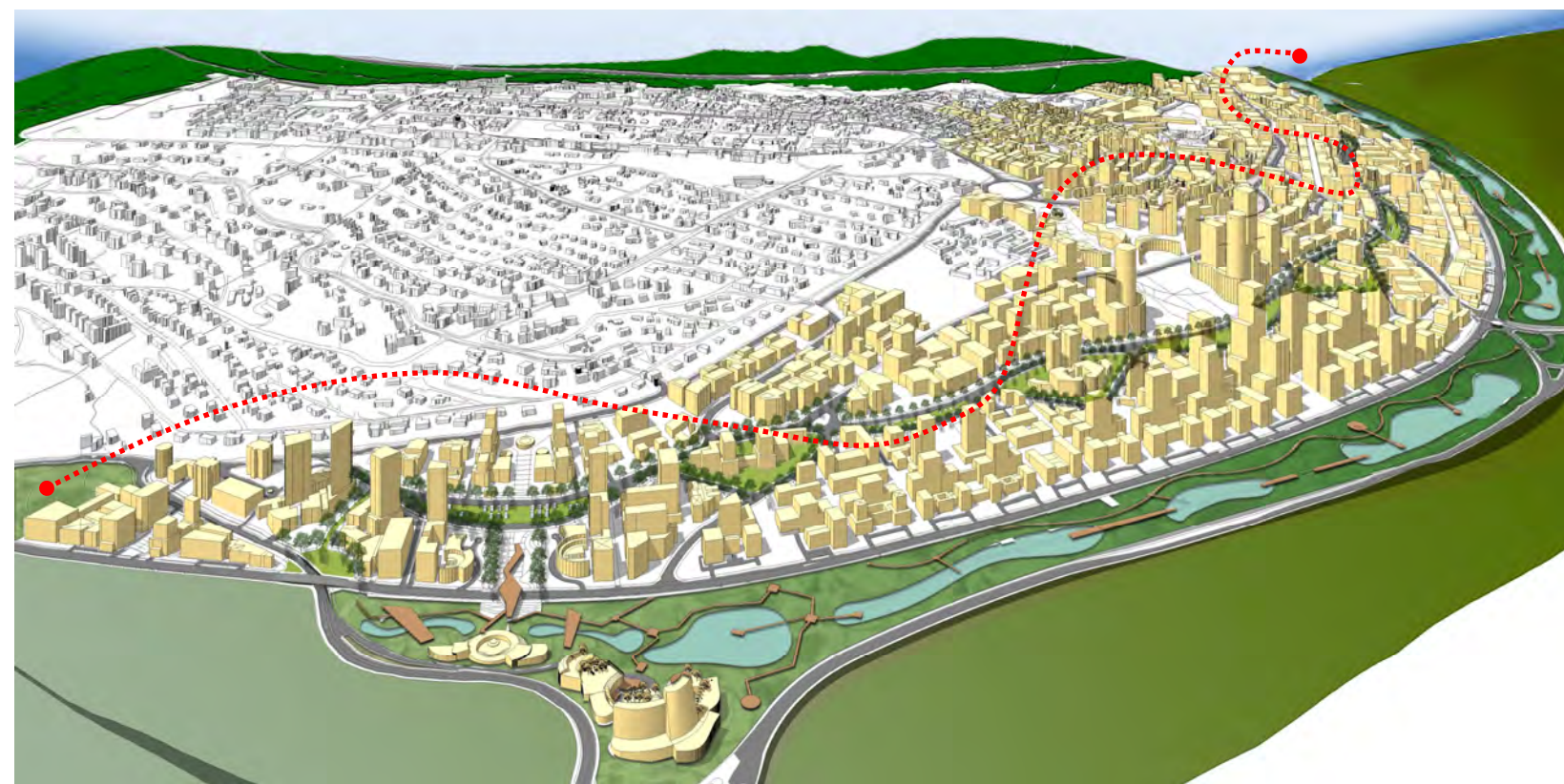


Figure 4.4: Mixed Use Spine Concept Option - Massing and Skyline.
Source: *Surbana*

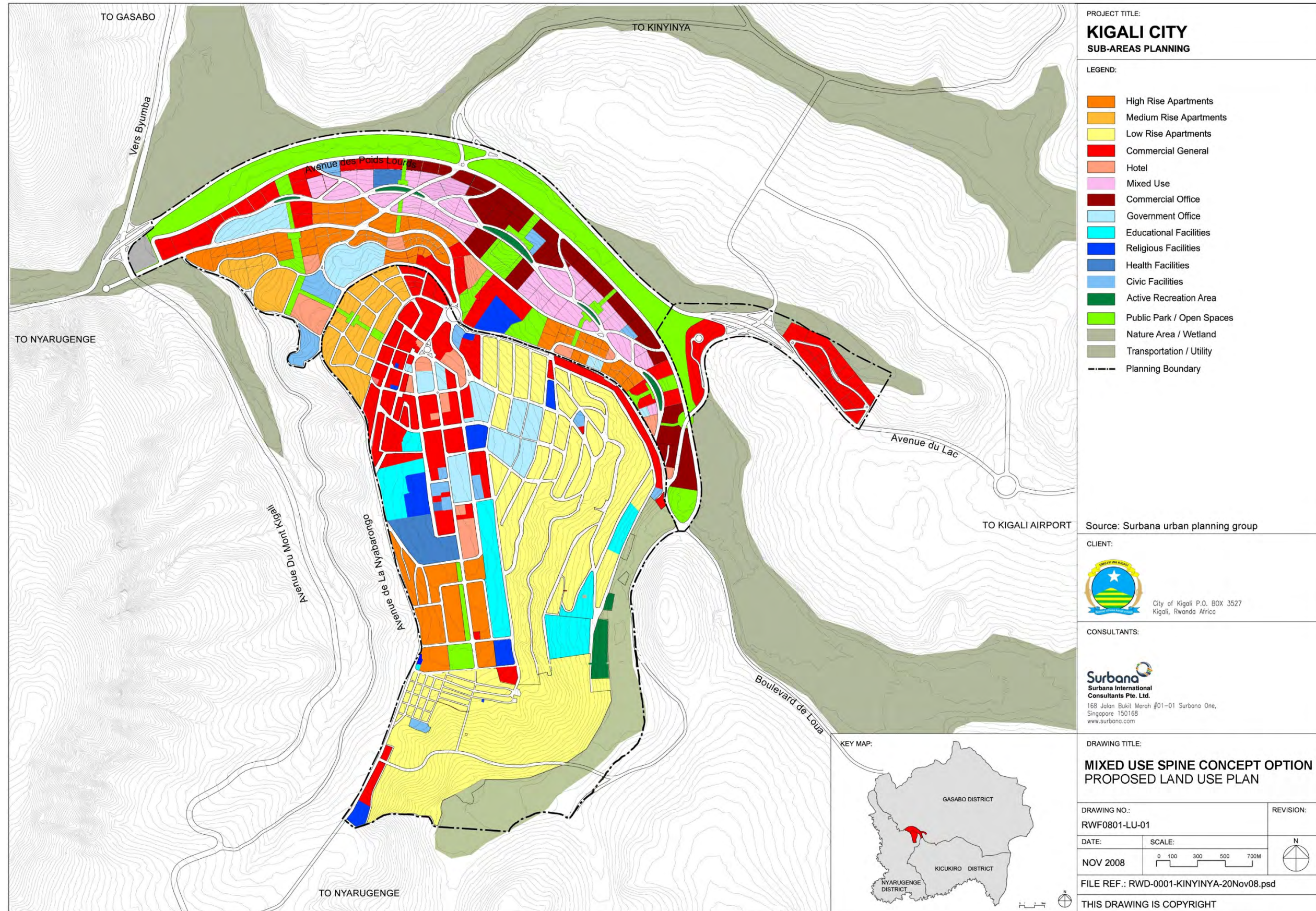


Figure 4.5: Mixed Use Spine Concept Option - Proposed Land Use Plan.
Source: Surbana

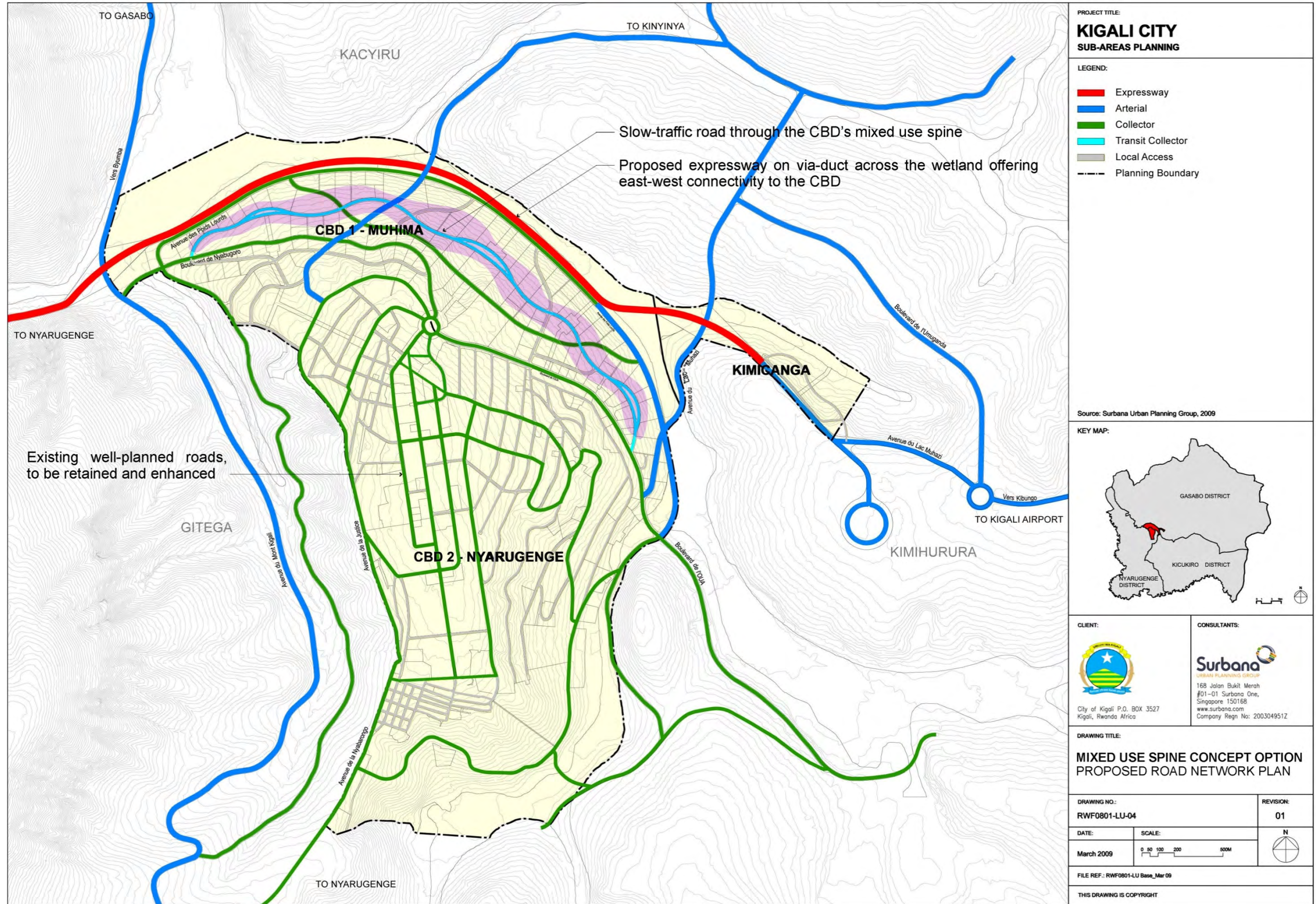
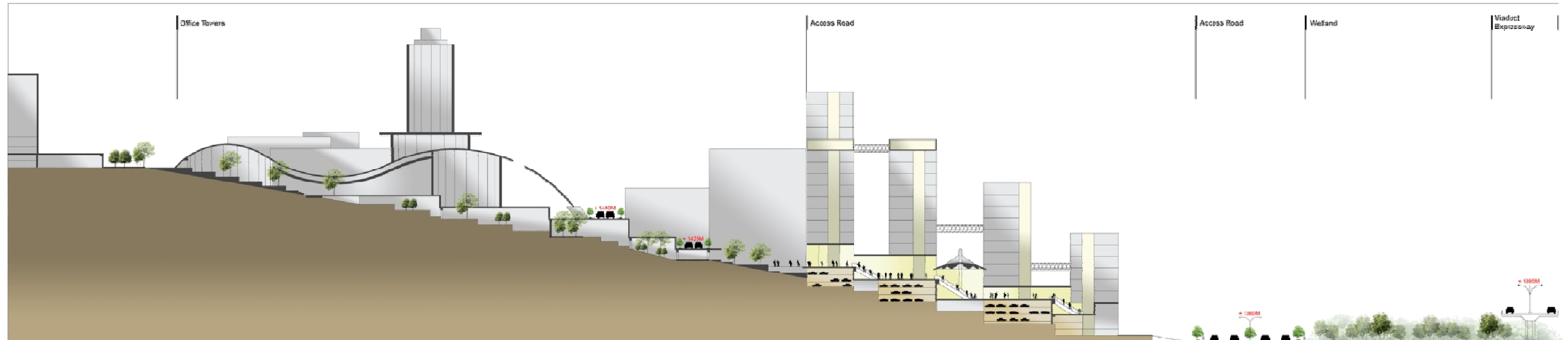
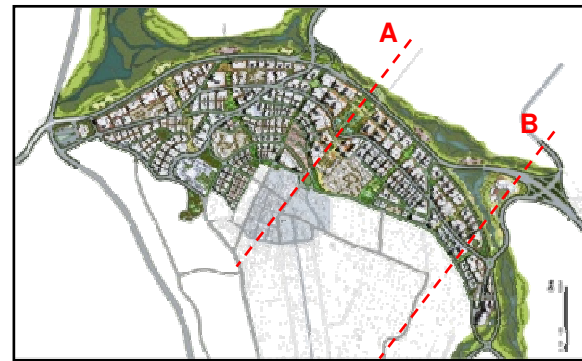


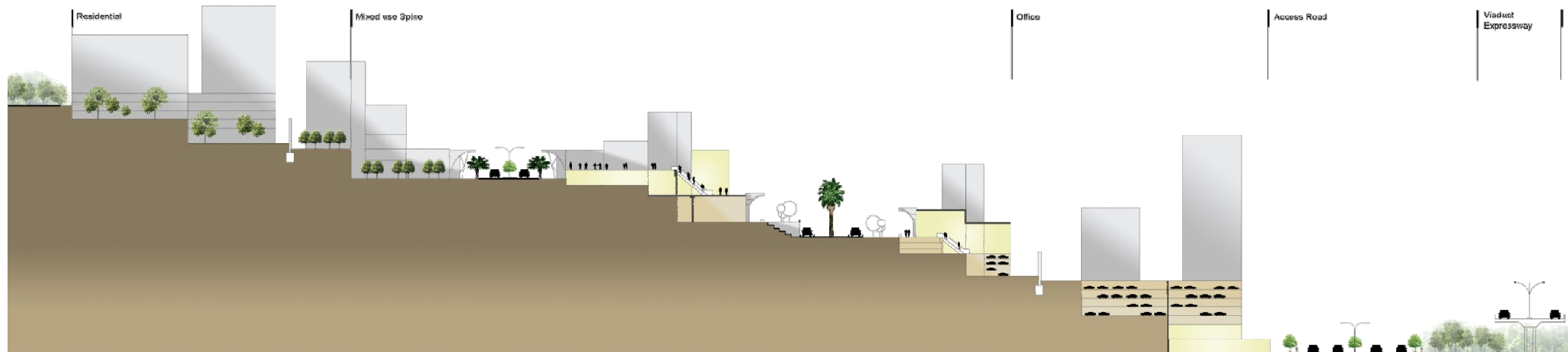
Figure 4.6: Mixed Use Spine Concept Option - Proposed Road Network Plan.
 Source: Surbana



Figure 4.7: Mixed Use Spine Concept Option - Illustrative Layout.
Source: *Surbana*



Section A-A (Through the Central Plaza)



Section B-B (Through the Phase 1 Development)

Figure 4.8: Mixed Use Spine Concept Option - Pedestrian Connectivity.
Source: Surbana

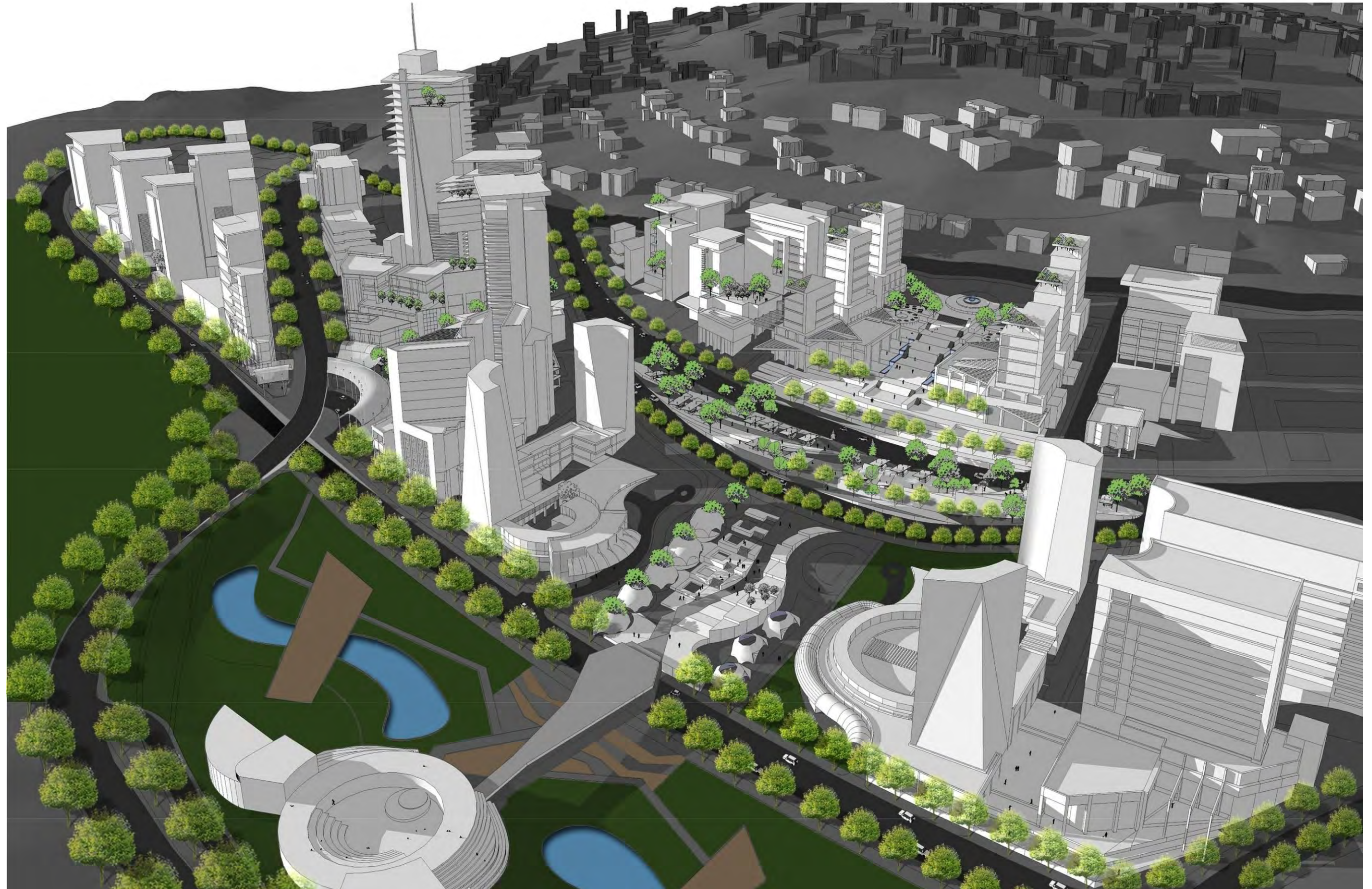


Figure 4.9: Mixed Use Spine Concept Option - Impression of Phase 1 Development.
Source: *Surbana*

4.3 Option 2: Green Fingers Concept

The key features of this concept option are the Green Fingers, a network of continuous public open spaces that seamlessly connect the commercial developments with the wetlands (refer to Figure 4.13). The objective is to create 'urban bridges' in a park-like setting, located along public open spaces, and offering connections to the opposite hill. The salient features of this concept are:

- The areas along the green corridors are developed for commercial uses, which benefit from the location next to the vibrant public spaces.
- Commercial retail developments act as transition between office development and residential developments
- The existing CBD core in Nyarugenge CBD is extended further down into the wetlands as the new CBD core, thus ensuring a seamless connection of the 2 CBD cores.
- The wetlands are reserved for public uses.
- Developments in the existing civic centre are densified, while ensuring that their character is retained.
- Kimicanga is developed as a entertainment hub.

Figure 4.10 illustrates the proposed CBD structure, open space strategy and broad land use as per the Green Fingers Concept Option.



Figure 4.10: Green Fingers Concept Option - Structure.
Source: *Surbana*

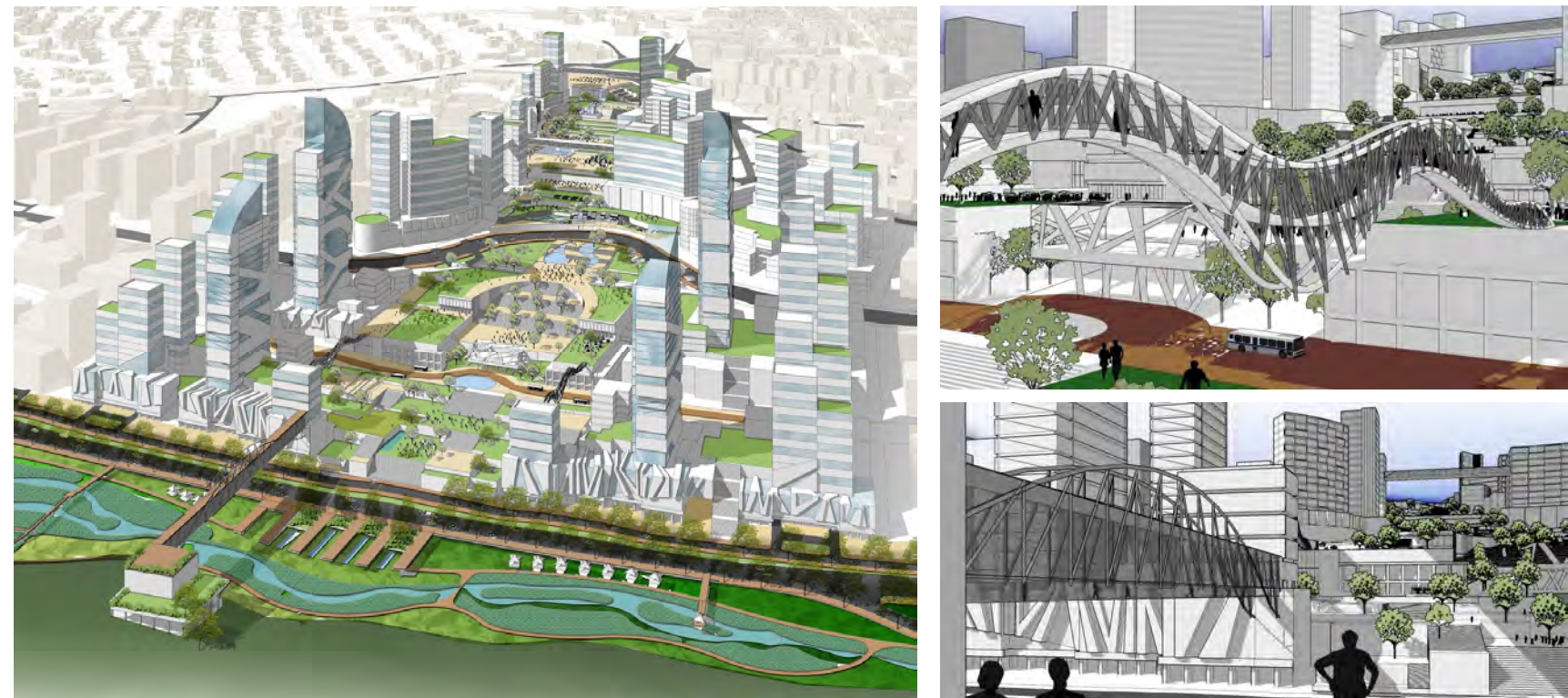


Figure 4.11: Green Fingers Concept Option - Impression of the Central Plaza in the New CBD Core.
Source: *Surbana*



Figure 4.12: Green Fingers Concept Option - Massing and Skyline.
Source: *Surbana*

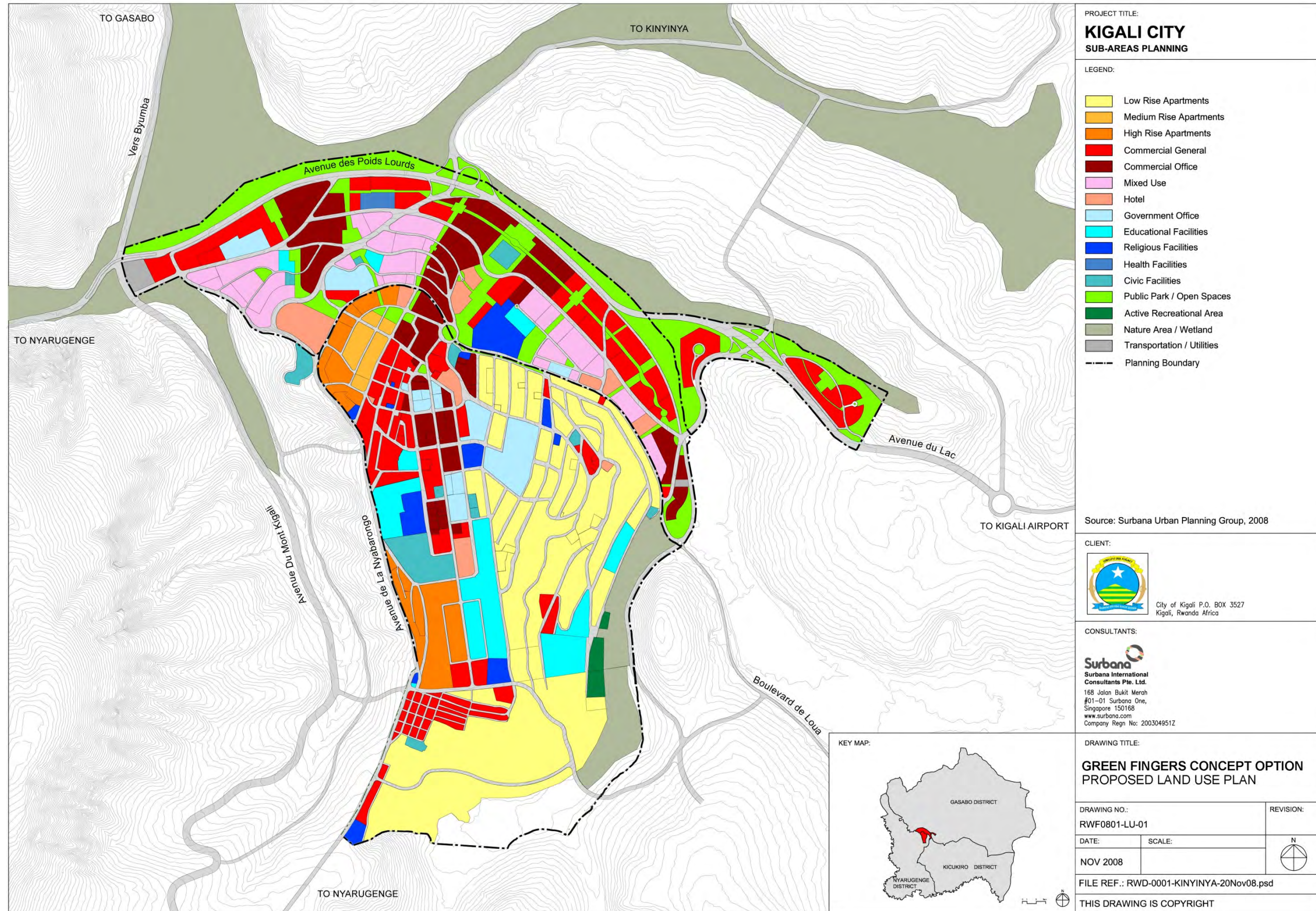


Figure 4.13: Green Fingers Concept Option - Proposed Land Use Plan.
 Source: Surbana

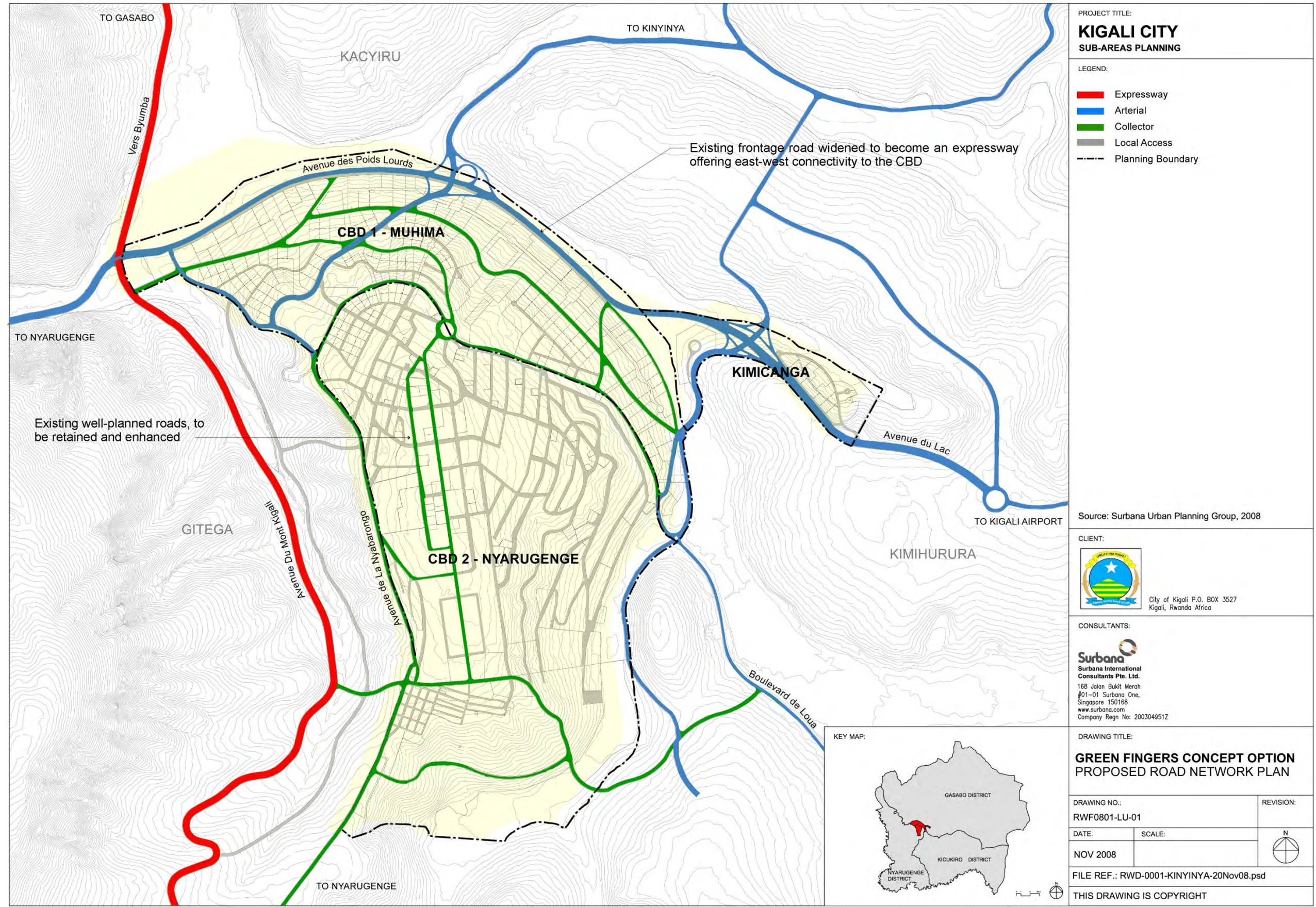
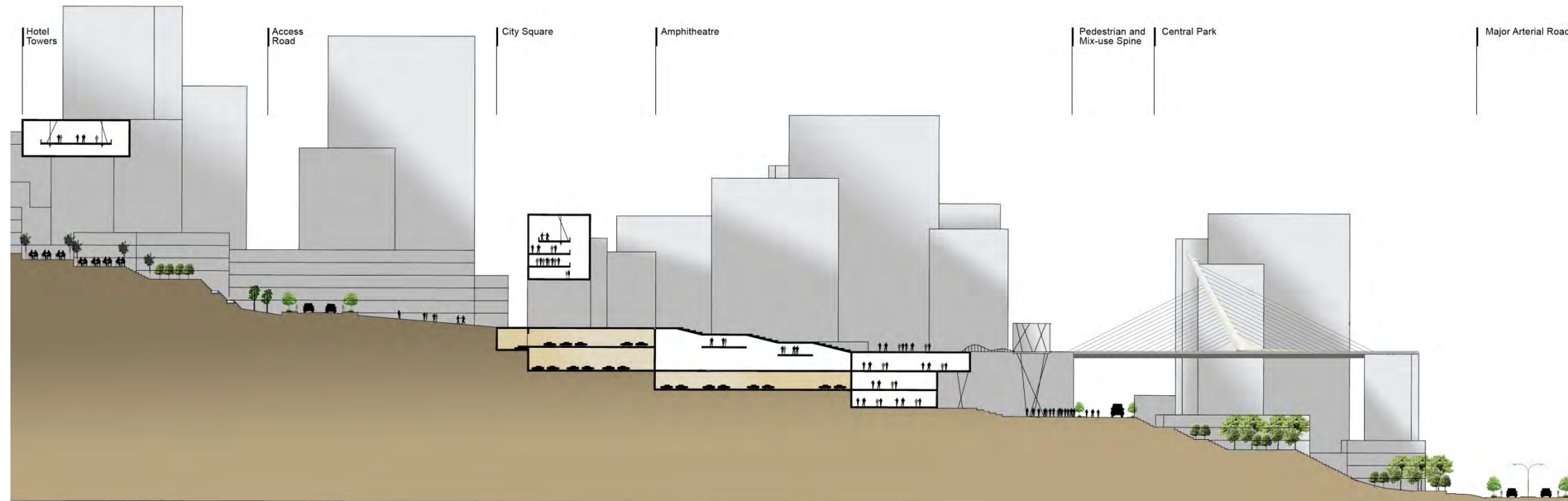
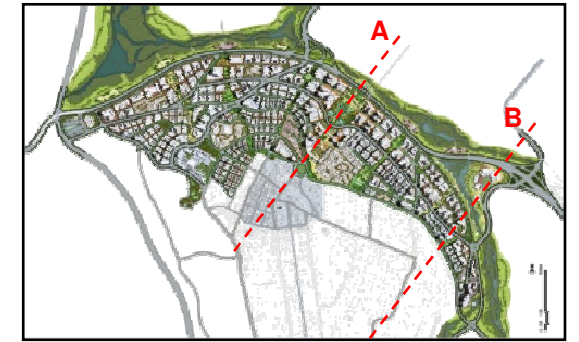


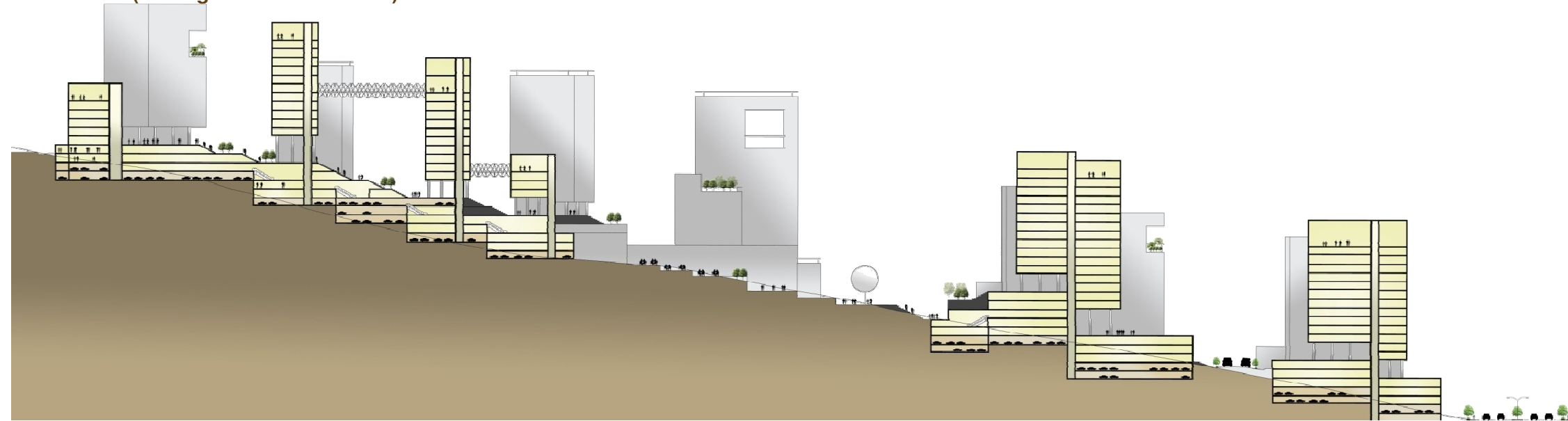
Figure 4.14: Green Fingers Concept Option - Proposed Road Network Plan.
 Source: Surbana



Figure 4.15: Green Fingers Concept Option - Illustrative Layout.
Source: *Surbana*



Section A-A (Through the Central Plaza)



Section B-B (Through the Phase 1 Development)

Figure 4.16: Green Fingers Concept Option - Pedestrian Connectivity.
Source: *Surbana*



Figure 4.17: Green Fingers Concept Option - Impression of Phase 1 Development.
Source: *Surbana*

4.4 Option 3: Compact City Concept

The key feature of this concept option is that it utilizes the cleared area in Muhima to develop the new CBD core. The objective is to utilize the readily available land, which is located strategically in between the Old City, Kacyiru and Kimihurura hills, and develop it as the City's gateway from the Kigali International Airport (refer to Figure 4.18). The salient features of this concept are:

- High-rise and high-density commercial developments are located in the Phase 1 area.
- The creation of a new site for commercial development will take off the pressure from the existing CBD core in Nyarugenge CBD.
- The Kimicanga Entertainment District is developed in integration with the CBD Core Area.
- The wetlands located between the CBD core area and Kimicanga are developed as an attractive Wetland Park, offering vibrant green and waterfront spaces which complement the modern developments in the new CBD.
- Developments in the existing civic centre are densified, while ensuring that their character is retained.

Figure 4.18 illustrate the proposed CBD structure, open space strategy and broad land use of the Compact City Concept Option.

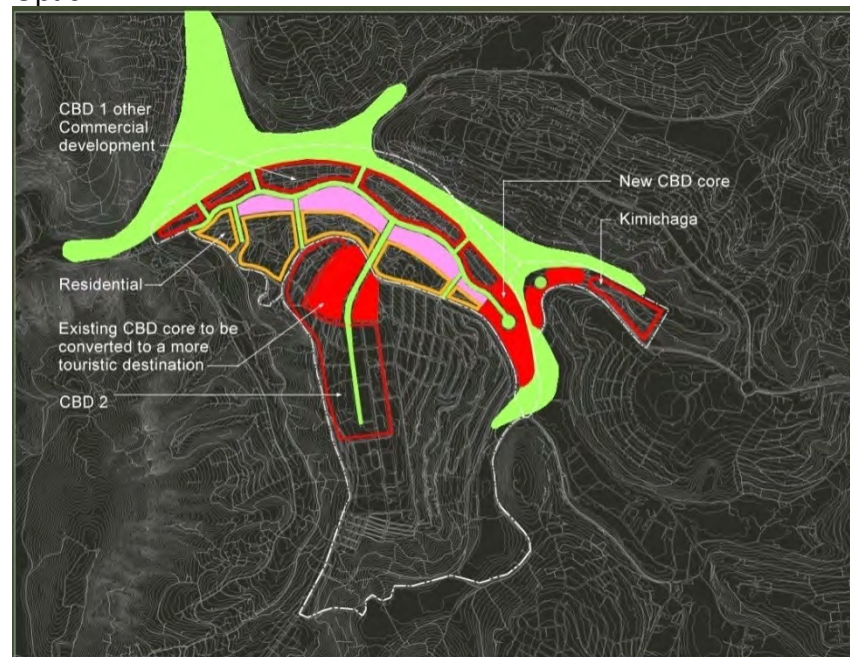


Figure 4.18: Compact City Concept Option - Structure.
Source: *Surbana*

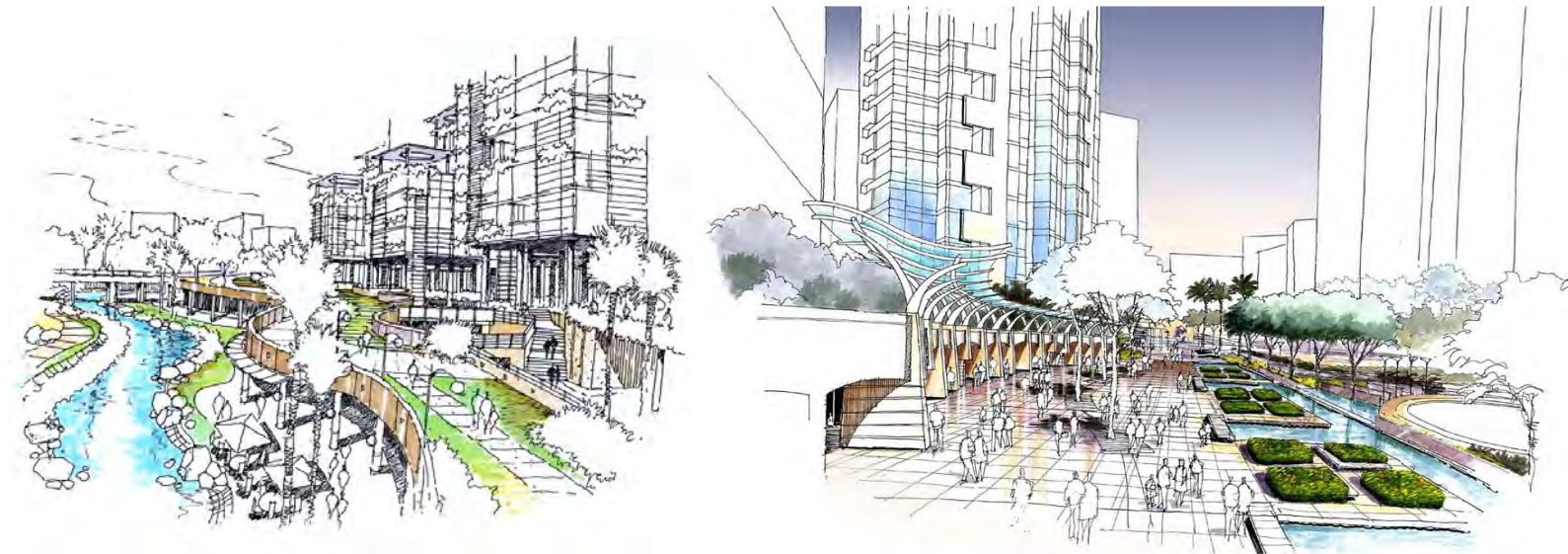


Figure 4.19: Compact City Concept Plan – Impression of Key Public Spaces.
Source: *Surbana*



Figure 4.20: Compact City Concept Option - Massing and Skyline.
Source: *Surbana*

4.5 Options Comparison

Figure 4.21 to Figure 4.23 offer a comparison of the three concept options by analysing the differences in terms of location of the CBD Core and start-up site and the key features. Table 4.1 present the comparative advantages and disadvantages of the three concept options.

Mixed Use Spine Concept

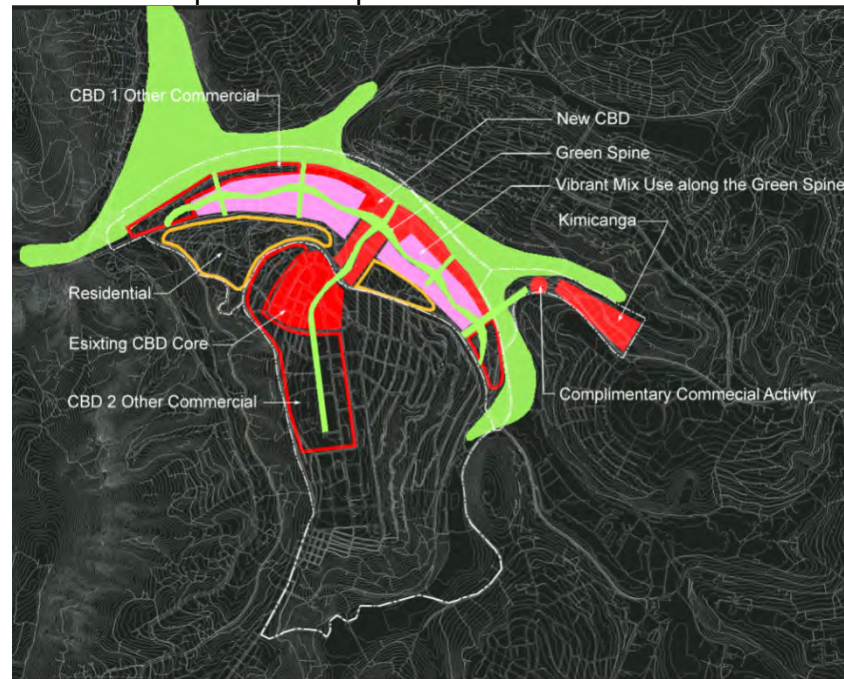


Figure 4.21: Mixed Use Spine Concept Option - Structure Plan.
Source: *Surbana*

- CBD Core is located along the low-lying flat areas of Muhima Planning Area.
- The cleared site in Muhima is the Phase 1 start-up site.
- The “Mix Use Spine” is the key feature.

Green Fingers Concept

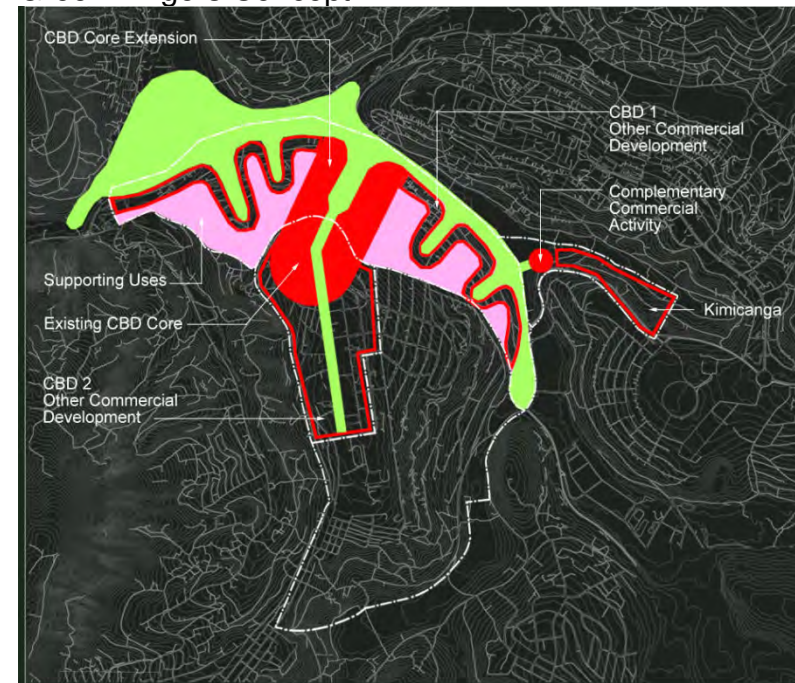


Figure 4.22: Green Fingers Concept Option - Structure Plan.
Source: *Surbana*

- The existing City Centre is extended to form the new CBD Core.
- The cleared site in Muhima is the Phase 1 start-up site.
- North-south running “Green Fingers” with the series of bridges across the wetlands are the key feature.

Compact City Concept

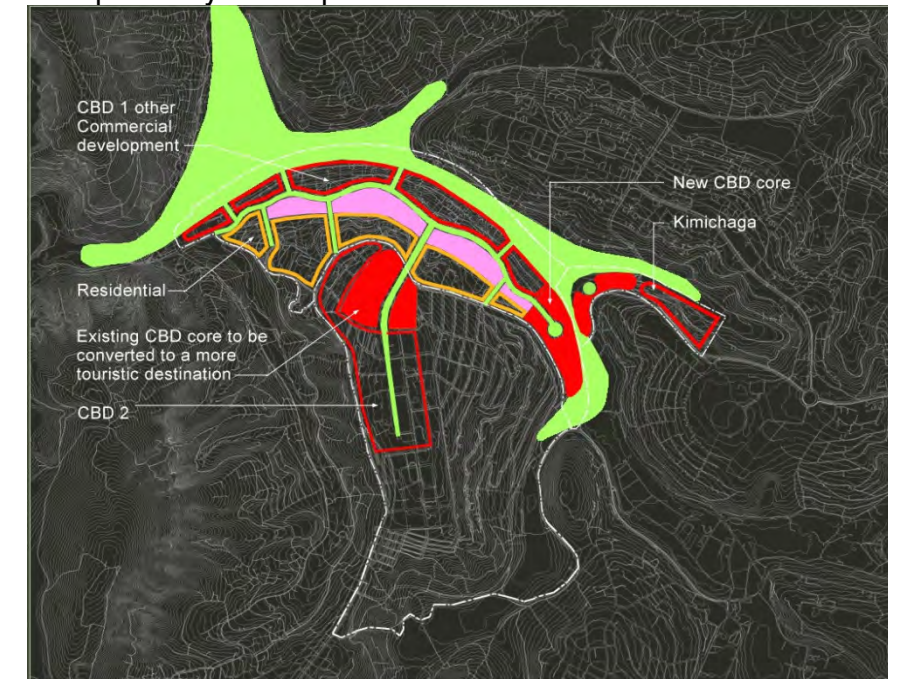


Figure 4.23: Compact City Concept Option - Structure Plan.
Source: *Surbana*

- The cleared site of in Muhima will become the new CBD Core.
- The cleared site in Muhima can be immediately developed as the new CBD core.
- The Compact CBD Core, the centre of the City’s main urban developments, is the key feature.

4.6 Options Assessment

Table 4.1: Comparison of Concept Options.

ASSESSMENT CRITERIA	Option 1:	Option 2:	Option 3:
	Mixed Use Spine Concept	Green Fingers Concept	Compact City Concept
ACCESSIBILITY			
Optimising the transportation network's level of service, and accessibility.	<ul style="list-style-type: none"> The high-density developments of the CBD Core are located in low-lying areas of Muhima, making them highly accessible with optimal LOS. 	<ul style="list-style-type: none"> The high-density developments of the CBD Core are located near the existing City Centre, on higher slopes, reducing their accessibility and increasing the traffic strain. 	<ul style="list-style-type: none"> The high-density developments of the CBD Core are located in low-lying areas along the wetland, making them highly accessible with optimal LOS.
CAPITAL INVESTMENT			
The amount of capital needed to execute the option.	<ul style="list-style-type: none"> More land to be acquired for development (about 150 ha). 	<ul style="list-style-type: none"> More land to be acquired for development (about 150 ha). 	<ul style="list-style-type: none"> Less land to be acquired for development (about 55 ha already acquired in Muhima CBD).
INVESTMENT RETURNS			
The profit generated from land sale.	<ul style="list-style-type: none"> More land available for sale. 	<ul style="list-style-type: none"> More land available for sale. 	<ul style="list-style-type: none"> Less land available for sale.
LAND VALUE			
The impact of land value in existing City Centre due to proximity of the CBD Core location.	<ul style="list-style-type: none"> CBD core located near the existing City Centre will result in the increase of it's the land value. 	<ul style="list-style-type: none"> The continuation of the old city centre as the CBD Core will tremendously increase its land value. 	<ul style="list-style-type: none"> The land value of the old city centre will be reduced as the CBD Core is located away.
STRATEGIC LAND BANKING			
Government ownership of high value land and long term holistic planning approach.	<ul style="list-style-type: none"> The land acquired for redevelopment gives a long term strategic benefit to the government due to a larger quantum of government owned land. 	<ul style="list-style-type: none"> The land acquired for redevelopment gives a long term strategic benefit to the government due to a larger quantum of government owned land. 	<ul style="list-style-type: none"> Private ownership of land in the CBD can create implementation issues in long term.
FEATURES			
The key features, which makes the CBD unique and distinct.	<ul style="list-style-type: none"> The "mixed use spine". The Central Plaza with 'Rock Hotel'. 	<ul style="list-style-type: none"> The green connectors within the CBD and the pedestrian bridges across the wetlands. The Central Plaza. 	<ul style="list-style-type: none"> The public plazas and connectors to Kimicanga.

Source: *Surbana*

4.7 Recommended Concept Option

The recommended Concept Option for Kigali CBD is a combination of the unique features of all the three presented concept options (refer Figure 4.24). The features selected from the different options to be incorporate in the final Concept Plan include:

Concept Option 1: Mixed Use Spine

- The *Mixed Use Spine* is recommended to be located along Muhima CBD.
- The location of the new CBD Core along the low lying flat areas of Muhima is recommended.

Concept Option 2: Green Fingers

- A series of Green Fingers are recommended to be running north-south across Muhima CBD and continued as pedestrian bridges across the wetlands.
- The on-grade expressway along the wetland is recommended as against the via-duct proposed in option 1.

CBD Concept Option 3: Compact City Concept

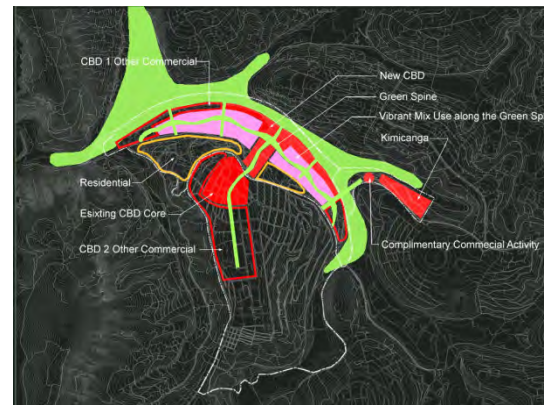
- The high-density commercial development in the Phase 1 site as proposed in the *Compact City Concept* is recommended for its 'Gateway' character from Kigali International Airport.

The Recommended CBD Concept:

The recommended CBD option will be a distinctive, symbolic and functional heart of Kigali City and includes the following elements:

- The CBD Core area along the low lying flat areas provides opportunities to encourage high-end intense activities closer to the expressways and interchanges thus reducing the traffic stress from the existing City Centre and keeping the public spaces free from vehicular traffic.
- The centre piece of the recommended CBD concept is the CBD Core area. Its seamless connection to the exiting city centre and the wetland park proposal give this option a strategic benefit.
- The linear city structure provides opportunities for an efficient land use planning and segregated transportation system encouraging a pedestrian friendly environment.
- The "Green Fingers" interspersed between the commercial developments acts as a primary linkage between the commercial developments and the wetland park developments. It also acts as public plazas between the high-density commercial developments similar to traditional Rwandan Courtyard Planning.

Option 1 – Mixed Use Spine



Option 2 – Green Fingers



Option 3 – Compact City

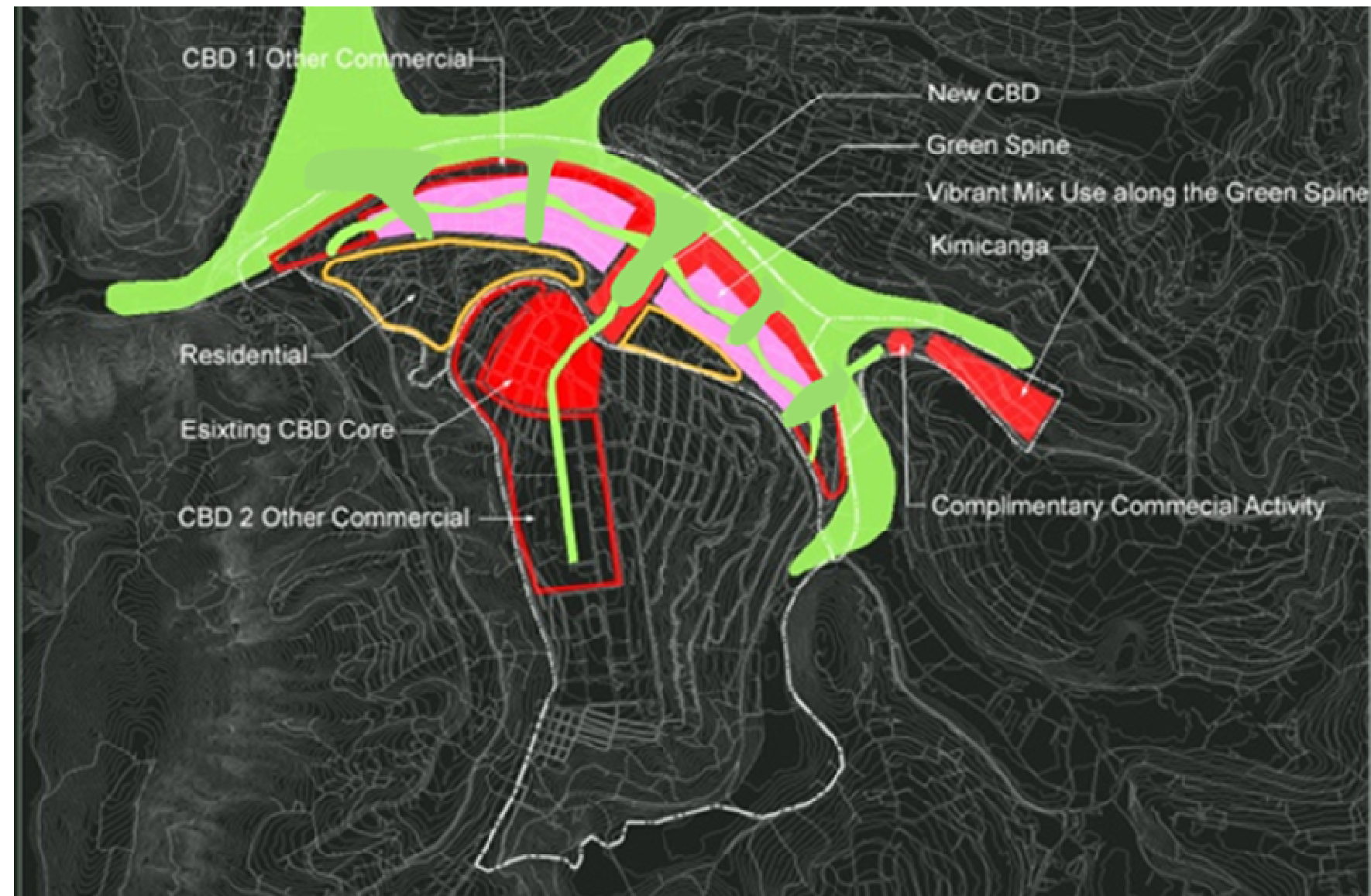
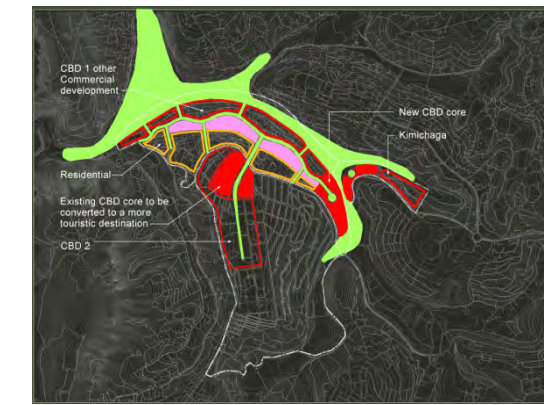


Figure 4.24: The Recommended Concept Plan.
Source: *Surbana*

CHAPTER 5: DETAILED MASTER PLAN AND URBAN DESIGN

The preferred concept option discussed in the previous chapter has been refined based on the feedback received from the Steering Committee and the Stakeholders to form the Structure Plan for Kigali CBD. A concept plan illustrates the key strategies of the proposed design for a planning area, whereas the structure plan helps translate those strategies into a physical plan which sets the direction for detailed physical planning and urban design. The Structure Plan proposed for Kigali CBD, prepared based on the preferred Concept Plan, is presented in Figure 5.1.

5.1 Kigali CBD - Proposed Structure Plan

The Structure Plan establishes the location of key activities in the CBD as well as the linkages between them. The salient features of the Structure Plan proposed for Kigali CBD include:

- Development of the new CBD in Muhima (CBD1), revitalization of the existing CBD in Nyarugenge (CBD2) to complement the new CBD as well as preserve the historic and cultural character, and creation of an entertainment district in Kimicanga.
- Creation of the new CBD core as an extension of the existing CBD core, in the flatter areas along the Wetlands in Muhima.
- Development of a linear mixed-use spine running along the length of CBD1, which offers vibrant commercial and public spaces.
- Integration of the natural Wetlands into the urban fabric of the CBD in the form of 'Green Fingers'. These green fingers form green connectors which link the existing CBD and the new proposed CBD to the wetlands and the key developments in the surroundings.
- Development of the site cleared in Muhima (CBD1) as the startup phase of Kigali CBD development.

This Structure Plan will form the basis for the development of the Detailed Master Plan and Urban Design for Kigali CBD, which will in turn form the basis for development of the proposed Land Use Plan, the proposed Transport and Infrastructure Plans, as well the Development Control and Urban Design Guidelines for key areas. It will also be the basis for Master Plan implementation, land acquisition and public facilities provision.

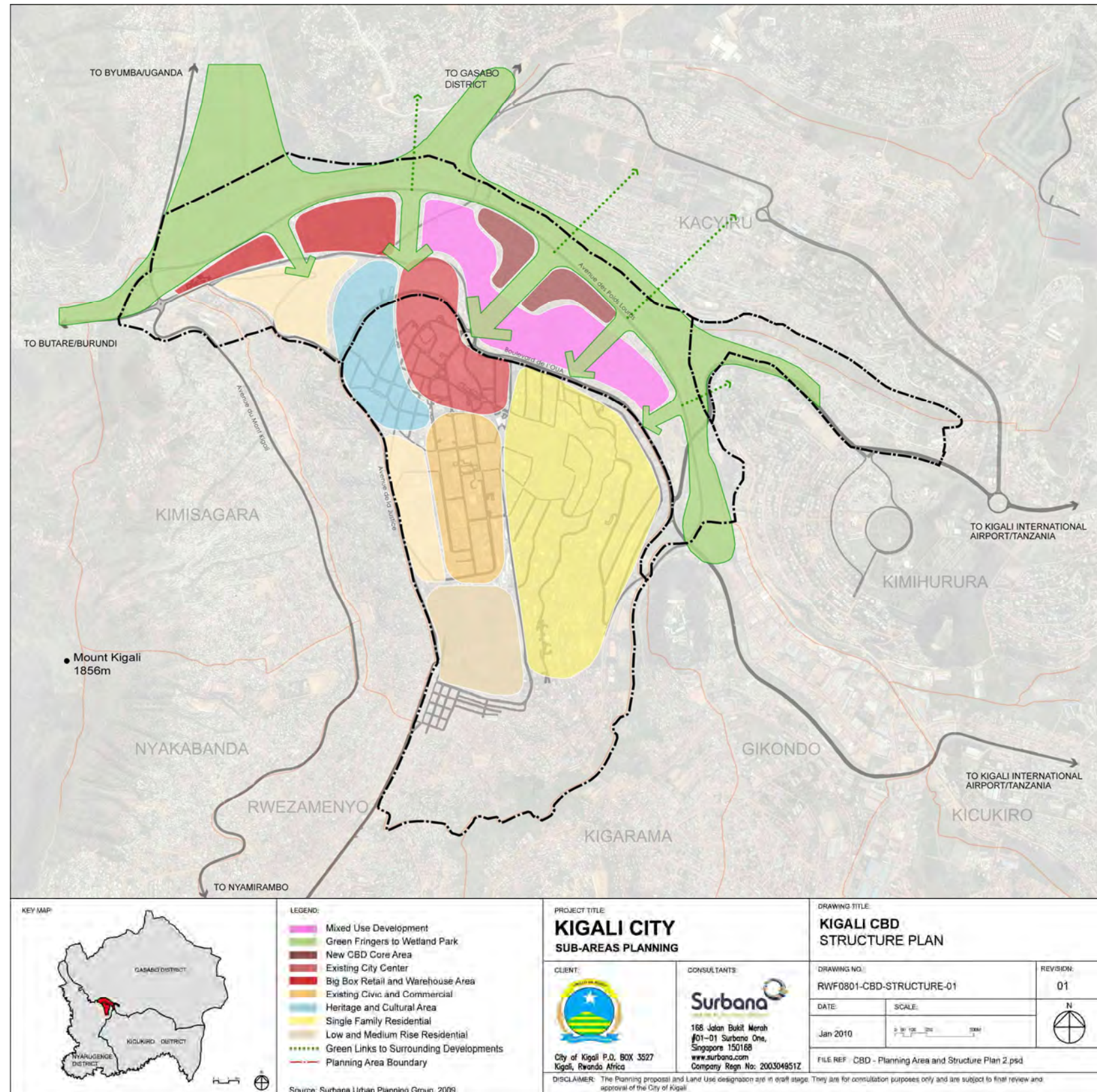


Figure 5.1: Kigali CBD – Structure Plan.
Source: Surbana

5.2 Planning Areas

As the three CBD areas, namely, Muhima CBD (CBD1), Nyarugenge CBD (CBD2) and Kimicanga have different contexts and characteristics, the planning approach and urban design proposal for each of these areas is distinct. The proposed Master Plan and Urban Design for each of these areas are hence, presented separately and are discussed in this chapter.

In addition to the Detailed Master Plan for the 3 CBD areas, detailed Urban Designs and Urban Design Guidelines have also been developed for a few key areas within these CBD areas. These areas have been selected due to their strategic location, or their significant commercial, recreational or heritage value and are discussed in the next chapter.

Table 5.1 and Figure 5.2 present the planning area boundaries of the three main CBD areas as well as the location and extent of the key areas which have been selected for detailed Urban Design.

Table 5.1: Kigali CBD - Planning Areas.

Location	Planning Area	Type	Size (ha)	Function
Muhima	Muhima CBD (CBD1)	Overall CBD Area	373.42	New Central Business District
	New CBD Core	Key Area	17.64	Financial Hub
	Kigali CBD Phase 1	Key Area	32.93	Start-up Phase
	Kigali CBD Wetland Park	Key Area	177.94	Recreational and Educational Development
	Nyabugogo Transport Hub and Market	Key Area	16.39	Regional Bus Interchange and Market
Nyarugenge	Nyarugenge CBD (CBD2)	Overall CBD Area	455.53	Existing Central Business District
	Centre Ville Roundabout Redevelopment	Key Area	40.95	Existing CBD Core
	Nyarugenge Heritage Village	Key Area	6.87	Heritage
	Upper Kiyovu Residential Development	Key Area	21.49	High-end Housing Development
Kimicanga	Kimicanga CBD	Overall CBD Area	64.65	Entertainment District

Source: Surbana

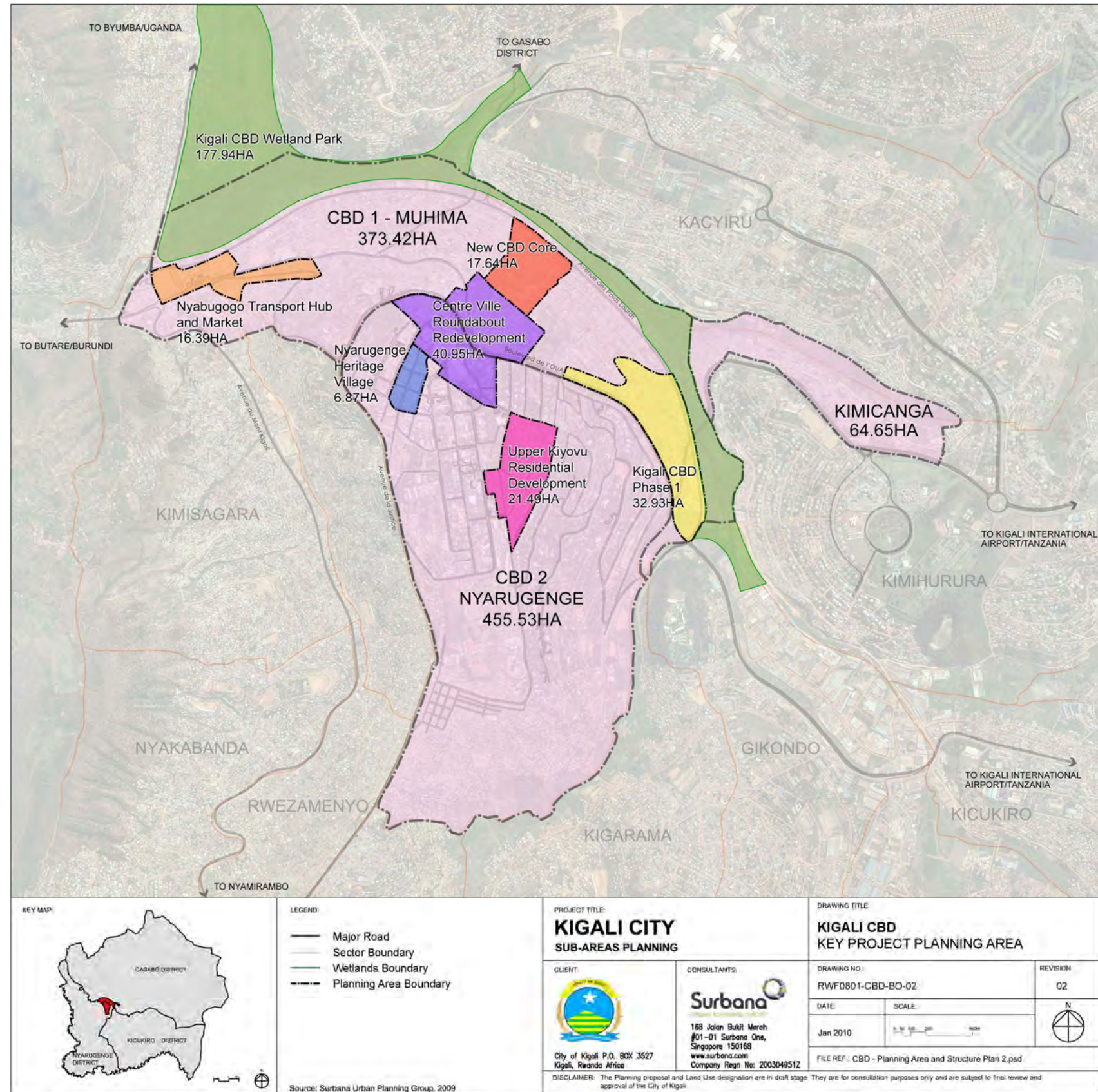


Figure 5.2: Kigali CBD – Planning Area Boundaries.
Source: Surbana

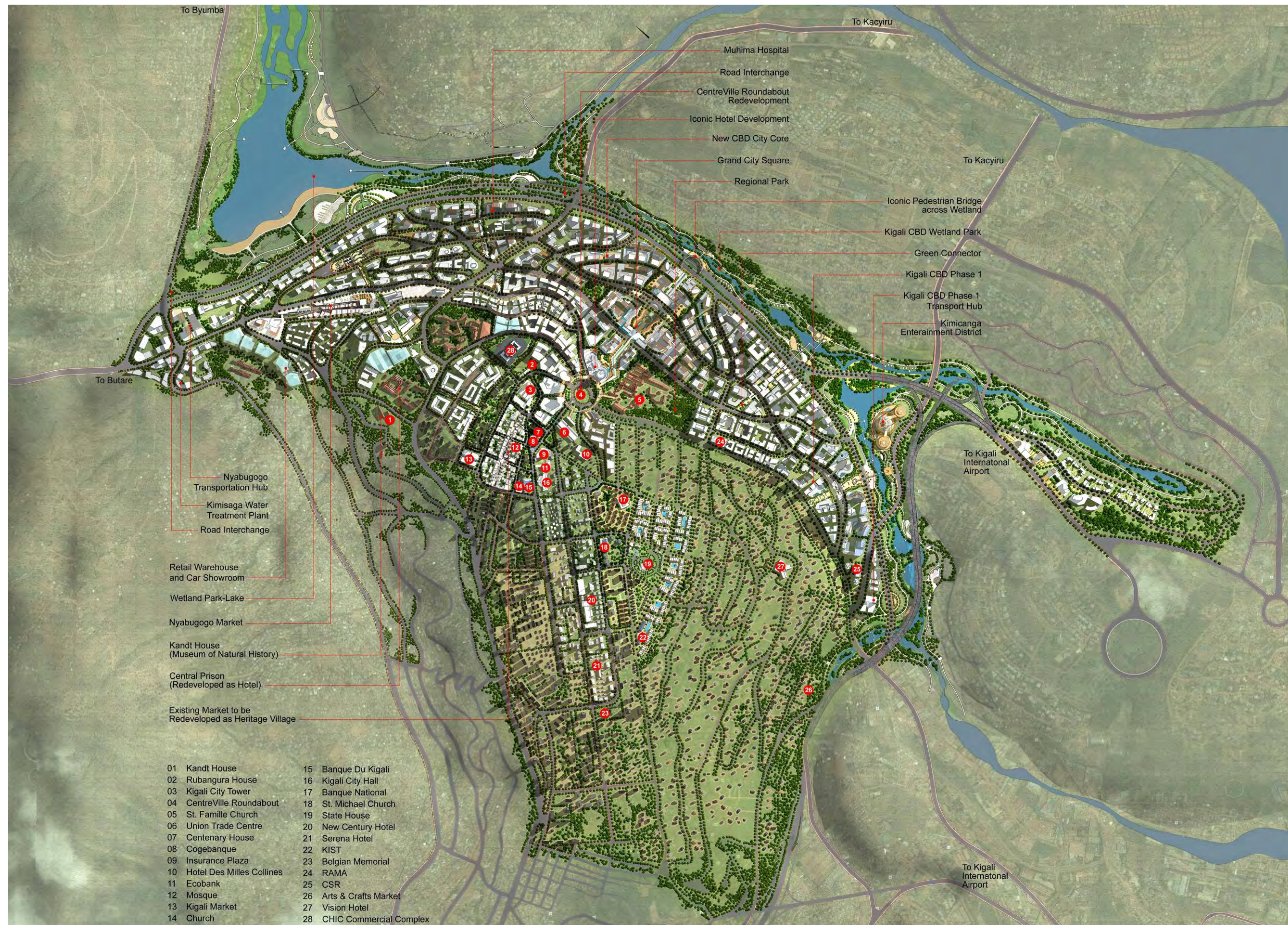


Figure 5.3: Kigali CBD – Illustrative Plan.
Source: *Surbana*

The Green Financial Hub of Central Africa

- The Premier Financial Hub of Central African Region.
- The Landmark Activity Node of Rwanda.
- The Main Tourist Destination in Kigali City.
- A Sustainable and Green CBD.



Figure 5.4: Kigali CBD – Aerial Perspective.
Source: *Surbana*

5.3 Kigali CBD – Road and Transportation Plan

Road and Transportation Planning is one of the key elements of the master planning and urban design process, as it ensures connectivity to other parts of the City, frames the land uses and ensures easy accessibility to each development parcel.

Kigali CBD is located in close proximity to other urban nodes of the City as well to key developments such as the existing and new airports and the future growth areas. Being envisioned as a regional commercial centre, it will attract a high volume of traffic. Hence, it is important to ensure that it is regionally well-connected and is planned to have congestion-free roads.

The goals and aspirations for the Transportation Plan for Kigali CBD include:

- Expansion and improvement to the current road network.
- Developing comprehensive parking policies and guidelines.
- Maintaining the current public transport modal share of at least 75%.
- Improving the current and planning for new public transport modes and facilities.
- Providing a safe and efficient pedestrian and bicycle network.

The following key processes are undertaken to arrive at the proposed Transportation Plan:

- Identifying an improved connectivity between the CBD and other regional nodes in Rwanda.
- Estimating a traffic forecast.
- Addressing attraction and dispersion of traffic to and from the CBD areas.
- Common planning considerations.

Figure 5.5 illustrates the connectivity of Kigali CBD with the rest of the City. The CBD is immediately connected to nearby commercial nodes by the green lines. Improving the east-west link with a high capacity road such as an expressway (red line) enhances the linkage between the airport and CBD. The expressway brings commerce and job opportunities to the CBD from other nodes (blue lines).

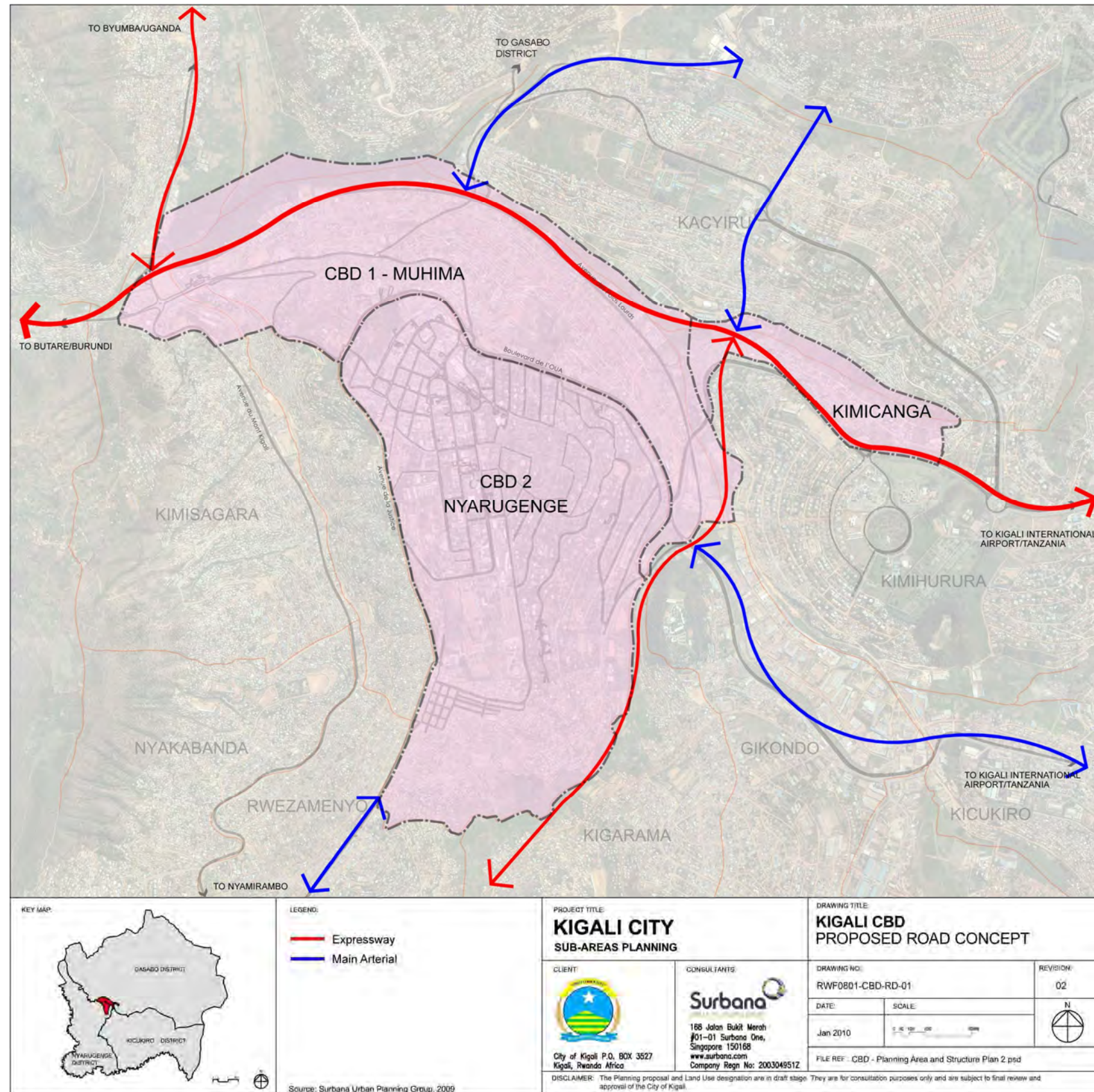


Figure 5.5: Kigali CBD–Proposed Road Concept.
Source: Surbana

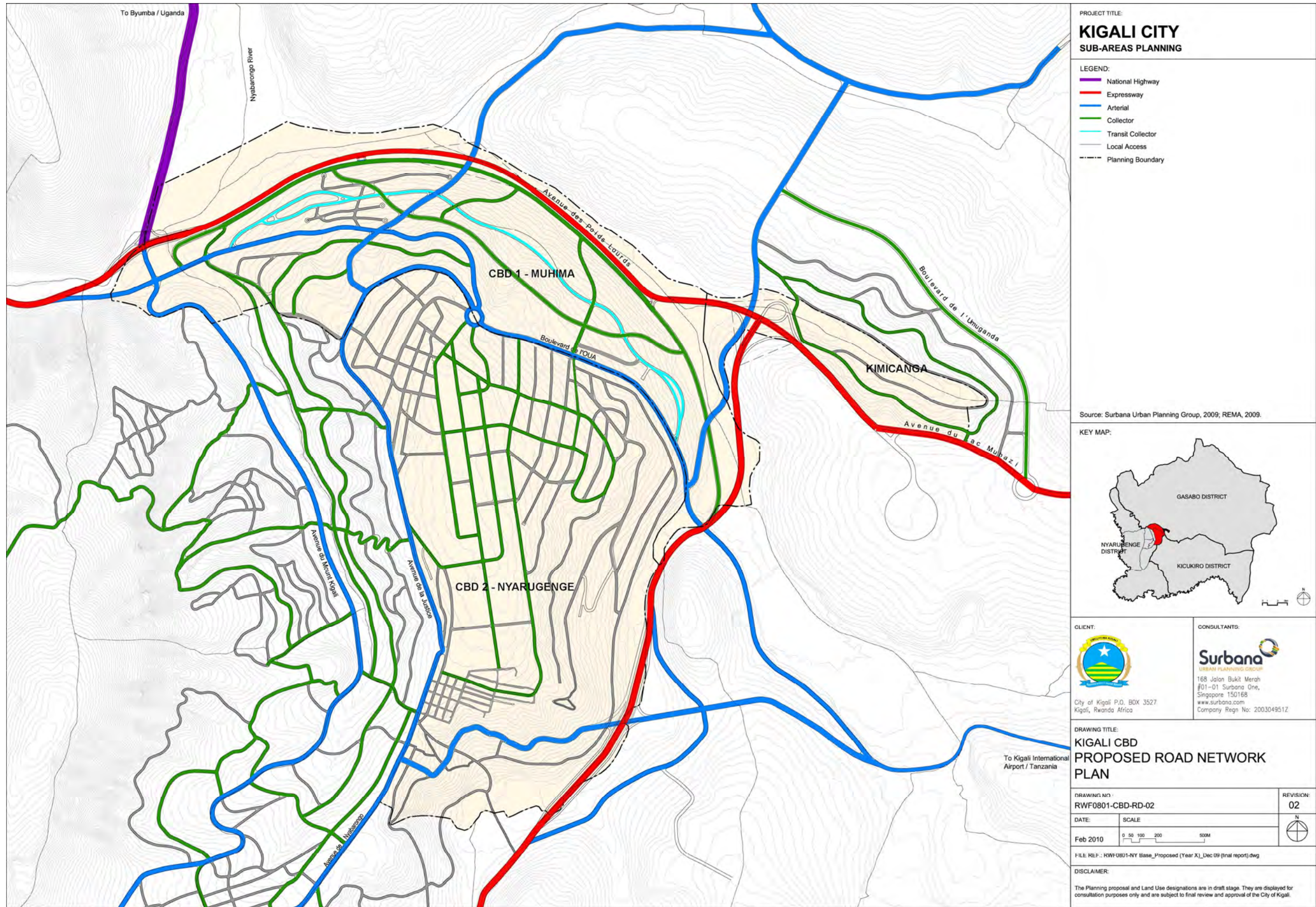


Figure 5.6: Kigali CBD – Proposed Road Network Plan.
Source: Surbana

5.4 Kigali CBD – Pedestrian Network Plan

As one of its sustainability goals, the planning for the CBD is to encourage walking within its areas. Muhima CBD is expected to offer seamless connectivity for pedestrians and cyclists between major destinations, public spaces and points of interest. Besides this, urban design regulations ensure that developments in key areas are fenceless thereby allowing through movement (refer to Figure 5.8).

Four types of pedestrian linkages are proposed in Muhima CBD:

Wetland Promenades - along the proposed Wetland Park.

Arcades - along all developments abutting public open spaces.

Overhead Links - linking high-rise developments across major roads and public open spaces.

Underpasses - linking basement developments of neighboring plots through underground linkages.

Wetland Promenades

Abutting the wetlands, promenades provide users a safe and comfortable platform to navigate around the wetland parks.

Pedestrian and bicycle paths meanders through the slopes on the periphery of the wetlands while boardwalks extend across the wetlands to bridge these into a seamless network. By creating minimal footprints for the boardwalks, the impact on the eco-system can be minimised while allowing people to come as close as possible to nature.

Pockets of commercial and activity areas are also introduced at strategic sites and double as gateways or internodes between the Promenade and surrounding CBD developments. These areas should consist mainly of temporary and lightweight structures thereby minimizing the impact on the immediate environment and biodiversity.

A strip of landscape between the commercial zones and expressway increases the physical buffer between the wetlands from noise and air pollution along the expressway.

Arcades

As part of the building envelope design in areas abutting public spaces, arcades provide users a continuous, sheltered passageway and form the backbone of the pedestrian network.

Integrated with the retail developments along the ground floor, these arcades add to the vibrancy of the streetscape and enhance the city experience for pedestrians. They could be on-grade, elevated or sunken in relation to the surroundings thereby introducing a layered urban experience and highlight the hilly topography of Kigali city. Notwithstanding this opportunity to craft a unique urban character for Kigali City,

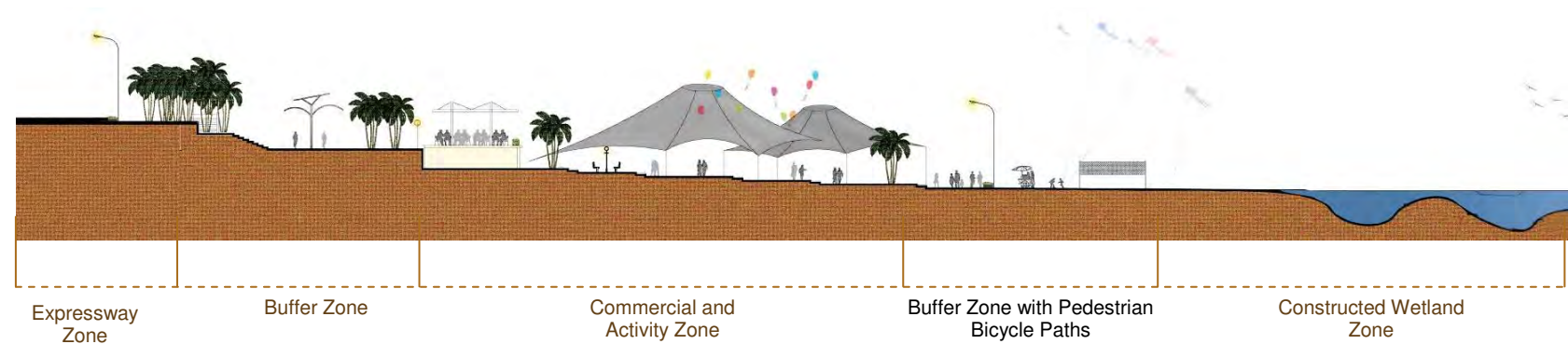


Figure 5.7: Muhima CBD - Section of Wetland Promenade.

Source: *Surbana*

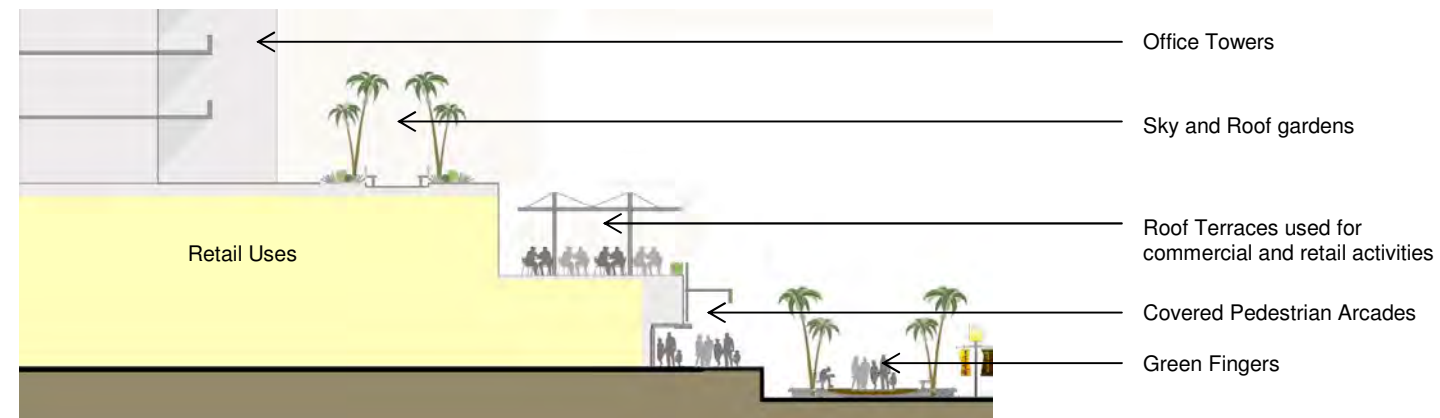


Figure 5.8: Muhima CBD - Section of Pedestrian Arcades.

Source: *Surbana*

these arcades adhere to international standards and are designed to be universally accessible.

Overhead Links

Bridging the two aforementioned pedestrian networks is a series of iconic overhead bridges to cross the expressways and other major roads. These bridges not only provide physical connectivity but also contribute to the imagery of modern Kigali City.

Another series of overhead linkages can be found in high-rise developments. Commonly known as sky-bridges, these contemporary urban linkages conveniently allow users to cross from one commercial tower to the neighboring tower without having to travel to the ground plane.

Regardless of the specific type of overhead linkages, they are an important part of the pedestrian network and allow pedestrian and vehicular circulation to be separated, thereby creating an efficient and uninterrupted flow of traffic and users.

Underpasses

Developed underground, these linkages bridge neighboring developments and provide a continuous, sheltered passageway for users.

Capitalising on the hilly topography of Kigali City, underpasses can be easily cut into the sides of the slopes and double as slope protection while enhancing connectivity within the pedestrian network. Similar to the arcades, these connections could have commercial and retail components complementing the functional corridors, thereby enhancing the vibrancy of the pedestrian network.

The proposed pedestrian network for Kigali CBD takes advantage of the natural opportunities of the site while maximizing the experiential value for the users and crafting unique urban characters for each district.



Figure 5.9: Muhima CBD – Pedestrian Network Illustration.
Source: Surbana

5.5 Kigali CBD – Heritage and Conservation Plan

The heritage areas and historical buildings are important landmarks that provide the City with a sense of history and identity. Therefore there is a need to preserve, rehabilitate and revitalise these sites so they can be used as catalysts to encourage future tourism-related destinations that promote the history, culture and heritage of Kigali CBD.

Heritage and conservation sites / areas are identified according to its age and historical importance^{8,9}. There are 10 sites identified with historical and heritage significance in Kigali CBD during the site visits (Refer to Table 5.2). These 10 sites include four historical churches, one mosque, four historical buildings and one conservation area. Of these 10 sites, only one historical church (St. Famille Church) is located in Muhima CBD, while the other 9 sites are located in the Nyarugenge CBD.

Table 5.2: Heritage Sites in Kigali CBD.

Reference	Name	Age	Current Use
HISTORIC CHURCHES			
A	St. Famille Church	>50 yrs	Church
B	Evangelical Presbyterian Church	>50 yrs	Church
C	St. Micheal Church	>50 yrs	Church
D	St. Etienne Church	>50 yrs	Church
HISTORIC MOSQUES			
E	Alfath Mosque	<50 yrs	Mosque
HISTORIC BUILDINGS			
F	Central Prison	>50 yrs	Prison Building
G	Kandt House	>50 yrs	Museum of Natural History
H	State House	>50 yrs	Presidents House
I	Belgian Memorial	>50 yrs	Memorial Structure
CONSERVATION AREAS			
J	Nyarugenge Market	>50 yrs	Market

Source: *Surbana*

⁸ The list is not exhaustive and the Department of Land Use Management and GIS should conduct a detailed study and survey of Heritage Buildings and Conservation areas in Nyarugenge District.

⁹ Refer to the Zoning Report for the principles of Preservation and Conservation.

5.5.1 Religious Buildings with Historic Significance

A. St. Famille Church

Located in Muhima CBD along Boulevard de l’OUA, the church was built in the early 1900s. Despite some cracking in the walls and the poor conditions of the supporting buildings, the church is still in good condition and currently in use.



St. Famille Church. Source: *Surbana and Wikipedia*

B. Evangelical Presbyterian Church of Rwanda

Located in Nyarugenge CBD along Rue Depute Kamuzinzi, the church was built in the early 1900s. Despite some minor cracking in the walls and the roof, the church is still in good condition and currently in use.



Presbyterian Church of Rwanda. Source: *Surbana*

C. St. Michael Church

Located in Nyarugenge CBD along Avenue de l’armee, and is part of the Saint Michael Parish and Archdiocese de Kigali complex. The church structure is in good condition and well maintained.



St. Michael Church. Source: *Surbana*

D. St. Etienne Church

Located in Nyarugenge CBD along Avenue Paul VI and is part of the KIST Campus. The church structure is in good condition and is currently in use.



St. Etienne Church. Source: *Surbana*

E. Alfath Mosque

This recently built mosque is located at the junction of Avenue de la Justice and Avenue de la Nyaburongo. The mosque caters to the Islamic settlements of Kigali City.



Alfath Mosque. Source: *Surbana*

G. Kandt House

In memory of the explorations and the discoveries of Richard Kandt, his former residence on Nyarugenge Hill in Kigali is now dedicated to the Museum of Natural History of Rwanda. The house is located along Avenue de la Justice near to the Central Prison site.



Kandt House. Source: *museum.gov*



Belgian Memorial. Source: *Surbana*

5.5.3 Conservation Areas

J. Nyarugenge Market¹⁰

Preserving buildings and structures in isolation is not enough to create a unique city with its own identity and character. It is also critical to retain its rich history, architectural style and ambience of the entire district so that the city can truly come alive and assert its individuality.

The Nyarugenge Market, which is one the oldest market area located closer to the CBD, is identified as the conservation district for its low-rise, compact development character. The commercial developments along Avenue du Commerce, with its vernacular Rwandan architecture, intimate scale and diverse facades, perpetuate a charm which is not found in new architecture.

The Nyarugenge Market conservation district not only serves as a reminder to the Rwandans of their heritage but also as a valuable tourist attraction.



Nyarugenge Market Area. Source: *Surbana*

¹⁰ Refer to the Zoning Report for detailed conservation guidelines and illustrations.

5.5.2 Buildings with Historic Significance

F. Central Prison

The oldest prison in Rwanda is located along Avenue de la Justice and has direct access from Rue de la Epargne. Despite some cracks in the compound wall, the prison is still in use. There is also a proposal to relocate the existing facility to a new Central Prison in Mageragere Sector, while the existing structure would be redeveloped as a tourist resort hotel.



Central Prison. Source: *Rwanda-chateau.org*

H. Statehouse

The Statehouse is located in Upper Kiyovu, about 560m from the Centre Ville Roundabout. The former residence of President Juvenal Havyarimana's regime will be adaptively reused to become the Rwandan museums in the future, envisioned to receive visitors to Rwanda and offer an experience of the various aspects of the vibrant Rwandan culture.



Statehouse. Source: *museum.gov*

I. Belgian Memorial

The Belgian Memorial which is called Camp Kigali is the historical venue of the massacre of 10 Belgian UN Blue Berets on the first day of the 1994 Genocide. Today, the Camp is used as a Belgian commemoration site that hosts a small museum giving a first introduction to the Genocide events.

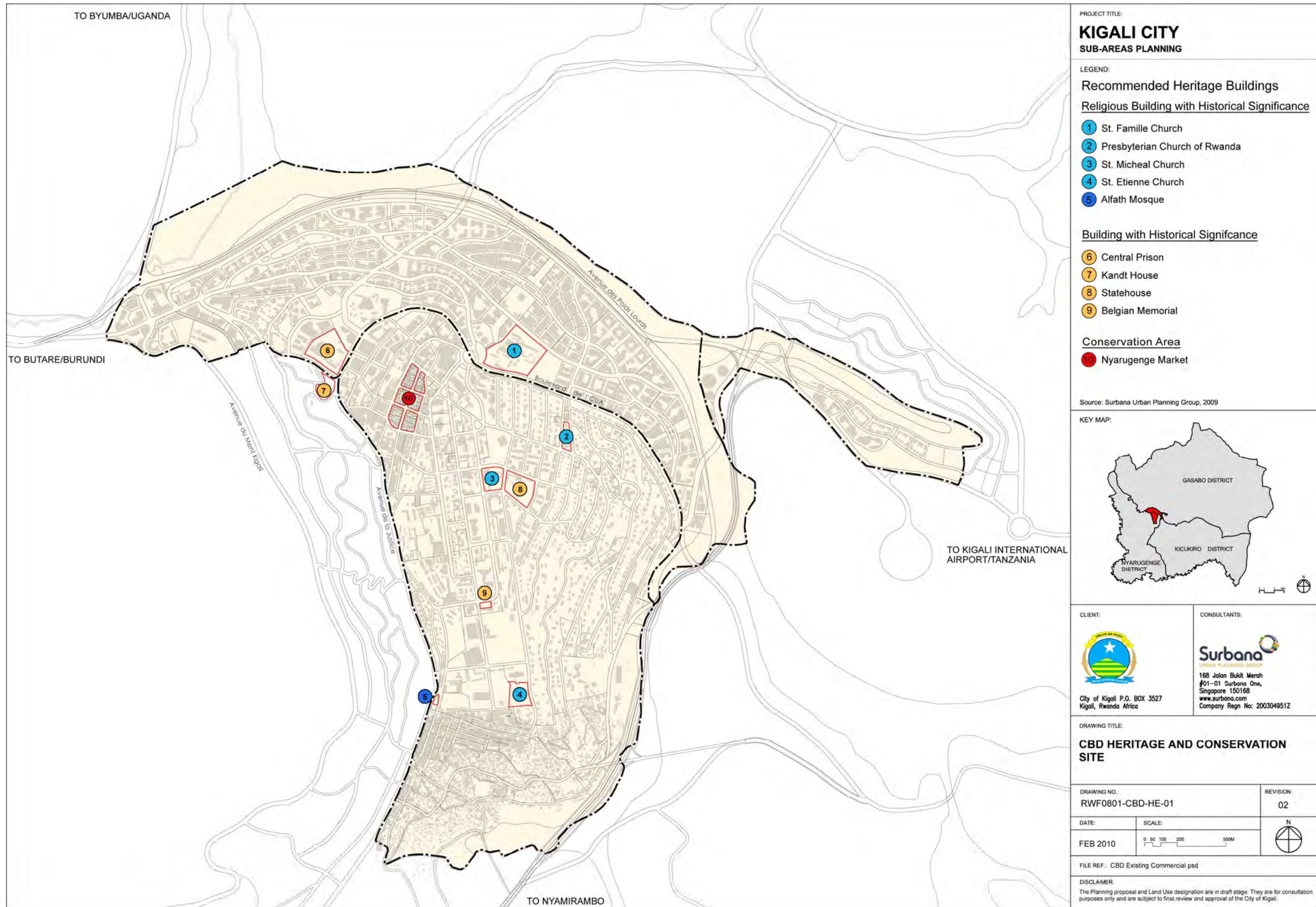


Figure 5.10: Kigali CBD Heritage and Conservation Site.
 Source: Surbana

5.6 Muhima CBD - Detailed Master Plan and Urban Design Plan

Muhima CBD covers an area of 230.8 ha and is located between the existing CBD in Nyarugenge and the wetlands. It comprises largely of medium to high density mixed use developments. The Sainte Famille Church, The Central Prison and the Nyabugogo Regional Taxi Park are its three major developments. The 35 ha cleared site is also located in its east. The planning for Muhima CBD is based on the assumption that the majority of its land would eventually be available for redevelopment. In view of this, Muhima CBD is envisioned as the new CBD, housing the new CBD Core of Kigali City.

5.6.1 Muhima CBD - Urban Design Concept

The Urban Design Concept for Muhima CBD is guided by several urban design principles and recommendations as illustrated in Figure 5.11 and as listed below:

A. Axes: Axes serve to visually and physically connect the major nodes within and around Muhima CBD imparting its structure and legibility. A major axis is proposed connecting the existing City Centre to the wetlands. A series of minor axes is proposed along the “green fingers” linking the other key developments, public areas and attractions to the wetlands and surrounding developments. A longitudinal activity spine linking all the axes and major commercial, financial, institutional and entertainment developments is also proposed along the “mix use spine” across Muhima CBD, from the Phase 1 site to the Nyabugogo Taxi Park.

B. Views: View corridors are proposed along the major and minor axes, which offer unobstructed views and enhance the visual relationships between buildings and their surroundings, giving Muhima CBD a strong sense of legibility and orientation. Special design guidelines along the view corridors, such as framing the views of the Wetland Parks from the CBD Core area, etc. are also proposed.

C. Gateways: Gateways are introduced to define significant entry points to the CBD, such as along Boulevard de l’OUA adjacent to Sainte Famille Church, etc. Gateways are proposed to be created by utilising built elements or landscape elements with distinct features that reflect the characteristics of the surrounding land uses or landscape.

D. Landmarks: Scenic natural areas such as the Wetland Park and buildings with prominent heritage and architectural features, such as the Sainte Famille Church, Centre Ville Roundabout and the Central Prison site redevelopment are proposed to be enhanced as landmarks in Muhima CBD, which will help define and structure Muhima CBD.

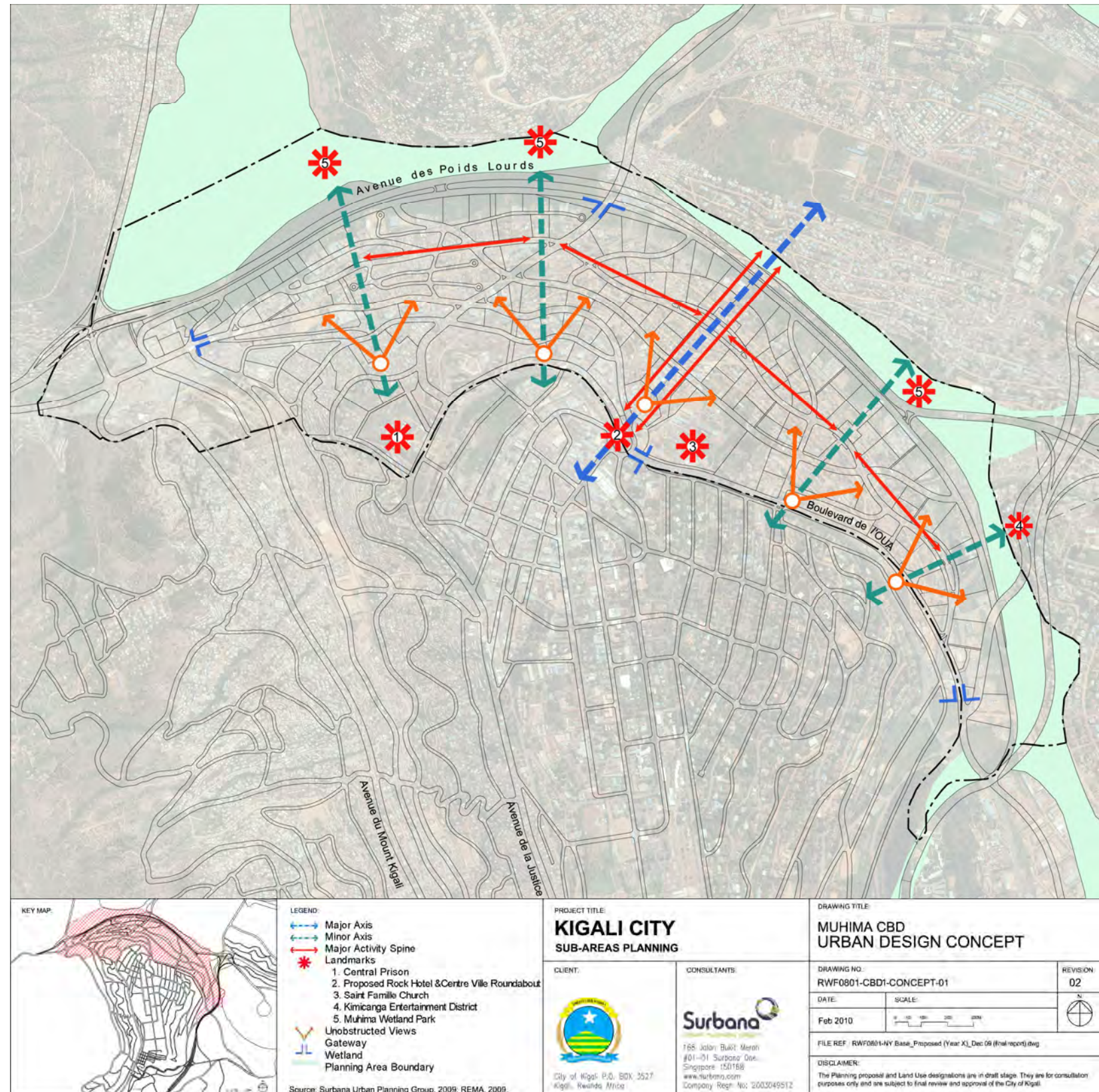


Figure 5.11: Muhima CBD – Urban Design Concept.
Source: Surbana

E. Skyline: The skyline for Muhima CBD is proposed so as to allow a variation in building heights, a gradual transition between areas with different heights, the creation of focal points which enhances the urban identity. Muhima CBD comprises predominantly of medium-rise to high-rise buildings, with heights ranging from a minimum of G+3 to a maximum of G+20. The high-rise buildings are proposed to be located at the CBD core area and gradually slope down towards the Phase 1 area and the Nyabugogo Taxi Park. The structures abutting the wetland, with the exception of those in the new CBD Core are generally kept lower, so as to allow unobstructed views to the wetlands from the developments at the back.

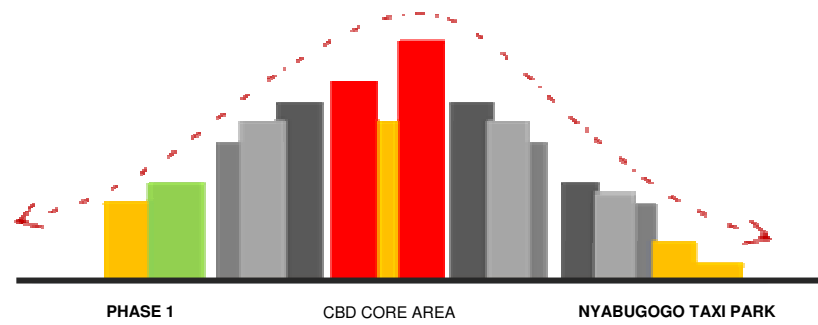


Figure 5.12: Muhima CBD – Proposed Skyline along the Wetlands.
Source: *Surbana*

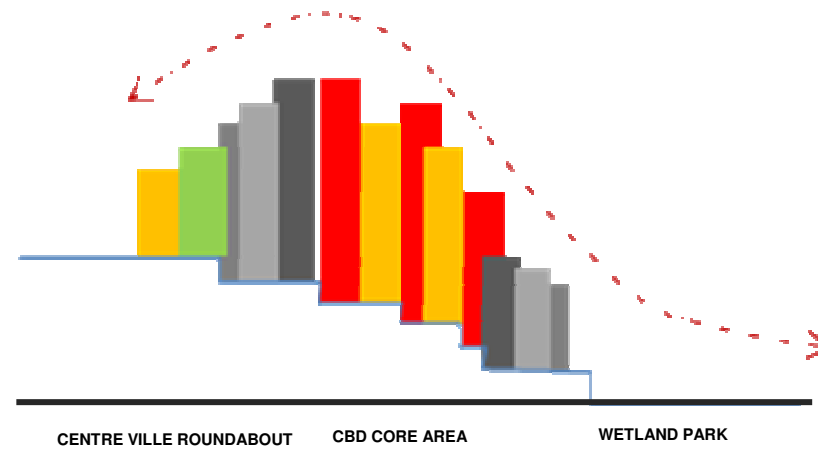


Figure 5.13: Muhima CBD – Proposed Skyline across the Slope.
Source: *Surbana*

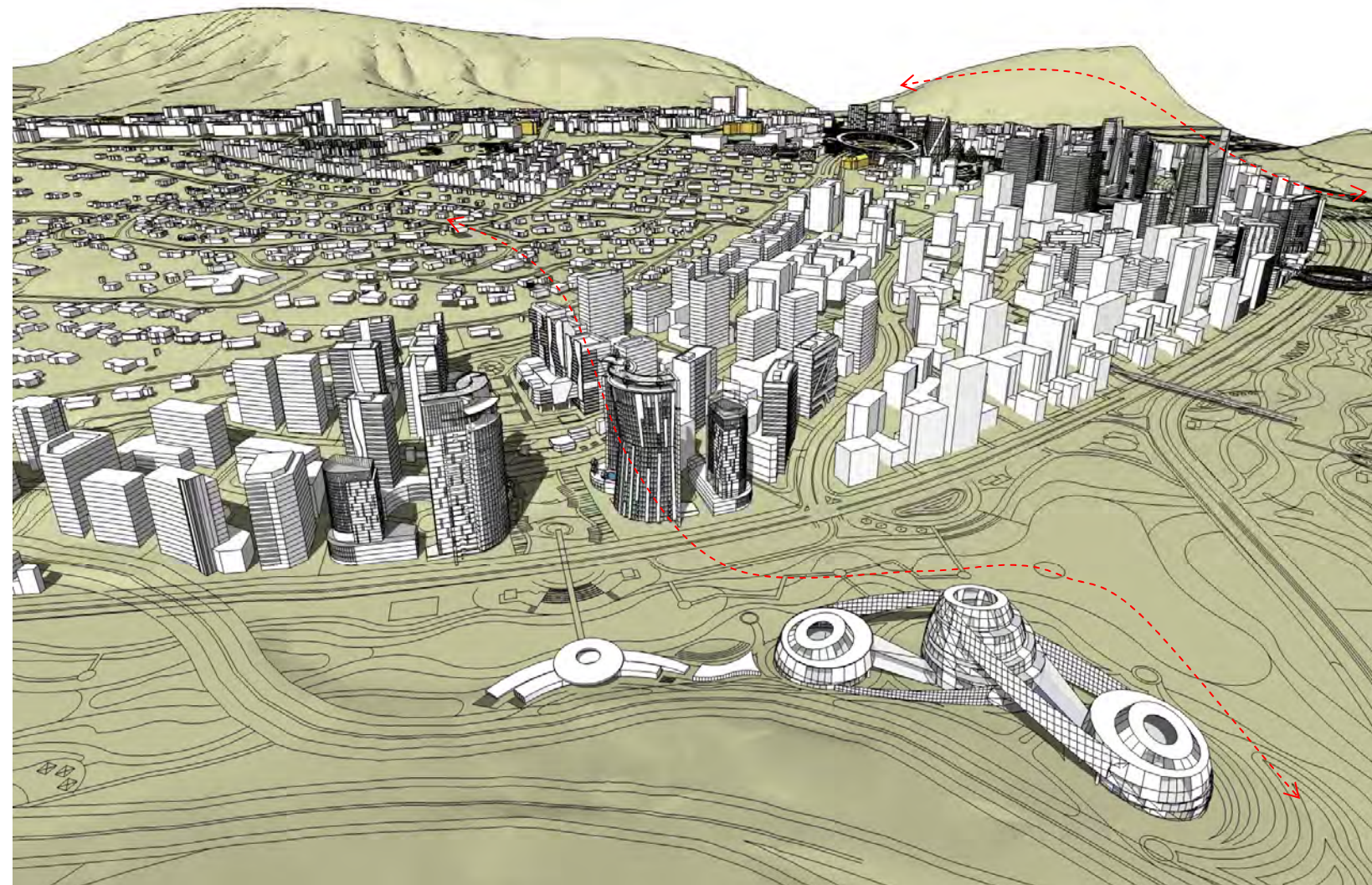
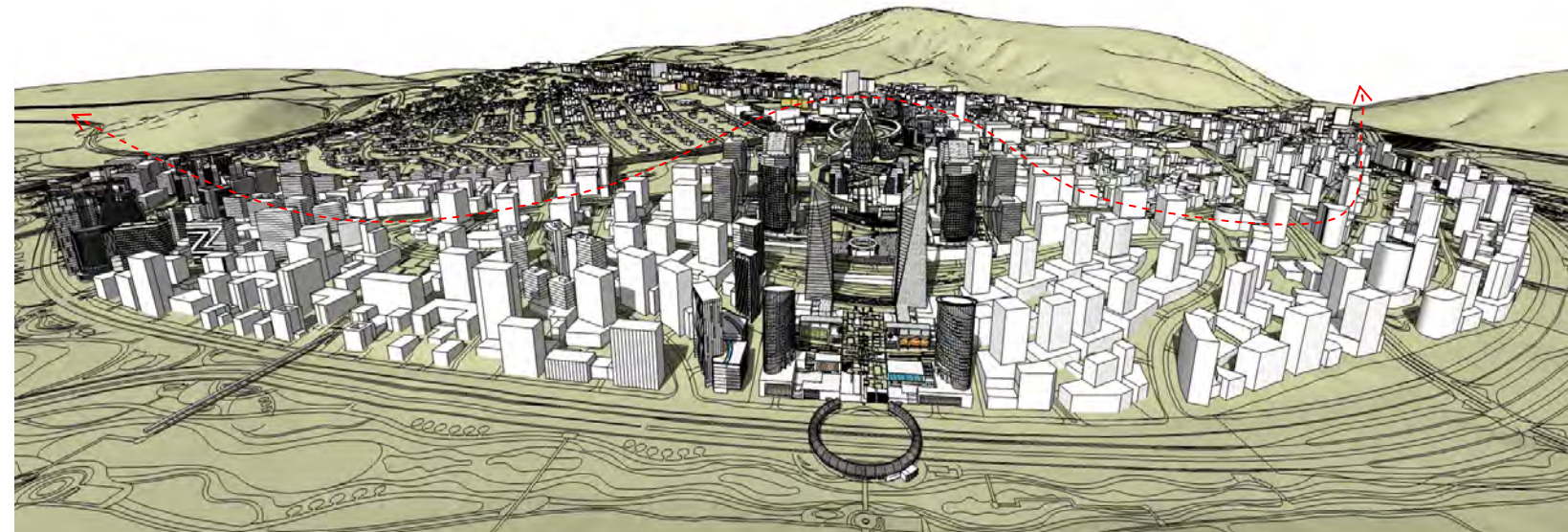


Figure 5.14: Muhima CBD - Proposed Skyline Illustration.
Source: *Surbana*

The proposed Urban Design Concept discussed above forms the base for developing the proposed Land Use Plan, the proposed Parcellation Plan, the Public Facilities Plan and the Parks and Open Space Plan.

5.6.2 Muhima CBD - Land Use Plan

The proposed Land Use Plan for Muhima CBD is developed to accommodate the large scale office, hotel and mixed use developments as envisioned, as well as in consideration of the existing key heritage and commercial developments such as the St. Famille Church, the Central Prison, and the CSR and RAMA buildings. Approximately 147,000 people are expected to work and reside in the 135.65 ha of commercial and residential land, with 90.33 ha of land reserved for parks and green connectors. Figure 5.15 presents the proposed Land Use Plan and Table 5.3 presents the Land Use Data for Muhima CBD. The salient features of the proposed Land Use Plan for Muhima CBD are:

- High density premium office uses, as a part of the new CBD Core, are allocated along the expressways closer to the wetland area to take advantage of the flat topography.
- The wetlands are proposed to be developed as The Wetland Park, offering complementary recreational destinations within the CBD.
- High density mix use developments are designated adjacent to the transit corridor, which runs east-west along Muhima CBD, to encourage public transportation use as well as to create vibrant and lively commercial spaces with a live-in population.
- Active green spaces and public plazas are located at regular intervals along the transit corridors to encourage pedestrian movement.
- A grand Central Plaza is proposed within the CBD core area, which will form the City's central gathering place for various government and recreational activities. Land for government offices and big retail developments is allocated adjacent to the Central Plaza.
- A network of parks and green connectors is distributed along the CBD.
- A site for iconic development next to Roundabout is reserved. Landmark developments such as the St. Famille Church, the Central Prison and Kandt House are proposed to be either retained or redeveloped into recreational or commercial uses.
- Medium rise and high rise residential uses are proposed to the east and west of the CBD.
- Large plots for hyper marts and educational institutions are placed along the expressways and major arterial roads for convenient access and to avoid vehicular traffic congestion.
- A number of reserve sites are assigned to accommodate the future unpredicted demand for land for public facilities.

The Land Use Plan is proposed as the ideal case scenario for Muhima CBD, as per the Master Plan for that area. This Plan identifies the existing development that need to be retained as well as the distribution of public spaces and facilities that need to be provided. As for the commercial and residential parcels, flexibility will be given through the Zoning Plan, which will allow the market 'supply and demand' to determine the actual use of these parcels.

5.6.3 Muhima CBD - Parcellation Plan

The Parcellation Plan for Muhima CBD is proposed based on the urban design concepts discussed above and is presented in Figure 5.16. The parcels are configured so as to encourage east-west traffic movement along the contours, minimising the need for extensive earthworks. Moreover the frontage along the east-west axis will encourage development facing north-south, which in turn encourages the use of passive lighting and ventilation. The green and open spaces across the contours encourage movement of the westerly winds. The wetlands help cool the westerly wind before it blows over Muhima CBD, thus helping in the reduction of heat generated by new large scale developments.

The commercial plot sizes generally vary from 4,000 m² to 10,000 m² allowing more compact commercial developments, which makes more land available for a creating a pedestrian friendly environment¹¹. Adjacent to the commercial plots, large multi-family residential plots of approximately 32,000 m² are placed to encourage a higher density compact living.

The proposed Parcellation Plan is subject to further refinement at later stages in the development of the Master Plan as well as to detailed survey and mapping for finalisation of the Parcellation Plan. Based on this, cadastre maps need to be generated as part of the land regularisation exercise currently underway in Kigali.

5.6.4 Muhima CBD - Public Facilities Plan

The existing public facilities in Muhima CBD, such as the St. Famille Church, Muhima Hospital, a school and some key sector offices, which are in line with the Master Plan are proposed to be retained. 2 other parcels for government and educational use, as well as 6 reserve sites are proposed to be distributed throughout the site. The 6 sites have been reserved for activity generating public facilities which are intended to add vibrancy to the CBD, such as a National Library, museums, arts and cultural centres, etc. These new sites should be acquired and reserved for their development in the future.

¹¹ Refer to the Appendix 2 for the CBD case studies on plot configuration and plot sizes.

Majority of the public facilities are proposed along major roads or the green connectors for easy pedestrian access. Figure 5.17 presents the Public Facilities Plan for Muhima CBD.

5.6.5 Muhima CBD - Green and Open Spaces Plan

The open spaces network for Muhima CBD comprises of 5 types of green and open spaces as illustrated in Figure 5.18 and described below:

- **The Central Plaza** - is the proposed city square in the heart of the new CBD Core.
- **The "Green Fingers"** - are a series of small green connectors and public plazas distributed throughout the site.
- **Sainte Famille Park** - is developed in the large pocket of open space available within the St. Famille Church complex.
- **Transit Parks** - are located at regular intervals along the "Mixed Use Spine" or the transit corridor.
- **Wetland Park** - is an effort to redevelop the wetlands to provide attractive recreational and educational venues to complement the CBD. The proposed design for the Wetland Park is discussed in detail in Chapter 6.

Urban Design recommendations for the development of these green and open spaces are presented below.

Table 5.3: Muhima CBD Land Use Data.

Muhima CBD Land Use Data			
Legend	Land Use	Nett Site Area* (sq m)	Percentage (%)
	Single Family Residential	19,084	0.5
	Low Rise Residential	8,739	0.2
	High Rise Residential	132,228	3.6
	Commercial Office	364,151	9.8
	Commercial General	426,839	11.5
	Hotel	143,377	3.9
	Mixed Use	437,105	11.7
	Educational Facilities	9,365	0.3
	Religious Facilities	82,783	2.2
	Health Facilities	11,582	0.3
	Civic Facilities	59,450	1.6
	Open Space and Park	322,860	8.7
	Sports and Recreation	14,191	0.4
	Wetland	735,522	19.8
	Transportation	12,887	0.3
R	Reserve Site	46,140	1.2
	Roads	895,353	24.1
Total		3,721,656	100.0

*All site areas subject to final survey.

Source: *Surbana*

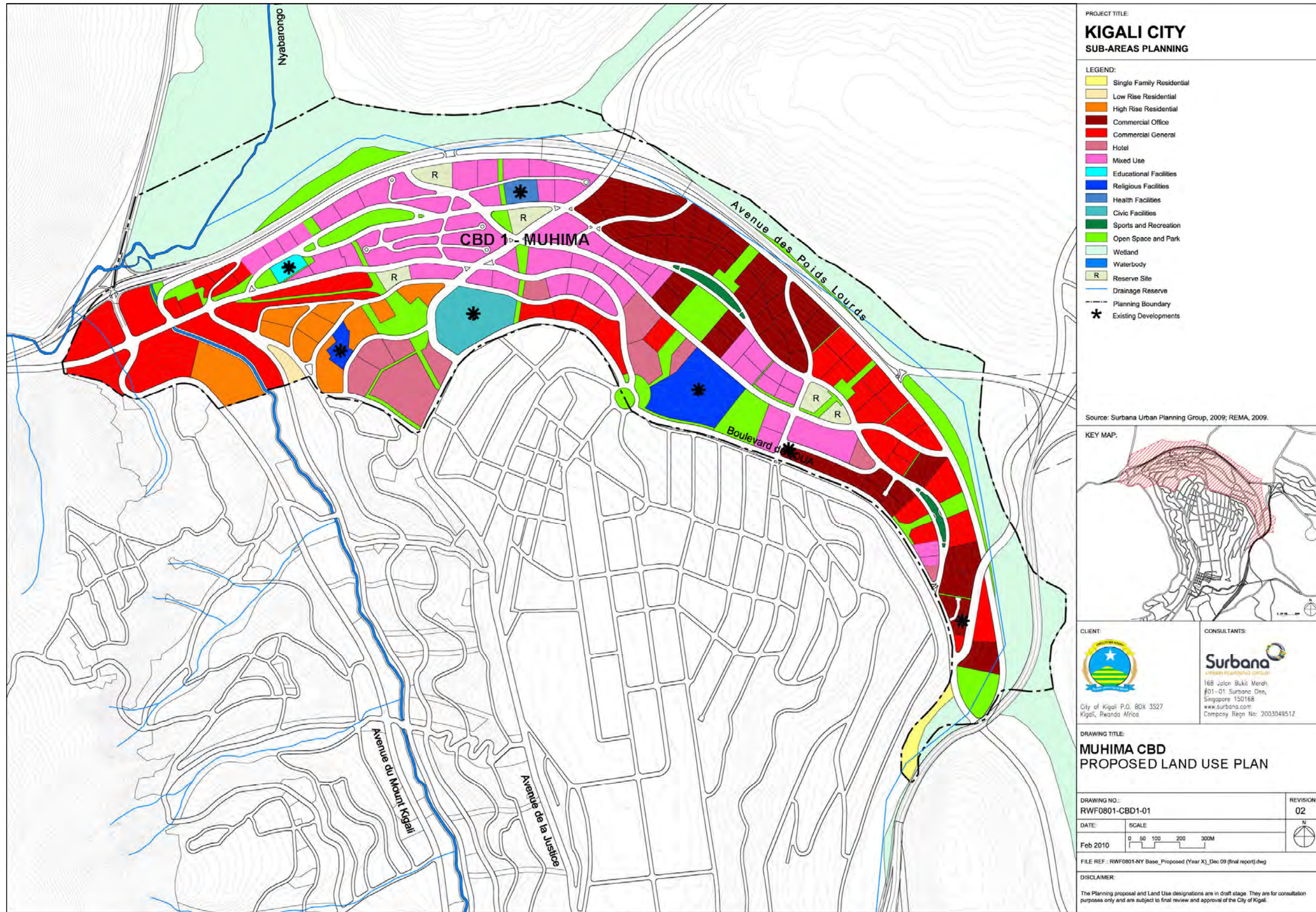
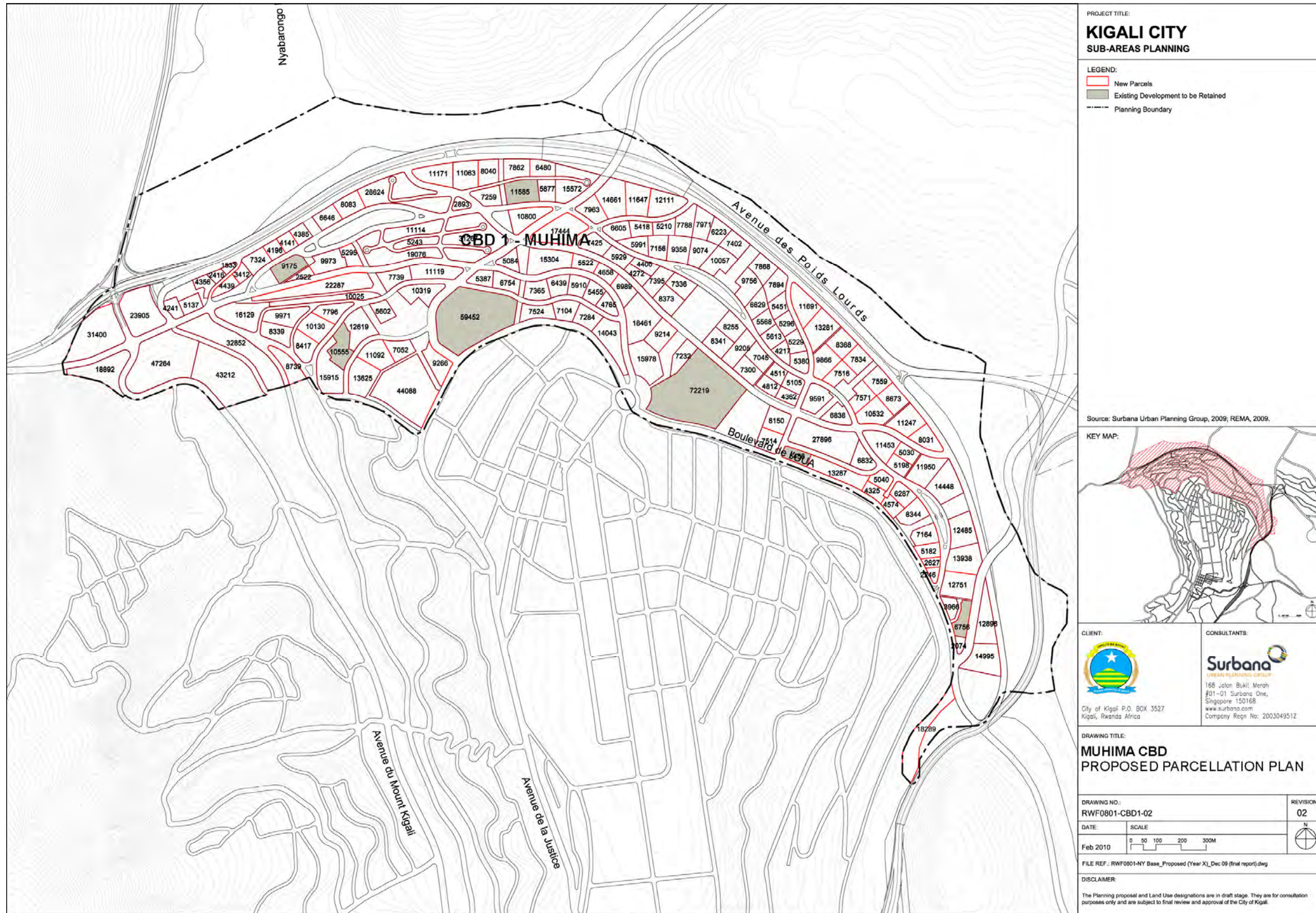


Figure 5.15: Muhima CBD – Proposed Land Use Plan.
Source: Surbana





PROJECT TITLE:
KIGALI CITY
SUB-AREAS PLANNING

LEGEND:
 New Parcels
 Existing Development to be Retained
 Planning Boundary


Source: Surbana Urban Planning Group, 2009; REMA, 2009.



CLIENT:  City of Kigali P.O. BOX 3527
Kigali, Rwanda Africa

CONSULTANTS:  **Surbana**
URBAN PLANNING GROUP
168 Jalan Bukit Merah
#01-01 Surbana One,
Singapore 150168
www.surbana.com
Company Regn No: 2003049512

DRAWING TITLE:
MUHIMA CBD
PROPOSED PARCELLATION PLAN

DRAWING NO.: RWF0801-CBD1-02		REVISION: 02
DATE: Feb 2010	SCALE: 0 50 100 200 300M	

FILE REF.: RWF0801-NY Base_Proposed (Year XI)_Dec 09 (final report).dwg

DISCLAIMER:
The Planning proposal and Land Use designations are in draft stage. They are for consultation purposes only and are subject to final review and approval of the City of Kigali.

Figure 5.16: Muhima CBD - Proposed Parcellation Plan.
Source: Surbana

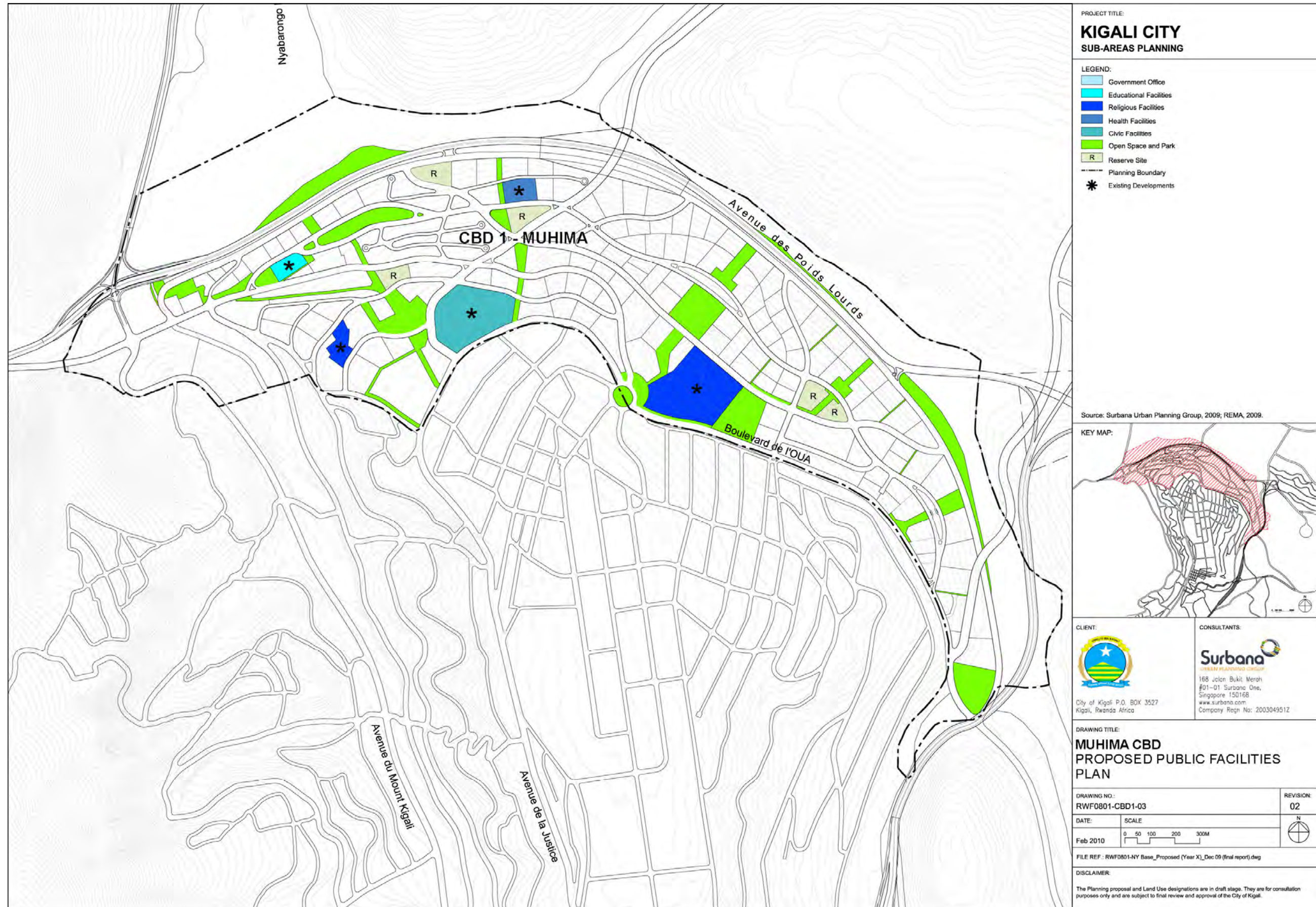


Figure 5.17: Muhima CBD - Proposed Public Facilities Plan.
 Source: Surbana

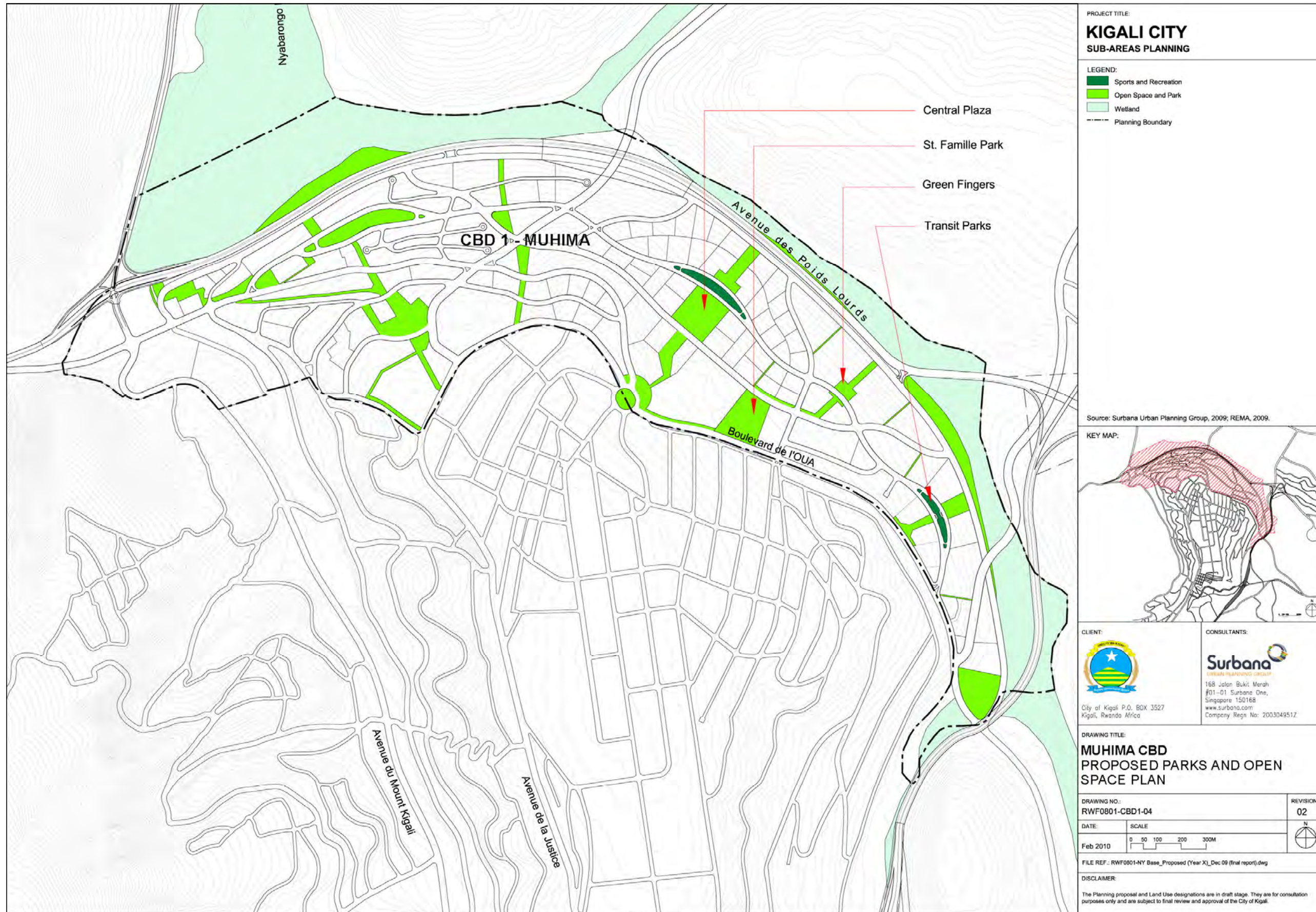


Figure 5.18: Muhima CBD – Proposed Parks and Open Space Plan.
 Source: Surbana

5.6.6 Muhima CBD Urban Design Recommendations

The Zoning Regulation for the overall CBD areas, as well as specific Urban Design Guidelines prepared for selected key areas will control the nature of development within the development parcels. In addition to this, a set of Urban Design recommendations are also prepared which will guide the development of the public realm. In case of Muhima CBD, urban design recommendations are prepared for the key public spaces in order to ensure the development of well designed and attractive public spaces, as well as to ensure a meaningful integration of these spaces with their surrounding developments. These are general recommendations proposed to ensure that each open space is developed to have a distinctive character and effectively fulfills the function assigned to it in the Master Plan.

A. Central Plaza

The Central Plaza is planned as the main city square of Kigali offering a venue for large scale cultural and ceremonial events. The recommendations for its design are:

- Provide a minimum of 50m x 50m leveled unobstructed open plaza for public ceremonies, parades and other such events.
- Reserve a 4m wide paved continuous open space next to the commercial buildings for outdoor recreational and F&B activities surrounding the Central Plaza to add vibrancy.
- Employ the use of basement and semi-basement spaces for the development of museums, public library, tourist centres, art galleries etc., to make effective use of the contoured topography.
- Blend the design of roads passing through the open spaces with the Central Plaza design. Provide traffic calming measures along such roads.
- Provide adequate drop-off points, emergency and service vehicle accesses.
- Provide 'universal design' features such as ramps, to allow for barrier-free and easy access for the disabled.
- In addition to floor lighting, mood lighting and other decorative lighting, provide high spot lighting above the main plaza to allow for sufficient lighting during public events.
- Plant decorative and formal trees, such as palms, to add to the grandeur of the Plaza.
- Provide adequate number of directional signage and location maps at strategic locations in the Plaza.
- Provide at least 4 pieces of traditionally designed public arts features such as sculptures, fountains etc. in the Plaza, so as to contribute a sense of local identity.
- Ensure the use of traditional forms, materials, textures and colours in the street furniture.

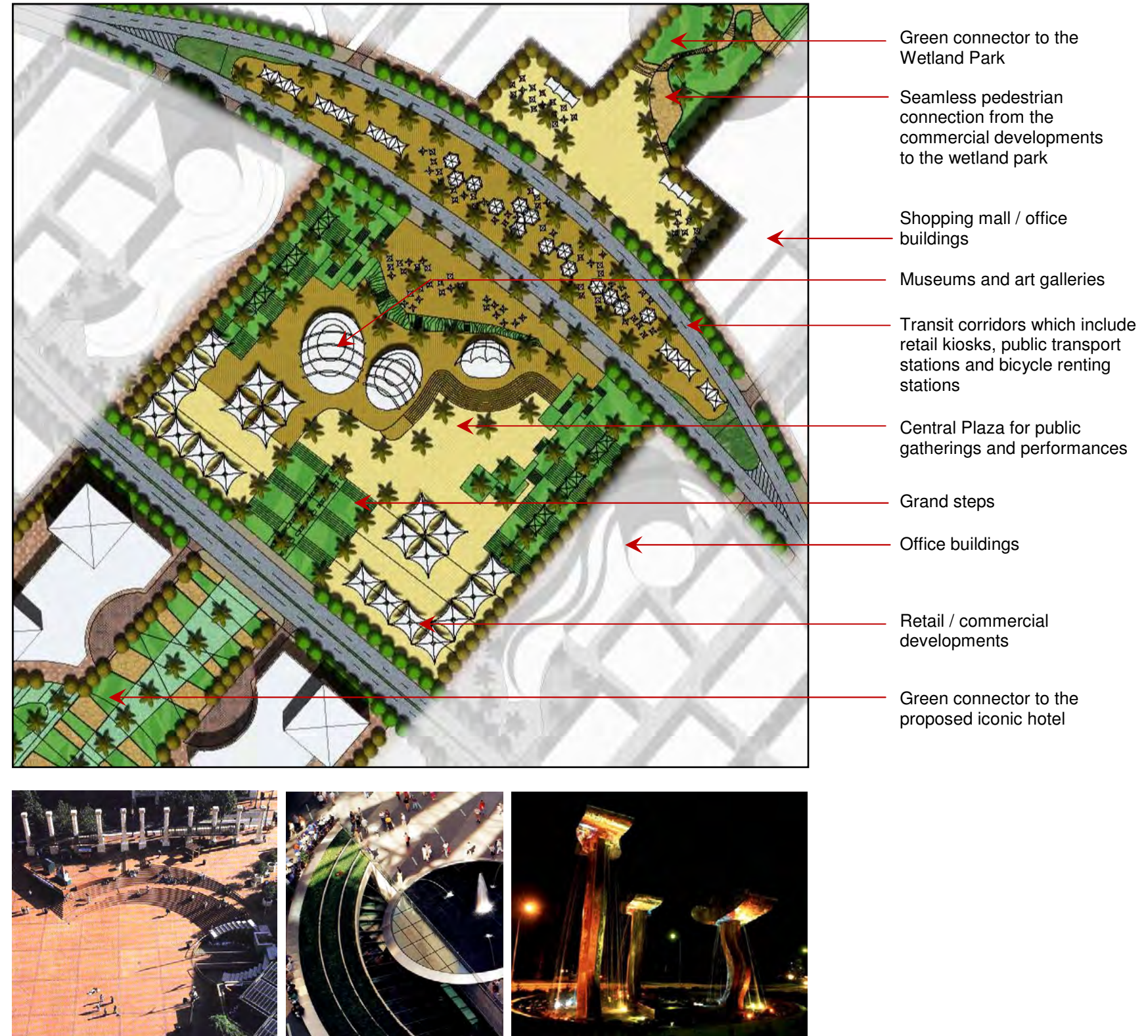


Figure 5.19: Urban Design Recommendations for the Central Plaza.
Source: *Surbana*

B. Sainte Famille Park

The Sainte Famille Church site has a large pocket of open space within its boundaries. This is proposed to be developed into a recreational park which, due to its strategic location, is expected to become a major green pocket for the community to gather, especially on Sundays. The recommendations for its design are:

- Restrict the coverage of hard paving to 30% of the total open space area so as to ensure a green relaxing ambience.
- Provide adequate sheltered and open seating for the people to gather and interact.
- Provide small children's playground, located away from the Church.
- Prohibit any noise generating activity to ensure that the sanctity of the Church is not disturbed.
- Provide toilets and other public amenities within the Park.
- Provide a well-paved pedestrian pathway cutting across the Park, linking the Church to the Transit Park.
- Provide 'universal design' features such as ramps, to allow for barrier-free and easy access for the disabled.
- Plant large canopy trees to provide adequate shading. Provide extensive turfing for picnic activities.
- Encourage the use of local materials such as cobble stones and local bricks for the pedestrian pathway. Encourage the use of traditional forms, materials, textures and colours in the street furniture.

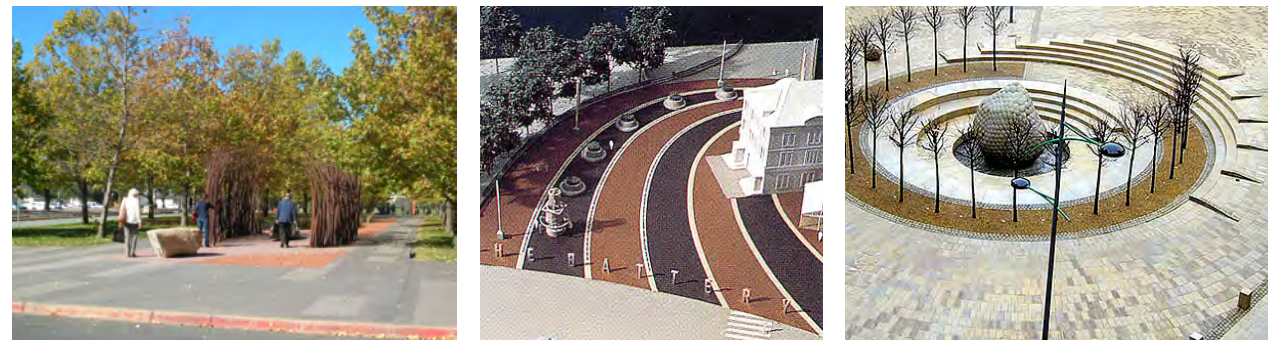
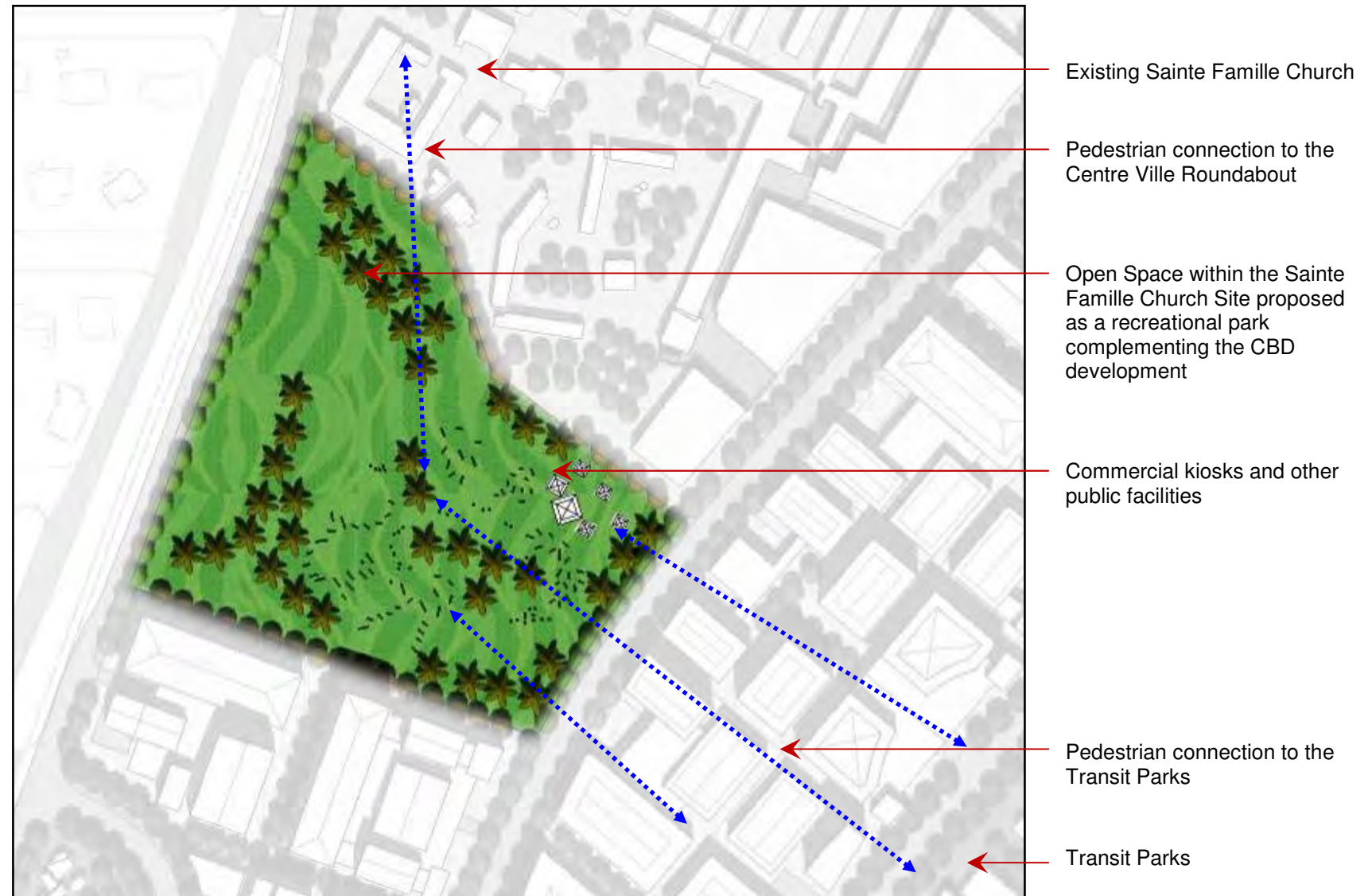
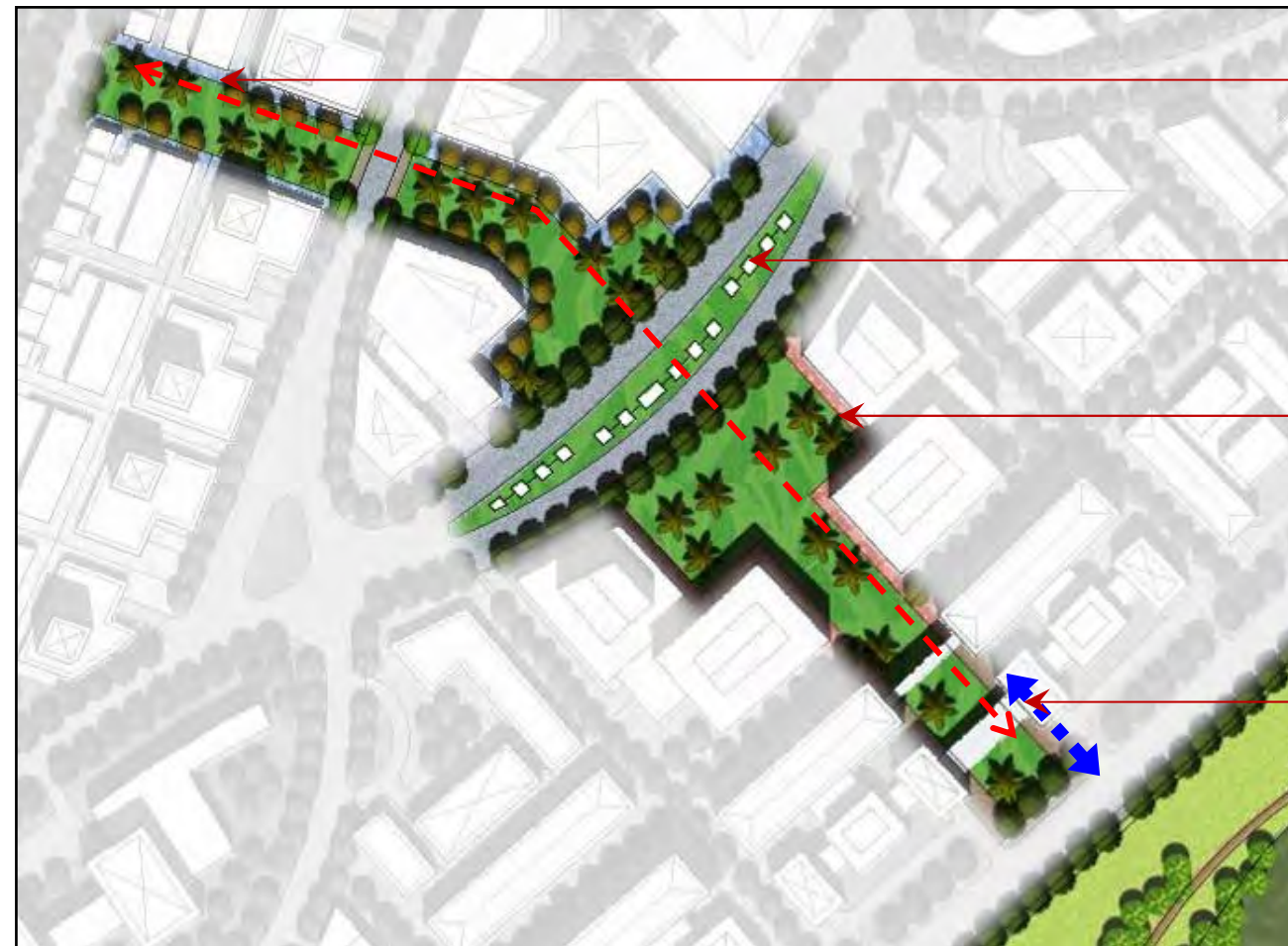


Figure 5.20: Urban Design Recommendations for Saint Famille Park.
Source: *Surbana*

C. Green Fingers

The “green fingers” are park connectors which connect the commercial and civic developments as well as the public open spaces to the wetlands. The recommendations for their design are:

- Provide a well-paved pedestrian path along the green fingers. Provide proper pedestrian connections from the surrounding developments to the green fingers.
- The minimum width of the pedestrian path should be 2.4m. It should be aligned at least 3m away from the parcel boundaries to allow for green space on both sides for tree planting.
- Prohibit the use of perimeter fencing along the boundary of the green fingers. Integrate the open space within the setback line in adjoining parcels by providing outdoor refreshment and other such activity generating businesses.
- Provide rest areas with seating facilities at every 100m interval.
- Provide ‘universal design’ features such as ramps, to allow for barrier-free and easy access for the disabled at the key nodes.
- Lighting at every 20m interval should be provided along the pedestrian pathway.
- Plant canopy trees at appropriate intervals to provide adequate shading.
- Provide adequate number of directional signage at entry points and intersection points along the green fingers.
- Encourage the use of local materials such as cobble stones and local bricks for the pedestrian pathway. Encourage the use of traditional forms, materials, textures and colours in the street furniture.
- Ensure that the servicing of main infrastructure alignments such as drainage, sewerage and water pipes laid along the green fingers is possible at all times.



- Linear parks with pedestrian pathways and bicycle paths.
- Commercial kiosks and other public facilities
- Open space with look-out points, landscaped plazas and small playgrounds
- Overhead pedestrian bridges connecting the commercial developments with the Wetland Park and developments beyond



Figure 5.21: Urban Design Recommendations for the Green Fingers.
Source: *Surbana*

D. Transit Parks

Transit Parks are provided at regular intervals along the “mix use” spine, which is a slow-traffic, pedestrian intensive transit corridor with high density commercial and mix use development on both sides. The Transit Parks function as green islands and public open spaces offering retail and public facilities. A public bus route is proposed to ply along the transit corridor and the public bus stops will be integrated within these islands. The recommendations for the design of Transit Parks are:

- Allow F&B outlets and small retail and commercial kiosks, no greater than 60m², to add vibrancy to the space. The edge of any such development should be at least 6m away from the road right of way (ROW) and be free from any sort of perimeter fencing.
- Restrict the coverage of hard paving, including that required for the outlets and kiosks, to 30% of the total open space area so as to ensure a green character.
- Provide pedestrian linkages at different locations from the Parks to the surrounding developments.
- Provide ‘universal design’ features such as ramps, to allow for barrier-free and easy access for the disabled.
- Provide adequate ambient lighting, especially along the pedestrian linkages. Provide decorative lighting to ensure a pleasant ambience.
- Plant large canopy trees to create a green and shaded environment. Use thematic flowering plants and shrubs to add colours and highlight these Parks along the transit corridor.
- As these Parks function as transit areas, provide adequate directional signage and maps of surrounding areas, close to the bus stops.
- Provide at least 1 piece of traditionally designed public arts features such as sculptures, fountains etc., so as to contribute a sense of local identity.
- Encourage the use of local materials such as cobble stones and local bricks for the pedestrian pathway. Encourage the use of traditional forms, materials, textures and colours in the street furniture.

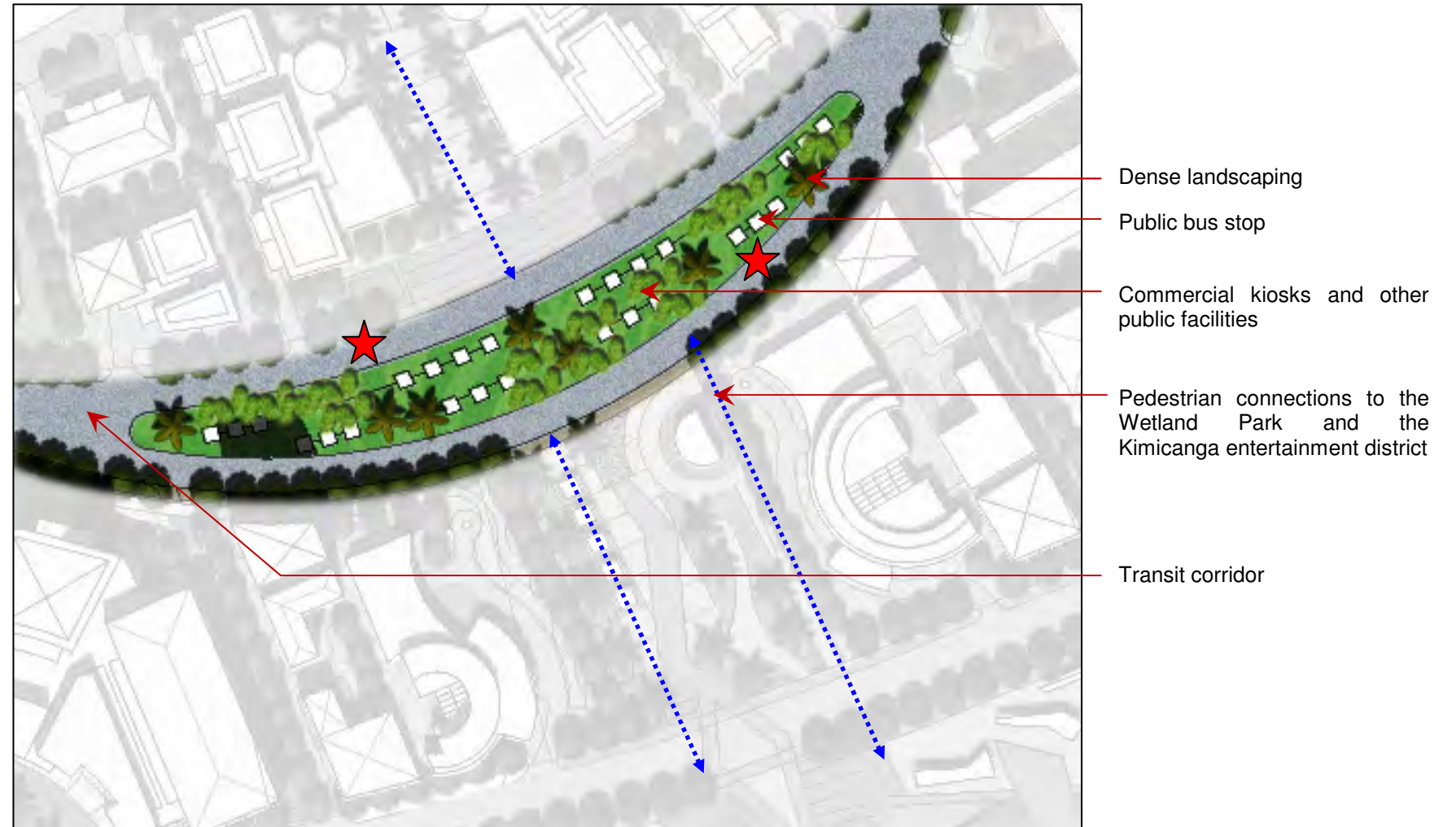


Figure 5.22: Urban Design Recommendations for the Transit Parks.
Source: *Surbana*

5.6.7 Kigali CBD Phase 1

A New Destination in Kigali CBD

Strategically located at the junction of the Boulevard de l'OUA and Avenue des Poids Lourdes, Kigali CBD Phase 1 forms the gateway to the Central Business District from Kigali International Airport.

As the startup phase for the new CBD, it features large, modern office complexes and international 5-star hotels developed within close proximity of one another. Mandatory sheltered walkways provide continuous, all-weather linkages between the podiums of office towers, thereby encouraging commuters to travel on foot in and around the vicinity of their workplaces.



Public Space Integrated with Transit Corridor.
Source: *Surbana*

On a macro scale, Muhima CBD Phase 1 strives to balance sustainable economic growth with ecologically sensitive, transit-oriented developments. To achieve this, pedestrian linkages are designed to integrate seamlessly with the transit corridor. This, in turn, has been strategically aligned to bisect the area and concurrently serve both sides of the infrastructure developments, maximising the returns for the builders and operators of the rapid bus transit system proposed for the area.

To further enhance the urban experience, commercial elements and attractive public spaces have been married with the transit corridors. These islands of greenery and commercial developments are strategically located along the transit spine to complement the pedestrian network within Muhima CBD Phase 1.



Series of Sky Gardens and Green Roofs as Part of Building Envelope Design Surrounding the Central Plaza.
Source: *Surbana*

In addition, with the intent to craft a pedestrian-friendly environment, the various pedestrian spines that overlap into a tightly woven network are further linked together through an attractive central plaza and a series of public spaces. Dotted with cafes, restaurants and other activity generating uses, it ensures a vibrant street life throughout the day in the Central Business District.

Pedestrian connectivity is further enhanced through introducing sky bridges to link up surrounding tower blocks. To complement this contemporary urban design direction, a series of sky gardens and green roofs have been introduced strategically in the adjacent developments as part of the building envelope design surrounding the central plaza.

Together with the stepped or terraced developments sited appropriately into the hilly terrain, these initiatives craft out new public spaces that characterises Muhima as a new destination within the Kigali CBD.

The undulating terrain also provides the opportunity to propose underground linkages between buildings wherever practical. These concealed linkages further contribute to the walk-ability of the whole development.



Stepped or Terraced Developments Sited into the Hilly Terrain.
Source: *Surbana*

Lastly, as an extension of this pedestrian network, the central plaza extends into an iconic bridge which crosses over the expressway and connects directly with the Kimicanga entertainment district and wetland park developments thereby giving new meaning to the term, live, work and play.

See Appendix 4.2 Kigali CBD Phase 1.



Central Plaza Extending into an Iconic Bridge.
Source: *Surbana*



Figure 5.23: Kigali CBD Phase 1 Illustration.
Source: *Surbana*

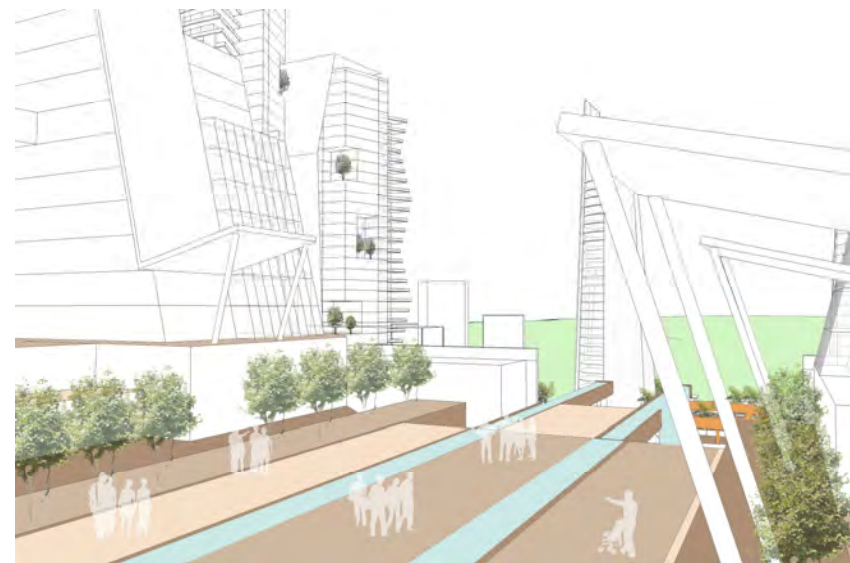
5.6.8 New CBD Core

The Premier Financial Hub of Kigali

The New CBD core will function as the future financial hub of Rwanda, where national and international financial institutions aspire to set-up their headquarters. Iconic developments which features 20 - 30 storey office towers and hotels are structured along an attractive green corridor in about 40 - 50 ha of development to the north of Centre Ville Roundabout.

Accessible to the public throughout the day, the green corridor provides a direct and seamless connection to the wetlands bordering the northern edge of the New CBD core, thereby providing easy access to an alternate recreational zone for those living in and around Centre Ville Roundabout.

Similarly, accessibility in the area will be enhanced by integrating a series of mandatory sheltered underpass into the green corridor development and in so doing, facilitates continuous movement in and around the vicinity of the new CBD core under all-weather conditions.

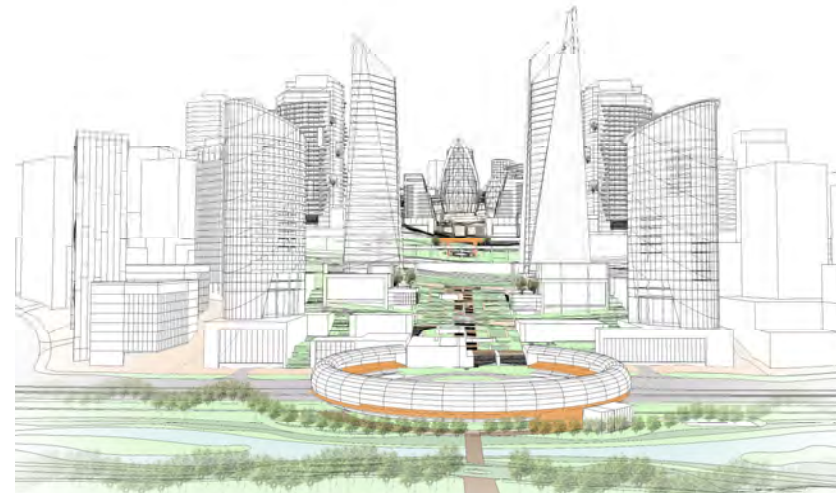


Green Corridor Providing Direct and Seamless Connection to the Wetlands
Source: *Surbana*

Another urban feature introduced to enhance the accessibility of the area is the iconic hotel. Anchoring the green corridor on the southern end near the roundabout, it is built into the steep slopes to the north of Centre Ville Roundabout. Mandatory urban design guidelines require a publicly accessible route to be introduced into the building design which is to remain accessible throughout the day. This could be either an extensive terraced

roof garden or a direct vertical access lift shaft, both of which has to comply with barrier-free design codes.

Besides enhancing the accessibility of the new CBD core, the iconic hotel contributes to the creation of a unique urban skyline amongst the other commercial towers. Fronted by the wetlands, the new CBD skyline sets the perfect stage to capture the image of a modern Rwanda for the international community.



Iconic Hotel Contributing to the Unique Urban Skyline Amongst Other Commercial Towers.
Source: *Surbana*



Grand City Square in the Middle of the Urban Greenery.
Source: *Surbana*

Punctuating all this visual poetry is the Grand City Square. Located in the middle of the urban greenery and at the centre of the CBD Core, it is envisioned as the venue for the major public events. Consisting of its own drop-off point, water and landscape features, Grand City Square is envisioned as a ceremonial space on special occasions while remaining as a publically accessible place on regular days. Tucked into the sides of a slope, it utilizes the odd spaces above and beneath

the square as commercial areas to create a vibrant and exciting public space while utilising the CBD skyline as its backdrop.



Sky Bridges, Large Canopy Trees and Sheltered Walkways Contribute to Pedestrian-Friendly Environment,
Source: *Surbana*

Barrier-free and pedestrian-friendly, the new CBD core is envisioned as a green and ecologically friendly development. Large canopy trees and sheltered walkways ensure that the area is well interconnected and accessible to workers and the public. Sky bridges and rooftop gardens contribute to the contemporary urban character of the new business district.

See Appendix 4.3 New CBD Core.



Figure 5.24: New CBD Core and Central Plaza Illustration.
Source: *Surbana*

5.6.9 Nyabugogo Transport Hub and Market

The City Bazaar

The transformation of the Nyabugogo Market primarily aims to preserve its existing vibrant character and appealing allure to the locals while at the same time, balance the redevelopment needs through developing selective sites into complementary shopping complexes which could offer a larger variety of goods and services as well as international brands that are familiar to the tourists and expatriates.

Retaining the existing physical character is partly achieved by mandatory use of local materials such as cobble stones and local bricks for the pedestrian pathway and emphasise on the use of traditional forms, materials, textures and colors in the street furniture.

Existing vendors are also encouraged to return and operate out of similar informal and makeshift stores but in specially denoted areas where electricity, water and proper sanitation are provided for the proper functioning and modernisation of these stores.



Existing Physical Character is Retained through Scale of Development and Mandatory Use of Local Materials.
Source: *Surbana*

Through these measures, Nyabugogo Market is transformed from the current informal market activities into a unique and attractive tourist destination that retains the existing character while sensitively adding some contemporary elements and shopping experience into the area.

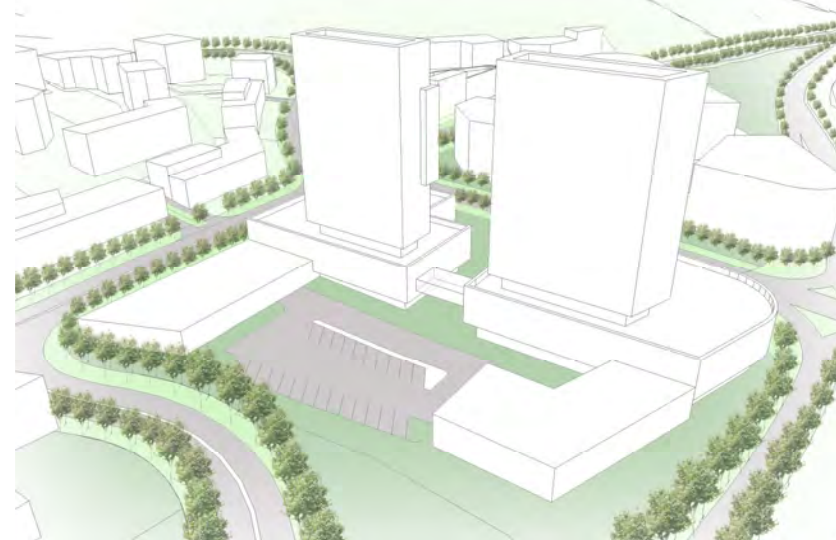
A series of urban canopies has also been introduced to bring in a sculptural and functional element to the pedestrian street. These structures double-up as landmarks and way-finding elements.

Illuminated in the night with energy-saving LED lighting, it injects a sense of vibrancy for the area and provides a visual highlight in the hours of darkness. In the process, operating hours of the informal market can be extended well into the night, increasing the coffers for the operators of the informal market.



Dynamic and Intimate Scale of Development Contributes to Vibrancy in the Area.
Source: *Surbana*

Continuous sheltered walkways have also been incorporated into the surrounding buildings to allow visitors to move uninhibited between buildings under all weather conditions. These connections are also extended from the retail commercial developments to the proposed bus interchange (Nyabugogo Transport Hub) to increase accessibility of Nyabugogo Market, making the place even more appealing for residents and visitors as a shopping and recreational destination.



Continuous Sheltered Walkways and Link Bridges are Extended to Nyabugogo Transport Hub.
Source: *Surbana*

While special attention has been placed on landscaping the series of public squares that punctuates the pedestrian streets in Nyabugogo Market, lush ornamental trees and vegetation have also been introduced extensively in the form of thematic landscaping along the pedestrian street. These softscapes not only contribute to improving the aesthetics of the area but also aids in creating a comfortable micro-climate and promotes eco-sustainability for the locale.

Similarly, in Nyabugogo Transport Hub, vertical greenery and rooftop gardens have been introduced as part of the urban design guidelines. These elements contribute to the overall ambience of the area and could possibly be a showcase of Kigali City's sustainable approach to urbanism.



Vertical Greenery and Rooftop Gardens Contribute to Development of Contemporary Landmarks.
Source: *Surbana*

See Appendix 4.4 Nyabugogo Transport Hub and Market.



Figure 5.25: Nyabugogo Market Illustration.
Source: Surbana

5.6.10 Kigali CBD Wetland Park

The New Wetland Park of Kigali CBD

The proposed transformation of the existing wetland running all along the north of Muhima Sector will focus on introducing ecologically compatible species to rejuvenate and reinstate the natural ecological condition of the area, enhancing accessibility within the Wetland Park and introducing non-intrusive activity zones to inject vibrancy into the area.

Through these approaches, recreational and educational value of the area is enhanced over time, increasing the draw factor and attracting locals and foreigners alike. As a natural heritage sited in close proximity of the proposed CBD, it has the potential to be transformed into an attractive ecological park for the workers and residents of Kigali City, providing them with an alternative recreational activity area close to their work environment.



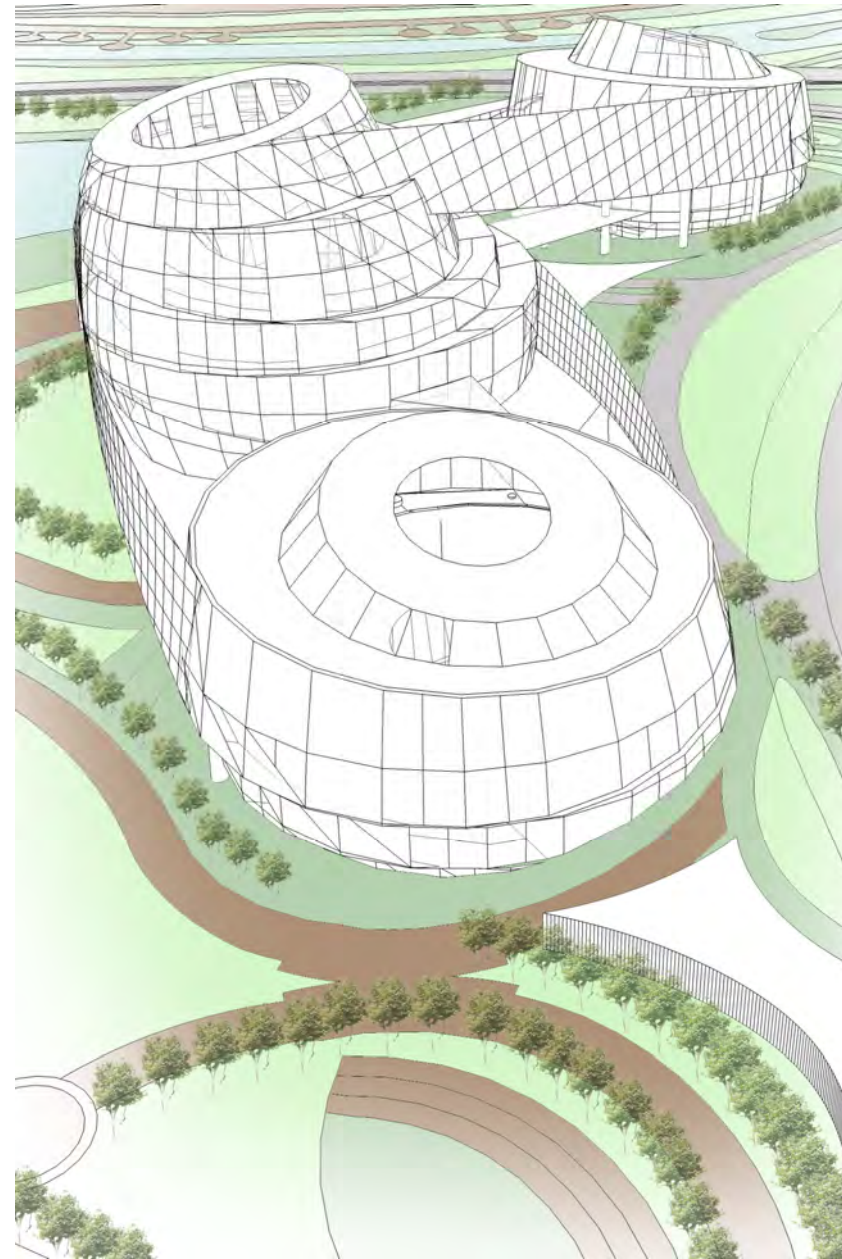
A Natural Heritage at the Doorstep of Kigali CBD.
Source: *Surbana*

Complementing the CBD, it balances the daily stress of living in high density developments by providing comforting views and a relaxing natural environment that is within a short walking distance from the office towers. This marriage of nature and built environment also provides Kigali City a unique edge in promoting the CBD as an attractive lifestyle that combines work, live and play for the modern urbanite.

Kigali Wetland Park also serves as a gateway into the Kimichanga Entertainment District. As a microcosm of commercial retail outlets and Cultural/Performance centres,

Kimichanga Entertainment District is slated to cater to the cultural and entertainment needs of the city.

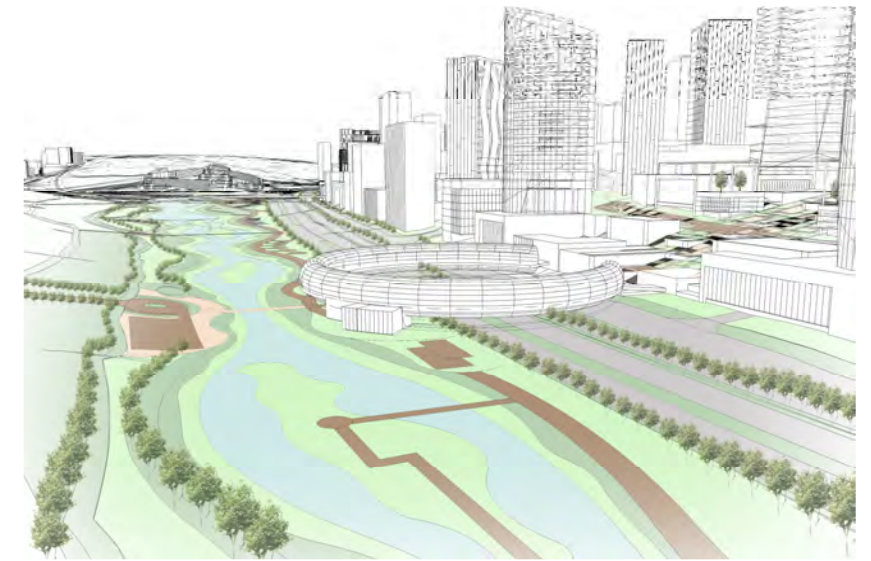
With sensitive and tasteful architectural lighting, the Kimichanga Entertainment District could be the beacon of pulsating energy, contrasted against the serenity and calm of the Kigali Wetland Park in the foreground.



Kimichanga Entertainment District to Cater to Cultural and Entertainment Needs of the City.
Source: *Surbana*

Though Kigali Wetland Park is bounded on its southern side by a proposed national highway and therefore detached from the CBD area, a series of green fingers consisting of iconic bridges and pedestrian networks, dotted with commercial and retail linkages, have been proposed to tie up the natural and built environment. This network of bridges across the national

highway complements the scenic drive from Kigali International Airport and could be perceived as a series of rhythmic urban sculptures, leaving visitors to the city with a lasting impression.



Series of Iconic Bridges Across the Proposed Expressways.
Source: *Surbana*

The transformation of Kigali Wetland Park would mark the beginning of the process of revitalizing the wetlands in the City into an attractive natural conservation, educational, recreational and tourism destination, renewing the bond between the people of Kigali and nature.



Kigali CBD Wetland Park – The Destination Where One is in Touch with Nature.
Source: *Surbana*

See Appendix 4.5 Kigali CBD Wetland Park.

5.7 Nyarugenge CBD - Detailed Master Plan and Urban Design

Nyarugenge CBD covers an area of 451.5 ha and is the earliest urban settlement of Kigali located on the top of Nyarugenge Hill. As such it functions as the existing City Centre for Kigali City. Due to this, it has a comprehensive mix of land-uses and key developments which include the current CBD core, key government and institutional buildings, banks and office buildings, premium shopping areas, a wholesale market and warehousing area, an industrial area as well as high-end residential areas. The high-end, high-value character of Nyarugenge CBD is proposed to be intensified and retained.

5.7.1 Nyarugenge CBD - Urban Design Concept

The Urban Design Concept for Nyarugenge CBD is guided by several urban design principles and recommendations as listed below:

A. Imageability: While the new CBD at Muhima allows for modern state-of-the-art developments, the guiding principle behind all planning activities in Nyarugenge CBD is to conserve the existing historical, low-rise up market character of the place. Development regulations which promote the redevelopment of existing parcels are proposed. Existing sites of historical importance are conserved and enhanced.

B. Districts: Existing land use analysis of the Nyarugenge CBD shows that similar land uses are clustered together in different locations in the CBD. The character of such districts is proposed to be further reinforced. Based on similarity of land use and building typologies, Nyarugenge can be divided into 5 distinct precincts as illustrated in Figure 5.28 and as described below:

- **Civic - Commercial Precinct**

Located on the flat ridge running north-south, the Civic - Commercial Precinct houses key government and office buildings. This linear civic - commercial belt originates from the Centre Ville Roundabout and terminates at the Belgian Memorial site next to the Kigali Institute of Science and Technology (KIST). The new CBD Core proposed in Muhima is an extension of this precinct, running north into the wetland.

The strategy for this precinct is to promote higher and denser developments which leverages upon and complement the new CBD core developments. The average parcel size in this precinct ranges from 30,000 m² to 40,000 m². The average building height proposed for this precinct is 12 storeys.

- **Market and Heritage Precinct**

Located in the western end of Nyarugenge CBD on the slopes that separate the existing CBD core from Muhima, the Market and Heritage Precinct currently houses the wholesale market and warehouses.

The strategy for this precinct is to relocate the wholesale market and warehouses adjacent to the Nyabugogo Taxi Park. However, the building footprint and typologies are to be retained and put to adaptive re-use as small scale retail, cultural and commercial areas set in a pedestrian-friendly environment. The average parcel size in this precinct ranges from 7,000 m² to 10,000 m². The average building height proposed for this precinct is 4 storeys.

- **New Retail - Mix Use Precinct**

The area further west, just below the Market and Heritage Precinct currently houses government buildings and industries. Most of the government sites are being vacated due to relocation of the offices.

The industries are to be relocated to a more appropriate location outside the CBD. This area along with the vacated government sites, is, thus, available for high density retail and mixed use developments, which falls in line with the adjacent CBD development in Muhima. The average parcel size in this precinct ranges from 10,000 m² to 25,000 m², with 1 parcel as large as 55,000 m². The average building height proposed for this precinct is 4 storeys.

- **Civic - Institutional Precinct**

Located in the south-western section of Nyarugenge CBD, adjacent to the Civic-Commercial Precinct, the Civic-Institutional Precinct houses key educational, health and religious institutions. These facilities cater to city level and regional needs.

The key strategy for this area is to improve the accessibility and reinforce infrastructural facilities to these developments. The average parcel size in this precinct ranges from 10,000 m² to 25,000 m². The average building height proposed for this precinct is 8 storeys.

- **Good-class Residential Precinct**

Located on the eastern slopes of Nyarugenge CBD, between the Civic-Commercial Precinct and the wetlands, the good Class Residential Precinct comprises mostly exclusive villas, interspersed with complementing civic and commercial developments.

The key strategy for this area is to preserve the character of the area, however, also promoting a gradual densification, capitalising on the increasing land values.

The average block size in this precinct ranges from 20,000 m² to 30,000 m², with individual parcels ranging from 750m² to 1,500 m². The average building height proposed for this precinct is 3 storeys.

- **Southern Mix Use Precinct**

Located in the southern end of the CBD on an area with steep slopes, this area houses low-rise, high-density retail and mixed use developments, and is largely catering to the lower income groups settled in the adjacent areas to the south. This area is well-structured and is very vibrant.

The key strategies for this area are to redevelop and reorganize into higher developments, such that they complement the character of the adjacent CBD areas as well as retain the existing vibrancy and character. The average parcel size in this precinct ranges from 2,500 m² to 3,000 m². The average building height proposed for this precinct is 4 storeys.

C. Landmarks: Landmarks in Nyarugenge CBD can be broadly classified into three types - buildings of historical and cultural importance, existing buildings with distinctive architectural features or important functions, as well as upcoming high-end developments. These landmarks are proposed to be reinforced such that they help define the structure of Nyarugenge CBD. Due to the general mid-rise, medium density development proposed in Nyarugenge CBD, the visibility of high-rise visual landmarks can be maintained. Use of appropriate signage and suitable urban design in the public spaces around these developments are proposed to enhance the visual importance of these landmarks. Figure 5.29 to Figure 5.32 present the key landmarks that have been identified for Nyarugenge CBD.

D. Legibility: The existing road network in Nyarugenge CBD is fairly regular and is planned as per the topography. The CBD structure is well organised. However, its legibility can be further improved by undertaking streetscape improvements as well as providing a few new road linkages so as to improve physical and visual connectivity and promote walkability. Thematic streetscape improvements can be considered to enhance the character to the surrounding precincts.

E. Urban Infill: While the overall aim for Nyarugenge CBD is to preserve its existing character, there is also a need to promote redevelopment, in order to maximize the increased development potential brought about by the master planning activities. Incentives for redevelopment are provided to encourage the redevelopment of disused, underdeveloped and underutilized sites.

F. Skyline: The existing skyline for Nyarugenge follows the profile of the Nyarugenge Hill. The developments on the ridge are mid-rise ranging from 4-8 storeys. The developments along the slopes i.e. the market area, the residential area etc. are low-rise, less than 4 storeys. The recent developments around Centre Ville Roundabout are as high-as 18 storeys. This skyline is proposed to be retained with the intention of preserving the character of the place as well as allowing the creation of focal points which enhance the urban identity. (Refer to Figure 5.26 and Figure 5.27).

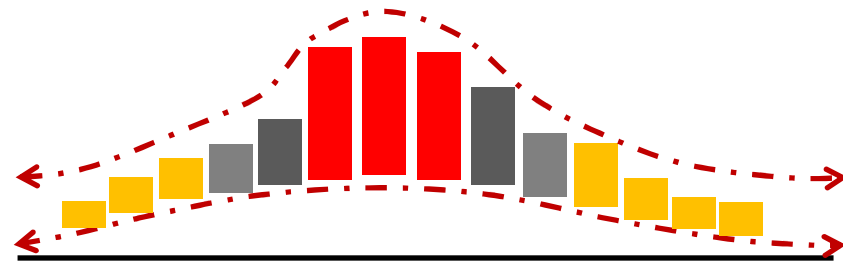


Figure 5.26: Nyarugenge CBD - Proposed Skyline across the Slopes.
Source: *Surbana*

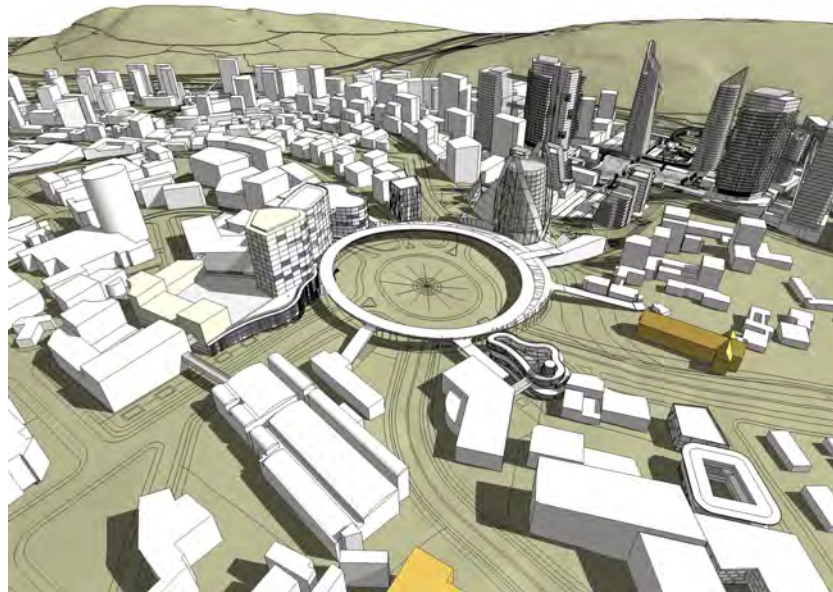
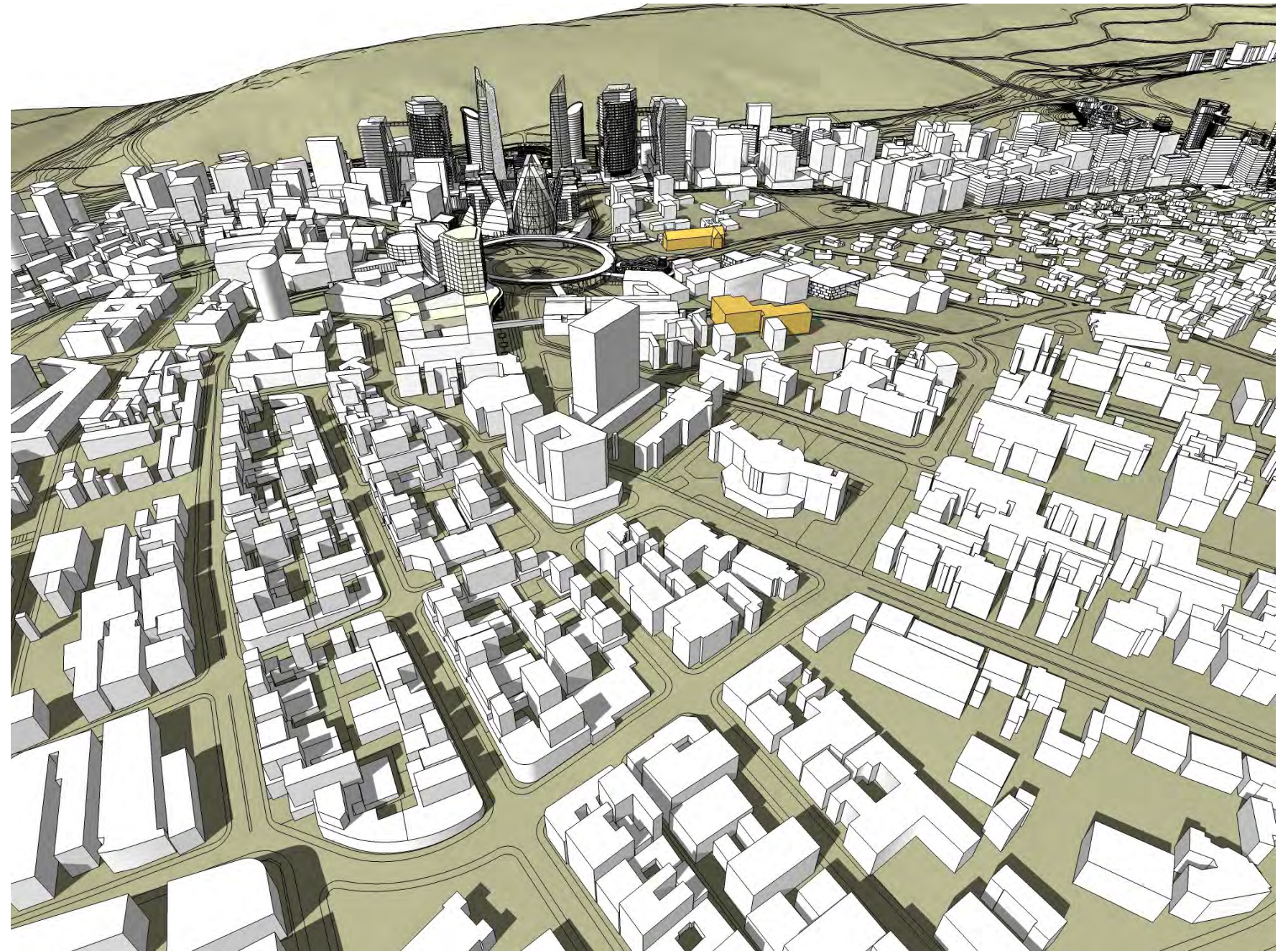


Figure 5.27: Nyarugenge CBD – Proposed Skyline Illustration.
Source: *Surbana*



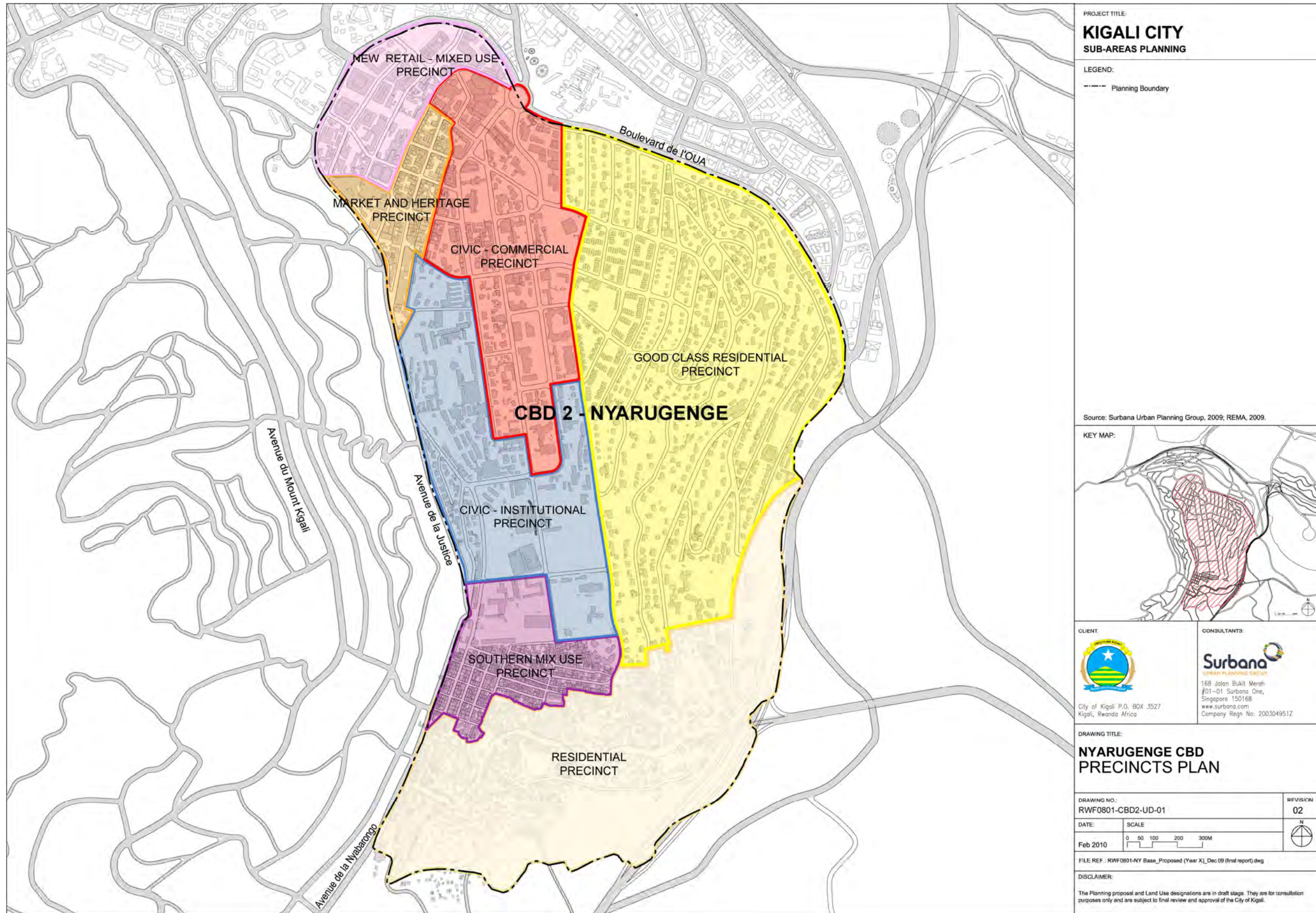


Figure 5.28: Nyarugenge CBD – Precincts Plan.
Source: Surbana

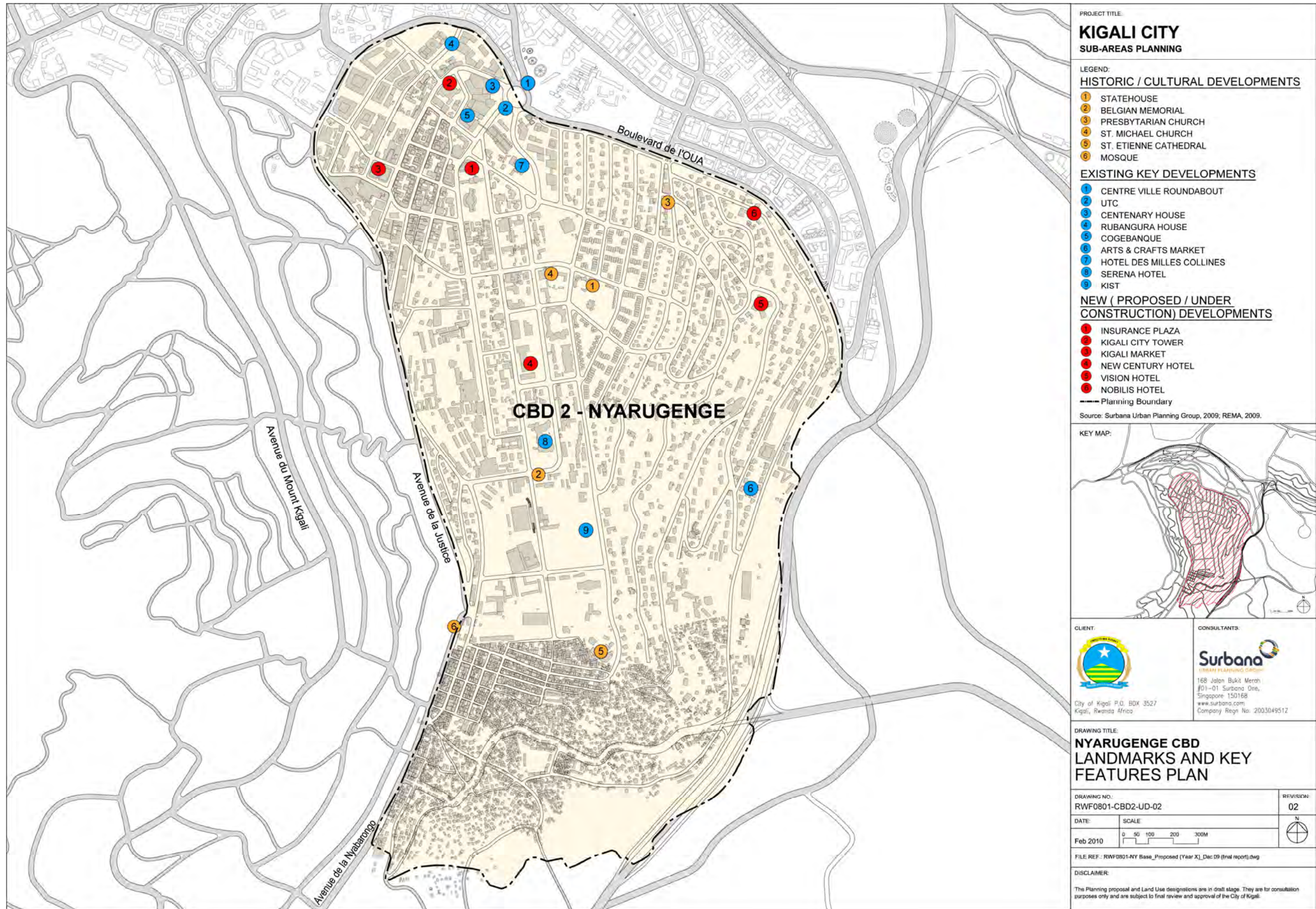


Figure 5.29: Nyarugenge CBD - Landmarks and Key Features Plan.
 Source: Surbana



Figure 5.30: Nyarugenge CBD Landmarks - Historic / Cultural Developments.
Source: *Surbana*



Figure 5.31: Nyarugenge CBD Landmarks - Existing Developments.
Source: *Surbana*



Figure 5.32: Nyarugenge CBD Landmarks - New Developments.
Source: *Surbana*

The proposed Urban Design Concept discussed above forms the base for developing the proposed Land Use Plan, the Public Facilities Plan and the Parks and Open Space Plan.

5.7.2 Nyarugenge CBD Land Use Plan

The proposed Land Use Plan for Nyarugenge CBD is developed to promote the redevelopment of the existing commercial and residential developments as well as the conservation of cultural and heritage landmarks such as the Statehouse site, the Belgian Memorial, the heritage market precinct, etc. Approximately 89,000 people are expected to work and reside in the 287.8 ha of commercial and residential land, supported by 60.4 ha of land for public facilities and with 43.9 ha of land reserved for parks and green connectors. Figure 5.33 presents the proposed Land Use Plan and Table 5.4 presents the Land Use Data for Nyarugenge CBD. The salient features of the proposed Land Use Plan for Nyarugenge CBD are:

1. The prime parcels around the Centre Ville Roundabout as well as the civic-commercial belt are proposed to be redeveloped as mid-rise commercial and civic developments.
2. The wholesale markets, warehouses and industries are proposed to be relocated and to be redeveloped as a culture and tourism based retail area.
3. The large blocks of soon to be vacated government land, on the west of the market are proposed to be developed as medium density mix use developments.
4. The single-family residential area in the east is proposed to be densified as a high-end residential area.
5. Public spaces are proposed to be developed in the Statehouse site and the heritage market development.
6. Key historical and cultural sites, such as churches are proposed to be retained and revitalised.
7. A new low-rise residential area is proposed to be developed to the south of the CBD, with the existing mix use developments redeveloped into general commercial uses.
8. The existing road and utility network is proposed to be reinforced and enhanced.

The Land Use Plan is proposed as the ideal case scenario for Nyarugenge CBD, as per the Master Plan for that area. This Plan identifies the existing public facilities and spaces that need to be retained. As for the commercial and residential parcels, flexibility will be given through the Zoning Plan, which will allow the market 'supply and demand' to determine the actual use of these parcels.

5.7.3 Nyarugenge CBD Public Facilities Plan

Nyarugenge CBD being the existing centre of Kigali has a large number of faculties such as educational institutions, KIST, hospitals, government head quarters and religious institutions which serve the local as well as the regional level. These are proposed to be retained. The ONATRACOM bus depot site is proposed to be developed in an integrated transit hub, with retail uses which serve the southern areas of the CBD. A reserve site is proposed in this site to accommodate the need to provide public facilities in the future. Figure 5.34 presents the Public Facilities Plan for Nyarugenge CBD.

5.7.4 Nyarugenge CBD Parks and Open Space Plan

There are three types of parks and open spaces in Nyarugenge CBD as illustrated in Figure 5.35 and described below:

- **Cultural Open Space** - this includes the redevelopment of open spaces which have a cultural or heritage significance, such as the Belgian Memorial and the Statehouse site. In both of these sites, the monumental structure is proposed to be retained whereas the open space around it is to be redeveloped for recreational activities.
- **Recreational Open Spaces** - this includes redevelopment of the wetlands as a recreational destination and the creation of a new public park in the ONATRACOM site.
- **Pedestrian Oriented Open Spaces** - this includes the creation of activity outdoor refreshment areas along major roads and large scale commercial developments. 2 such areas are proposed in Nyarugenge CBD: the pedestrian promenade along Avenue de la Paix, leading to the Centre Ville Roundabout developed as part of the existing City Centre redevelopment efforts, and the pedestrian link proposed through the mix use developments from the heritage market development to Avenue de la Justice.

Table 5.4: Nyarugenge CBD Land Use Data.

Nyarugenge CBD - Land Use Data			
Legend	Land Use	Nett Site Area* sq m	Plot Ratio
	Single Family Residential	989,445	21.7
	Low Rise Residential	659,322	14.5
	Medium Rise Residential	6,405	0.1
	Commercial Office	143,683	3.2
	Commercial General	499,138	11.0
	Hotel	190,432	4.2
	Mixed Use	144,952	3.2
	Government Office	48,485	1.1
	Educational Facilities	471,453	10.3
	Religious Facilities	83,168	1.8
	Health Facilities	89,370	2.0
	Civic Facilities	65,808	1.4
	Open Space and Park	127,406	2.8
	Sports and Recreation	115,673	2.5
	Wetland	84,907	1.9
	Utilities	14,507	0.3
R	Reserve Site	7,860	0.2
	Roads	814,059	17.9
Total		4,556,073	100.0

*All site areas subject to final survey.

Source: *Surbana*

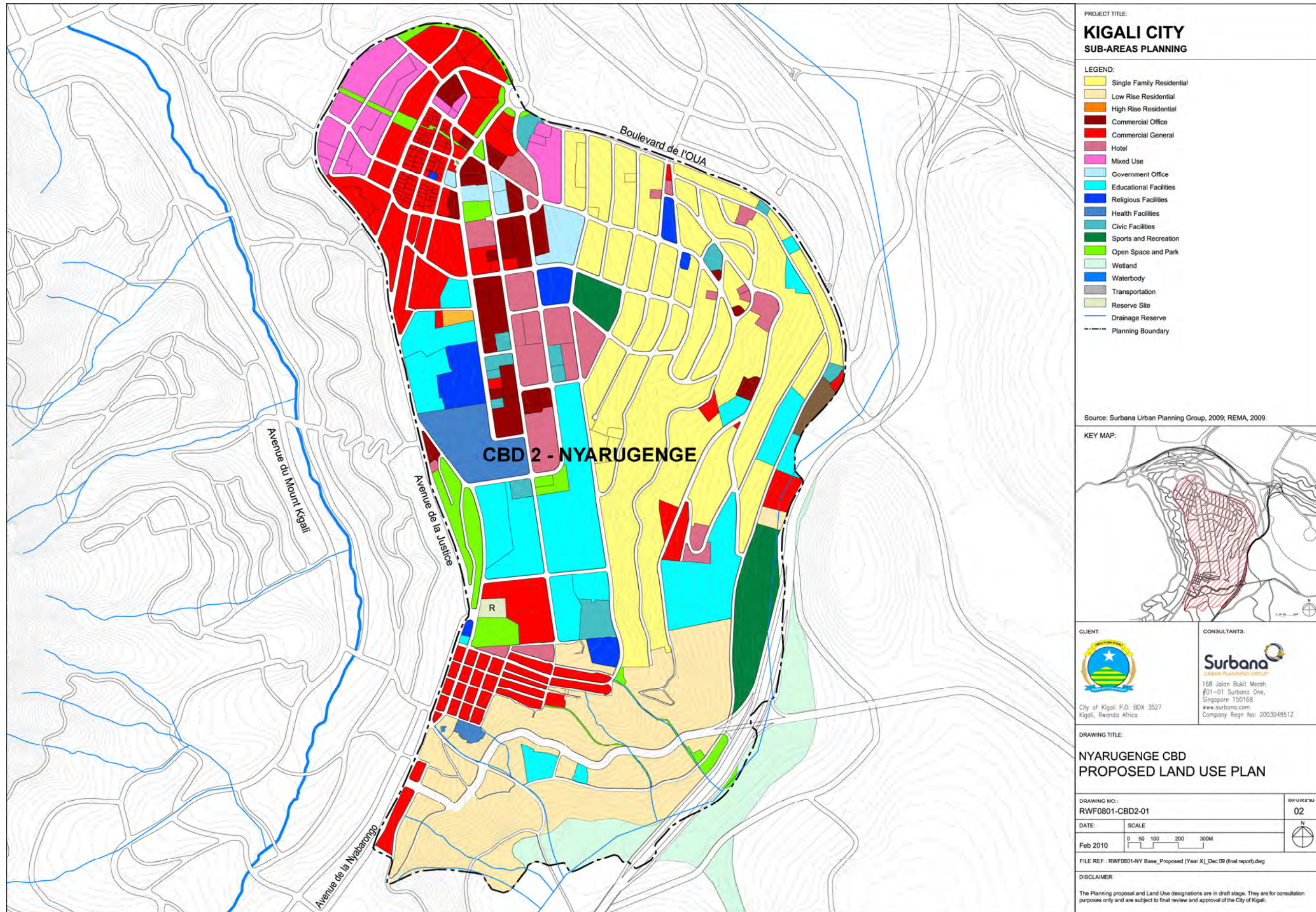
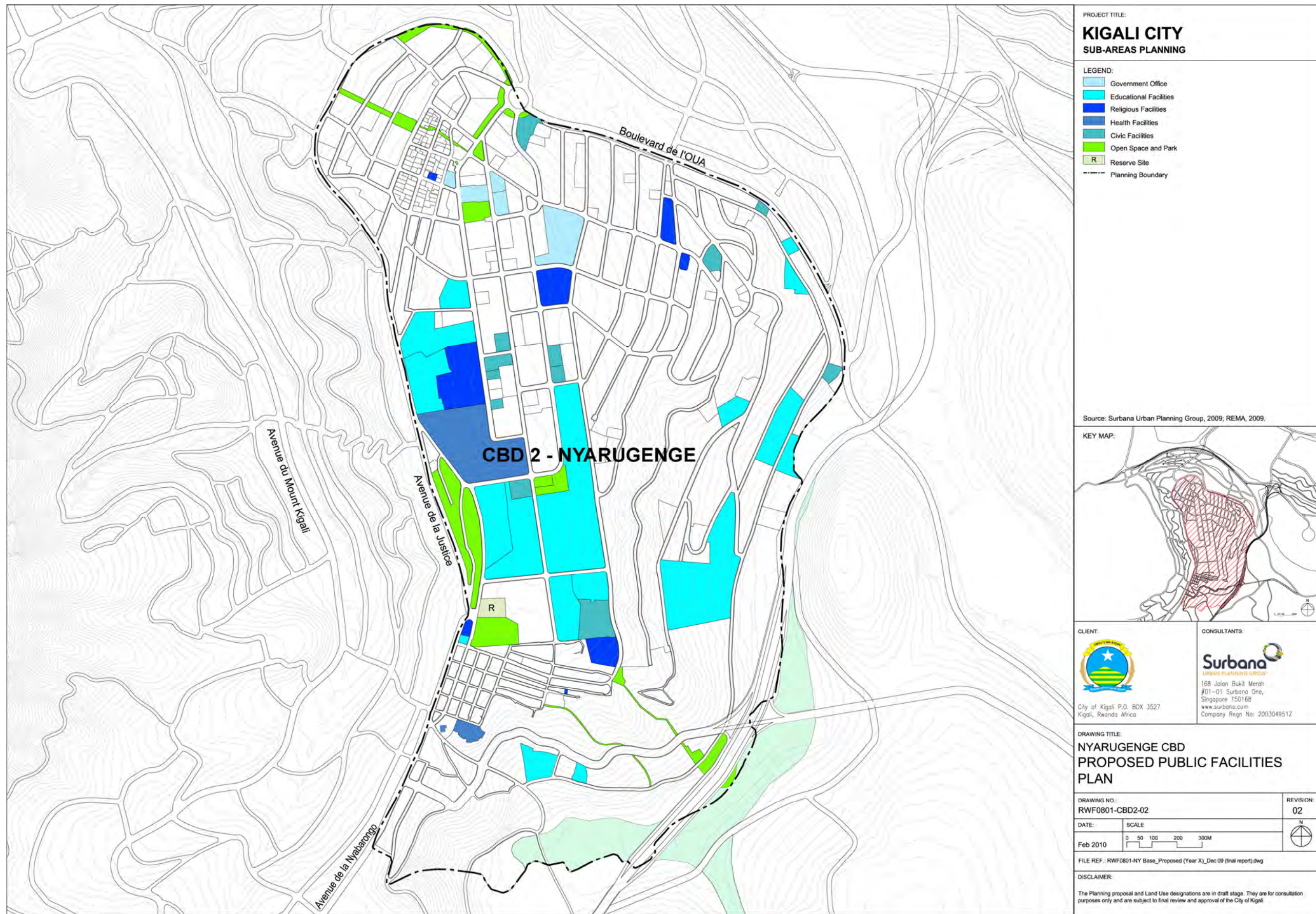


Figure 5.33: Nyarugenge CBD – Proposed Land Use Plan.
Source: Surbana



PROJECT TITLE:
**KIGALI CITY
SUB-AREAS PLANNING**

- LEGEND:
- Government Office
 - Educational Facilities
 - Religious Facilities
 - Health Facilities
 - Civic Facilities
 - Open Space and Park
 - R Reserve Site
 - Planning Boundary

Source: Surbana Urban Planning Group, 2009; REMA, 2009.



<p>CLIENT:</p> <p>City of Kigali P.O. BOX 3527 Kigali, Rwanda Africa</p>	<p>CONSULTANTS:</p> <p>Surbana URBAN PLANNING GROUP</p> <p>168 Jalan Bukit Merah #01-01 Surbana One, Singapore 150168 www.surbana.com Company Regn No: 200304951Z</p>
--	--

DRAWING TITLE:
**NYARUGENGE CBD
PROPOSED PUBLIC FACILITIES
PLAN**

DRAWING NO.: RWF0801-CBD2-02	REVISION: 02
DATE: Feb 2010	SCALE: 0 50 100 200 300M

FILE REF.: RWF0801-NY_Base_Proposed (Year X)_Dec 09 (final report).dwg

DISCLAIMER:
The Planning proposal and Land Use designations are in draft stage. They are for consultation purposes only and are subject to final review and approval of the City of Kigali.

Figure 5.34: Nyarugenge CBD – Public Facilities Plan.
Source: Surbana

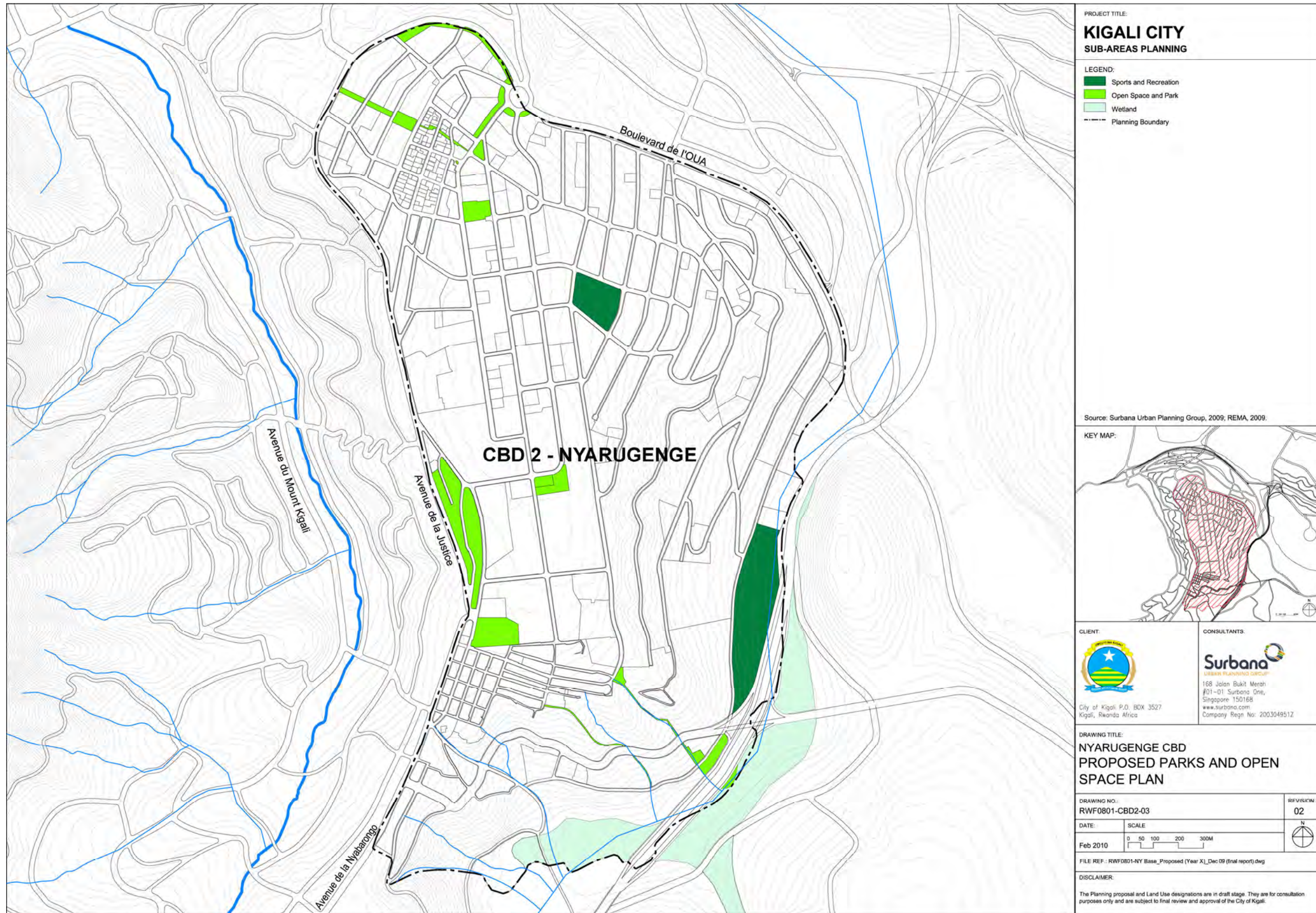


Figure 5.35: Nyarugenge CBD – Proposed Parks and Open Space Plan.
 Source: Surbana

5.7.5 Nyarugenge CBD Urban Design Recommendations

The Zoning Regulation for the overall CBD areas, as well as specific Urban Design Guidelines prepared for selected key areas will control the nature of development within the development parcels. In addition to this, a set of Urban Design recommendations are also prepared which will guide the development of the public realm. In the case of Nyarugenge CBD, urban design recommendations are prepared for the key public spaces in order to ensure the development of well designed and attractive public spaces, as well as to ensure a meaningful integration of these spaces with their surrounding developments. These are general recommendations proposed to ensure that the public spaces are developed to have a distinctive character and effectively fulfill the function assigned to it in the Master Plan. The following Urban Design Recommendations are proposed for Nyarugenge CBD:

- Streetscape Improvement Strategies and Guidelines
- Public Arts Project Plan

A. Streetscape Improvement Strategies and Guidelines

The streetscapes selected for redevelopment in Nyarugenge CBD can be classified into three categories, based on their categories in the road hierarchy system as well as the nature of developments in their surroundings. The key objective of streetscape improvement is to facilitate ease of movement. In addition, thematic streetscape enhancement is proposed to complement and enhance the character of the adjoining precincts or developments. Road safety features and designs are also proposed to be introduced to ensure safety of pedestrians, cyclists, as well as vehicles. Based on the category of streets, 3 types of broad streetscape improvement strategies are proposed as described below (refer to Figure 5.36):

i. Improvement of Major Avenues

This is applicable to the major avenues and collectors running in the Civic-Commercial and Civic-Institutional Precincts. The major roads under this category include:

TYPE A (Major Avenues)

- Avenue de la Paix
- Rue de la Revolution
- Avenue de l'Armee
- Avenue Paul IV

TYPE B (Collectors)

- Avenue des Grans
- Avenue de la Jeunesse
- Rue de Nyarugunga
- Rue de l' Hospital

These roads are characterised by mature trees, well constructed but generally narrow road ROW, on street parking at certain locations and sufficient building setbacks along the roads. These being major thoroughfares need to have a formal and grand appeal. The key recommendations for this category of roads are:

- **Road design:** Ensure clear segregation of the carriage way and the road reserve area using roadside kerbs to ensure pedestrian safety. No on-street parking is to be allowed along the avenues. Only covered drainage system should be applied along these roads.
- **Pedestrian and bicycle facilities:** To provide continuous sidewalks and dedicated bicycle tracks along these roads. Minimum width of the sidewalk should be 1.5m.
- **Landscape and tree planting:** To maintain the existing mature trees along the road and develop continuous planting strips, shading trees and other appropriate landscaping amenities along all roads. To ensure that the types of trees along the avenue do not obstruct pedestrian and vehicular circulation.
- **Street lighting:** Standard street lighting to be provided at 20m interval.
- **Street furniture:** Provide integrated bus shelters integrated with bin boxes at 300 meter intervals along the avenues marked for bus routes. The design of the bus shelter should be "light", so as not to hamper the green character of the roads. Introduce a comprehensive signage and place marking system.
- **Perimeter fencing:** 80% transparency of the perimeter fencing is required for all the developments fronting the road to create a spacious streetscape.

ii. Improvement of Pedestrian-oriented Commercial Streets and Plazas

This is applicable to the low-traffic pedestrian oriented streets running in the Market and Heritage Precinct and Southern Mix Use Precinct. The major roads under this category include:

- Rue du Lac Ihema
- Avenue du Commerce
- Rue du Lac Burera
- Avenue de la Rweru
- Rue de la Prefecture
- Rue de l'Eprange
- Avenue de la Republic
- Avenue des Milles Collines



Figure 5.36: Streetscape Improvement Recommendations for Major Avenues.
Source: Surbana



Figure 5.37: Streetscape Improvement Recommendations for Pedestrian Oriented Commercial Streets and Plazas.
Source: Surbana



Figure 5.38: Streetscape Improvement Recommendations for Residential Streets.
Source: Surbana

These are roads that generally run through pedestrian intensive areas. The key recommendations for this category of roads are:

- **Road design:** Resurface these roads with more pedestrian friendly paving materials such as concrete blocks or cobblestones as a traffic calming measure as well as to add visual vibrancy to the space. Integrate the design of pedestrian spaces into the road design so as to enhance the walkability of the spaces. Only covered drainage system should be allowed along these roads. No on-street parking is to be allowed.
- **Pedestrian facilities:** Development of covered corridors and arcades is encouraged along the road. The development of attractive patterns along the road is encouraged to enhance the pedestrian friendly environment.
- **Landscape with tree planting:** Considering the narrow roads, only the use of decorative trees should be promoted, which add ornamental value as well as not obstruct the emergency and services circulation.
- **Street lighting:** Decorative street lighting should be provided instead of the standard street lighting with features such as flag poles, planters, signage integrated into the street light. Introduce a comprehensive signage and place marking system.
- **Street Furniture:** Seating areas, planter boxes and bin boxes should be proposed at 50m intervals. It, however, should not obstruct the emergency and services circulation.
- **Perimeter fencing and building setback:** Perimeter fencing is not allowed along these roads; integration of the front yard of the development parcels into the road space is encouraged.

iii. Improvement of Residential Streets

This is applicable to the low-traffic, quiet residential streets running in the Good-class Residential Precinct. The major roads under this category include:

TYPE A (Through Roads)

- Avenue du Roi Boudouin I
- Avenue des Grandes Lacs
- Avenue de Kiyovu
- Rue de l'Akagera

TYPE B (Local Access Roads)

- Rue Depute Zamuzinzi
- Rue de l'Akanyaru

These roads are characterised by dense plantations and well constructed, but narrow road ROW. No on street parking is noticed on these streets as most of the parking is within the private residential developments. The key recommendations for this category of roads are:

- **Road design:** Provide appropriate traffic calming measures along the road by providing change of materials at intervals. An environmentally friendly and aesthetically appealing open drain (bio-swale) is recommended along these roads.
- **Pedestrian facilities:** Continuous sidewalk to be provided. The minimum width of the sidewalk should be 1.5 meter.
- **Landscape and tree planting:** As the road is narrow, tree planting is encouraged only when space is available.
- **Street lighting:** Standard street lighting should be provided at 20m intervals to ensure safety and security.
- **Street furniture:** No street furniture is required along this type of roads with the exception of a comprehensive signage and place marking system.
- **Perimeter fencing and building setback:** 80% transparency is required for all buildings fronting the road to ensure that the road space is safe and friendly to the pedestrians.

B. Public Art Projects Plan

Public arts such as unique sculptures, fountains, murals, etc. contribute to the identity of public spaces. The following recommendations are proposed for the promotion of public arts in Nyarugenge CBD:

- Promote the use of local art, style, forms and materials in the development of public art pieces.
- Commission and place 1 public art work in each of the parks and public plazas at prominent locations to enhance the identity of that space as well as to facilitate way-finding for pedestrians.
- Create platforms for outdoor art displays in the various government sites scattered all along the Nyarugenge CBD.
- Ensure all public art displays respect Rwandan beliefs and practices.

Figure 5.40 is the Public Arts Projects Plan for Nyarugenge CBD, showing the location of the areas selected for promotion of public art.

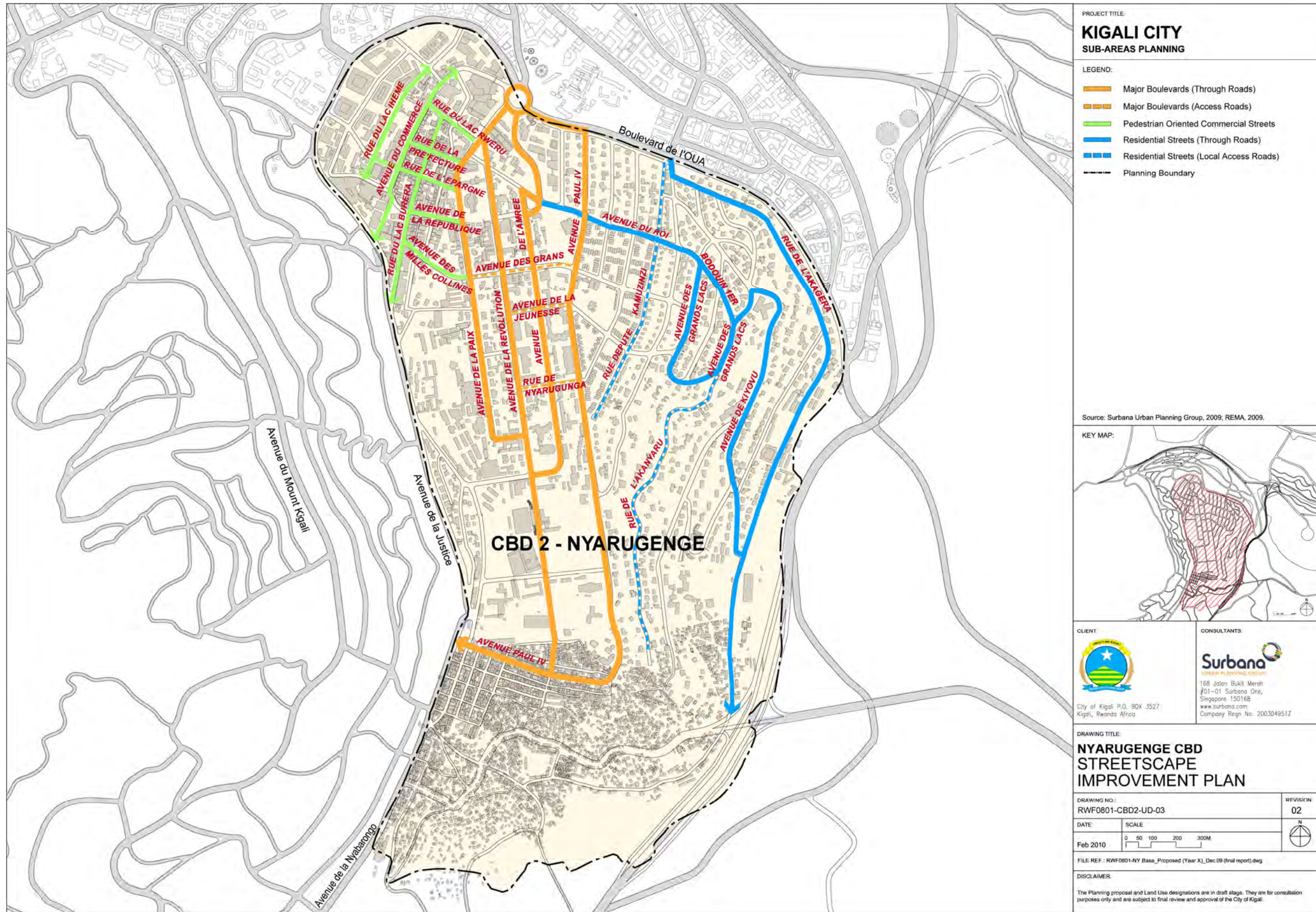


Figure 5.39: Nyarugenge CBD – Streetscape Improvement Plan.
 Source: Surbana

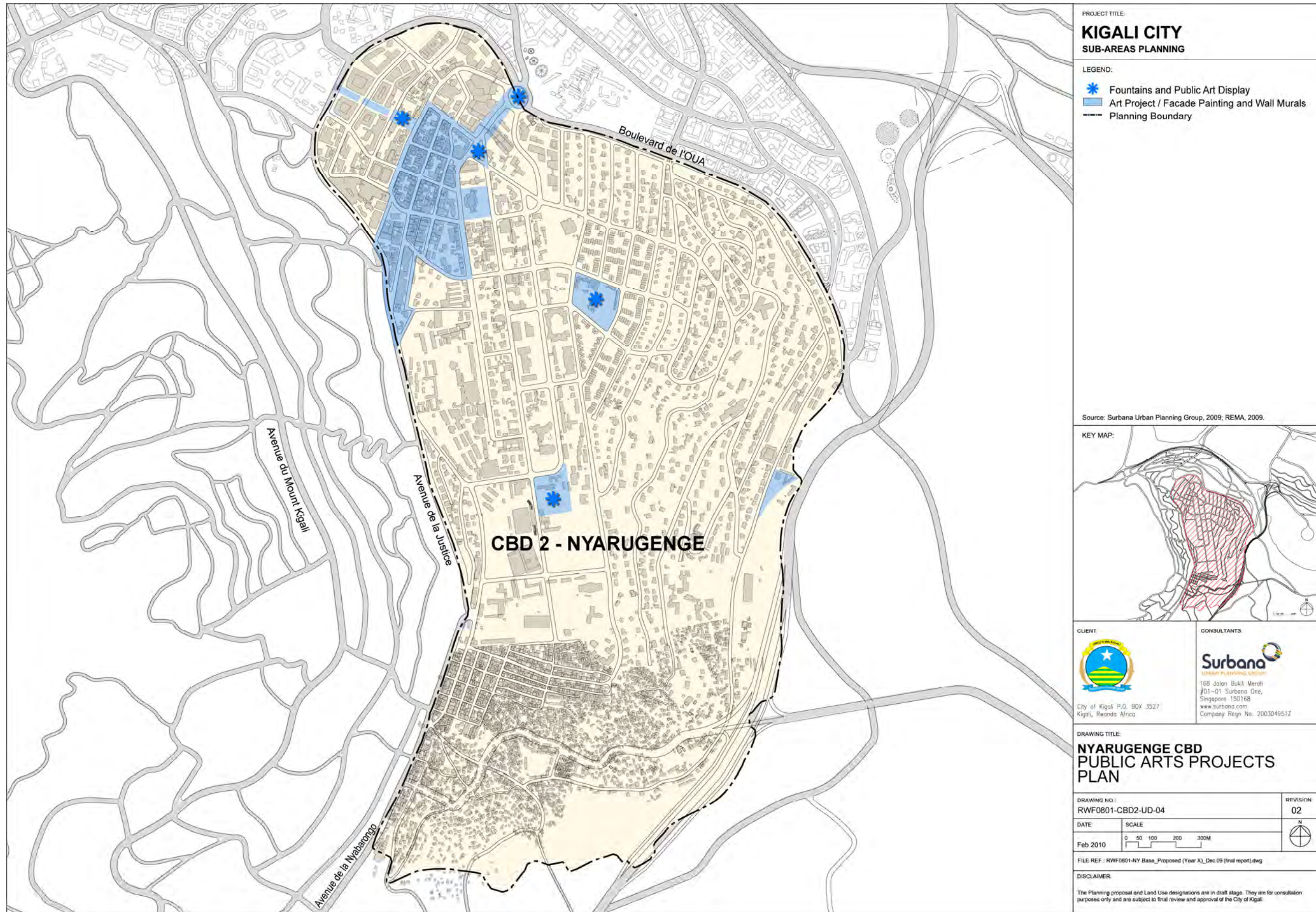


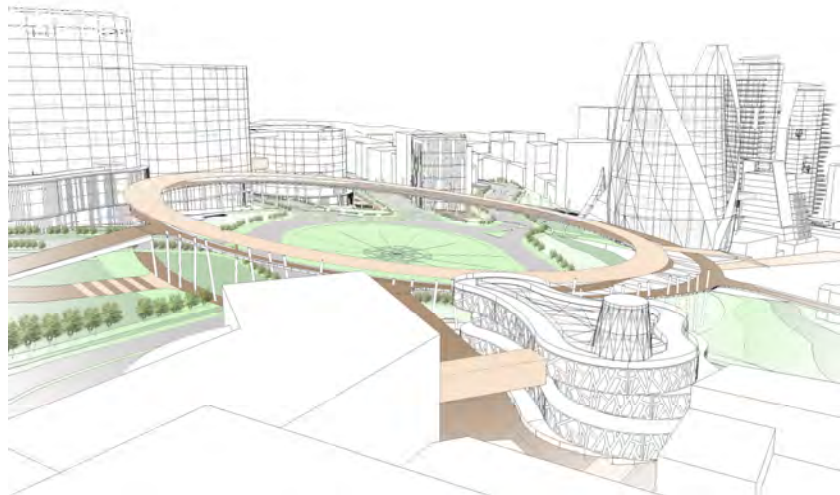
Figure 5.40: Nyarugenge CBD -- Public Arts Project Plan.
 Source: Surbana

5.7.6 Nyarugenge CBD – Centre Ville Roundabout Redevelopment

The New Shopping District

Centre Ville Roundabout redevelopment capitalises on its present location and context. As a landmark area in Kigali, its prominence and accessibility has attracted key developments such as Hotel Des Milles Collines and UTC shopping complex to be located in the vicinity.

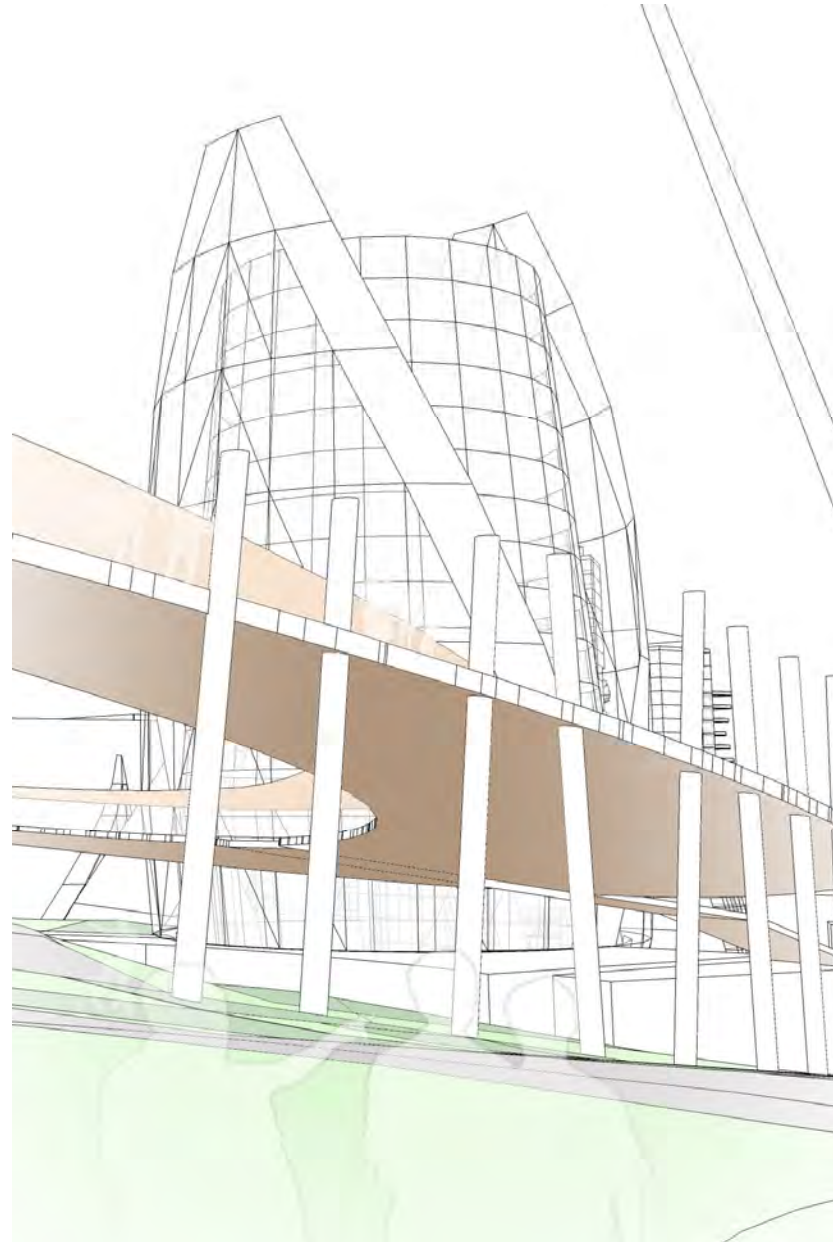
Situated within a short walking distance from the proposed new CBD core, the area has the potential to be developed as a vibrant, world-class shopping precinct, targeting tourists and serving the general working population in and around the CBD area. Clusters of new shopping centers, hotels and F&B outlets could be set up in the area with excellent interconnectivity between the developments.



Pedestrian Linkages Organised Around Pedestrian Overhead Ring Bridge.
Source: *Surbana*

The pedestrian linkages are organised around a colossal pedestrian overhead ring bridge surrounding the Centre Ville Roundabout. This landmark feature anchors the network of landscape boulevards, thematic pedestrian streets, sheltered walkways, sky bridges between buildings and contemporary public spaces, thereby creating a pedestrian-friendly and eco-sustainable environment within the new shopping district.

Complementing the extensive pedestrian networks is a series of mandatory 24hrs public-accessible thoroughfares within the buildings. These corridors could in turn provide opportunities to create vistas towards the Centre Ville Roundabout for orientation and way finding purposes.



Vistas Oriented Towards Pedestrian Ring Bridge.
Source: *Surbana*

To generate more vibrancy within the shopping district, Al Fresco dining is introduced along AVENUE DE LA PAIX. The 30m wide pedestrian boulevards ensure that the pedestrian flow will not be impeded and provides sufficient area for extensive landscaping of this key stretch within the shopping district.

In addition, dynamic LED screens could adorn the facades of the shopping centres and architectural lighting could be employed to highlight certain key features of the building such as the crown, gateways or even the whole façade, thereby enhancing the prominence of the building and further contributing to the vibrancy and way finding around the shopping district at night.

Similarly, the water fountain at the Centre Ville Roundabout could be upgraded to include a daily laser and light show, thereby providing more value to the area as a tourist attraction. It could also draw in the local crowds from neighboring districts and enhance the usage of the pedestrian ring bridge as a viewing platform.



Surrounding Developments with Dynamic Facades.
Source: *Surbana*

As an alternative to the shopping activities in the district, the open area fronting Saint Famille Church will be transformed into a public park. Within a short walking distance, it provides a respite from the hive of activity in the shopping district.



Public Park Provides Respite in the City.
Source: *Surbana*

See Appendix 5.2 Centre Ville Roundabout Redevelopment.



Figure 5.41: Centre Ville Roundabout Illustration.
Source: *Surbana*

5.7.7 Nyarugenge Heritage Village

The Heritage District

The Nyarugenge Market represents the early urban grain of the City and has been identified as a heritage conservation district, wherein the existing character and vibrancy of the area will be preserved while allowing for redevelopment into an attractive high-activity shopping area in certain plots.

The site which covers roughly 7 ha will be transformed into an attractive pedestrianized area with low rise retail shops, interspersed with alfresco dining areas, restaurants, galleries, handicraft centres, souvenir shops and cafes.

Seamlessly connected to the Centreville Roundabout area, key buildings will be conserved to aid in way finding and preservation of the visual memories of the place. Likewise, characteristics of the streets will be recreated to preserve the charm and genius loci of the heritage district.



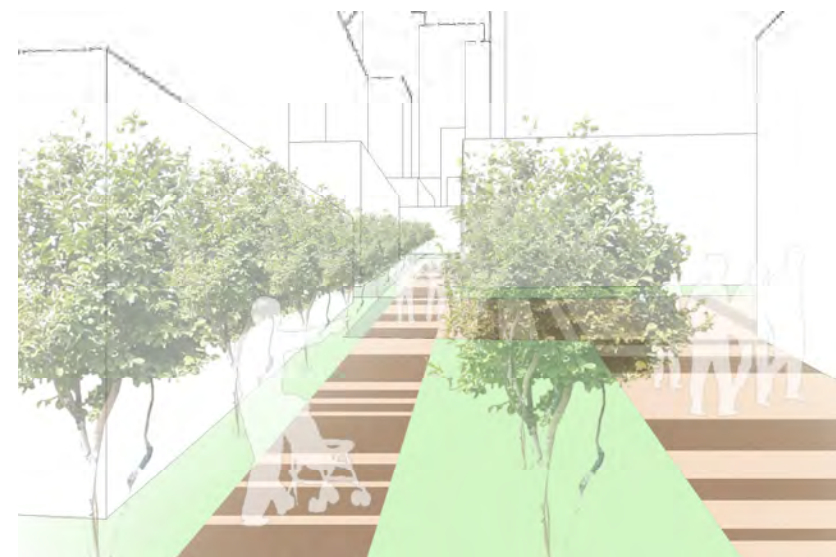
Existing Character and Vibrancy of Area Preserved as Heritage District.
Source: *Surbana*

Existing building foot prints and typologies are retained and put to adaptive re-use as small scale retail, cultural and commercial areas. To maintain the intimate nature of a heritage district, average building heights are proposed to be no more than four storey and average parcel sizes are kept within a range of 7,000 m² to 10,000 m².

Similarly, retaining the existing physical character is partly achieved by mandatory use of local materials such as cobble stones, local bricks and traditional motifs for the pedestrian pathway while emphasis has been placed on the use of vernacular forms, materials, textures and colors in the choice of street furniture.



Old World Charm Through Use of Local Materials.
Source: *Surbana*



Courtyards Reprogrammed into Intimate Retail / Commercial Spaces or Public Squares.
Source: *Surbana*

The irregularity of existing building plots also offers the unique opportunity to introduce courtyards within the concentric developments, thereby contributing to the plurality of the urban fabric. Depending on the size of the courtyards, these could be programmed into intimate spaces for Al Fresco dining or could be outfitted into a public square off the main pedestrian street.

Thematic landscaping and the occasional rooftop gardens or vertical green walls give the heritage area a tinge of contemporary touch, contributing to the identity of modern Rwanda juxtaposed against the historic roots of the Kigali city.



Thematic Landscaping Along Green Connectors.
Source: *Surbana*

See Appendix 5.3 Nyarugenge Heritage Village.



Figure 5.42: Nyarugenge Heritage Village Illustration.
Source: *Surbana*

5.7.8 Statehouse Site Redevelopment

A Green Residential Enclave in the Heart of Kigali CBD

As an up-market residential development, Upper Kiyovu Residential Enclave aims to leverage on the heritage value of the Statehouse complex as well as the high economic value of its location. Proposed development consists of attractive, luxurious housing clusters and hotels which could support the residential needs of workers in the CBD.

The existing Statehouse could be redeveloped into a heritage building for education and nation building purposes while the large open space around the Statehouse is proposed to be developed into an exclusive club catering to the residents in the area.



Upmarket Residential Development Centred Around Heritage Value of the Statehouse Complex.
Source: *Surbana*

Through redevelopment, the land value and development potential could be maximised by general densification of the land parcels. This also provides the opportunity to develop the estate with a distinctive contemporary architectural character that appeals to expats and wealthy locals. Thematic streetscapes and modern street furniture could further enhance the unique architectural character, creating a distinct identity for this enclave.

Notwithstanding the possible developmental changes within the estate, privacy, security and character of the existing residential developments will not be compromised. The heritage and symbolic value of the Statehouse would also be preserved through sensitive adaptive reuse of the building.



Distinctive Contemporary Architectural Character in the Estate.
Source: *Surbana*

Generally, residential developments in the Upper Kiyovu residential area comprise of a low rise up-market modern houses. These are in turn, buffeted from the high-rise CBD developments by medium density premium residences.

Possibly developed as a mix of townhouses and apartments with some shared amenities, each residential cluster could be a self contained community. Examples of such state of the art facilities and services include common entrance gate and security, shared parking, gymnasium, club house, heated lap pools, barbeque areas, water features and landscaped areas, etc.



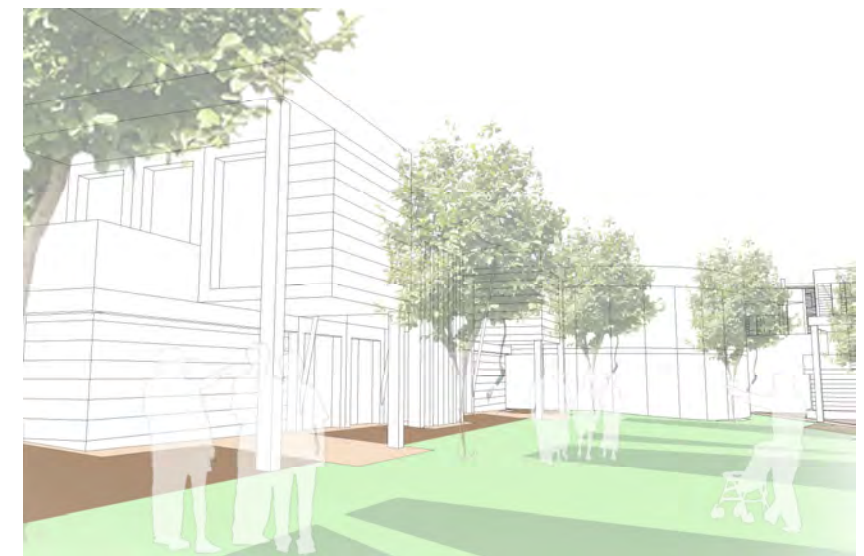
Self-Contained Residential Cluster.
Source: *Surbana*

Along with the shared amenities, each residential unit could possibly have its own private open spaces such as a private

front yard and entrance, a private back yard and garden, rooftop terraces and gardens, etc.

Existing hotel developments such as Serena and the under construction New Century Hotel on the western end of the site would be complemented by a handful of mid-rise premium hotels. Similarly, in line with the neighboring low-rise residential developments, a low-rise boutique hotel could be built in the parcel south of the Presidential Park.

With the former President's House proposed to be converted to a historic museum, the Presidential Park could complement the new function and be converted into an exclusive club with sports and entertainment facilities. Within this exclusive park, small scale commercial developments such as restaurants, cafes and retail facilities can be developed for the surrounding residential neighborhood.



Exclusive Club Developed in Presidential Park.
Source: *Surbana*

See Appendix 5.4 Statehouse Site Redevelopment

5.8 Kimicanga - Detailed Master Plan and Urban Design Plan

Kimicanga covers an area of 32.3 ha and includes the existing residential settlement along Avenue du Lac Muhazi Road. It is located between the three important developments, the proposed Kigali CBD Phase 1 development, the Kacyiru and Kimihurura Hills, along a major road that leads to the Airport. In view of this, Kimicanga is envisioned as the regional entertainment and cultural centre. It is surrounded by wetlands on the north and west, which are proposed to be developed into the Kigali CBD Wetland Park, complementing the developments in Muhima CBD and Kimicanga. The planning for Kimicanga is based on the assumption that majority of its land would eventually be available for redevelopment.

5.8.1 Kimicanga Concept Plan

The Urban Design Concept for Kimicanga is guided by several urban design principles and recommendations as illustrated in Figure 5.43 and as listed below:

A. Axes: Axes serve to visually and physically connect developments within and around Kimicanga imparting it a structure and legibility. Two major axes are proposed connecting the Kimicanga with the Kigali CBD Phase 1 development and the other from the Expressway to Kimicanga. A series of minor axes is proposed connecting the key nodes of the entertainment district with the attractions of the wetland park proposal.

B. Views: View corridors are proposed along the major and minor axes, which offer unobstructed views and enhance the visual relationships among buildings and their surroundings, giving Kimicanga a strong sense of legibility and orientation. Special design guidelines along the view corridors, such as framing the views of the Wetland Park, etc. are also proposed.

C. Gateways: Gateways are introduced to define significant entry points to the CBD such as Avenue du Lac Muhazi. This gateway is proposed to be created by utilizing built elements or landscape elements with distinct features that reflect the characteristics of the Kimicanga Entertainment District or its landscape.

D. Parks and Green Connectors: The Kigali CBD Wetland Park is proposed to be utilized to create a variety of public spaces and offer a soft edge to the Kimicanga developments. Landscaped green connectors linking the Wetland Park and the Entertainment District are proposed which encourage pedestrian walking and cycling and integrate the various recreational activities.

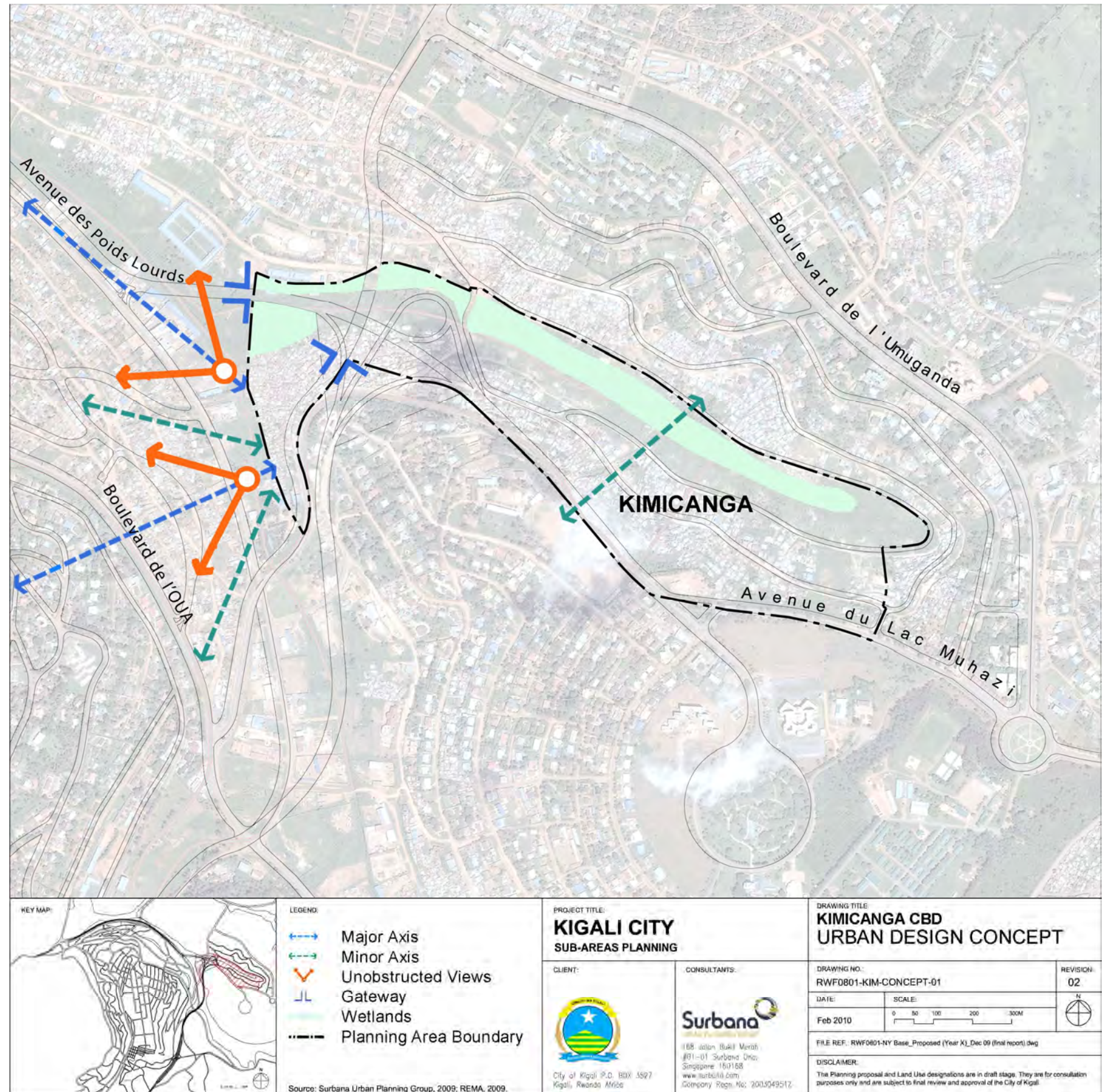


Figure 5.43: Kimicanga CBD – Urban Design Concept.
Source: Surbana.

The proposed Urban Design Concept discussed above forms the base for developing the proposed Land Use Plan and the proposed Parcellation Plan.

5.8.2 Kimicanga Land Use Plan

The proposed Land Use Plan for Kimicanga is developed to accommodate vibrant entertainment and recreational uses such as recreational clubs, multiplex theatres, food streets, pubs, dance floors etc. to complement the high density commercial development in Kigali CBD Phase 1. The proposed entertainment center in Kimicanga is envisioned to be the new destination in Kigali CBD complementing CBD Phase 1. Hotels and serviced apartments are proposed along Avenue du Lac Muhazi to complement the Kimiharura convention centre. In addition it will also house convention facilities and retail developments on a small scale. Approximately 8,500 people are expected to make use of the 16.97 ha of commercial land, with 16.51 ha of land reserved for parks and green connectors. Figure 5.44 presents the proposed Land Use Plan and Table 5.5 presents the Land Use Data for Kimicanga. The salient features of the proposed Land Use Plan for Kimicanga are:

- High density recreational and commercial developments are allocated adjacent to the Kigali CBD Phase 1.
- Low density recreational uses are allocated along the wetland boundaries to reduce the negative impact on the environmentally sensitive areas.
- Mix use developments are encouraged along Avenue du Lac Muhazi to create vibrant and lively commercial spaces with a live-in population.
- Big utility installations including electrical substations are integrated within recreational complexes.

The Land Use Plan is proposed as the ideal case scenario for Kimicanga as per the Master Plan for that area. However, for the development of the commercial and residential parcels, flexibility will be given through the Zoning Plan, which will allow the market 'supply and demand' to determine the actual use of these parcels.

Table 5.5: Kimicanga Land Use Data.

Kimicanga - Landuse Data			
Legend	Land Use	Nett Site Area* sq m	Plot Ratio
	High Rise Residential	52,547	8.1
	Commercial General	39,168	6.1
	Hotel	48,669	7.5
	Open Space and Park	201,678	31.2
	Sports and Recreation	14,224	2.2
	Wetland	113,658	17.6
	Roads	176,440	27.3
Total		646,383	100.0

Source: Surbana

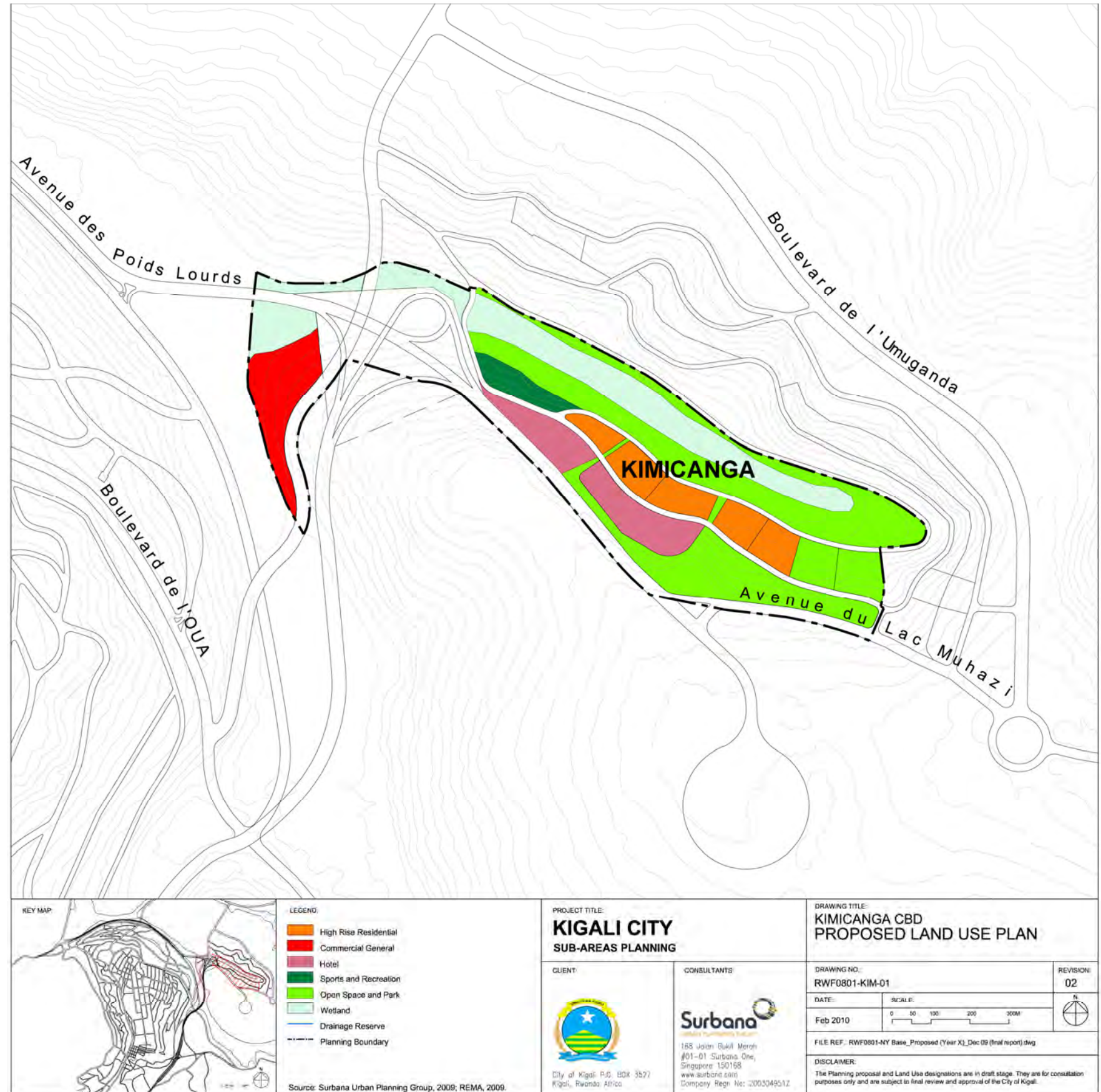


Figure 5.44: Kimicanga CBD - Proposed Land Use Plan.
Source: Surbana.

5.8.3 Kimicanga Urban Design Recommendations

The Zoning Regulation for the overall CBD areas, as well as specific Urban Design Guidelines prepared for selected key areas will control the nature of development within the development parcels. In addition to this a set of Urban Design recommendations are also prepared which will guide the development of the public realm. In case of Kimicanga, urban design recommendations are prepared for the public spaces in order to ensure the development of well designed and attractive public spaces, as well as to ensure a meaningful integration of these spaces with their surrounding developments.

A. Green Strip

The green strip or park connectors which connect the commercial and developments to the wetlands is proposed in the eastern area of Kimicanga. The recommendations for its design are:

- Provide a well-paved pedestrian path along the green strip.
- Provide proper pedestrian connections from the surrounding developments to the strip.
- The minimum width of the pedestrian path should be 2.4m. It should be aligned at least 3m away from the parcel boundaries to allow for green space on both sides for tree planting.
- Prohibit the use of perimeter fencing along the boundary of the green strip. Integrate the open space within the setback line in adjoining parcels by providing outdoor refreshment and other such activity generating activities.
- Provide rest areas with seating facilities at every 100m interval.
- Provide 'universal design' features such as ramps, to allow for barrier-free and easy access for the disabled at the key nodes.
- Lighting at every 20m interval should be provided along the pedestrian pathway.
- Plant canopy trees at appropriate intervals to provide adequate shading.
- Provide adequate number of directional signage at entry points and intersection points along the green strips.
- Encourage the use of local materials such as cobble stones and local bricks for the pedestrian pathway. Encourage the use of traditional forms, materials, textures and colours in the street furniture.
- Ensure that the servicing of the main infrastructure alignments such as drainage, sewerage and water pipes laid along the green strips are possible at all times.

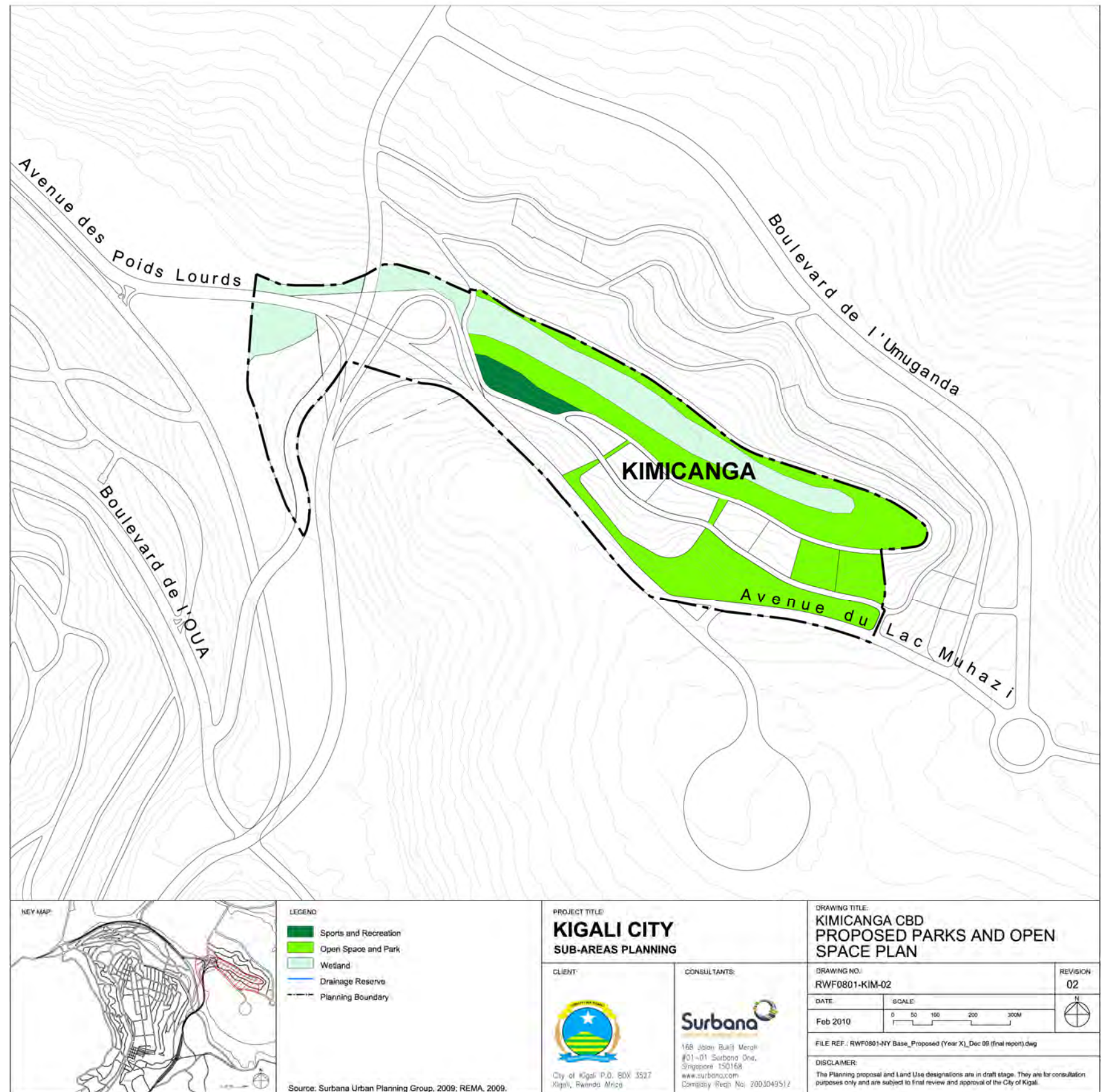


Figure 5.45: Kimicanga CBD – Proposed Parks and Open Space.
Source: Surbana



Figure 5.46: Kimicanga CBD – Arts and Entertainment Centre Illustration.
Source: *Surbana*

CHAPTER 6: PROPOSED IMPLEMENTATION MECHANISM

The implementation of the Master Plan for the Kigali CBD is estimated to take about 20 years. This chapter presents the mechanisms and the development phasing proposed to implement the CBD master plan.

The key tools and strategies proposed for the implementation of the Kigali CBD master plan include the Zoning Plan, the Capital Improvement Plan, and the Special Projects.

6.1 Implementation of Zoning Plan

The implementation of the Zoning Plan for the CBD area is expected to encourage redevelopment of land parcels within the Kigali CBD. The proposed Zoning Plan facilitates development and provides an avenue for land owners to realise the value of their land through redevelopment.

The zoning plan and guidelines are elaborated in the Zoning Plan Report (Refer to Volume 3 Zoning and Urban Design Guidelines Report for Nyarugenge District).

6.2 Capital Improvement Plan (CIP)

The Capital Improvement Plan is aimed at improving infrastructure capacity and providing essential public facilities required to support the Vision, Land Use and Zoning Plans proposed for the CBD. The proposed capital improvement projects should be funded by the government and should include the following:

- Infrastructure development, which includes development of roads, water supply, power supply, sewerage and drainage systems.
- Development of public facilities required in the CBD such as development of schools, clinics, the City Hall and other government buildings, museums, public libraries etc.
- Development of parks and public spaces such as the central plaza in the new CBD core, the Kigali Wetlands Park and the parks connectors.

The Capital Improvement Plan proposed for Kigali CBD development is discussed further in Chapter 8.

6.3 Special Projects

A few 'special projects' within the CBD have been identified and would set the standards for quality and design in the CBD. These projects should be initiated by the government. For the successful execution of these projects, the following measures are advised:

- Ensure that an integrated and high quality development is achieved thru design competition or invited tender.
-
- Form a Task Force for each project that will look after the interests of the city and the residents.
-
- Form special-purpose vehicles to effectively manage and execute these projects.

The projects identified as 'special projects' are usually large and complex. The execution of such projects, which also involves financing and marketing, is best done with the Public-Private Partnership (PPP) approach – in which private sector participation is encouraged.

The PPP approach is recommended with the following considerations:

1. The projects should be developed on commercial basis involving private investors and developers, such that the government could minimise the initial investment needed for the project.
2. Private partners, as experienced developers, are expected to ensure infallibility of the project as they would be able to fund the infrastructure development of the project and draw references from previous project experiences.
3. The government and the private developers can act together to develop the infrastructure and key features of the CBD. This joint-venture company will then market the land parcels for commercial and residential development to other investors and developers, thus allowing other participants and accelerating the development of the CBD.

The PPP is recommended¹² because it offers a win-win solution for the public, the public sector and the private sector.

The 3 implementation mechanisms would allow various developments to take place at the same time, in the CBD. In the light of man power and budget constraints however, it is recommended that the development of projects identified in the CIP as well as the 'special projects' to be phased according to their level of urgency and priority, so as to better manage the developments in the CBD.

The special projects identified in the CBD are as indicated in Figure 6.1 and are as listed below:

- Proposed CBD Phase 1 development
- Redevelopment of Centre Ville Roundabout area
- Proposed CDB Core area
- Proposed Kimicanga Phase 1 development
- Redevelopment of Nyabugogo Taxi Park area
- Proposed Statehouse redevelopment

¹² No particular PPP model is recommended in order to keep the options open for the government and the Department of Land Use Management & GIS to explore different ways of implementation.

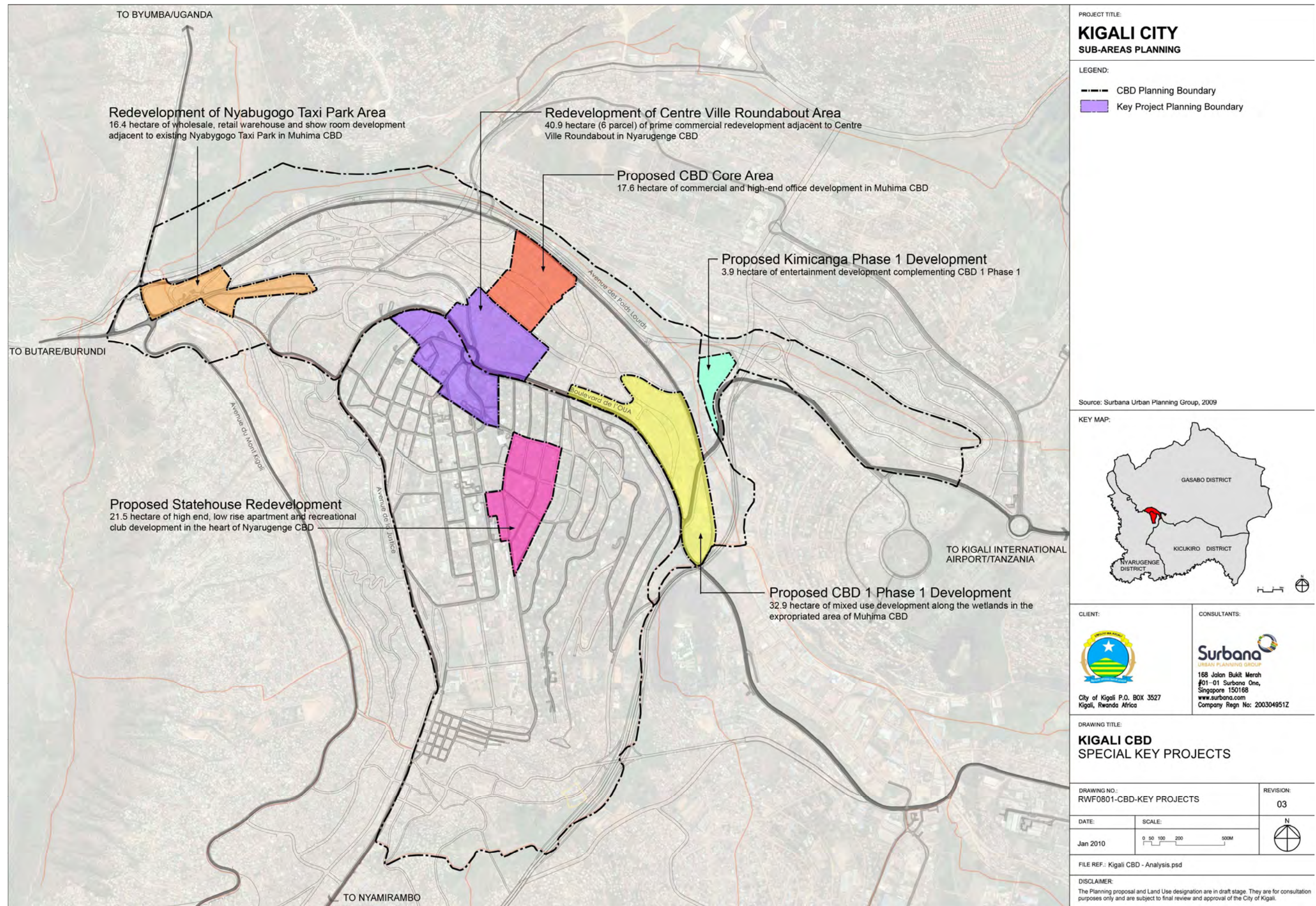


Figure 6.1: Proposed Special Projects Plan.
 Source: Surbana

6.4 Proposed Phasing Plan

To ensure the success of the Kigali CBD Master Plan, it is imperative to lay out clear implementation steps to guide the development of the Master Plan over the next 20 years. The development phasing recommended for the CBD is proposed based on priorities such as the need to attract investment and create employment. Figure 7.1 presents the Phasing Plan proposed for the CBD areas, and is elaborated as follows.

6.5 Phase 1 (2009 - 2014):

A. Muhima CBD Phase 1 Development:

Muhima CBD Phase 1 Development is proposed to take place in the recently expropriated 55 ha of land along Avenue de Poids Lourdes and Boulevard de l'OUA. The development of CBD 1 Phase 1 is expected to usher in a new comprehensively planned commercial development and create a new destination in Kigali City. The scope of work for this project includes:

- Infrastructure development of the Phase 1 area.
- Development of the public open spaces.
- Land sale of the commercial parcels.

B. Nyarugenge CBD Roundabout Development:

This involves the redevelopment of the prime area of Nyarugenge CBD, around the Centre Ville Roundabout, where there is pressing need for commercial redevelopment and integration with the UTC that has recently been completed. The scope of work for this project includes:

- Consolidation, amalgamation and regularization of the existing small commercial parcels into a single integrated strata development parcel.
- Road and infrastructure improvement including road widening, sewerage network development etc.
- Development of circular pedestrian bridge around the roundabout.

C. Nyabugogo Area Redevelopment:

The high demand for commercial space near the Nyabugogo Taxi Park is resulting in land owners redeveloping their land. However, this development is unregulated and may conflict with the Master Plan proposed for this area. Hence, it is important for the City to intervene and ensure that development in this area takes place in a planned manner. The scope of work for this project includes:

- Consolidation, amalgamation and regularization of small commercial parcels into a single strata development parcel.

- Road, traffic and infrastructure improvement.
- Development of public spaces including the open street bazaar along Boulevard de Nyabugogo.

6.6 Phase 2 (2014 - 2019) & Phase 2+3 (2014-2024)

D. Kimicanga Phase 1 Development:

This project is important as it is located closer to the Muhima CBD Phase 1 development and is planned to complement the development of CBD phase 1. The scope of work for this project includes:

- Land acquisition.
- Infrastructure development.
- Land sale of the commercial parcel.
- Development of Performing Art Centre

E. Wetland Park Phase 1 Development:

This project is important as it is located between CBD phase 1 and the Kimicanga entertainment district. It is also a start-up project within the Kigali Wetland Park development (also proposed to be a City Park). The scope of work for this project includes:

- Land clearing.
- Development of the Wetland Park.
- Development of pedestrian bridge connecting the park and the CBD phase 1.

F. Muhima CBD Core Area Development (Phase 2+3):

The proposed CBD Core is strategically located along the low lying flat areas of the Muhima Planning area, and is expected to become a vibrant regional business and administrative centre for the entire region. This project is scheduled to span over two Development Phases. The scope of work includes:

- Land acquisition of the area marked for the development of the CBD core.
- Infrastructure development for the CBD core.
- Development of the central public plaza.
- Land sale of commercial parcels.

G. Nyarugenge Commercial and Heritage Areas Redevelopment :

This involves the redevelopment of the existing Nyarugenge Market into a tourism related retail-cultural and entertainment centre, the scope of work includes:

- Acquisition of land areas required for public use.
- Development of public spaces including the pedestrianisation of one of the existing roads.
- Redevelopment and regularization of the existing small commercial parcels.
- Road and infrastructure improvement including road widening, sewerage network development etc.

H. The Upper Kiyovu Residential Development

This involves the redevelopment of the area around the current statehouse into a modern residential complex. The scope of works includes:

- Conversion of the statehouse into museum, community club and public park
- Land sale of the residential and hotel parcels

6.7 Phase 3 (2019-2024)

I. Kimicanga Phase 2 Development:

This involves the development of the rest of the Kimicanga planning area, to complete the development of the entertainment district. The scope of work for this project includes:

- Land acquisition.
- Infrastructure development.
- Land sale of the commercial and residential parcel.

6.8 Subsequent Phase (2024 onwards):

The development of the other CBD areas are categorized as 'priority 3 projects' and are covered under the subsequent phases of the project.

The proposed Phasing Plan is subject to further refinement in terms of scope, project boundary and time frame. A project feasibility study needs to be carried out for each of the abovementioned projects.

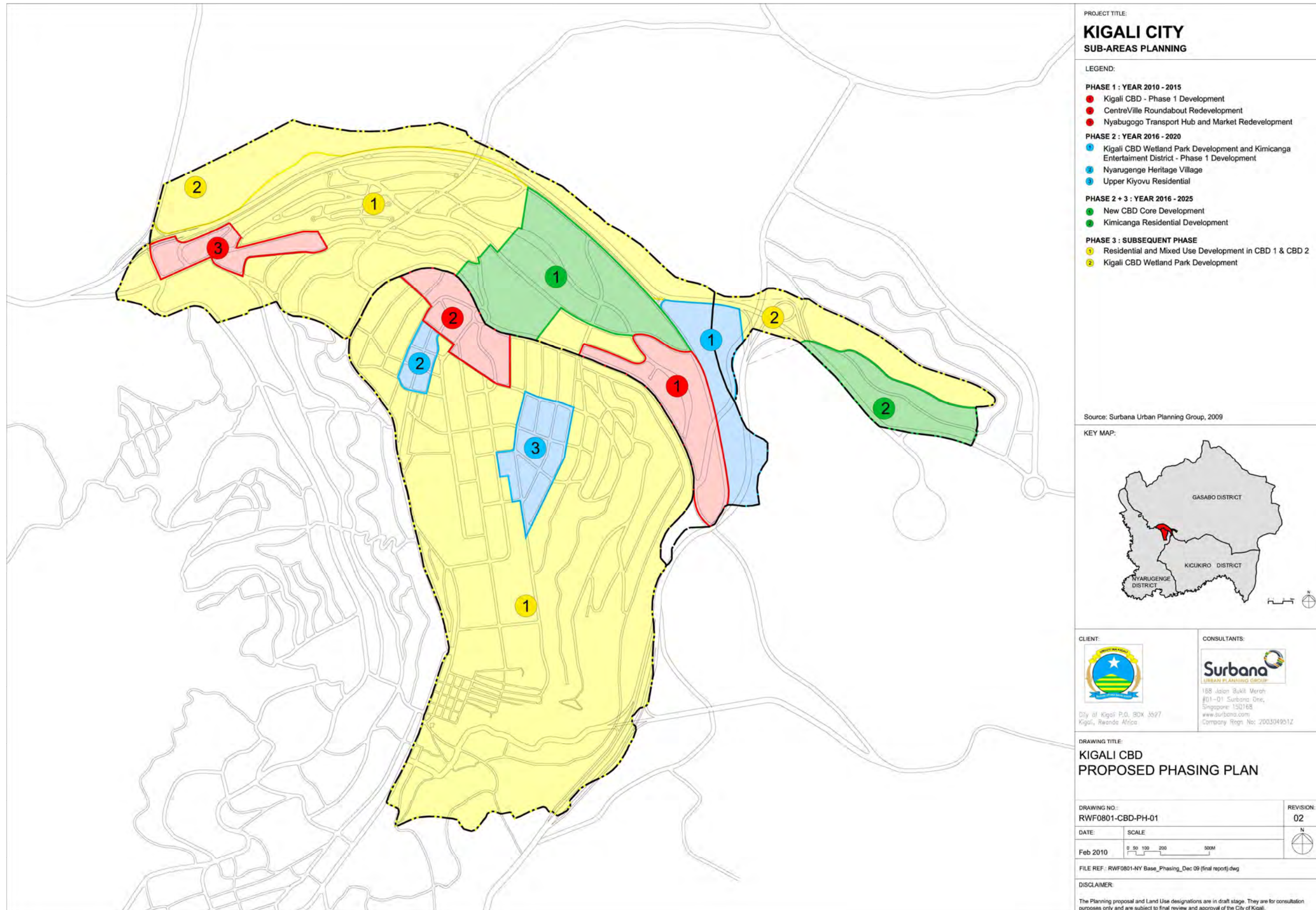


Figure 6.2: Proposed Phasing Plan.
 Source: Surbana

CHAPTER 7: CAPITAL IMPROVEMENT PLAN

7.1 Introduction

As Kigali City progresses towards the future, the government and the people envision a CBD that is well-planned for growth and development, with quality spaces and services for its people. As such adequate capital improvements, especially in the development of public facilities and infrastructure, are required.

The determining aspects of any successful community are its public facilities, transportation and utility systems. The City's Capital Improvement Program for the CBD will govern the provision of facilities and infrastructure. These improvements will play a vital role in determining how the CBD will function in the future and will have a significant impact on its development and operations.

7.2 Capital Improvement Plan

A Capital Improvement Plan (CIP) provides a list of public projects and serves as a guide for identifying current and future fiscal requirements, forming the basis for determining the future capital budgets.

CIP projects are major projects generally undertaken by government agencies and include:

- General Public Facilities Projects
- Transportation Projects
- Utility Projects

The CIP for Kigali CBD is developed based on the proposed Phasing Plan presented in Chapter 6. The proposed development Phasing Plan for Kigali CBD provides the selection planning horizons for determining projects to be included in the multi-year CIP. The CIP will focus on the development within the next 25 years and define the public projects, phasing, and cost estimates for planning and funding the CIP.

The preliminary costing prepared at this stage gives a broad indication of the capital outlay for the implementation of these projects to support the future developments in Kigali CBD.

Typically, capital improvement projects are funded by government resources, such as sales taxes, service fees and revenues¹³. Funding of such projects, especially those in the CBD core area, can also be done through privatisation.

7.2.1 General Public Facilities Projects

General public facilities refer to public buildings, such as government offices, schools, libraries, religious institutions, hospitals or health centres, sports clubs and complexes, cultural centres, parks and public open spaces.

Such projects address the increasing need for public facilities – resulting from a growing population with increasing aspirations for a higher quality of life. The funding for these projects is expected to come from the City. They are expected to be implemented by the City or other government departments.

Table 7.1 listed the public facilities projects for phase 1 & 2, while Figure 7.1 indicates the location of these projects.

7.2.2 Transportation Projects

Transportation projects are elaborated in the CBD Infrastructure report (Volume 2: Detailed Transportation and Infrastructure Master Plan Report for Nyarugenge District). They involve the development of an efficient transportation system, which includes the improvement of existing roads and the construction of new road as per the Road Network Plan proposed for the CBD, as well as other transport related projects such as road widening, signalisation of junctions, etc.

7.2.3 Utility Projects

Utility projects are elaborated in the CBD Infrastructure report (Volume 2: Detailed Transportation and Infrastructure Master Plan Report for Nyarugenge District). They include the water distribution systems and water storage reservoirs, sewerage systems, electricity distribution networks and electrical substations. Most of the utility projects are expected to be funded by the City and implemented by Electrogaz. Drainage projects are expected to be implemented by the City as part of the road works.

¹³ Only projects proposed by Surbana have been included in the preparation of the cost estimates for the capital improvement projects. Projects that have already been planned or committed by the government authorities are not included, as it is assumed that such projects have already been budgeted for by the relevant government authorities. For costing estimates, the unit rates used in the calculation is built up from the unit rates provided by the City Council, Electrogaz and the local contractors in Rwanda.

Table 7.1: Development of Public Facilities for Phase 1 & 2.

Items		Plot Area (m ²)	GFA (m ²)	Unit Rate*	Costs (Million USD)	Remarks
MUHIMA CBD Phase 1 & 2						
1	Muhima Hospital Redevelopment	11585	18536	350 USD/m ²	6.48	Assuming an plot ratio of 1.6
2	Development of Wetland Park Phase 1	207110	-	20 USD/m ²	4.14	Cost includes soft landscaping and other public facilities like the street furniture, pedestrian walkways and infra provisions
3	Nyarugenge Transport Hub and Market Green	The cost of the parks and green finger development is excluded from the table, as it is included in the Special Projects cost.				
4	CBD Core Central Plaza development	The cost of the green and central plaza development is excluded from the table, as it is included in the Special Projects cost.				
5	Phase 1 green and plaza development	The cost of the green and plaza development is excluded from the table, as it is included in the Special Projects cost.				
Nyarugenge CBD Phase 1 & 2						
6	Centre Ville Library and Cultural Centre Development	8043	9651	700 USD/m ²	6.75	Assuming an plot ratio of 1.2
7	City Hall Office	6864	10296	700 USD/m ²	7.20	Assuming an plot ratio of 1.5
8	State House Redevelopment	28313	8494	350 USD/m ²	2.97	Assuming an plot ratio of 0.3
9	Belgian Memorial Redevelopment	5939	2969	350 USD/m ²	1.03	Assuming an plot ratio of 0.5
10	Nyarugenge Heritage Market Redevelopment	9360	-	50 USD/m ²	0.46	Cost includes soft landscaping and other public facilities like the street furniture, pedestrian walkways and infra provisions
11	Parks and Open Space Development	The cost of the park and open space development is excluded from the table, as it is included in the Special Projects cost.				
Total					29.03	

Source: *Surbana*

* The unit construction price is derived from the average figures gathered from Electrogaz, builders and local contractors

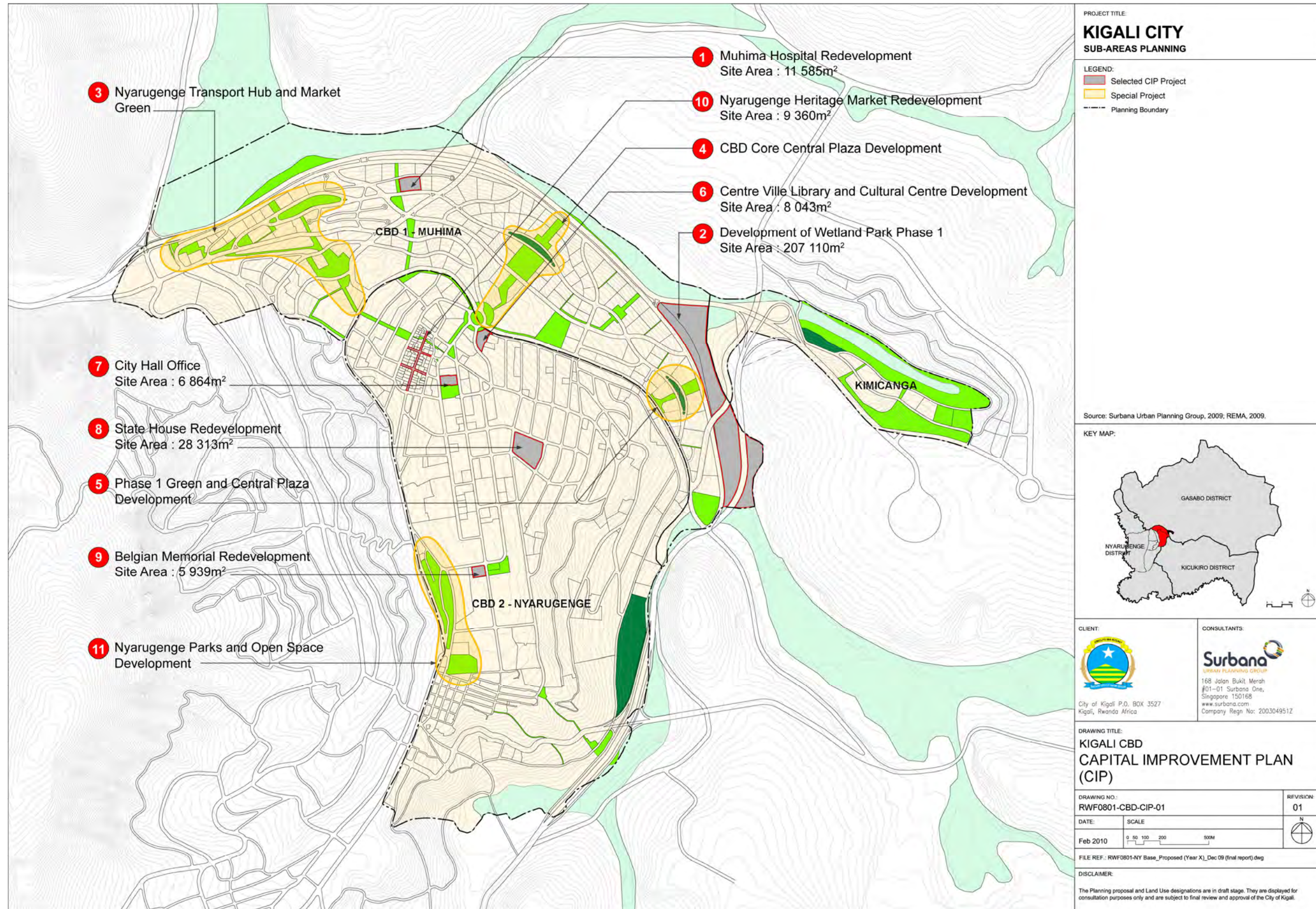


Figure 7.1: Capital Improvement Plan.
 Source: Surbana

CHAPTER 8: FOLLOW UP MEASURES

8.1 Introduction

The Detailed Master Plan presented above sets the direction for the development of Kigali CBD for the next 20 years. In order to meaningfully implement the Master Plan, it needs to have a legal status. Moreover, considering the uncertainties of future developments, it is critical to review, adjust and improve the Master Plan so as to respond to changing socio-economic situation and the aspirations of the people. The implementation of the Master Plan also requires a capable team which would ensure that the desired vision of the Master Plan is realized.

In view of the above, the follow-up measures recommended for the successful implementation of the Master Plan are as follow:

8.2 Establishment of Policy Framework:

The Master Plan (i.e. the Zoning Plan), once approved, should have a legal status and should not be seen as government's tool to expropriate land or to achieve certain political goals. As the concept of a Master Plan or a Zoning Plan is new in Kigali, it is therefore necessary for the government to establish a legal framework to ensure the successful implementation of the Master Plan. At the same time, the government should prepare the document to regulate the review, changes and approval to the Master Plan (Zoning Plan) in the long run.

8.3 Monitoring and Evaluation:

It is common to have major reviews of the Master Plan every five years. However, as the concept of launching a Master Plan is new in the City of Kigali, it is recommended to have the first major review of the Master Plan after 3 years of its launch. In this review, the Department of Land Use Management and GIS could look into the development trend and compare it to the one proposed in the Master Plan, in order to see if there are any deviations, and thus find means to address them. The review would also look at problems arising from the urban development, such as parking problems, traffic jams, lack of public spaces etc. and find means to address them through planning.

Besides these major reviews, interim minor reviews should also be conducted, especially to assess the zoning boundaries and regulation and to ensure that the zoning guidelines are practical, clear and easy to understand.

8.4 Establishment of Planning Manual

To allow for an effective Master Plan review as well as for the successful implementation of the Master Plan, it is recommended that the Department of Land Use Management and GIS establishes a manual to document the planning, review and approval processes.

This manual should incorporate the following:

- Review and approval procedure of the Master Plan (what issues need to be reviewed, who would be involved in the review, who would be the approving authority, what would be the means to disseminate the information to the public etc.).
- Initiation and approval process for changes in the Zoning Guidelines (who would initiate the process, who would approve the changes, what would be the means to disseminate the information to the public etc.).
- Updating and approval process of the GIS information (when to update, what to update, who would approve the updates, who can access the information etc.).
- Procedure for assessment and approval of planning/development application (who should assess, what is the assessment procedure, who should approve, how long the procedure should take to complete etc.)

8.5 Development of Special Control Guidelines

Special control guidelines are required to ensure quality development within the City, to ensure sustainability and to enhance local culture and identity. As such, preparations of 2 other key development guidelines are recommended, in addition to the Master Plan and Zoning Guidelines:

- City Sustainable Framework and Green Building Codes
- Heritage Conservation Guidelines - for conservation of heritage buildings within the City.

8.6 Capacity Building and Recruitment:

Considering the high workload currently undertaken by the Department of Land Use Management and GIS to facilitate urban development in the City, capacity building is required to allow the Kigali City staff to manage and further improve the Master Plan. Training is further recommended to allow the City staff to carry out the following responsibilities effectively:

- Accessing and approving the planning and development application.
- Improving and streamlining the planning approval process, the Zoning Guidelines and Urban Design Control Regulations.
- Updating, developing and maintaining GIS database.
- Coordinating with the City's Infrastructure Department, the National Land Centre and various service providers for the implementation of the Master Plan.

Besides training, recruitment is also recommended for Senior GIS Managers and Senior Planners who would take the lead in Development Control (Zoning); in coordination works with the Ministry of Infrastructure and the service providers for implementation works; and in looking after the strategic research for the department.

Appendices

APPENDIX 1: PLANNING ANALYSIS

A1.1 Introduction

For the purpose of detailed site analysis the areas under Kigali CBD, namely, CBD1, CBD2 and Kimicanga are divided into eight study zones. Each of these zones is analysed in detail with respect to existing land uses, accessibility, massing, views, vistas, opportunities and the key issues that need to be addressed.

These 8 zones are as indicated in Figure A 1.1 and as listed below:

1. Military camp area in Nyarugenge CBD.
2. Civic and administrative site in Nyarugenge CBD.
3. Central Prison site in Muhima CBD.
4. Nyabugogo Taxi Park site in Muhima CBD.
5. Sainte Famille Church site in Muhima CBD.
6. Cleared Site in Muhima CBD.
7. Kimicanga.
8. Low Rise villa development in Nyarugenge CBD.

The detailed analysis of these sites is presented in the following sections.

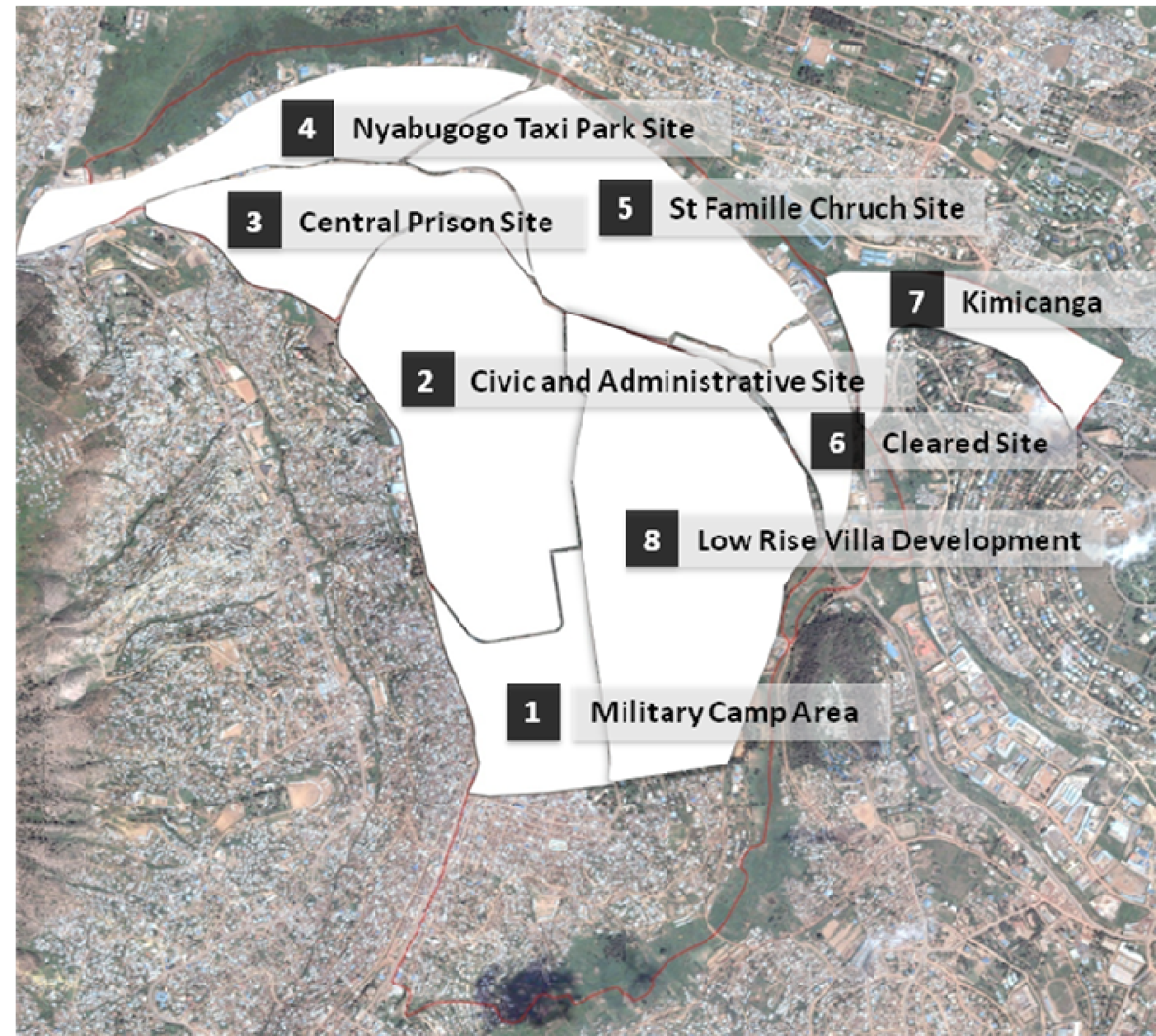


Figure A 1.1: Planning Analysis.

Source: *Surbana*.

A1.2 Military Camp Area

CONTEXT:

The Military Camp area, covering an area of 43.45 ha is located at the southern end of Nyarugenge CBD. The military training facility that existed in Military Camp site has been moved and the whole land is subsumed by The Kigali Institute of Science and Technology (KIST), located adjacent to this site. KIST is currently in the process of developing a master plan for its campus expansion.

EXISTING CONDITIONS:

The existing major land uses of this area are institutional, residential, and religious. The site is highly accessible by the major roads and has good connections to the existing City Centre in Nyarugenge.

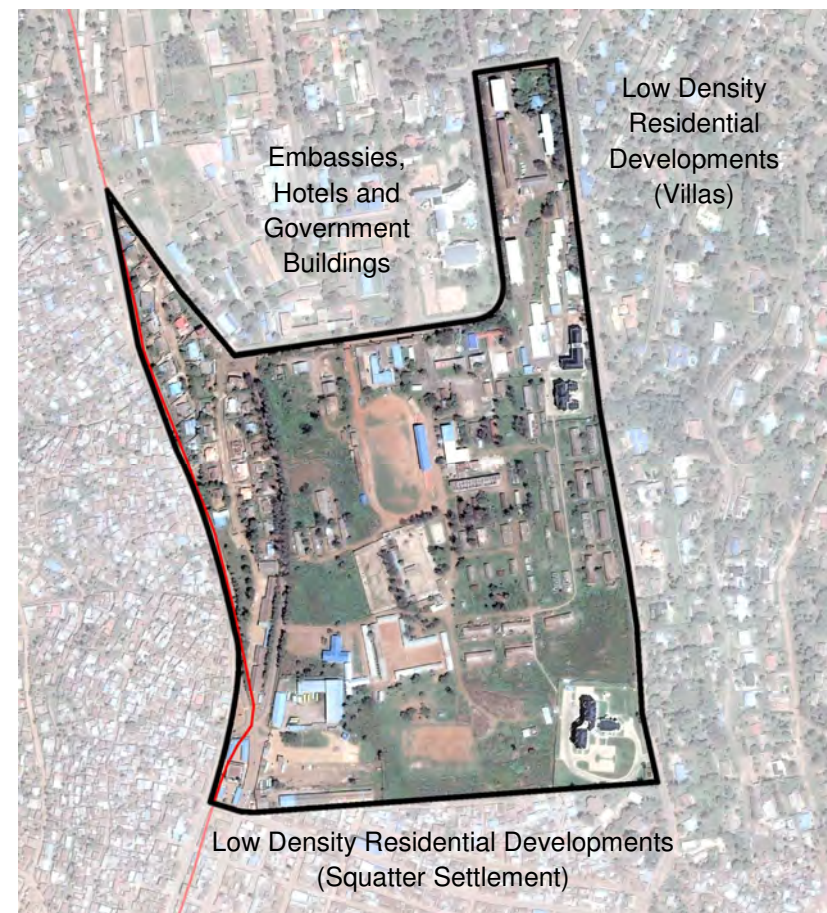


Figure A 1.2: Military Camp Area Study Area.
Source: Surbana

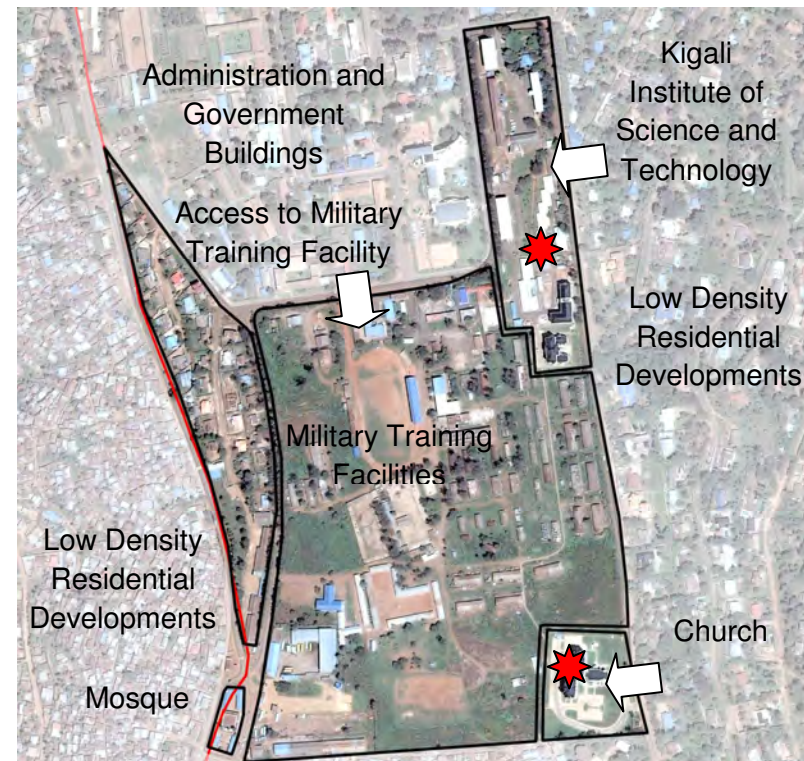


Figure A 1.3: Military Camp Area - Land Use.
Source: Surbana



Figure A 1.4: Military Camp Area - Building Heights and Massing.
Source: Surbana

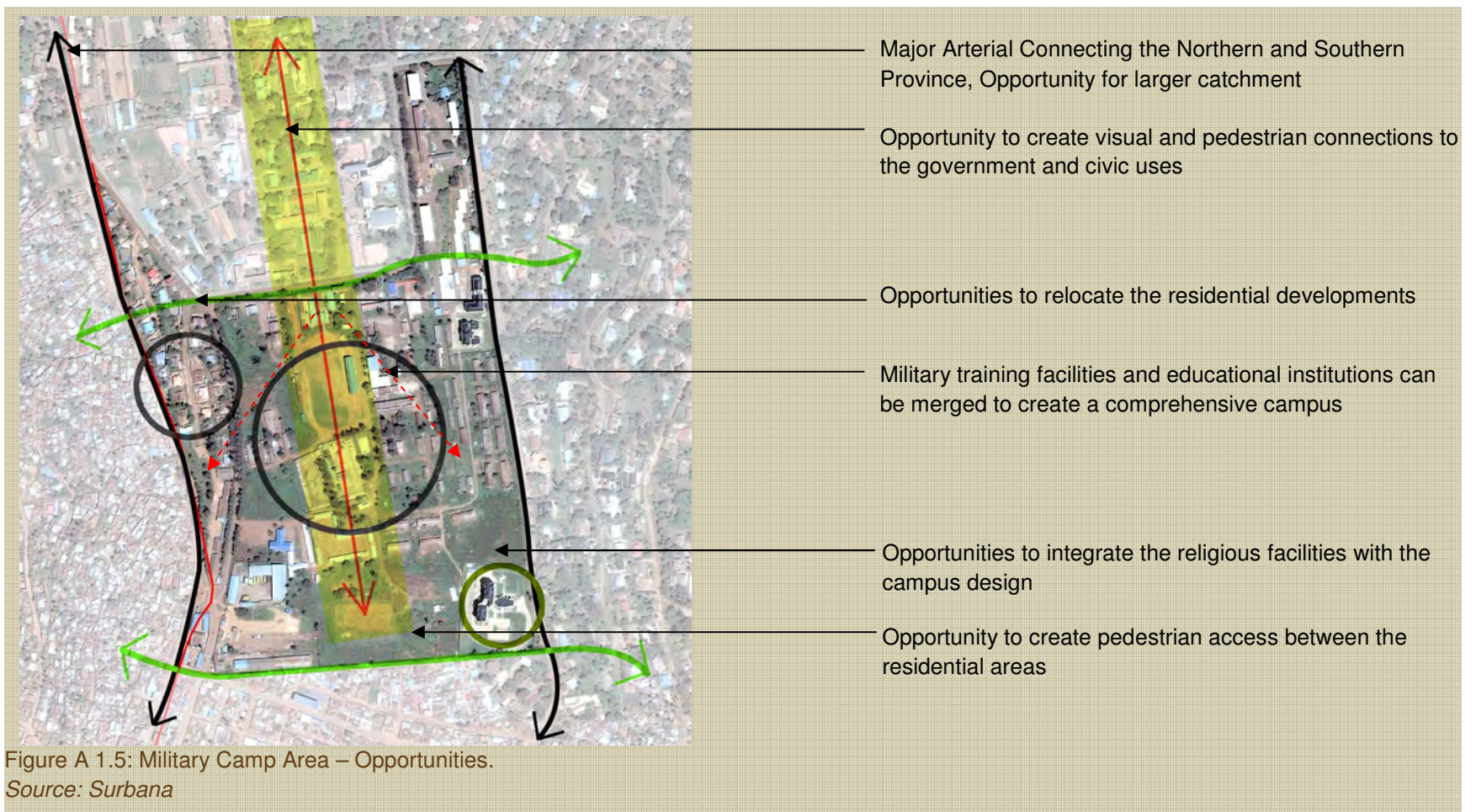


Figure A 1.5: Military Camp Area – Opportunities.
Source: Surbana

A1.3 Civic and Administrative Site

CONTEXT:

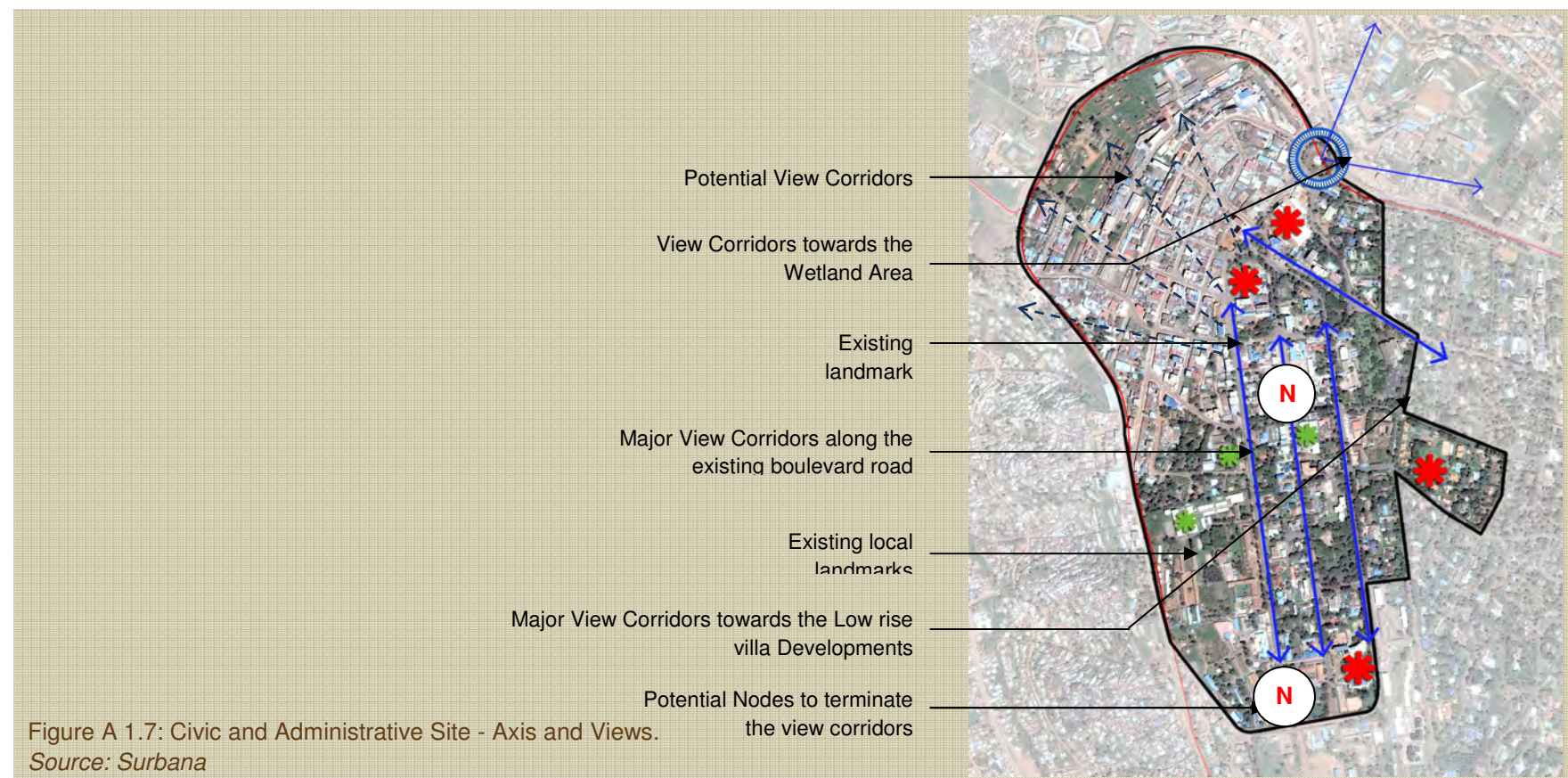
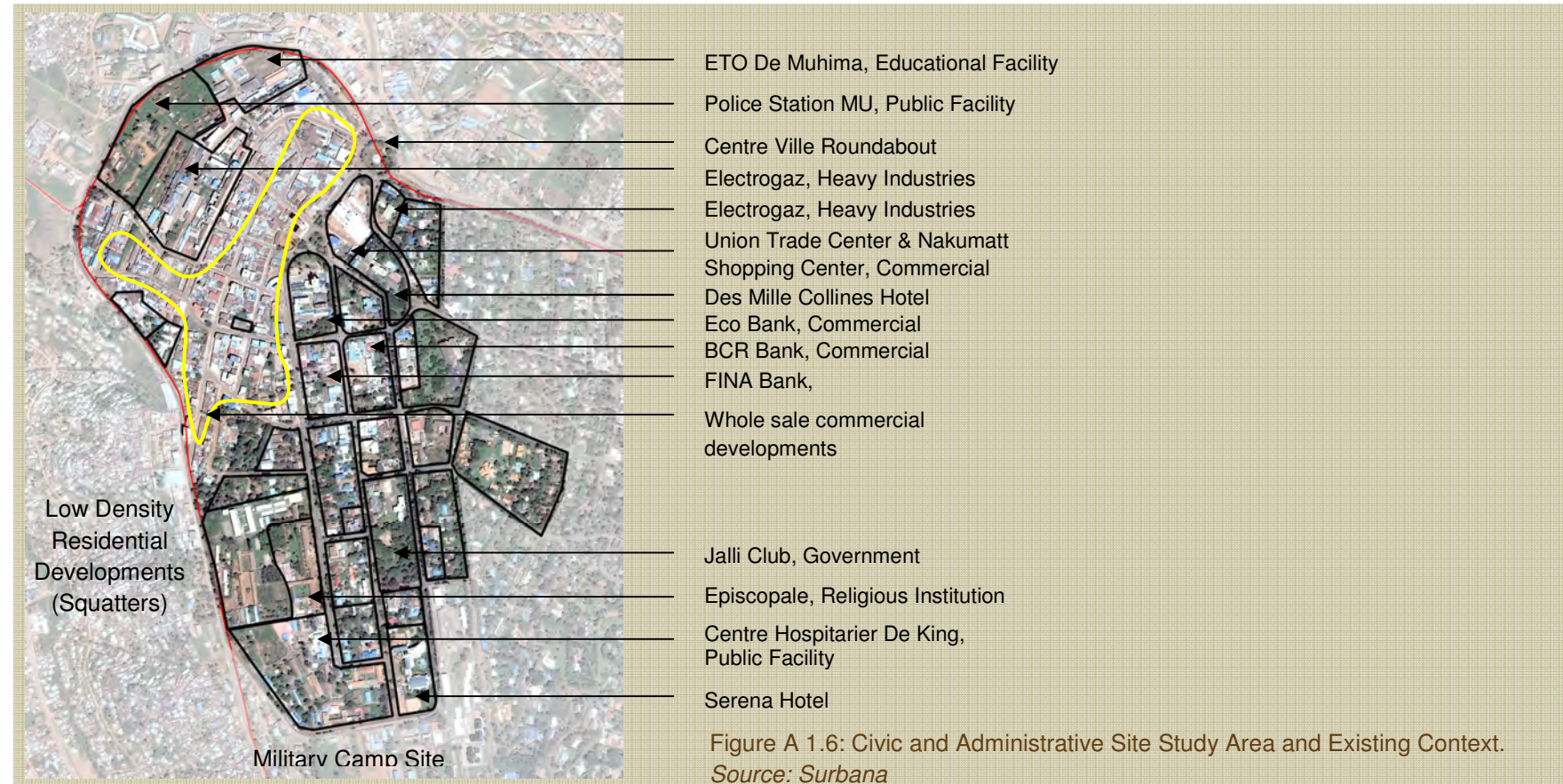
The Civic and Administrative Site is the heart of the Nyarugenge CBD. Major financial institutions, banks, government buildings, hotels, embassies etc. are located here. The total site area is about 130 ha comprises of medium to high rise buildings in a formal urban development pattern.

EXISTING CONDITIONS:

The existing major land uses are commercial, institutional, residential, religious and some heavy industries. The CBD Core of Kigali City is located around the Centre Ville Roundabout. Some of the popular landmark buildings are the Union Trade Centre, Des Mille Collines Hotel, Kigali City Hall, Centenary Building, and Bank of Kigali. These sites are highly accessible by the major avenues. Most of the avenues are paved with adequate right of way as well as other infrastructure facilities.

VIEWS AND LANDMARKS:

The avenues act as the major view corridors connecting the Centre Ville Roundabout to KIST on the southern end. The sloping topography towards the east also creates some interesting view corridors towards the low rise villa developments. The major view corridors are terminated by some landmark buildings like the Union Trade Centre, Bank of Kigali Tower and Des Mille Collines on the north; and Serena Hotel and KIST on the south.



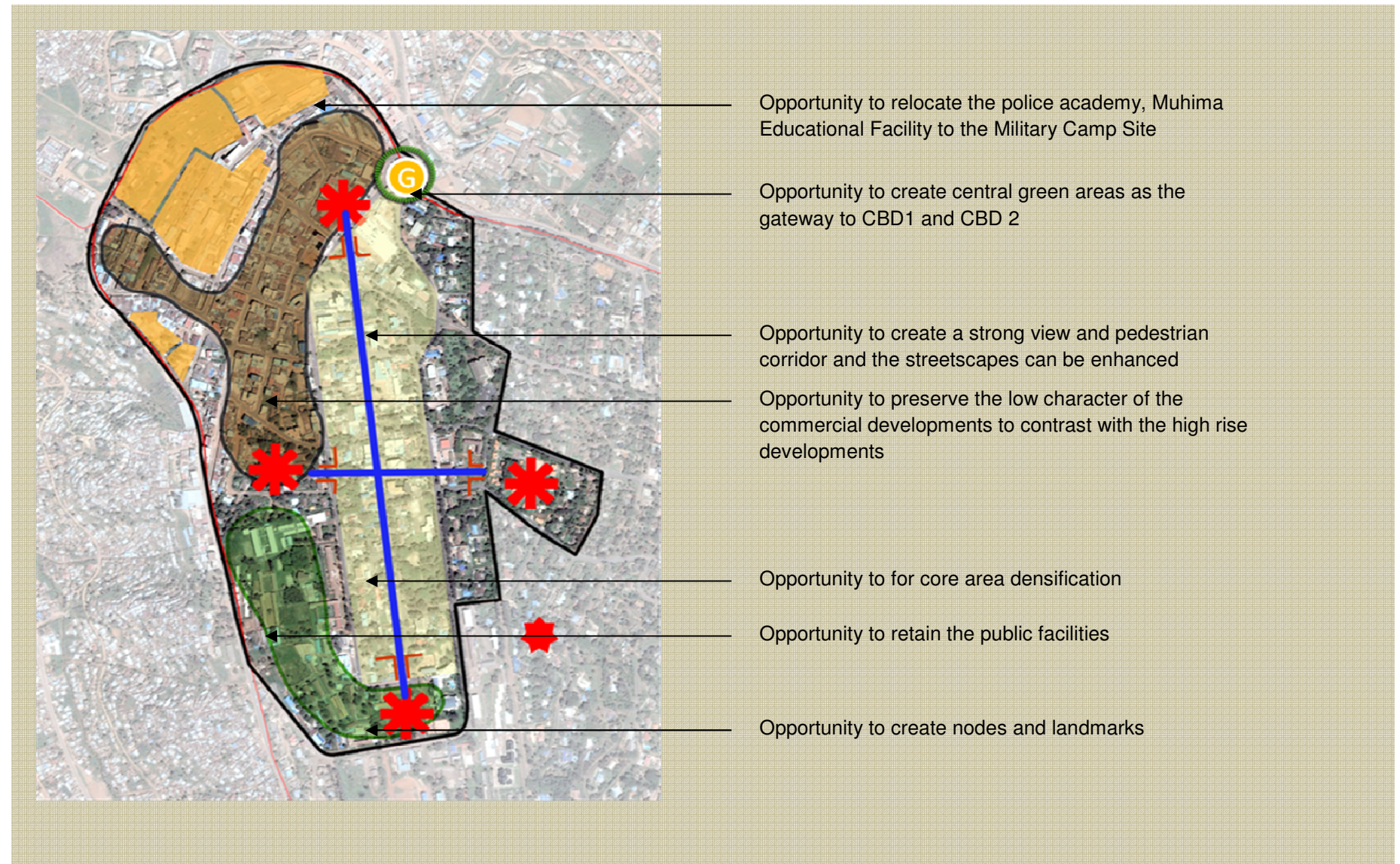


Figure A 1.8: Civic and Administrative Site - Opportunities.
Source: *Surbana*

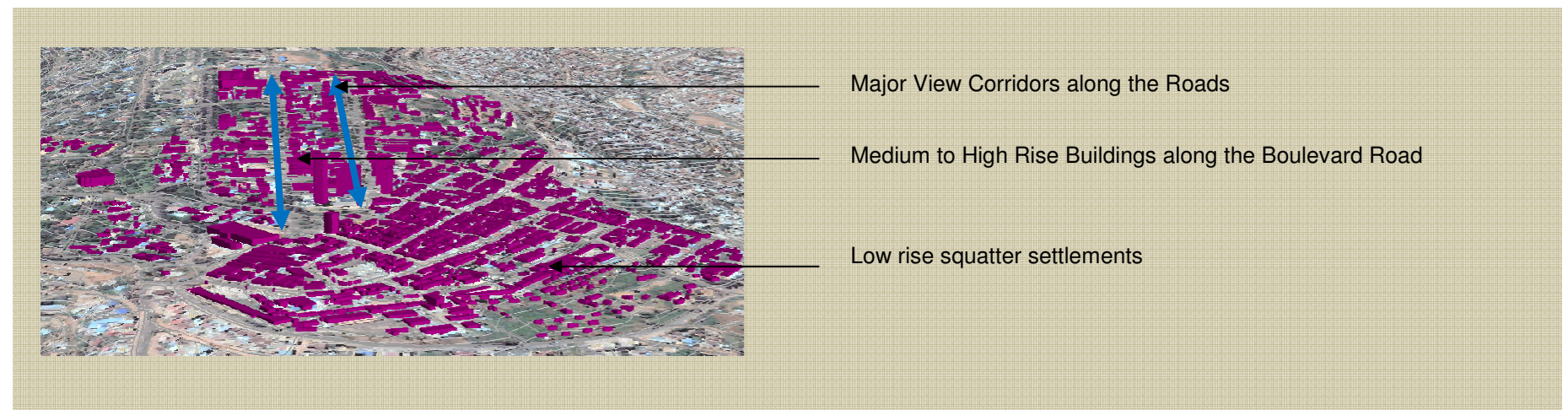


Figure A 1.9: Civic and Administrative Site - Building Heights and Massing.
Source: *Surbana*

A1.4 Central Prison Site

CONTEXT:

The Central Prison Site is located along the slopes of Nyarugenge CBD towards the Nyabugogo Taxi Park and the wetlands. Major heritage buildings like the Central Prison and the Kandt House are located here.

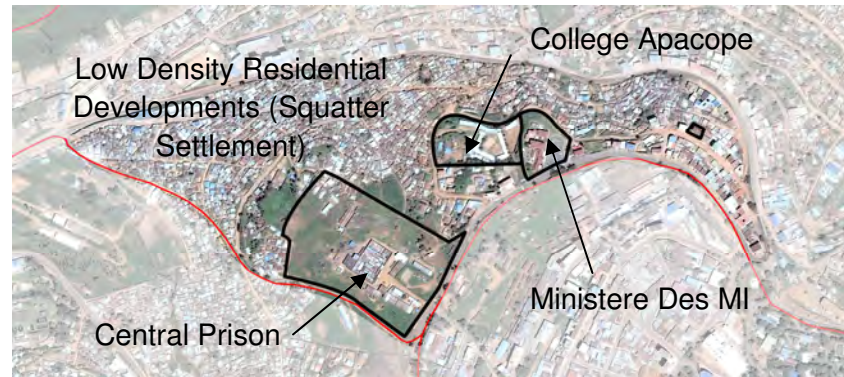


Figure A 1.10: Central Prison Site - Study Area and Existing Context.
Source: *Surbana*

EXISTING CONDITIONS:

More than 80% of the land is occupied with informal squatter settlements along the slope towards the Nyabugogo Taxi Park. The existing major land uses are cultural, government, residential, and institutional. The site is well connected to the Avenue de la Justice.

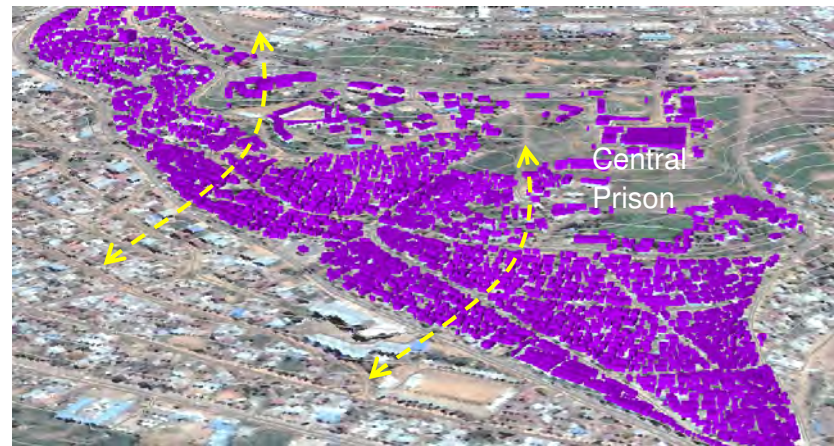


Figure A 1.11: Central Prison Site - Building Heights and Massing.
Source: *Surbana*

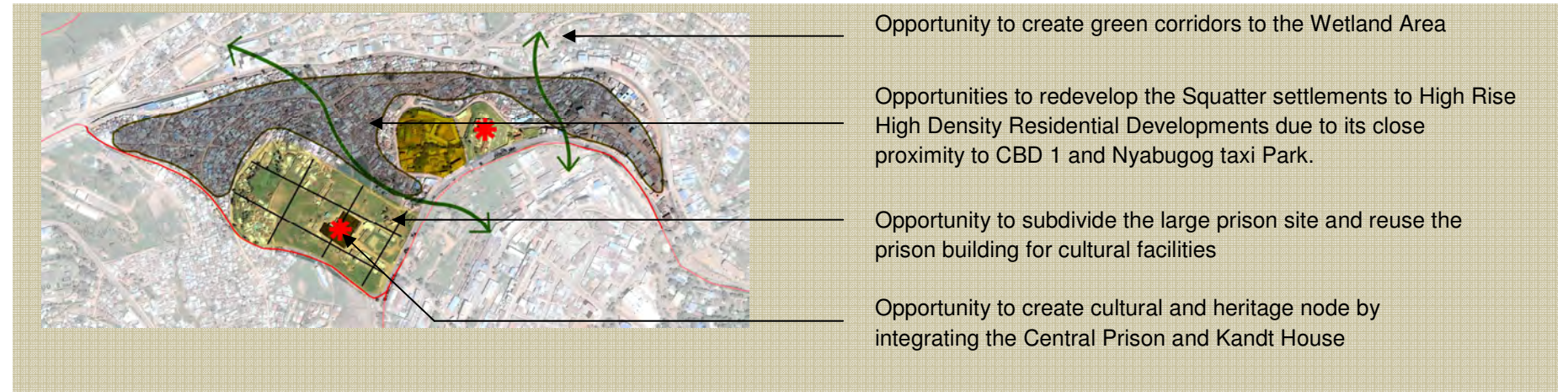


Figure A 1.12: Central Prison Site - Opportunities.
Source: *Surbana*

A1.5 Nyabugogo Taxi Park Site

CONTEXT:

The Nyabugogo Taxi Park site includes the informal housing settlements, the regional transportation terminal, government facilities like the Muhima Sector Office, the Muhima Hospital and a graveyard. The total site area is about 60 ha with a low-rise sporadic urban character. The site is highly accessible by the Boulevard de l'OUA and Boulevard de Nyabugogo, both of which connect to the Roundabout.

EXISTING CONDITIONS:

The existing major land uses are transportation, commercial, institutional, residential, and religious. Currently the Nyabugogo Taxi Park and the surrounding areas are witness rapid commercial developments.

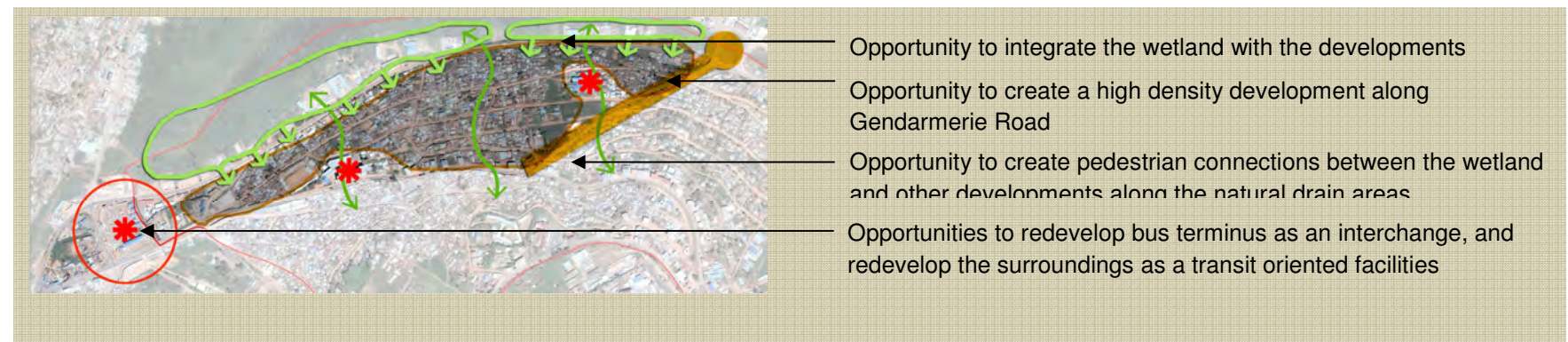


Figure A 1.13: Nyabugogo Taxi Park Site - Opportunities.
Source: *Surbana*

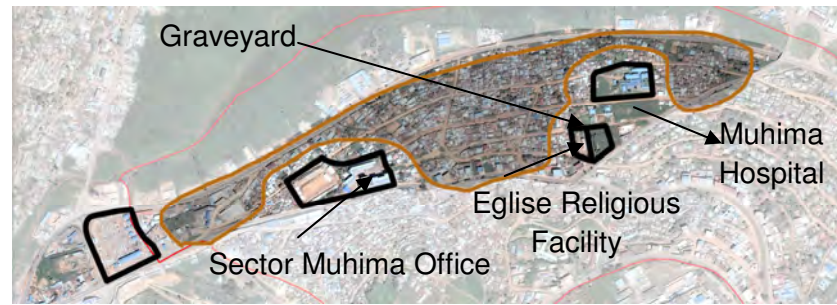


Figure A 1.14: Nyabugogo Taxi Park Site - Study Area & Existing Condition.

Source: *Surbana*

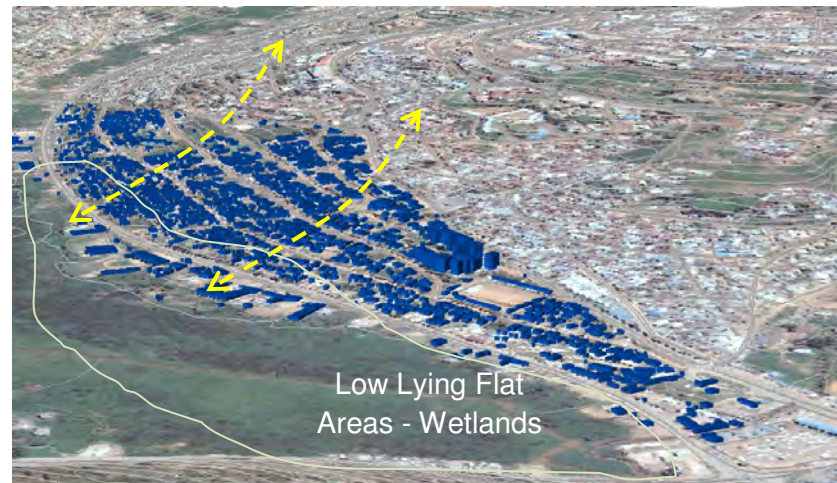


Figure A 1.15: Nyabugogo Taxi Park Site - Building Heights and Massing.

Source: *Surbana*

A1.6 Sainte Famille Church Site

CONTEXT:

The Sainte Famille Church a major religious landmark development of Kigali is located in the site. The total site area is about 95 ha with a low rise sporadic urban character. The site is highly accessible by the l'UAC Boulevard road, Democracy Avenue and Boulevard de Nyabugoro connecting the Centre Ville Roundabout and the Nyabugogo Taxi Park.

EXISTING CONDITIONS:

The existing major land uses are the commercial, institutional, residential, and religious uses. The site is strategically located between the existing City Centre and the wetlands. It offers a great opportunity to be redeveloped as the CBD Core area of the Muhima CBD.

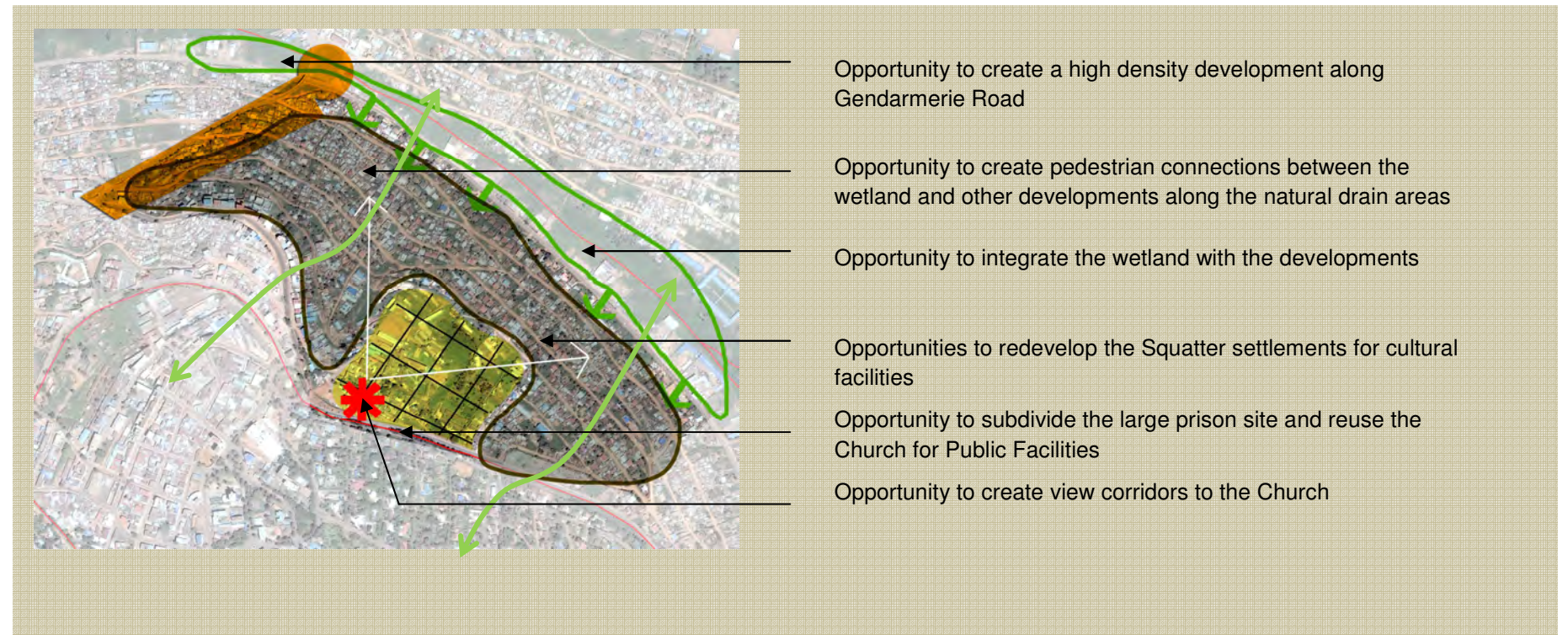


Figure A 1.16: Sainte Famille Church Site - Opportunities.

Source: *Surbana*

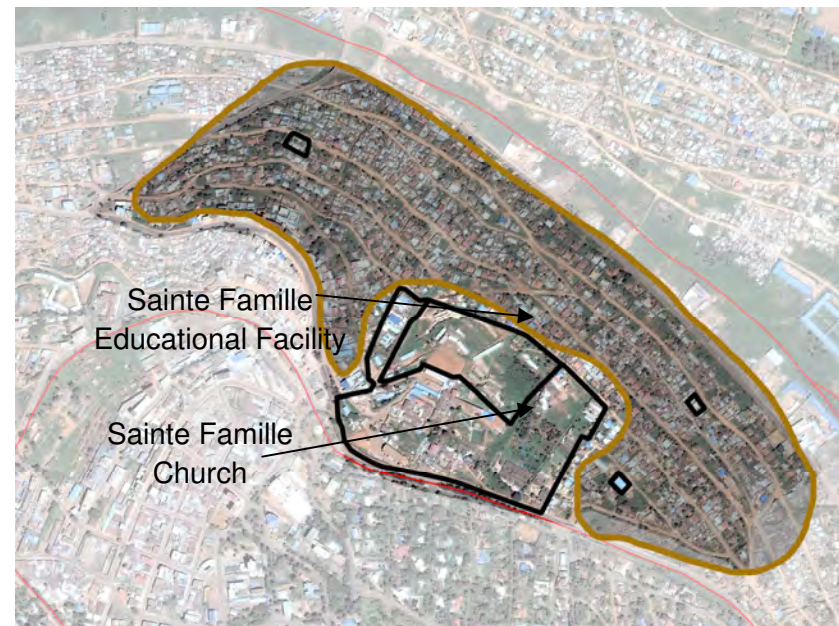


Figure A 1.17: Sainte Famille Church Site - Study Area & Existing Conditions.

Source: *Surbana*



Figure A 1.18: Sainte Famille Church Site - Building Heights & Massing.
Source: Surbana

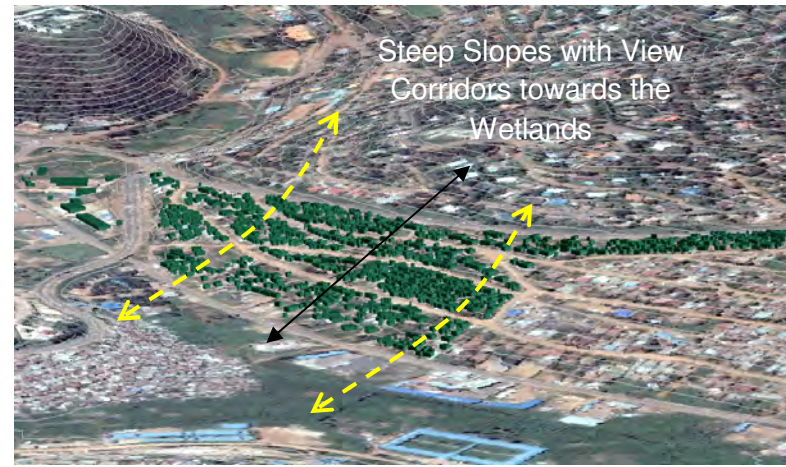


Figure A 1.20: Cleared Site at Muhima Study Building Heights and Massing.
Source: Surbana

A1.7 Cleared Site at Muhima

CONTEXT:

About 35 ha of land in Muhima CBD has recently been cleared for Phase 1 Development. The site is strategically located at the junction of the Boulevard de l'OUA and Avenue des Poids Lourdes.

EXISTING CONDITIONS:

As all the existing developments are cleared for redevelopment there are no significant land uses existing in the site. There are some commercial developments under constructions along Boulevard de l'OUA such as the RAMA building close to the Centre Ville Roundabout. Many parcels along Boulevard de l'OUA are privately owned and are 2000 to 3000 m² in size.

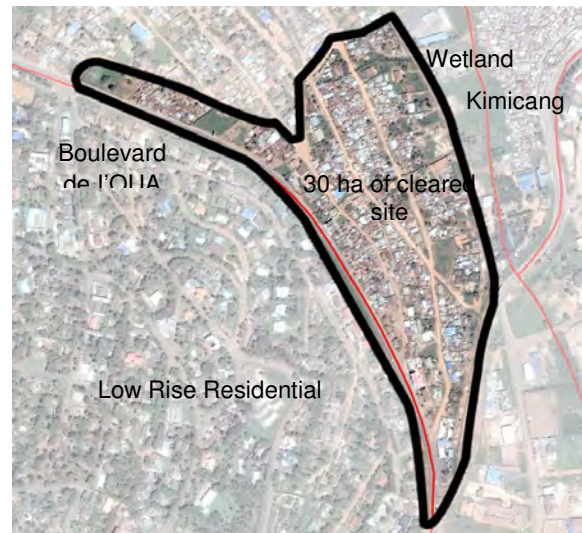


Figure A 1.19: Cleared Site at Muhima Study Area & Existing Conditions.
Source: Surbana



Figure A 1.21: Cleared Site at Muhima Study - Opportunities.
Source: Surbana

A1.8 Kimicanga

CONTEXT:

About 35 ha strategically located along Boulevard de l'OUA and directly connected to the Kigali International Airport. The site is also in very close proximity with the Muhima CBD Phase 1 development. Currently there are informal squatter settlements along the slopes with some small commercial developments along Boulevard de l'OUA.

EXISTING CONDITIONS:

The site is located along the wetland area and has a very high opportunity to be integrated with the wetland park areas in the future. As most the residential developments are squatter settlements it can be redeveloped into more viable commercial developments as the site is adjacent to the Muhima CBD Phase 1 Development.

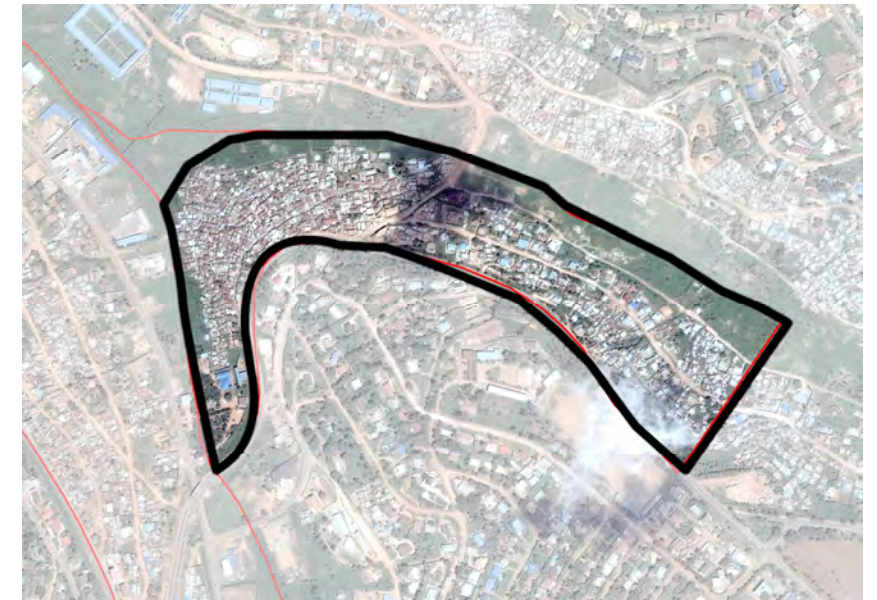


Figure A 1.22: Kimicanga Study Area and Existing Conditions.
Source: Surbana



Figure A 1.23: Kimicanga Building Heights and Massing.
Source: Surbana

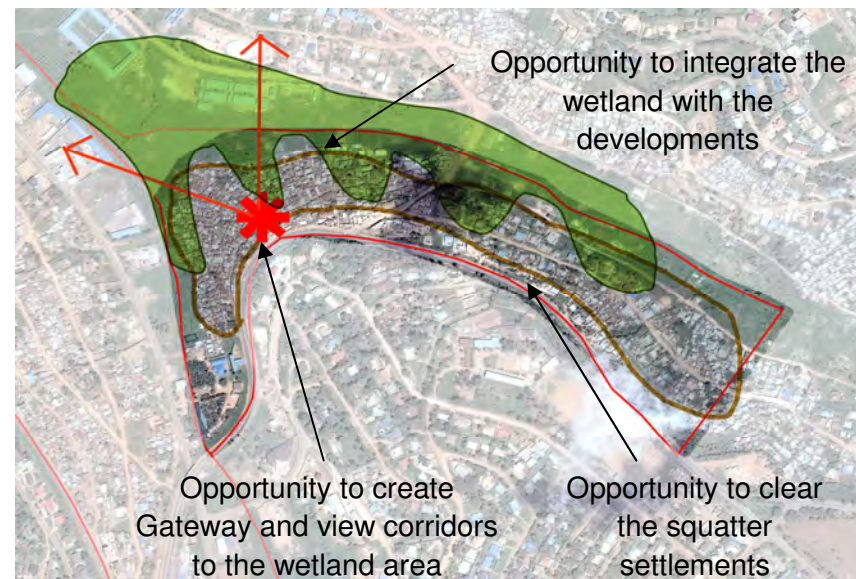


Figure A 1.24: Kimicanga Opportunities.
Source *Surbana*

A1.9 Low Rise Villa Development Site

CONTEXT:

The existing low rise residential villa development is located in the Nyarugenge CBD. Most of the high end bungalow and premier housing developments are located here. The site also includes themed restaurants, resort hotels, schools, and some commercial facilities to support the residential population within the site. The site is highly accessible by the major arterial roads like Boulevard de l’OUA and is directly connected to key developments in the CBD areas.

EXISTING CONDITIONS:

The State House is currently located in this site. Recently there was a proposal to move the State House to other place, which creates opportunity to redevelop the current site into a major public facility for the residents. The existing low rise, low density residential character of the site needs to be maintained.

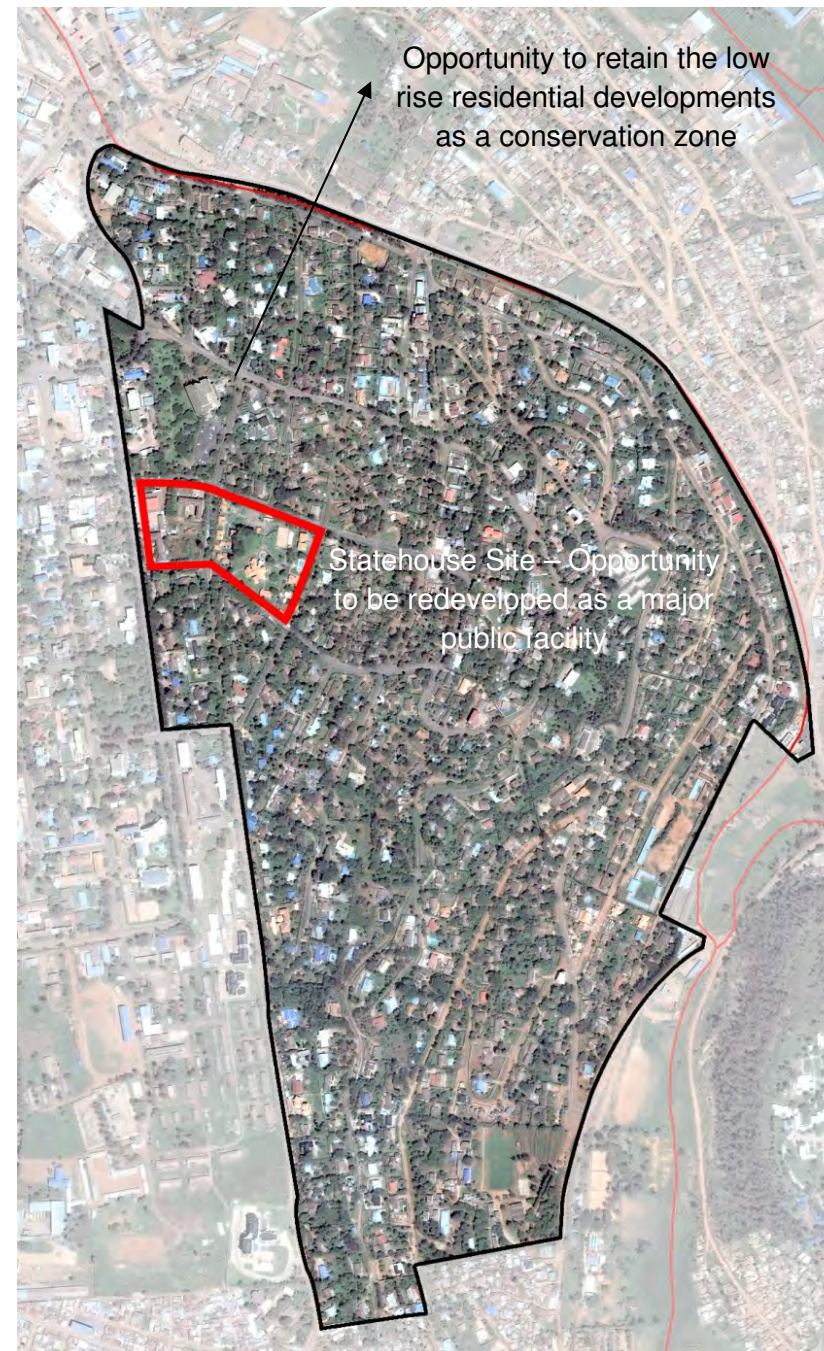


Figure A 1.25: Low Rise Villa Development Site Opportunities.
Source *Surbana*

APPENDIX 2: CENTRAL BUSINESS DISTRICT CASE STUDIES

Appendix presents the case studies done of various CBDs in order to understand various issues related to their development. This includes:

- CBD Physical Development Case Studies
- CBD Transit Case Studies
- CBD Parcellation Case Studies

A2.1 CBD Physical Development Case Studies

A. La Défense, Paris:

Flanking the River Seine, and lying at the heart of the Île-de-France region, Paris (the capital of France) is the country's largest city. It is one of the most populated metropolitan areas in Europe, housing a population of 1, 100 million. Given the economic status of Paris, a 'second business district' – La Défense, was established to supplement the Paris Central Business District (CBD). It is located 4 km to the west of the CBD and covers approximately 750 ha. It boasts about 40 years of investment and development, and agglomerates important businesses for example, French enterprises, trans-national corporations and their European headquarters or central administration.

Starting Phase

- EPAD for Development issues
- ESSO settle down

Phase 1

- 85,000 square meters office building planning

Phase 2

- Regional railway
- A new plan completed
- 1,500,000 square meters office building completed
- Economic recession, the vacancy rate rise
- Government initiatives and policies in place

Phase 3

- Europe's largest shopping centre Quatre Temps opened
- Monument improved the image of the business district
- The first business hotel built
- Subway / tram opened
- Underground highway.

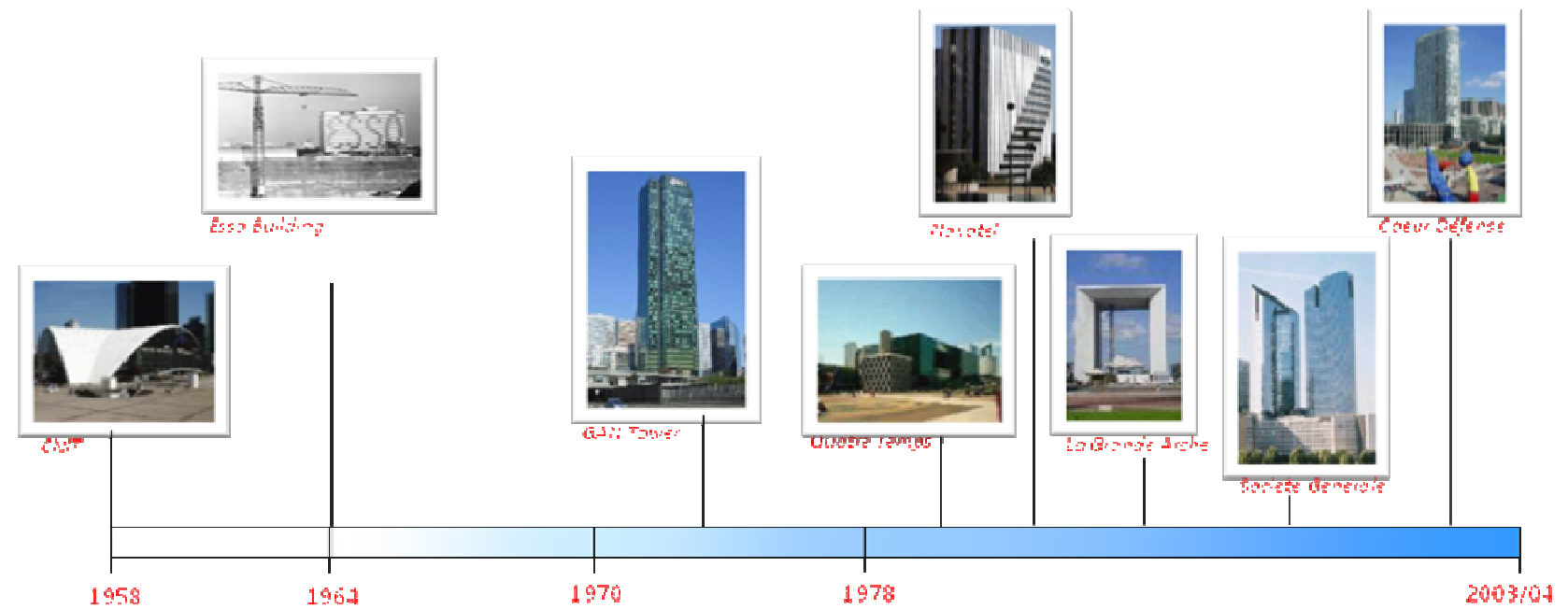


Figure A 2.1: La Défense CBD Development Time Line.

Source: *Surbana*



Figure A 2.2: La Défense Location Plan.

Source: *Surbana*



Figure A 2.3: La Défense CBD before 1950.

Source: *Surbana*



Figure A 2.4: La Défense CBD now 2000.

Source: *Surbana*

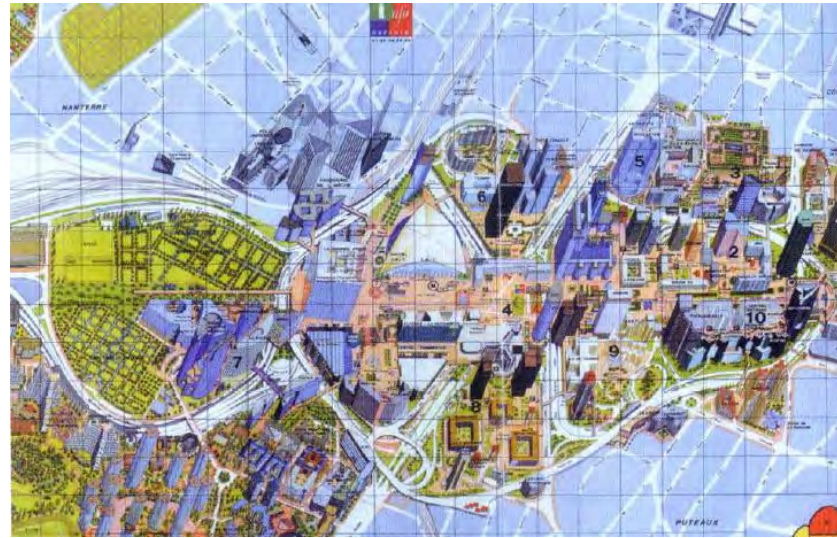


Figure A 2.5: La Défense CBD Core Area Illustration.
Source: *Surbana*

To ensure a good mix of recreation and work, La Défense is divided into 2 zones:

- Business District (at 130 ha, 17% of the total area); and
- Park District (at 620 ha, 83% of the total area).

It caters to an array of business activities spanning over a Gross Floor Area of 5.3 million sqm:

- Office 3,400,000 m² (150,000 employees)
- Retail and catering 210,000 m²
- Residential 1,500,000 m² (15,000 units)
- Hotel 150,000 m² (2508 rooms)
- Exhibition 50,000 m² (including the CNIT)

Summary:

The essential lessons from La Défense are:

- Flexibility in Planning – the ‘Start-up Planning Scheme’ was rigid in terms of planning decisions/guidelines, thus acted as a negative influence on property values;
- Government policies and financial support – legislative and monetary aid from the authorities were beneficial to the efficacy of plans;
- Progressive development – market conditions were accounted for through the phasing of development into 3 stages (Phase I 85,000 sqm → Phase II 1,500,000 sqm

→ Phase III 1,800,000 sqm); whilst large-scaled commercial developments (shopping centres and hotels) were slated for the matured stage; and

- Project co-ordination and management eg. EPAD (Etablissement Public pour l’Amenagement de la Defense) played a crucial role in development.

B. Central Business District, Hong Kong:

The Central Business District of Hong Kong is located north-west of Hong Kong Island, It plays host to major financial and business services focused on the region providing high-quality office buildings, high-end commercial, residential, as well as high-end luxury hotels. It covers a total area of 106.24 ha and the following commercial profile:

- Office property
 - 30% of high-grade office space in Hong Kong (more than 3,200,000 sq m);
 - Financial business and the headquarters of multinational companies;
- Commercial property
 - Large-scale retail area of about 350,000 sqm;
- Residential property
 - Less apartment; and
- Hotel
 - Large number of high-end hotel and conference facilities.

Summary:

The successful conversion from a light manufacturing to financial and business services sector brings about important points to learn from:

- Government investment, particularly for infrastructure investment is very important because it sets a proper basis for the functioning of businesses;
- Restrictions on the supply of land prevent trade speculation thus minimizing unnecessary holding of land, and ensuring timely completion of projects;
- Government policies are imperative to regulate market practices, rules, taxation, market transparency, the protection of property rights, and so on;

Good built environment is very important, especially for commercial and residential projects, since a secure neighbourhood is a determining factor for developments to occur; and

- Successful city marketing to promote the comparative advantage of the country/city.



Figure A 2.6: CBD Hong Kong Location Plan.
Source: *Surbana*

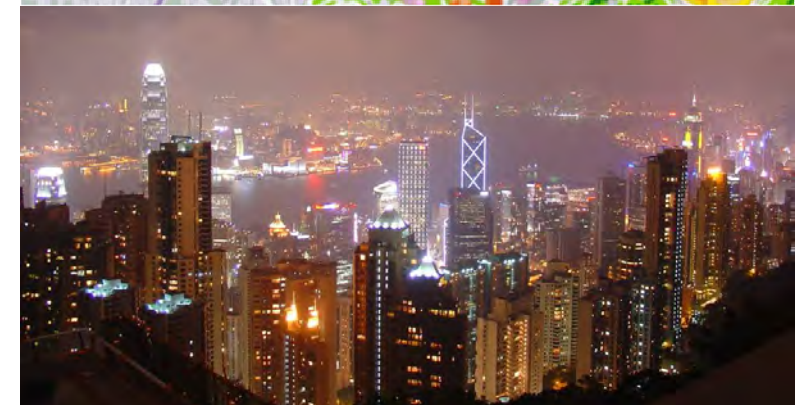


Figure A 2.7: CBD Hong Kong Core Area.
Source: *Surbana*

C. Shanghai, China:

Shanghai is arguably the fastest growing city in the world, with 86 regional headquarters of trans-national corporations, 105 foreign investment companies and 140 foreign R & D centres.

Planning and construction started in 1991 at the only financial and trade zone of China. Development of the subject zone was guided by preferential policies for investment.

Starting Phase

- Established in 1990.
- In 1995, the first completed office building.

Phase 1

- The supply of a large number of office properties.
- In Financial crisis in Southeast Asia, office property market decline.
- Hotels, conference facilities to further improve the business function.

Phase 2

- Effectively stimulate economic recovery and market demand.
- Financial centre built.
- Prosperity of the surrounding industrial enlarged office property demand
- Continue to improve infrastructure
- Pudong International Airport in operation

Summary

- Shanghai Lujiazui (Group) Co., Ltd. Established in 1990, to be responsible for the area of land development, operation and coordination of integrated management.
- Government introduced a series of relevant policies to develop the district as an international financial centre.
- Transport infrastructure, particularly rail transit construction, profoundly impact on emerging regional development.
- Large-scale commercial development should not be too fast.
- Huge supply of office in early stage is difficult to digest for the market

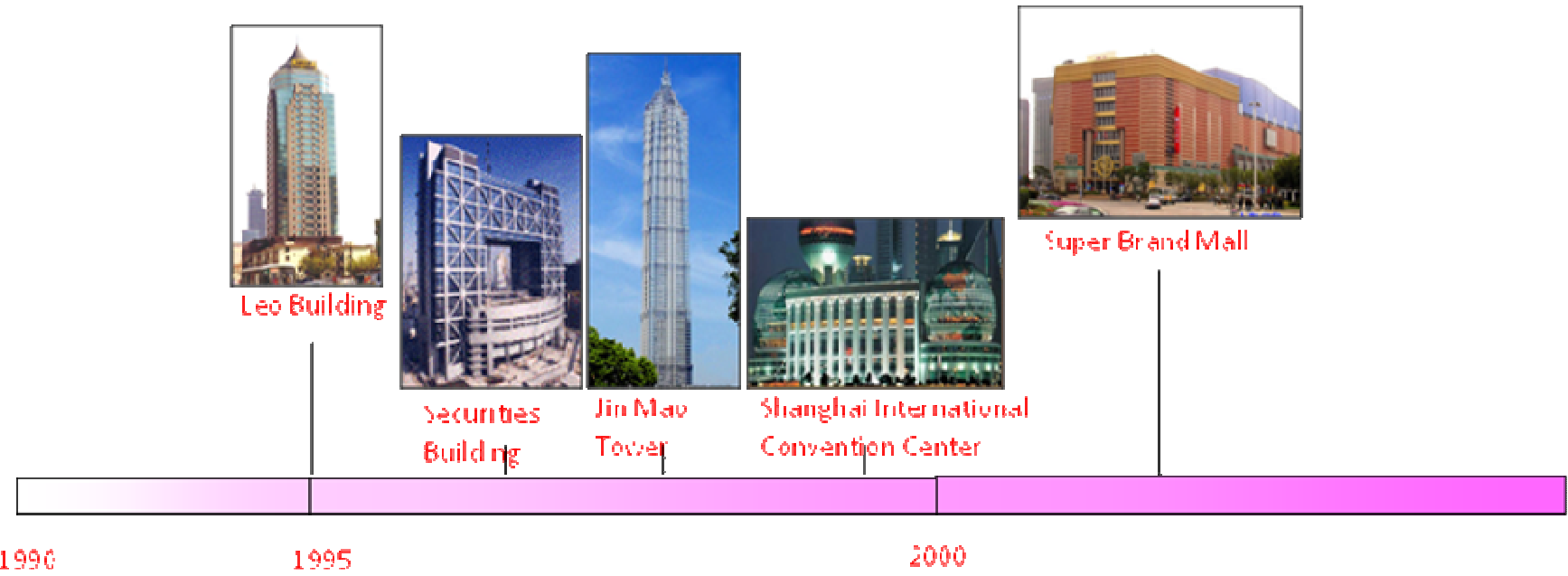


Figure A 2.8: Shanghai CBD Development Timeline.
Source: *Surbana*



Figure A 2.9: Shanghai CBD Location Plan.
Source: *Surbana*



Figure A 2.10: Shanghai CBD before 1990.
Source: *Surbana*



Figure A 2.11: Shanghai CBD now 2008.
Source: *Surbana*

D. Lessons Learned:

Internalising the various lessons drawn from each case study, a list of important guide points for effective and efficient planning and development of a central business district is as follows:

Transport Facilities

- Infrastructure planning and construction should have a long term approach to better complement the development of an area;
- Public transport and pedestrian system are required in an urban development to help reduce traffic issues; and
- Government investment in public transport will greatly enhance the attractiveness of the Central Business District.

Policy Support

- Preferential tax system, such as corporate income tax relief needs to be promoted;
- Appropriate financial assistance to preferred projects;
- Mandatory policies to are essential in guiding industrial development; and
- The development of the CBD can be driven, initially, by a Government investment arm.

Organisational Structure

- The establishment of related government agencies, specializing in project planning and implementation, especially for CBD
- Coordination between different agencies to promote common projects
- Public private partnership is encouraged

Table A 2.1: CBD Physical Development Summary

Physical Development Strategies	Quantum and Development Mix
Broad and Flexible Plan Amendable and Revisable Plan	Creating White Sites Safeguarding Land for Future Developments
Large Network of Green and Open Spaces	10% - 20%for Green and Open Spaces (About 97.5ha of land, 30% of 325ha)
High Density Mixed Use Developments along the Transport Corridors	40% - 60% for Commercial, Government, Civic, Cultural and Residential Uses (About 130 ha of land, 40% of 325ha)
Convenient and Comfortable Public Transport System (TOD)	50% - 20% for Transportation and Infrastructure Facilities (About 97.5ha of land, 30% of 325ha)
Signature Architecture with Local Materials and Skills	NIL
Respect Topography	Allocate uses like high-end hotels, residential developments etc in the top of ridges. Allocate commercial and high density developments in the valley floors

Source: *Surbana*

A2.2 CBD Transit Case Studies

E. Bogotá Columbia:

Being Columbia's largest economic centre, and the third highest major city in the world, Bogotá is unveiled as follows:

- Population: 7,033,914 (2007)
- Land Area: 1,732 km²
- Population Density: 3,914 persons per sqkm
- Roadways : 13,000 lane-km
 - 10,000 lane-km (paved)
 - 3,000 lane-km (unpaved)

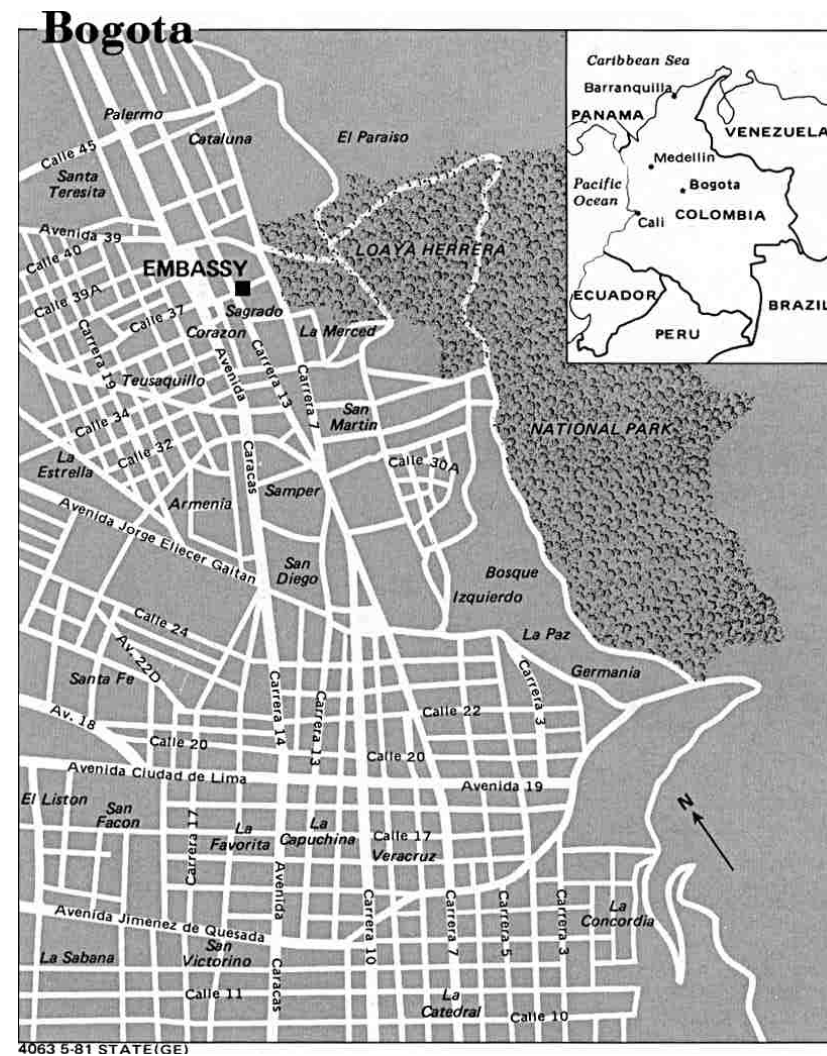


Figure A 2.12: Bogotá Road Layout Plan.
Source: Surbana

1990's urban transport in Bogotá

Transportation within Bogotá was undesirable in the nineties. Besides poor road network conditions, long travelling time and high occurrence of accidents, there were multiple fare collection by the many private operators.



Figure A 2.13: Bogotá Urban Transportation in 1990.
Source: Surbana

Long Term Mobility Strategy

To mitigate the situation, metro and elevated highways were proposed when the long term Mobility Strategy was initiated in 1998. Bus transit improvements and automobile restrictions (projects) such as "Transmilenio" and "CicloRuta" were introduced.



Figure A 2.14: Bogotá Urban Transportation now 2006.
Source: Surbana

Transmilenio

- Modern mass transit; high ridership
- Infrastructure
 - o Transmilenio stations every 700m
 - o Articulated bus with capacity of 160 passengers
 - o Pedestrian overpasses with ramp
 - o Level loading and off-loading of passengers
 - o Transmilenio is supported by feeder bus services
- Centralized coordinated fleet control

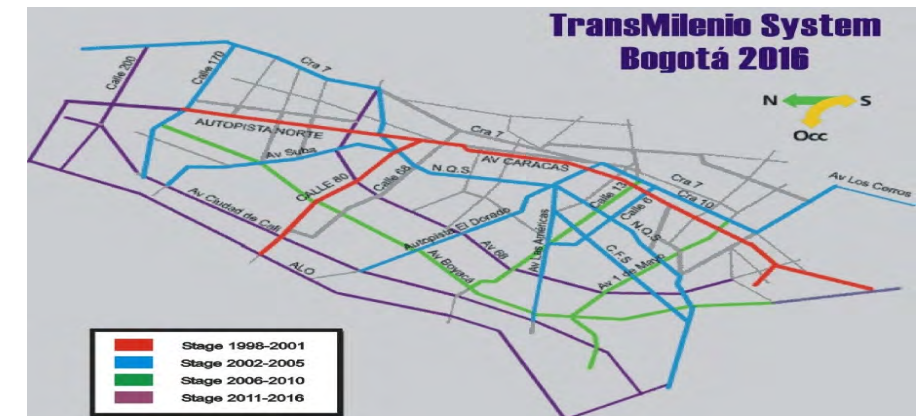


Figure A 2.15: Bogotá Transmilenio System 2016.
Source: Surbana

Achievements of Transmilenio

- Improved environment through a more efficient transport system and new buses
- Reduce time lost in congestion
- Creation of more than 1,500 temporary construction jobs for unskilled workers
- Improve Bogotá competitive position by offering an attractive and modern transit system and reduce economic cost of congestion
- Peak public transport person trips (morning 2hrs peak) :



870,000
Figure A 2.16: Bogotá Urban Transportation Imagery.
Source: Surbana

CicloRuta:

- More than 300 km bike path network
- Facilitates 213,000 trips (2005) a day
- Transmilenio Terminals provide free bicycle parking
- Car-free event “Ciclovía”

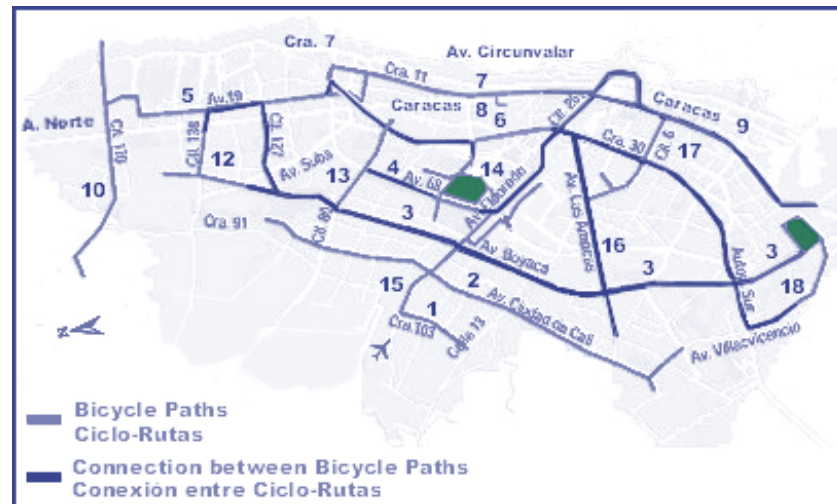


Figure A 2.17: Bogotá CicloRuta System.

Source: *Surbana*



Figure A 2.18: Bogotá Car Free Event Day.

Source: *Surbana*

Achievements of CicloRuta

- Bicycle use has increased from 0.2% in 2000 to 4% in 2007 of the total trips in the City
- CicloRutas play an important role for the poor people and children of the City. It gives them the freedom to travel.
- Air quality improvement
- Safety in transportation increases as the paths are away from cars.
- CicloRutas also helped to recover public space, along riverbanks, and wetlands
- Businesses grow along with CicloRutes



Figure A 2.19: Bogotá Bicycle Station.

Source: *Surbana*

F. San Francisco City:

Being the second most populous major city in the United States, San Francisco is profiled as such:

- Population: 765,000 (2007)
- Land Area: 121 km²
- Population Density: 6,320 persons per square km
- Streets are laid out in grids over more than 50 hills within city limits.
- Elevations range between 0 m to 282 m
- Steepest street in San Francisco: Filbert Street at 31.5% maximum gradient
- Most crooked street: Lombard Street (27% grade; 400m in length; 8kmph limit; one-way downhill)
- Average street gradient: 16%



Figure A 2.20: San Francisco Grid Pattern Road System.

Source: *Surbana*

Instant City; Grid Patterns

- Grid patterns were popular in the US in the late 1800s
- Grid system facilitated the division, sale, and registration of land
- Each plot was approximately 26 feet by 98 feet (8m by 30m).
- Completely abstract system does not take into account constraints imposed by hilly terrain
- Some of the steepest slopes are provided with stairways for pedestrians, rather than with paved streets

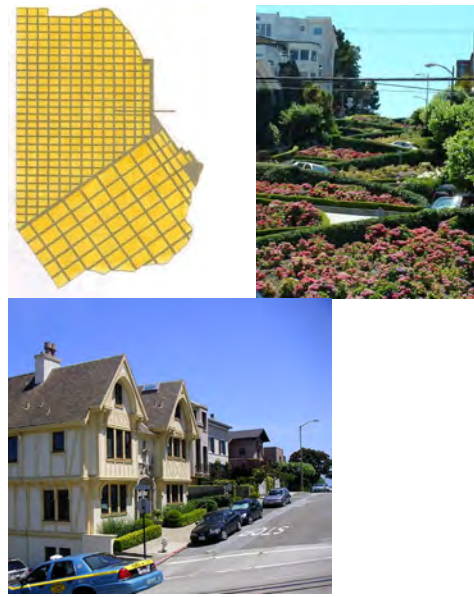


Figure A 2.21: San Francisco Sloped Road Systems Imagery.
Source: *Surbana*

Transportation

- Walking is a favoured means of transportation
- The famous cable cars are a convenient way for commuters to travel in the downtown area
- The city's Municipal Railway System (Muni) light-rail vehicles travel underground in the inner city and above ground in the outlying areas
- Bearers of Muni Passports have access to Muni's entire 978-vehicle fleet of buses, trolleys, light-rail vehicles, and cable cars
- The Bay Area Rapid Transit (BART) is an ultra-modern train system linking the city with 43 stations in the East Bay Area



Figure A 2.22: San Francisco Public Transport.
Source: *Surbana*

Liveable Streets Program

- Safety for bicyclists, pedestrians, and motorists is a top priority
- The Pedestrian Program envisions San Francisco as becoming the most walkable city in the country and world
- The Traffic Calming Program uses innovative tools to address speeding, reckless driving and traffic spill over from main arterials to local streets
- The City's Transportation Management System, SFgo, monitors the transport network
- The School Area Safety Program strives to make streets near San Francisco's public and private schools safer for walking, bicycling and public transportation

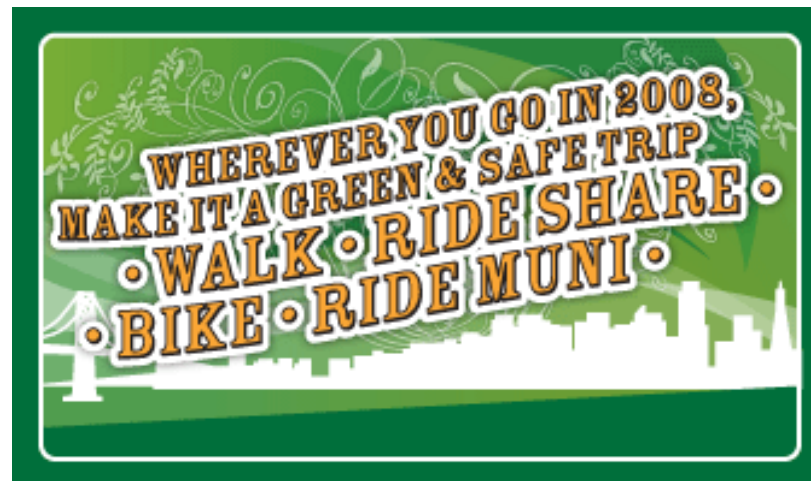


Figure A 2.23: San Francisco Pedestrian Programs.
Source: *Surbana*

G. Lessons Learned:

Assimilating the lessons drawn from Bogotá and San Francisco, the City of Kigali can adopt the following valuable pointers:

Immediate Strategies (1 -3 years)

- Formulation of public transport and parking policy
- Regulation of Public Transport operators
- Replace haphazard minibus system with a robust bus system with proper schedules, routes, and fare structure
- Improve pedestrian and bicycling facilities along critical routes
- Improve regional bus services

Medium-term Strategies (3 – 8 years)

- Seek funding and operators for BRT system
- Embark on infrastructure improvements
- Implement BRT system

Long-term Strategies (beyond 8 years)

- Refine BRT system
- Congestion management

A2.3 CBD Parcellation Case Studies

Referencing from major Central Business Districts, the following case studies provide an idea of the usual land parcellation sizes.

Singapore CBD Parcellation Study:



Figure A 2.24: Singapore CBD Plan View.

Source: Google Earth and Surbana

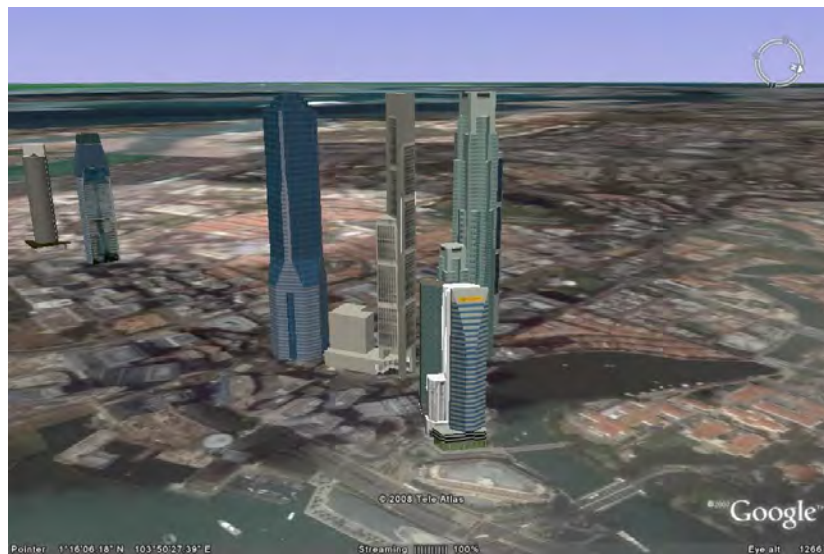


Figure A 2.25: Singapore CBD Aerial View.

Source: Google Earth and Surbana



Figure A 2.26: Singapore CBD Parcel Sizes.

Source: Google Earth and Surbana

- Block Size – 200m X 75m 6 towers planned together
- Block Size – 85m X 70m Single Tower
- The building footprints vary from 70m X 45m to 20m X 20m
- Plot Ratios vary from 8 to 14

Hong Kong CBD Parcellation Study:



Figure A 2.27: Hong Kong CBD Plan View.
Source: Google Earth and Surbana

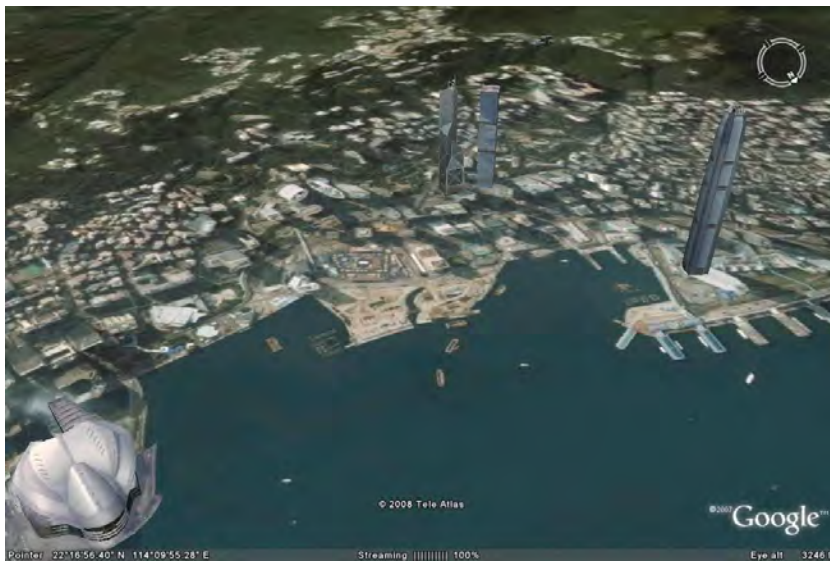


Figure A 2.28: Hong Kong CBD Aerial View.
Source: Google Earth and Surbana

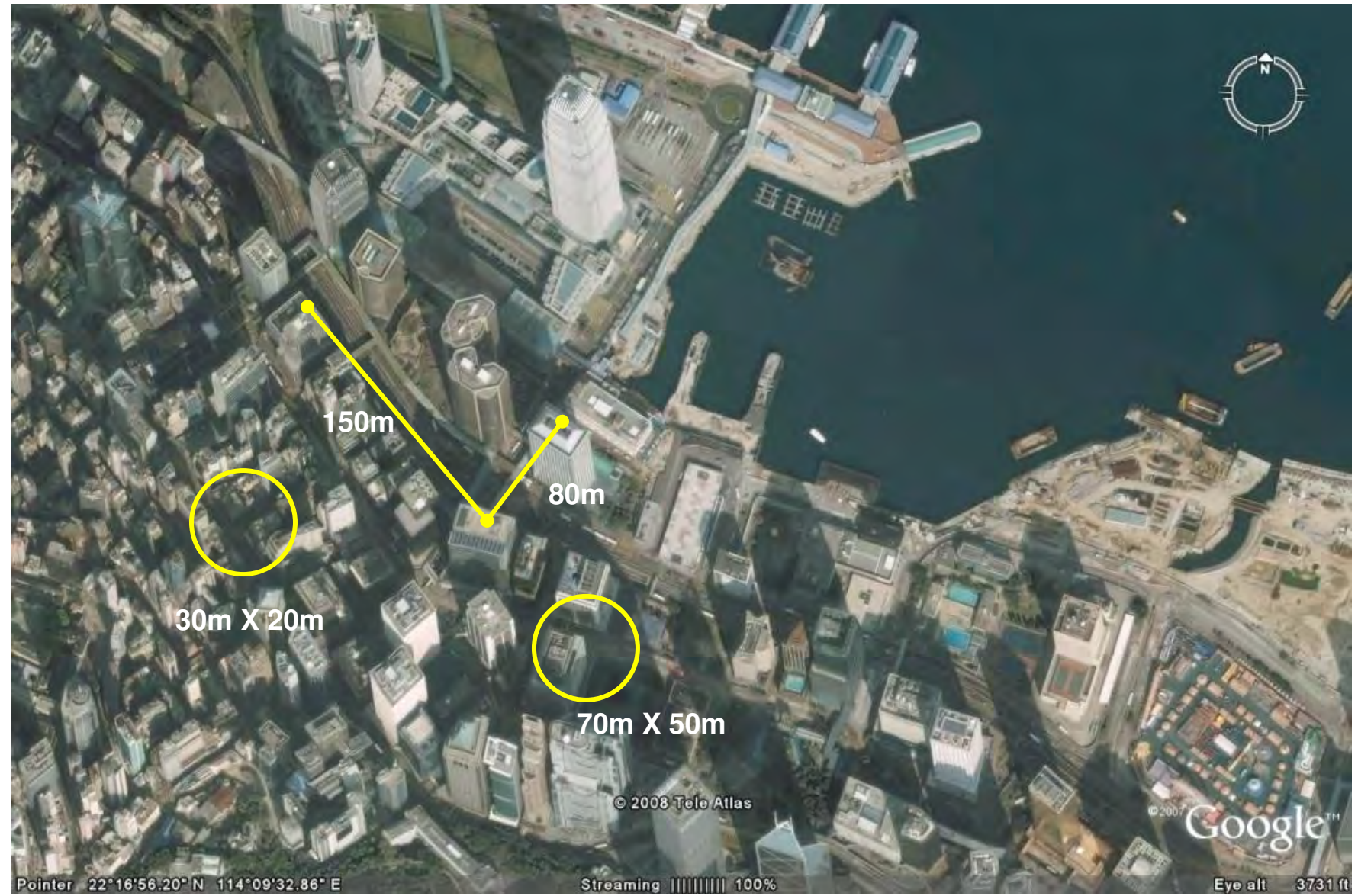


Figure A 2.29: Hong Kong CBD Parcel Sizes.
Source: Google Earth and Surbana

- Block Size – 150m X 80m 3 towers planned together
- Block Size – 70m X 50m Single Tower
- Block Size – 30m X 20m
- The Building Footprints vary from 70m X 45m to 20m X 20m
- Plot Ratios vary from 8 to 14

Los Angeles CBD Parcellation Study:



Figure A 2.30: Los Angeles CBD Plan View.
Source: Google Earth and Surbana



Figure A 2.31: Los Angeles CBD Aerial View.
Source: Google Earth and Surbana



Figure A 2.32: Los Angeles CBD Parcel Sizes.
Source: Google Earth and Surbana

- Block Size – 160m X 100m
- Block Size – 80m X 50m
- The Building Footprints vary from 80m X 80m to 50m X 30m
- Plot Ratios vary from 6 to 8

Barcelona CBD Parcellation Study:



Figure A 2.33: Barcelona CBD Plan View.
Source: Google Earth and Surbana

- Block Size – 50m X 30m
- Block Size – 30m X 20m
- Plot Ratios vary from 1.5 to 3

Table A 2.2: Parcellation Sizes Comparison.

Singapore	Hong Kong	Los Angeles	Barcelona
High Rise		Medium Rise	Low Rise

Source: Surbana

APPENDIX 3: WETLAND PLANNING

A3.1 Introduction

Wetlands are one of the most biologically diversified ecosystems. They can be broadly classified into five major categories:

- Marine (coastal wetlands)
- Estuarine (deltas, tidal marshes, and mangroves)
- Lacustrine (lakes and associated wetlands)
- Riverine (rivers, streams and associated wetlands)
- Palustrine (marshes, swamps and bogs)

These are further divided into more than 30 sub-divisions classified based on physical, chemical or biological characteristics.

Three case studies of different scales, contexts and functions are undertaken for understanding the planning of wetlands, which includes:

- Hong Kong Wetland Park - township level wetland redevelopment project.
- Putrajaya Lake and Wetland - CBD level project dealing with the development of an extensive constructed wetland network.
- Melbourne Wetland Project - City level project dealing with City level water management initiatives.

A3.2 Case Studies

Presented below are three case studies, of varying scale and nature, on wetland development.

A3.2.1 Case Study 1: Hong Kong Wetland Park

Project Data:

Located in the south of Deep Bay, between Tsim Bei Tsui and Tin Shui Wai new town, the Hong Kong Wetland Park (covering 64 ha) is a millennium project to promote eco-tourism in Hong Kong. The project started in March 2002 and was completed in April 2006.

Key Functions of Hong Kong Wetland Park:

- Restoration of lost natural wetland
- Reed beds clean the grey water discharged from residential areas
- Habitat for migratory birds and aquatic life
- Exhibition on different wetland systems
- Recreational and tourism venue

Some key features in the Hong Kong Wetland Park:

- Constructed wetland with fresh water seasonal marshes, permanent marshes, mud-flats and mangrove habitats
- Wetlands are designed using clay as a base to develop freshwater marsh
- Many storage ponds to maintain water circulation of wetland area.
- Local construction resources
- Facilities - visitor centre/museum, recreation areas and many other facilities and attractions for eco-tourism and recreation.

Innovative features of the Hong Kong Wetland Park:

- Integrated and harmonized with the adjacent wetland
- Environment-friendly, passive climatic features
- Use of local, recycled materials and resources



Figure A 3.1: Hong Kong Wetland Park - Layout.
Source: *Surbana*



Figure A 3.2: Hong Kong Wetland Park - Study Area.
Source: *Surbana*



Figure A 3.3: Integration with Adjacent Natural Wetlands.
Source: *Surbana*



Figure A 3.4: Hong Kong Wetland Park - Recreational and Landscape Feature.
Source: *Surbana*



Figure A 3.5: Hong Kong Wetland Park - Attractions.
Source: *Surbana*



Figure A 3.6: Hong Kong Wetland Park - Use of Passive Technologies for Lighting and Ventilation.
Source: *Surbana*

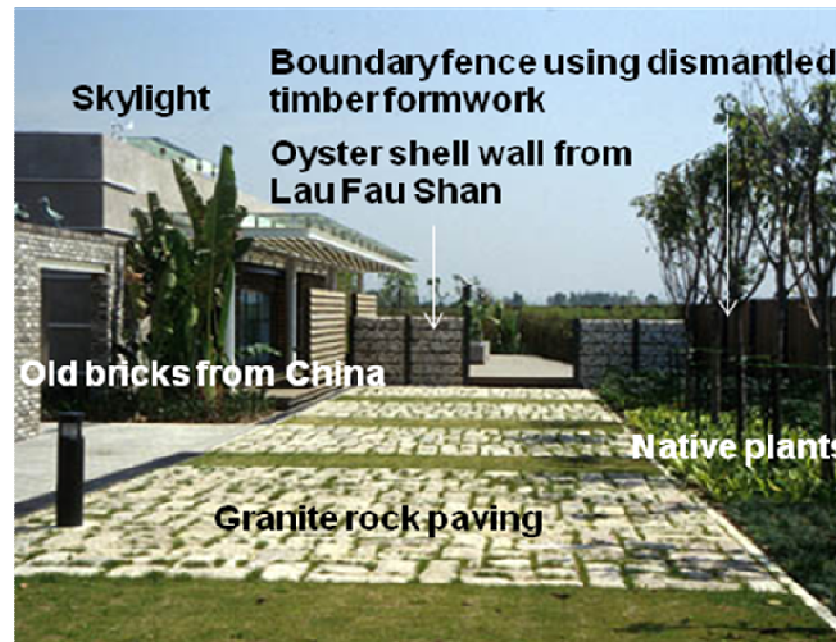


Figure A 3.7: Hong Kong Wetland Park - Use of Local and Recycled Materials for Construction.
Source: *Surbana*

A3.2.2 Case Study 2: The Putrajaya Lake & Wetland

Project Data:

The Putrajaya Lake & Wetland is a planned city located 25 km to the south of Kuala Lumpur, the federal administrative capital of Malaysia. Its catchment area of 50.9 km² includes a wetland area covering 197 ha of land. The project started in March 1997 through August 1998.

Key Functions:

- Designed to treat the storm water runoff before it is discharges into the 400 ha Putrajaya lake.
- Creates a habitat for conservation of native wetland flora and fauna.
- Aesthetic amenity to the administrative capital.
- Venues for community education and research on wetlands.

Key Features:

- The wetlands are designed as 24 multi-cells.
- Key advantages of multi cell system: better hydraulic performance, maximized areas for plant growth, improved accessibility for maintenance.
- Each wetland cell incorporates the following zones:
 - Inlet Zone
 - Macrophytes zone (0.3m to 1.0m deep)
 - Open Water Zone (1.0-3.0 deep)
 - Outlet zone
 - Intermittently flooded zone up to 1.5m
- Construction resources – 90% native plant & local construction material.
- Wetland plants - 12.3 million with over 70 species.
- Facilities - interpretation centre, wetland plant nursery, flamingo pond and nature trails, water sports, picnic areas as well as public amenities.



Figure A 3.8: Putrajaya Lake and Wetland Park - Study Area.
Source: Surbana

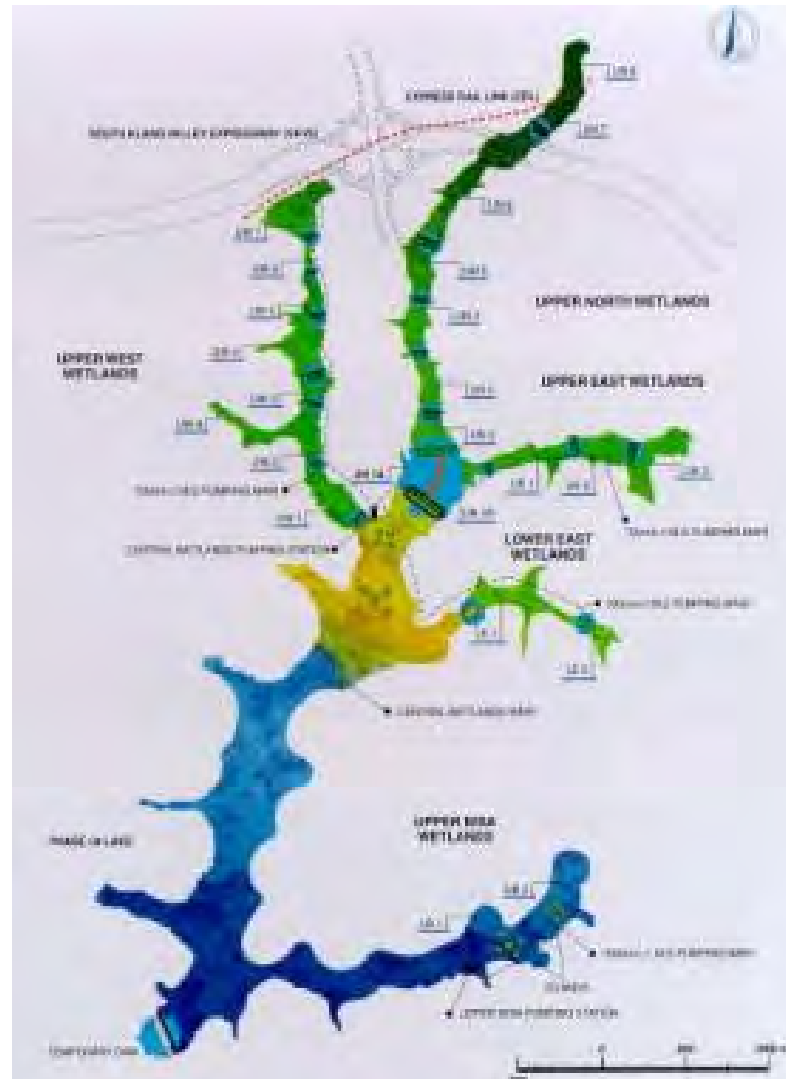


Figure A 3.9: Putrajaya Lake and Wetland Park - Multi-cell System.
Source: Surbana



Figure A 3.10: Putrajaya Lake & Wetland Park - Recreational & Landscape Feature.
Source: Surbana



Figure A 3.11: Putrajaya Lake and Wetland Park - Flooded Zone.
Source: Surbana

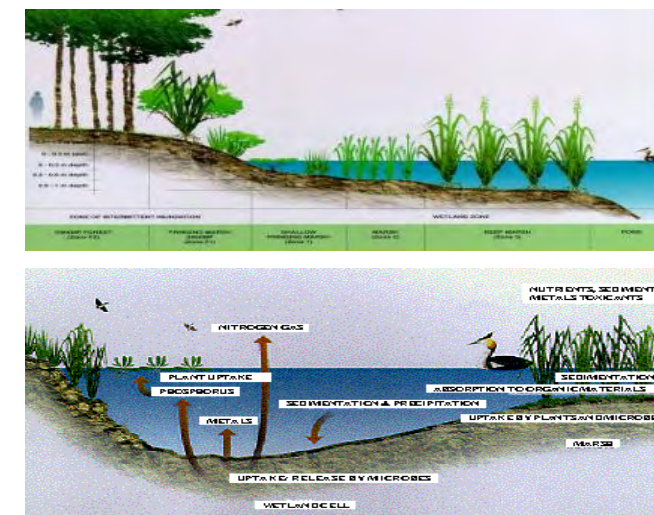


Figure A 3.12: Putrajaya Lake and Wetland Park - Cross Sections.
Source: Surbana

A3.2.3 Case Study 3: Melbourne Wetlands Project

The Melbourne Wetlands Project, Australia, was first established to create wetlands in the vicinity of Port Phillip Bay. The saturation of land was done through carrying water from the nearby Port Phillip bay.

In the first phase of 3 years, 10 wetlands were constructed in Melbourne's south-east growth corridor. These wetlands cover more than 80 ha and have one more than a million aquatic plants.

Initiated in 2002, the authority-in-charge, Melbourne Water, has already established 30 wetlands, and a further 30 are being designed / constructed at present.

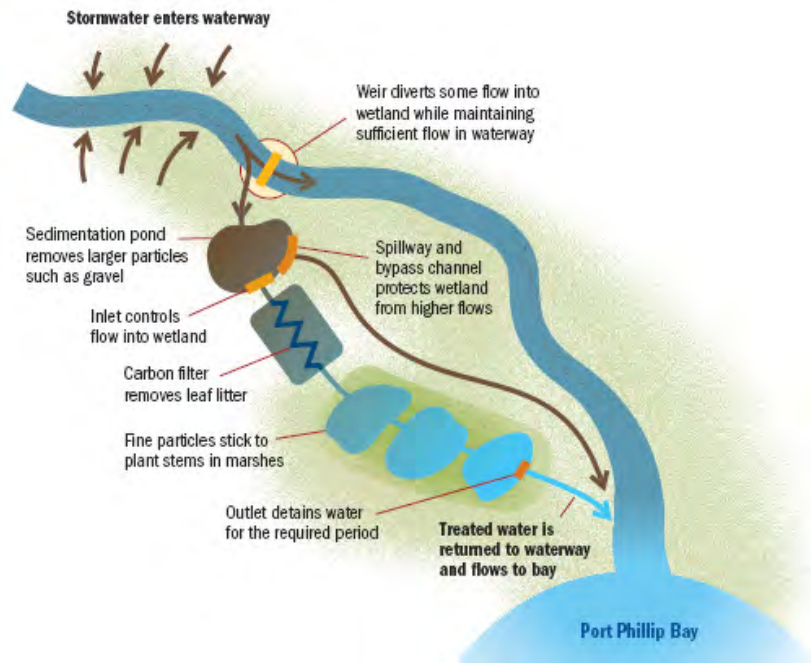


Figure A 3.13: Melbourne Wetlands Project - Working System.
Source: *Surbana*



Figure A 3.14: Melbourne Wetlands Project - Flooded Zone.
Source: *Surbana*

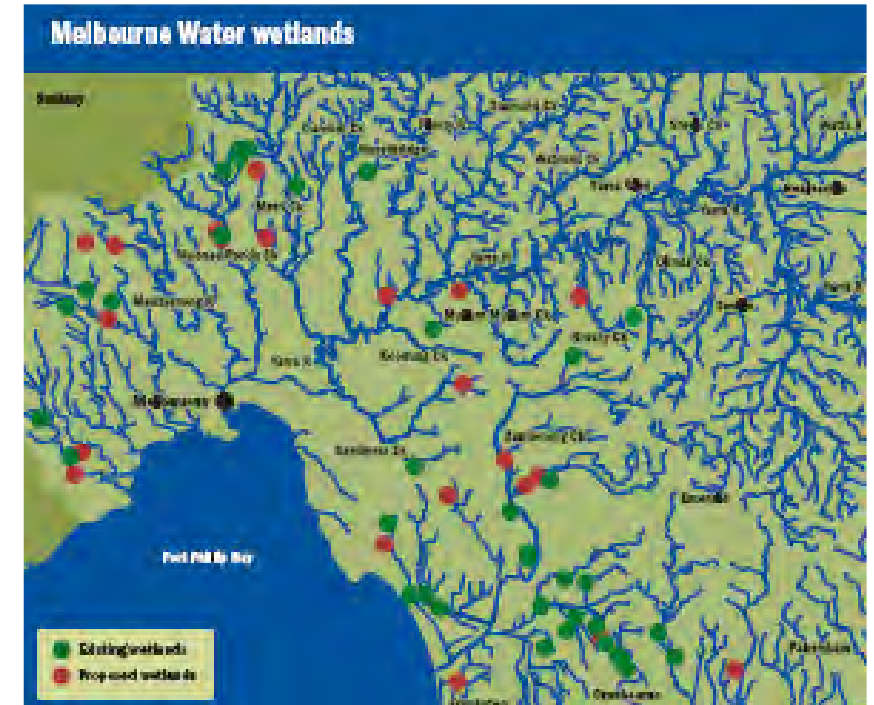


Figure A 3.15: Melbourne Wetlands Project - Network.
Source: *Surbana*

APPENDIX 4: KEY FEATURES IN MUHIMA SECTOR

A4.1 Planning Areas

Appendix 4 presents the context, opportunities, constraints and proposed land use concepts for 4 selected key feature areas in Muhima Sector, as shown in Figure A 4.1 and described below:

Kigali CBD Phase 1 - The cleared land located at the eastern corner of Muhima, is proposed as the start-up parcel for the development of the new CBD and is envisioned to house a mix of high end retail and office spaces with mix use housing catering to the needs of the rapidly urbanizing population.

New CBD Core - The existing City Centre located in the area of the Centre Ville Roundabout is proposed to be revitalized. A new CBD Core, strategically located along the low lying flat areas of the Muhima CBD, is proposed to be developed as an extension of the existing CBD Core. Together the Roundabout and CBD Core area is expected to become a vibrant business and administrative centre for the entire region.

Nyabugogo Transport Hub and Market - The existing taxi park at Nyabugogo is proposed to be developed into an integrated transportation interchange, with complementary commercial and office facilities, serving as an important transportation node at the junctions of Muhima, Kanyinya and Gitega Sectors.

Kigali CBD Wetland Park - The wetlands along Boulevard de l'OUA, north of Muhima are proposed to be developed as a Wetland Park offering a range of recreational and educational venues as well as critical environmental benefits.

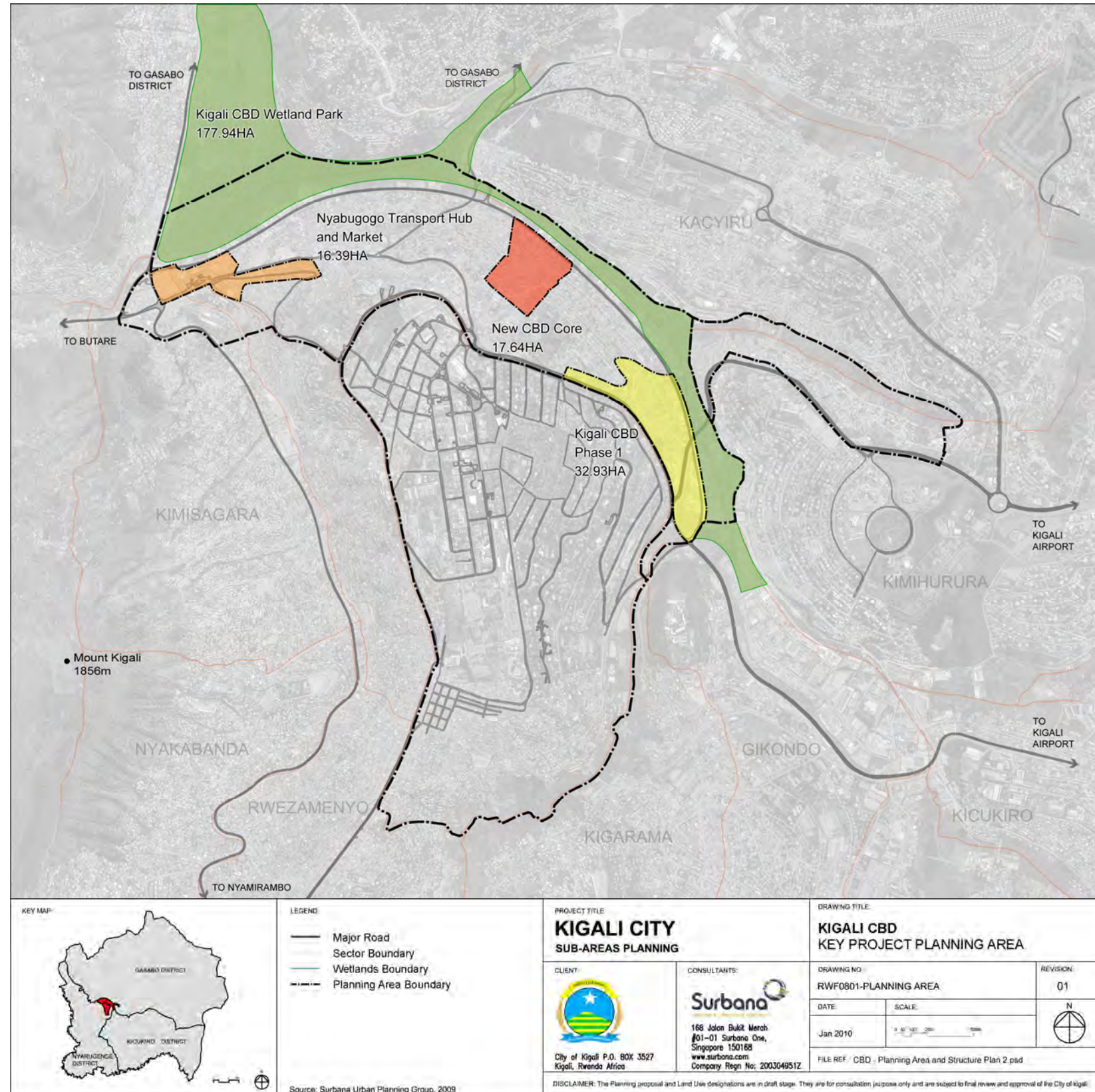


Figure A 4.1: Kigali CBD – Key Feature Areas in Muhima Sector.
Source: Surbana

A4.2 Kigali CBD Phase 1

A4.2.1 Introduction

The Kigali CBD Phase 1 site covers an area of 32.9 ha, which includes the 35 ha cleared site. The location and extent of the planning area is indicated in Figure A 4.2. This section presents the development context, opportunities, constraints and threats as well as the proposed land use concept for the Kigali CBD Phase 1.

A4.2.2 Context

Kigali CBD Phase 1 site is strategically located at junction of two major arterial roads, Avenue des Poids Lourdes and Boulevard de l'OUA, which connect the existing City Centre with the Kigali International Airport. It is located very close to the existing City Centre as well as the other key developments in Kimihurura and Kacyiru. It slopes towards the wetlands, across which lies Kimicanga, the proposed entertainment district. A land measuring 35ha has been recently cleared and prepared by the government for the development of high density commercial and financial developments. 2 high-rise offices blocks, RAMA and CSR, are currently under construction within the site. Most of the site is government owned, with the exception of a strip of land along Boulevard de l'OUA which is under private ownership and needs to be considered. Analysis of the overall land form and the topographic features indicates a general slope which is less than 20% and hence conducive for development.

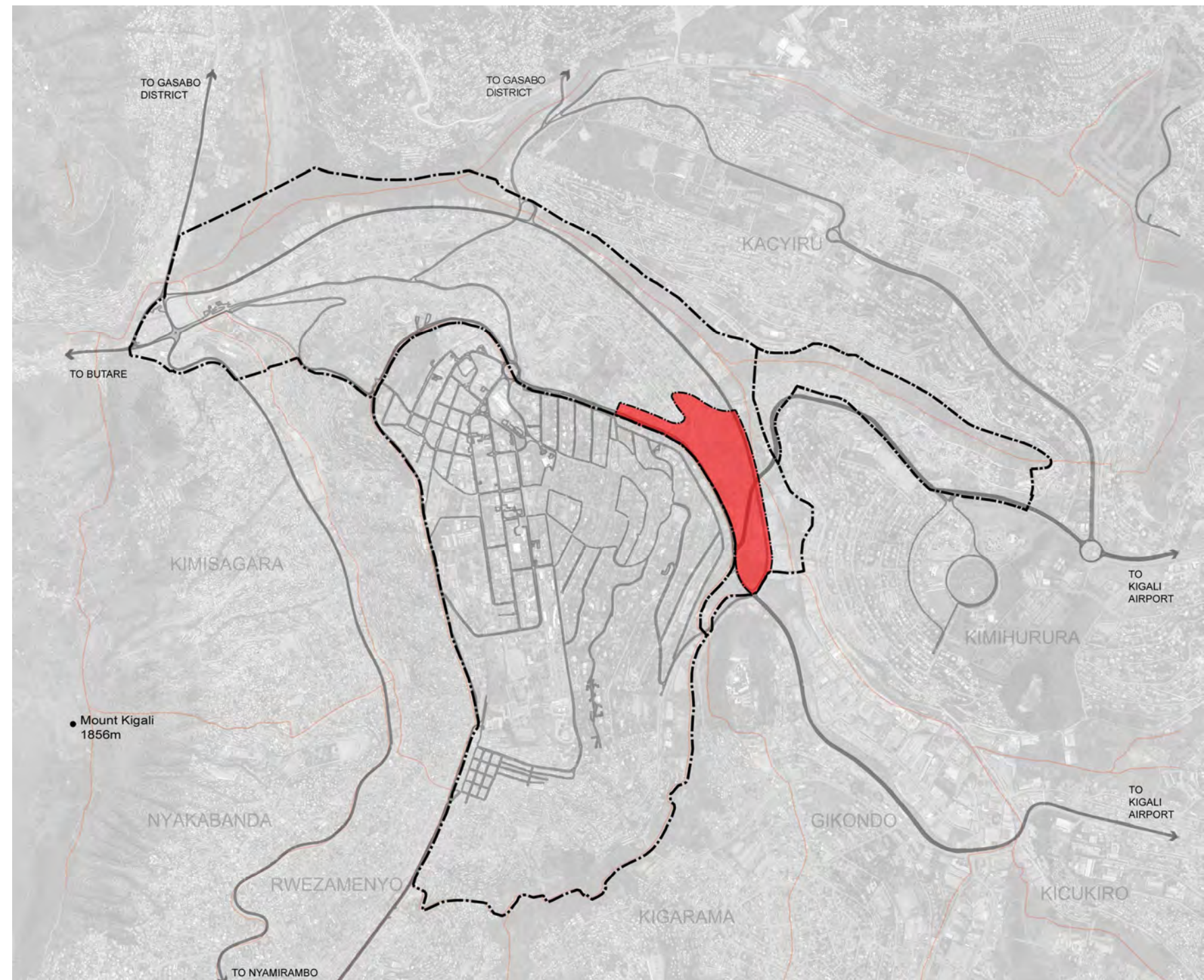


Figure A 4.2: CBD Phase 1 – Location Plan.
Source: *Surbana*

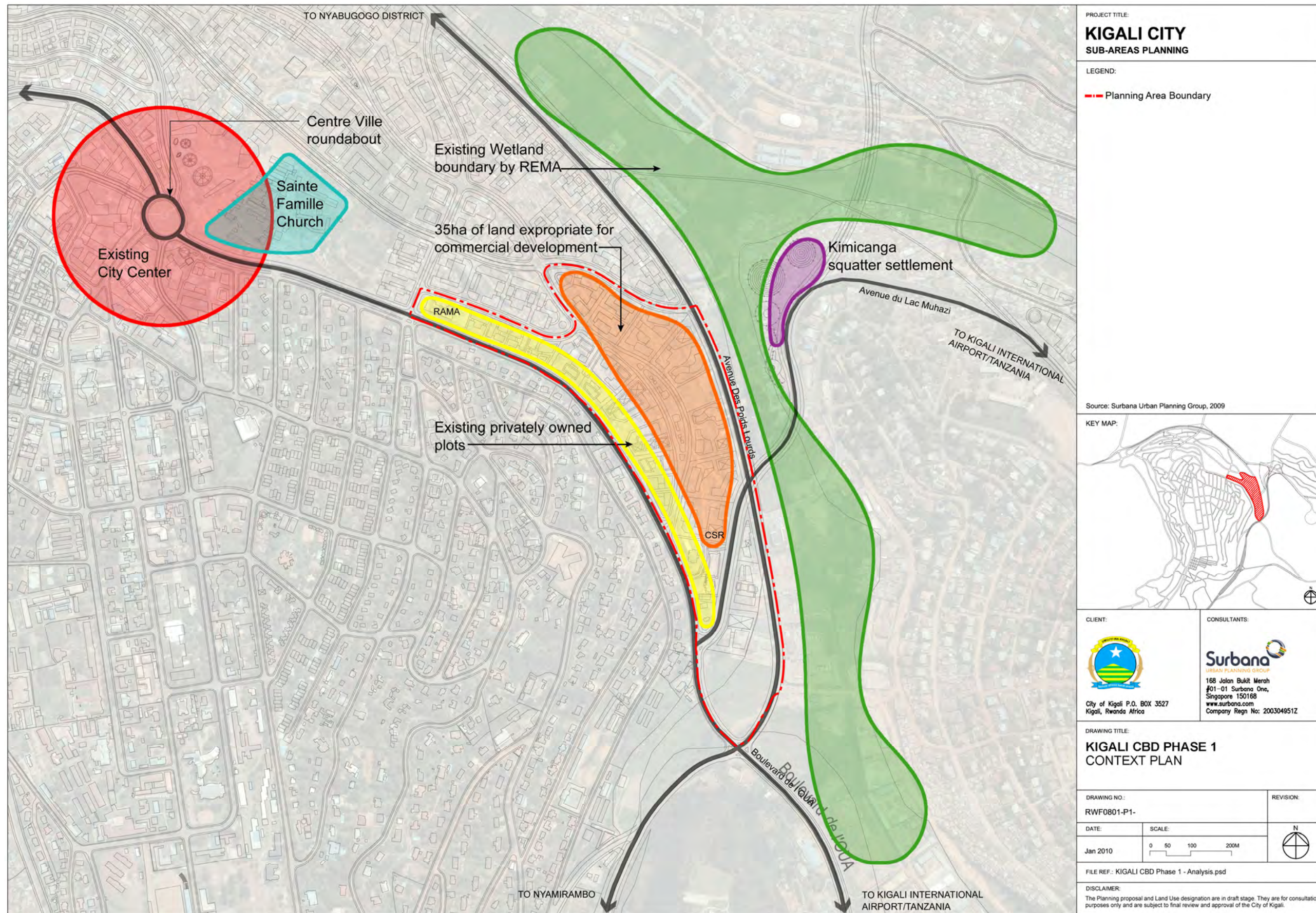


Figure A 4.3: Kigali CBD Phase 1 - Context Plan.
Source: Surbana

A4.2.3 Kigali CBD Phase 1 Opportunities, Constraints and Threats

Based on the context and the existing site conditions, the key opportunities, constraints and threats for the Muhima CBD Phase 1 site have been generated as presented in Table A 4.1, Figure A 4.4 and Figure A 4.5.

Table A 4.1: Kigali CBD Phase 1 - Opportunities, Constraints, and Threats.

Issues	Opportunities	Constraints	Threats
Accessibility and Location	<ul style="list-style-type: none"> Kigali CBD Phase 1 is highly accessible from Kigali International Airport and the rest of the City via Boulevard de l'OUA. The close proximity to the existing city centre may increase the development potential of Kigali CBD Phase 1. 	<ul style="list-style-type: none"> Not Applicable 	<ul style="list-style-type: none"> Potential increase in vehicular traffic along Boulevard de l'OUA could result in congestion and vehicular-pedestrian conflict.
Developable Land	<ul style="list-style-type: none"> 35 ha of vacant land within the Kigali CBD Phase 1 is under government ownership. This offers flexibility for the government to plan, phase and implement the Muhima CBD Phase 1. 	<ul style="list-style-type: none"> Ongoing developments such as the CSR and RAMA buildings need to be retained. A sizeable number of small plots (less than 4000 m²) along Boulevard de l'OUA are under private individual ownership. These plots need to be retained and integrated in the proposal for Kigali CBD Phase 1. 	<ul style="list-style-type: none"> Not Applicable
Natural Features	<ul style="list-style-type: none"> The wetlands stretching along Boulevard de l'OUA can be developed into an attractive recreational development which can be integrated with the Kigali Phase 1 development. Most of the site has a slope less than less 20% offering opportunities for large scale developments. 	<ul style="list-style-type: none"> The recently approved Organic Law prohibits development in the wetlands, requiring the relocation of the existing developments in the wetlands. 	<ul style="list-style-type: none"> Increased commercial and recreational activities may create development pressures within and around the wetland areas.

Source: *Surbana*

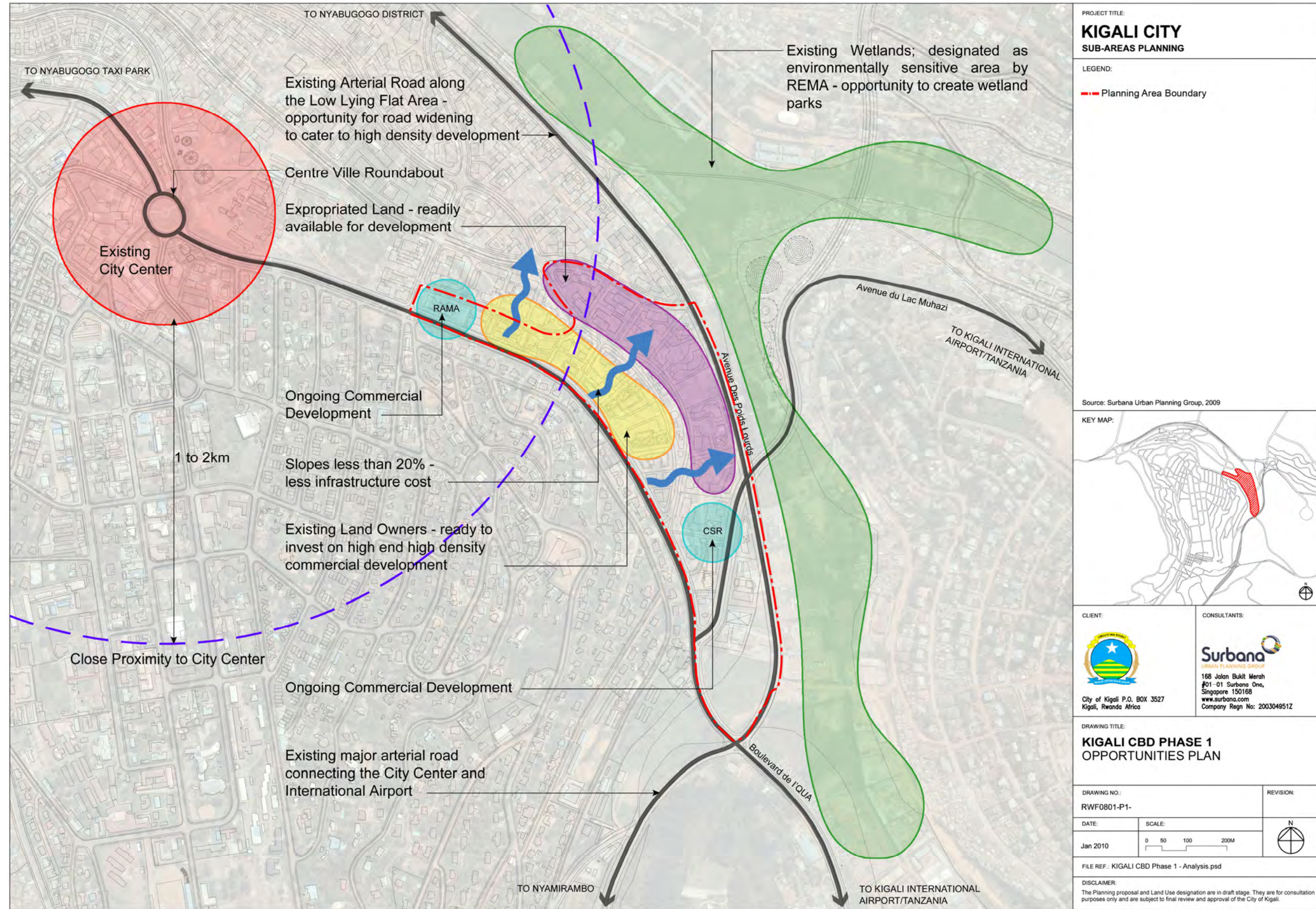
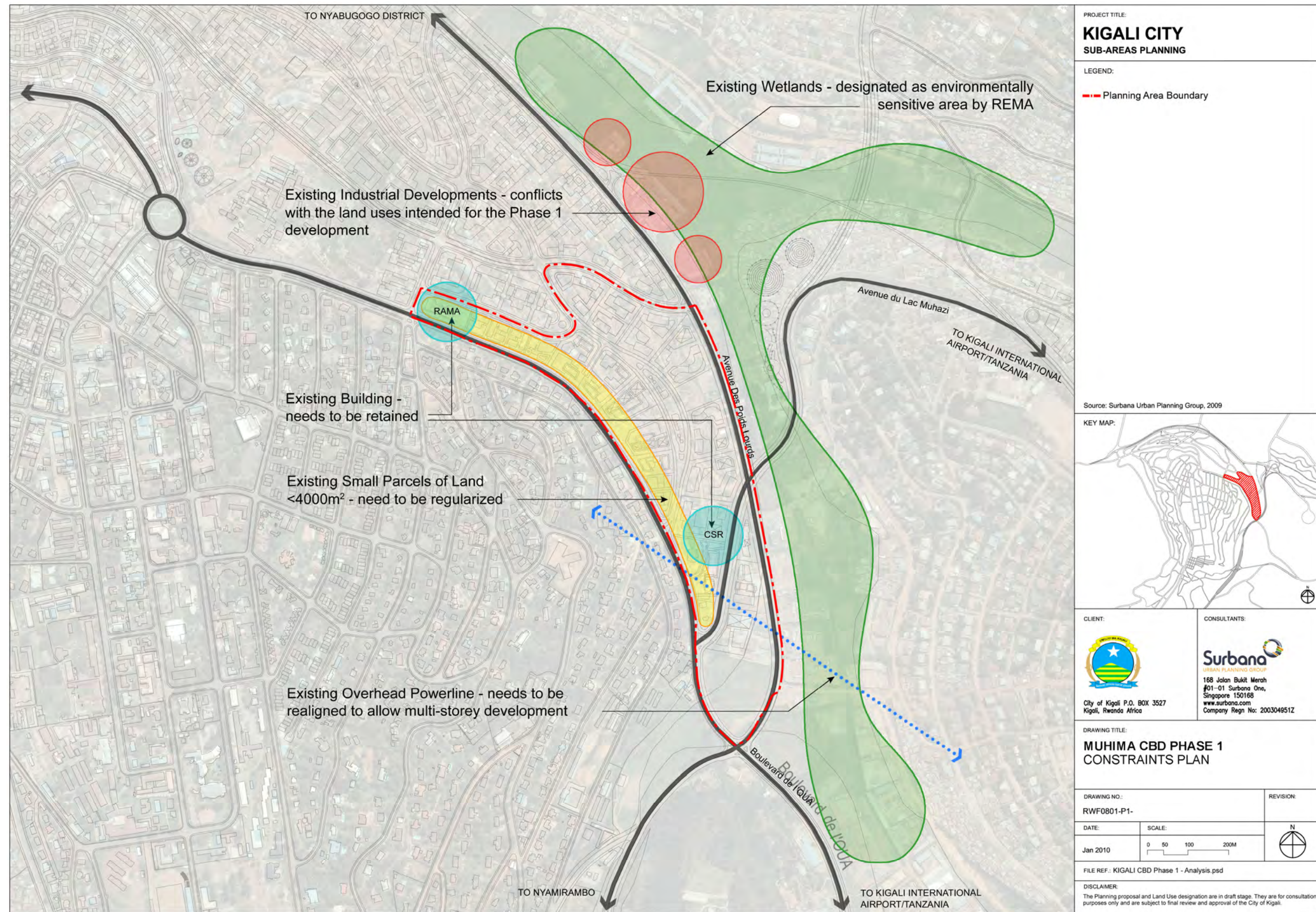


Figure A 4.4: Kigali CBD Phase 1 - Opportunities Plan.
 Source: Surbana



PROJECT TITLE:
**KIGALI CITY
SUB-AREAS PLANNING**

LEGEND:
- - - Planning Area Boundary

Source: Surbana Urban Planning Group, 2009

KEY MAP:

CLIENT:

City of Kigali P.O. BOX 3527
Kigali, Rwanda Africa

CONSULTANTS:

Surbana
URBAN PLANNING GROUP
168 Jalan Bukit Merah
#01-01 Surbana One,
Singapore 150168
www.surbana.com
Company Regn No: 200304951Z

DRAWING TITLE:
**MUHIMA CBD PHASE 1
CONSTRAINTS PLAN**

DRAWING NO.: RWF0801-P1-		REVISION:
DATE: Jan 2010	SCALE: 0 50 100 200M	

FILE REF.: KIGALI CBD Phase 1 - Analysis.psd

DISCLAIMER:
The Planning proposal and Land Use designation are in draft stage. They are for consultation purposes only and are subject to final review and approval of the City of Kigali.

Figure A 4.5: Kigali CBD Phase 1 - Constraints Plan.
Source: Surbana

A4.2.4 Concept Plan

The buildings currently under construction at the Kigali CBD Phase 1 site are to be integrated in the overall development. An open space is reserved as public plaza and green connector, connecting the proposed Kigali CBD Wetland Park with the Kigali CBD Phase 1 site and to the rest of the city. The open space is in line with the overall green network plan for the Kigali CBD.

The open space would also provide an unobstructed view corridor towards the proposed Kigali CBD Wetland Park. A distinctive building edge is proposed to frame the public open space to further give an identity to the Kigali CBD Phase 1 development.

Landmark buildings would also frame the Kigali CBD Phase 1 core area, thus creating a distinctive skyline for the area.

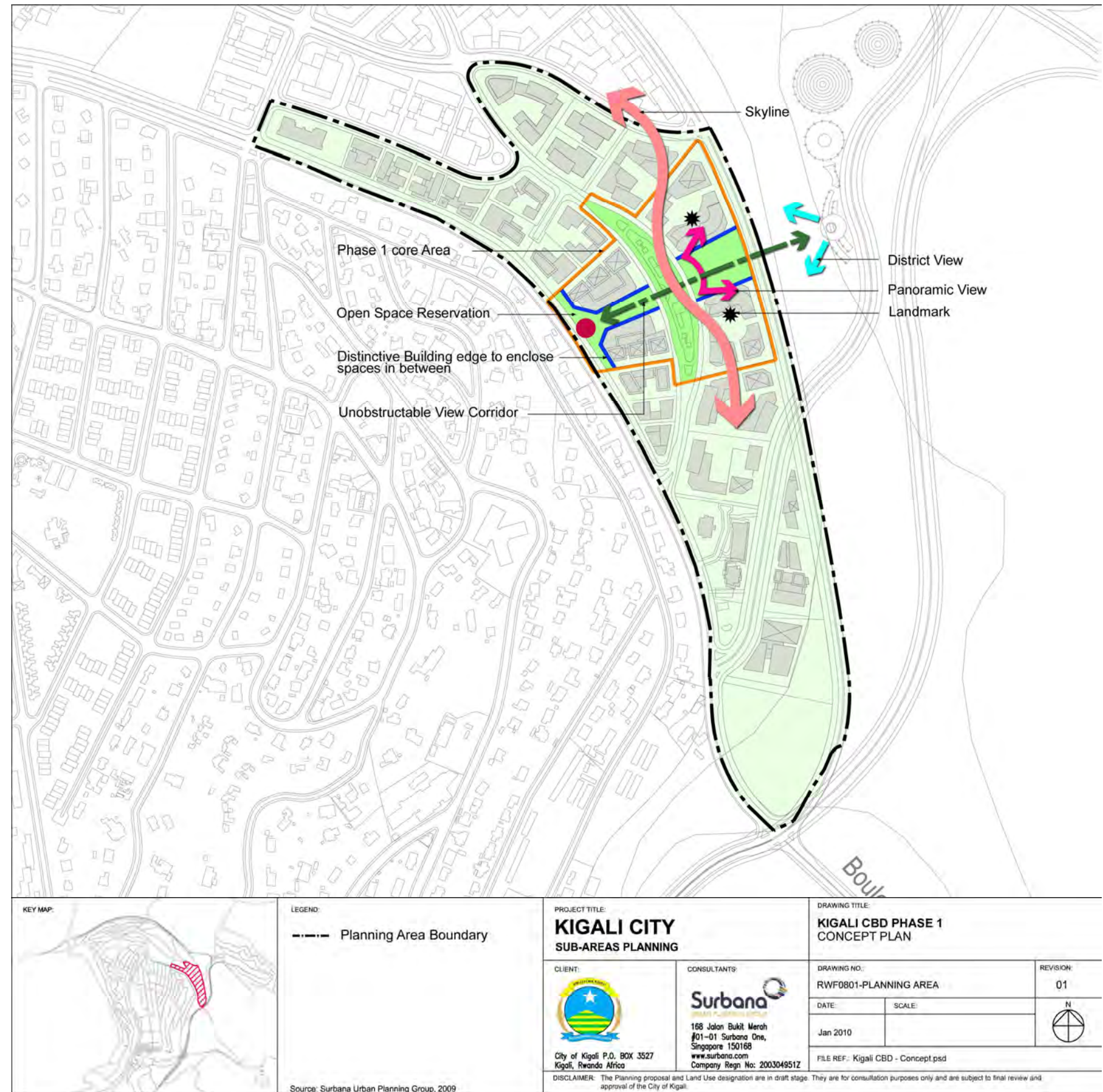


Figure A 4.6: Kigali CBD Phase 1 - Constraints Plan.
Source: Surbana

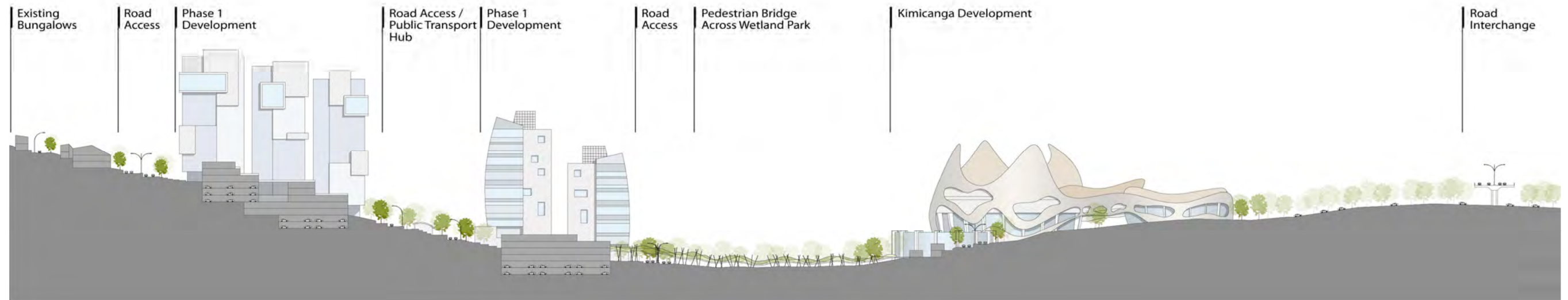
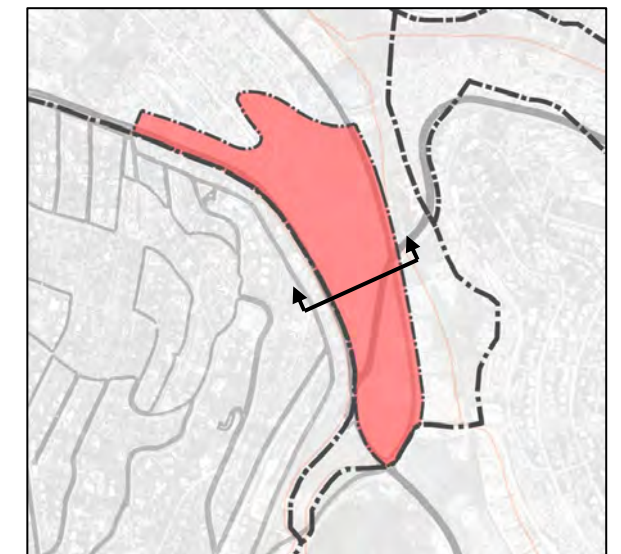


Figure A 4.7: Kigali CBD Phase 1 – Key Section.
Source: *Surbana*



A4.3 New CBD Core

A4.3.1 Introduction

The existing City Centre located around the Centre Ville Roundabout covers an area of 41.25 ha, while the site proposed for the New CBD Core covers an area of 17.6 ha. The location and extent of the planning area is indicated in Figure A 4.8. This section presents the development context, opportunities, constraints and threats as well as the proposed concept for the New CBD Core.

A4.3.2 Context

The New CBD Core is strategically located at the centre of the CBD area, adjacent to the Avenue des Poids Lourdes. The New CBD core is located just below the Centre Ville Roundabout. Avenue des Poids Lourdes is proposed to be redeveloped as an expressway offering east-west connectivity to the CBD Core. The area slopes towards the wetlands, across which lies Kacyiru, the hill which houses a number of embassies and important government buildings.

Analysis of the overall land form and the topographic features indicates a general slope which is less than 20% and hence conducive for development.

Figure A 4.9 presents the Context Plan for the New CBD Core area.

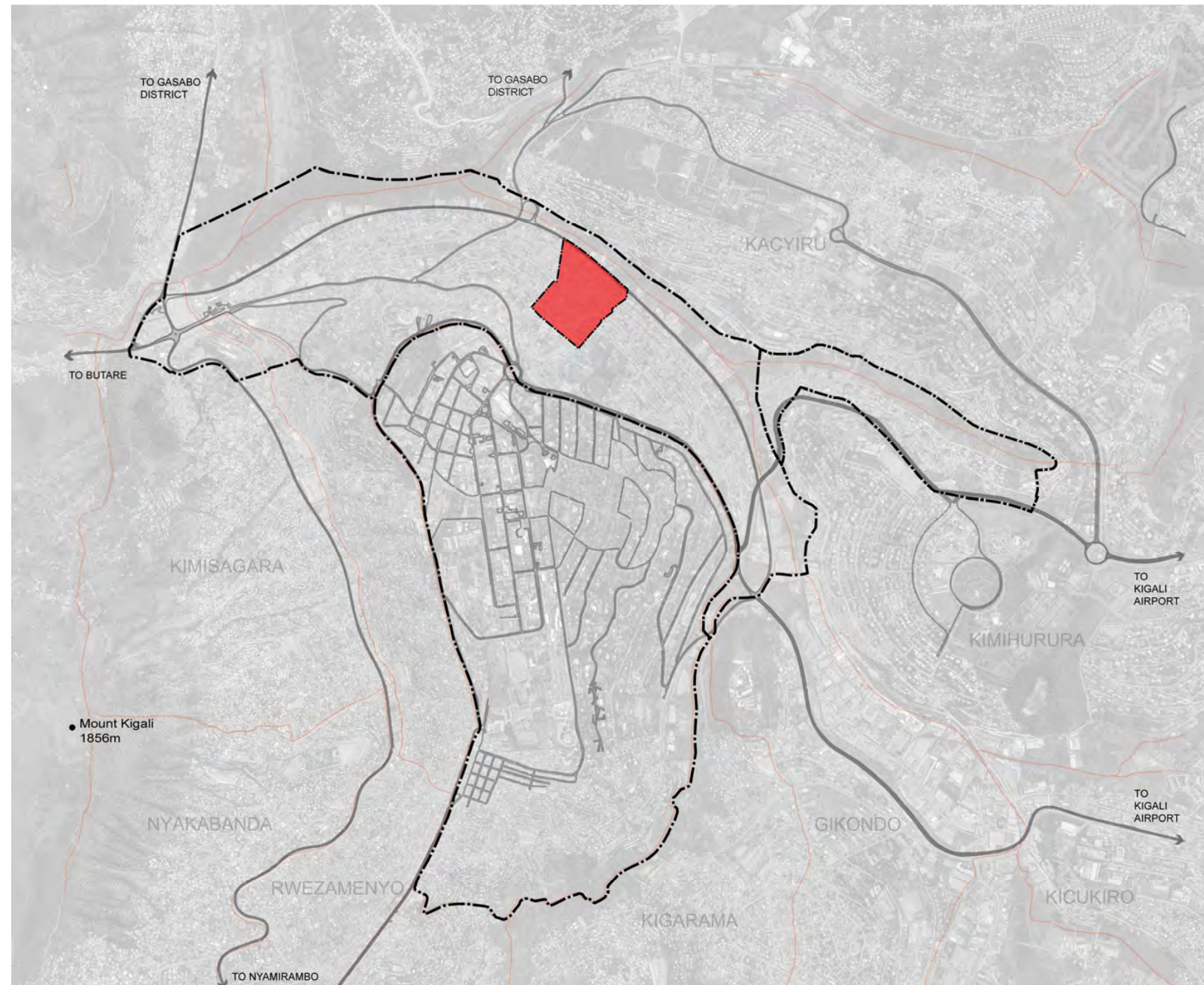


Figure A 4.8: New CBD Core – Location Plan.
Source: *Surbana*

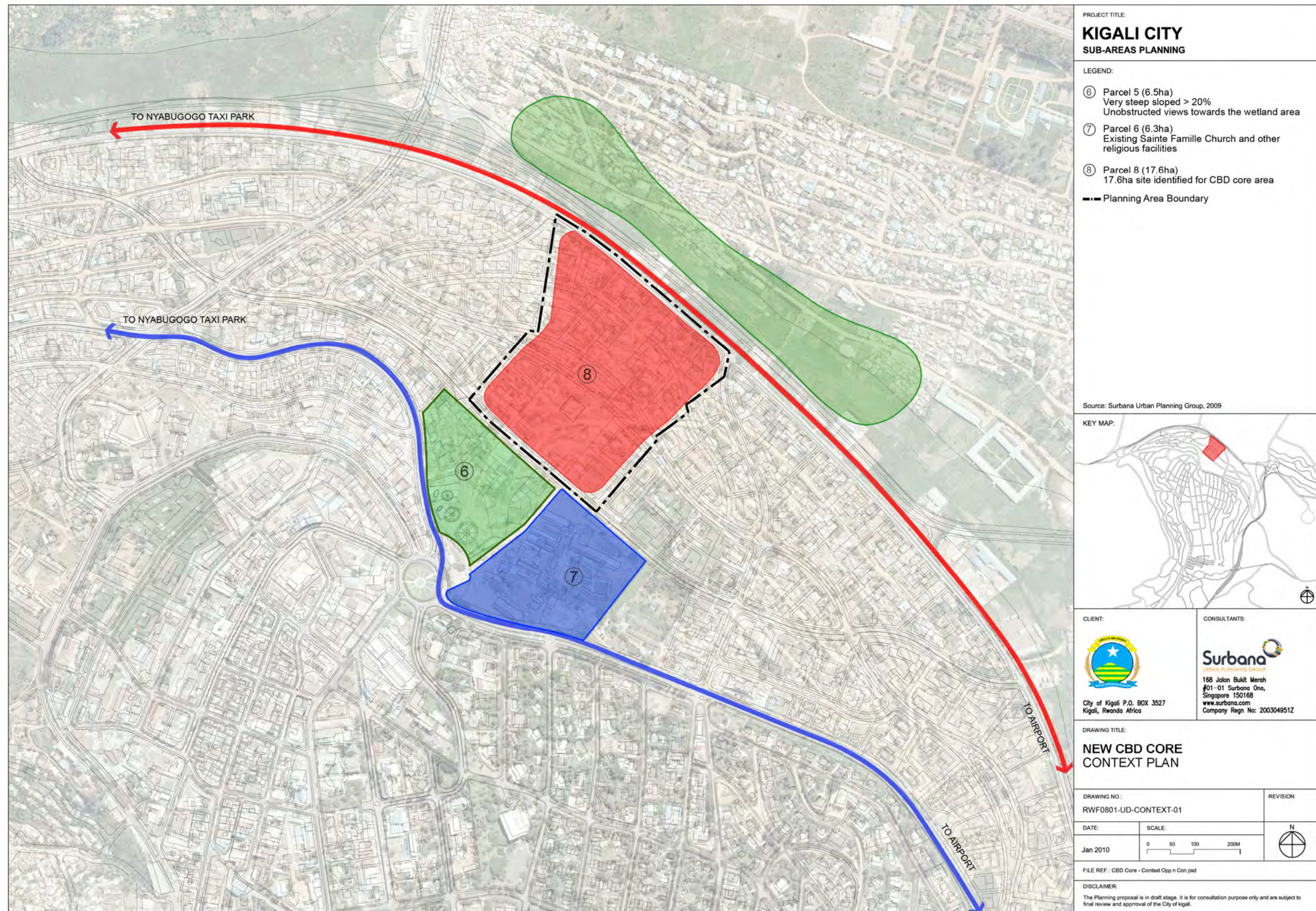


Figure A 4.9: New CBD Core – Context Plan.
Source: Surbana

A4.3.3 New CBD Core – Opportunities, Constraints and Threats

Based on the context and the existing site conditions, the key opportunities, constraints and threats for the New CBD Core have been generated as presented in Table A 4.2 and Figure A 4.10 and Figure A 4.11.

Table A 4.2: New CBD Core - Opportunities, Constraints and Threats.

Issues	Opportunities	Constraints	Threats
1. Connectivity and Circulation	<ul style="list-style-type: none"> The site proposed for the new CBD Core development is connected via Avenue des Poids Lourdes the key developments such as the Airport, the Nyabugogo Taxi Park etc, thus making it highly accessible and increasing its development potential. Existing road can be widened to serve the new CBD Core developments. 	<ul style="list-style-type: none"> Propose expressway create a physical boundary between the CBD Core and the Wetlands 	<ul style="list-style-type: none"> Unless proposedly designed and integrated, the recreational potential of the Wetlands could be compromised.
2. Topography and Natural Features	<ul style="list-style-type: none"> The Wetlands abutting the northern boundary of the development can be developed as a recreational park which complements the new CBD. Gentler slope allow high density commercial development. 	<ul style="list-style-type: none"> Not applicable 	<ul style="list-style-type: none"> Not applicable
3. Surrounding Context	<ul style="list-style-type: none"> The strategic location along the expressway, offer opportunities for high value frontage. 	<ul style="list-style-type: none"> Not applicable 	<ul style="list-style-type: none"> Not applicable
4. Existing Land Use	<ul style="list-style-type: none"> Not applicable 	<ul style="list-style-type: none"> The land required for the development of the new CBD core needs to be acquired. 	<ul style="list-style-type: none"> Unless reserved in time, the sporadic developments which may come up on this site due to high commercial pressure, may hamper the effective implementation of Master Plan.

Source: *Surbana*

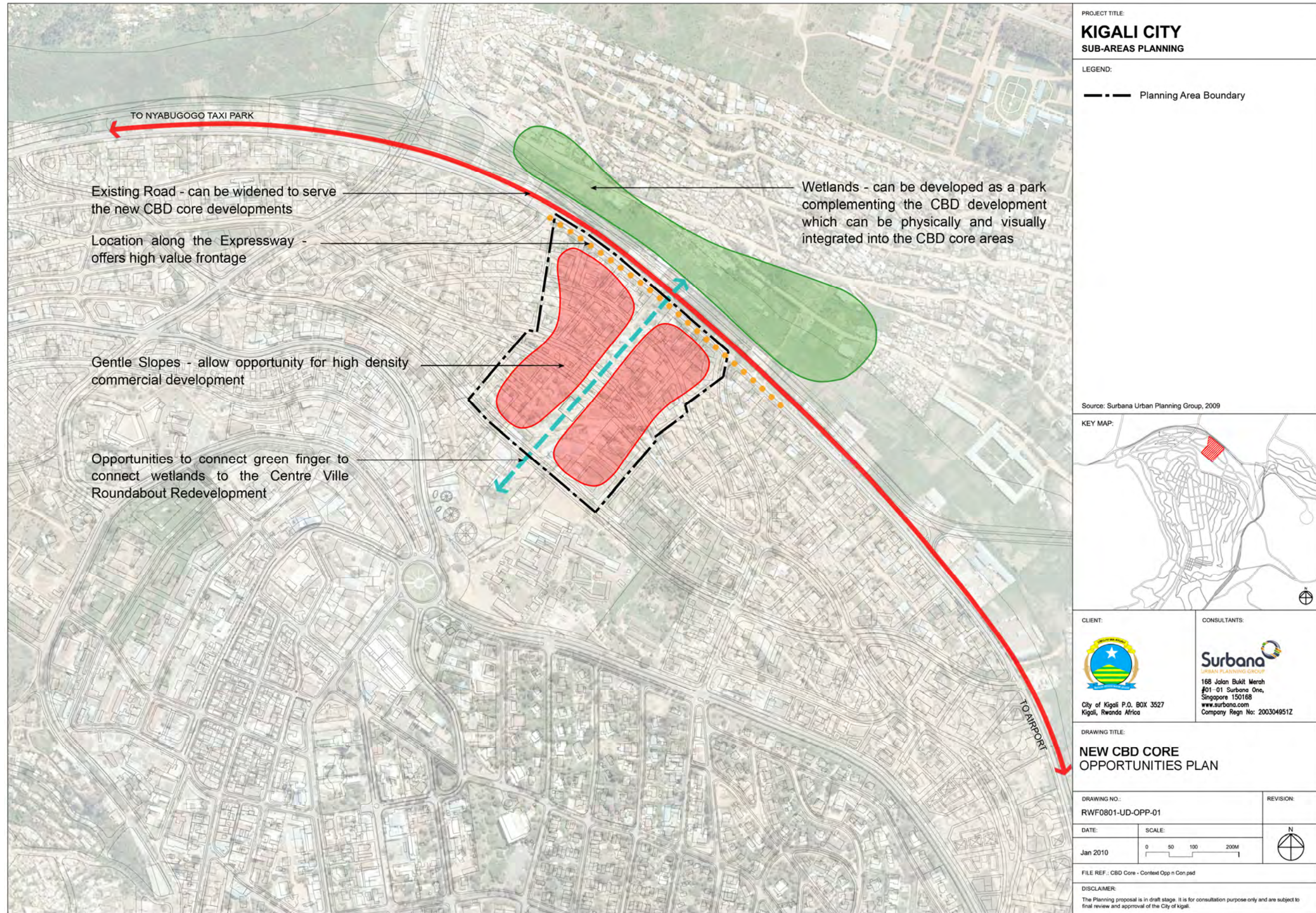


Figure A 4.10: New CBD Core – Opportunities Plan.
Source: Surbana

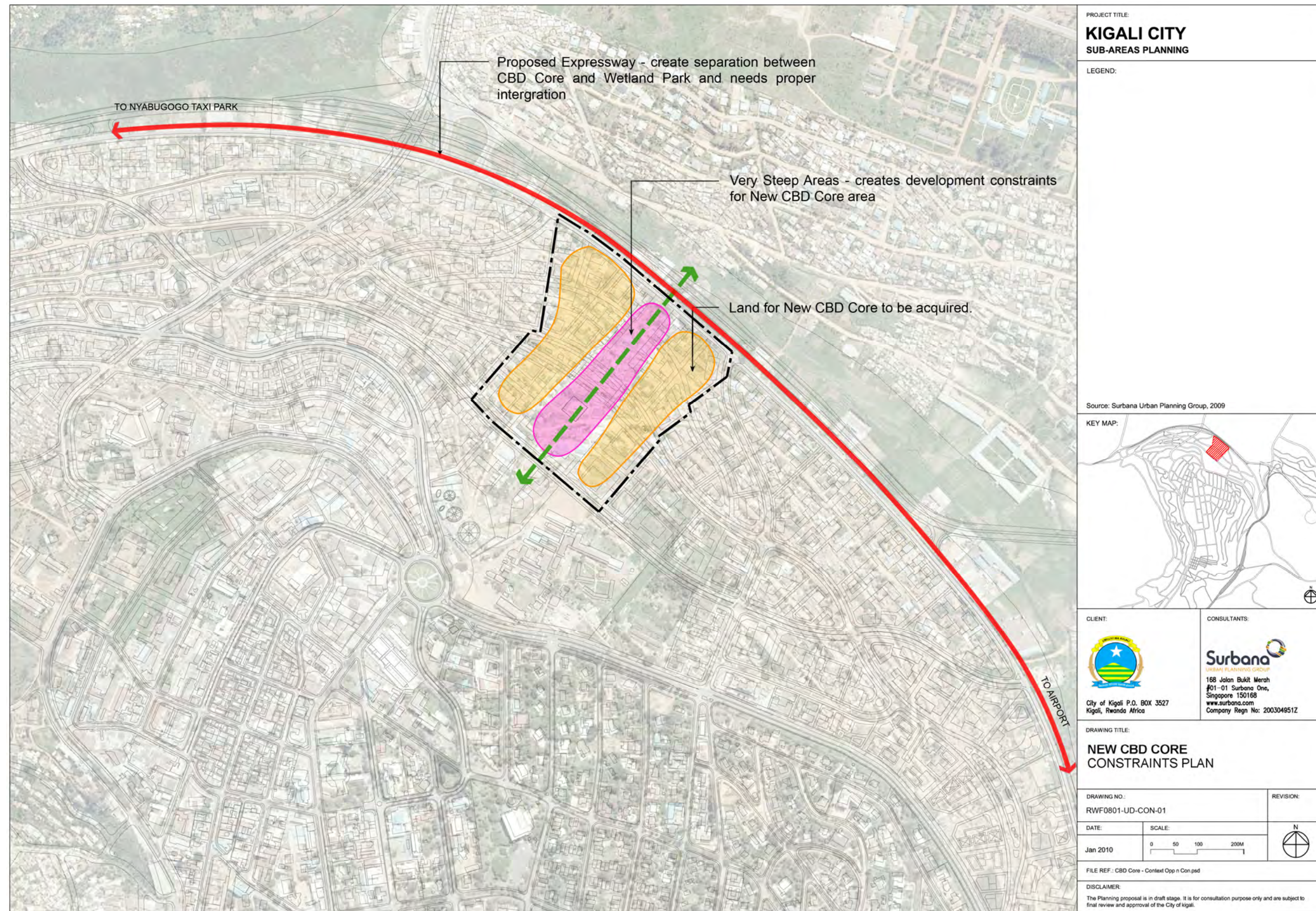


Figure A 4.11: New CBD Core – Constraints Plan.
Source: Surbana

A4.3.4 Concept Plan

An open space is to be reserved in the New CBD Core area that is proposed to be the main public square for the city, as an important public and civic space. The open space is to be extended towards the proposed Kigali CBD Wetland Park, creating an unobstructed view corridor towards the wetlands, capitalizing on the natural topography of the site.

An elevated pedestrian walkway is proposed over the new expressway to allow connectivity between the New CBD Core and the Kigali CBD Wetland Park and as an extension of the green areas into the New CBD Core.

The open space in the New CBD Core is to be framed by a distinctive building edge on its adjacent parcels with activity generation uses at ground level to promote a vibrant public space.

Pedestrian connectors are proposed across parcels from buildings to buildings to allow an all-weather pedestrian connectivity.

Landmark towers A and B as indicated in Figure A 4.12 are proposed to frame the New CBD Core and a distinction from the rest of the CBD areas. These towers are to be the tallest in the CBD, creating a gradual skyline outwards from it.

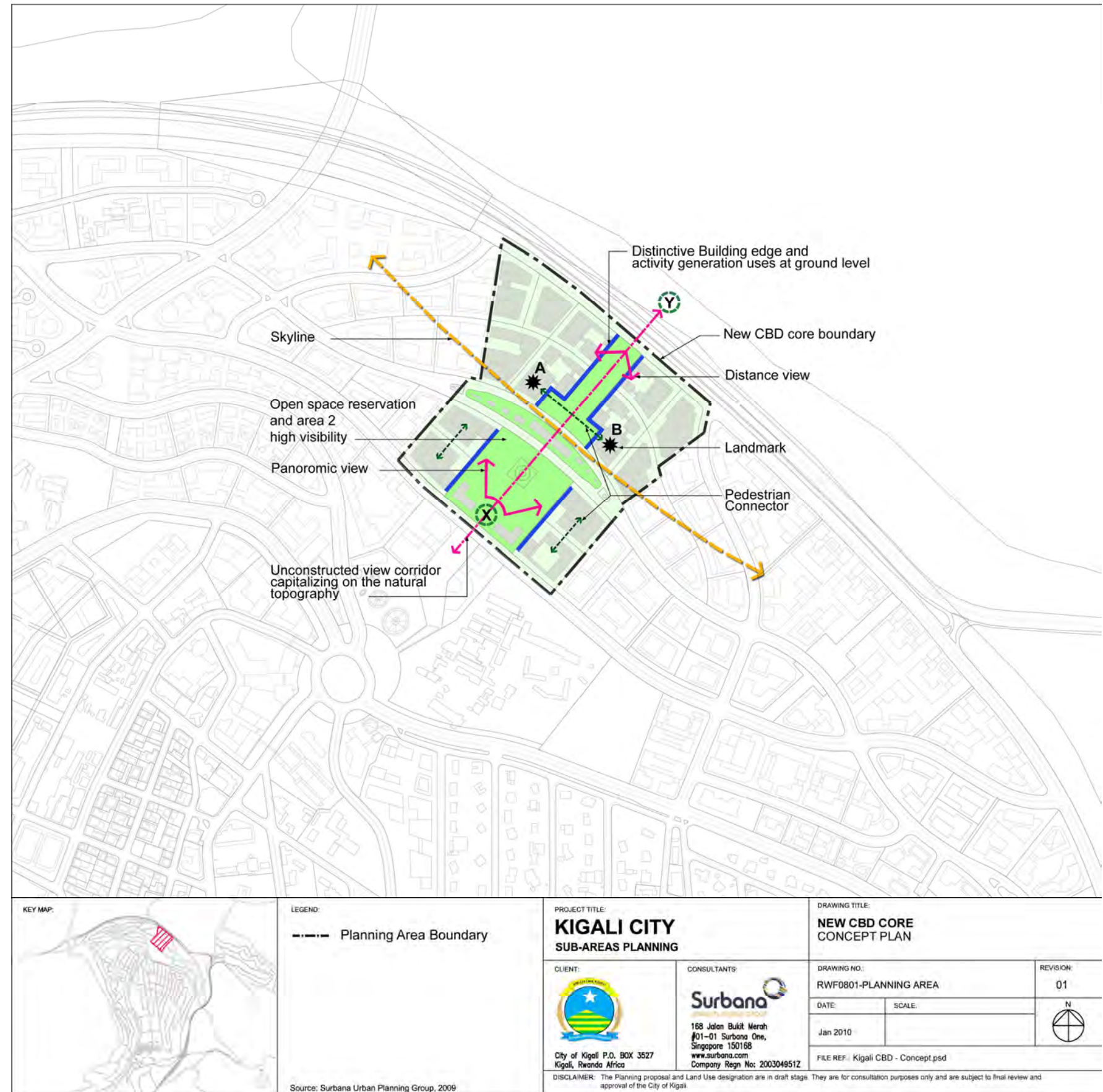
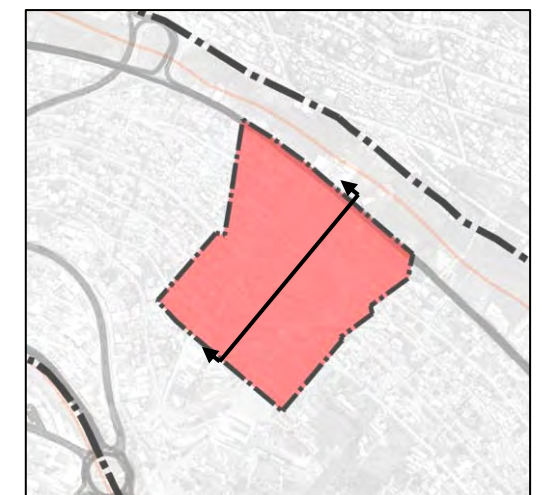


Figure A 4.12: New CBD Core – Concept Plan.

Source: Surbana



Figure A 4.13: New CBD Core – Key Section.
Source: *Surbana*



A4.4 Nyabugogo Transport Hub and Market

A4.4.1 Introduction

The Nyabugogo Transport Hub and Market spreads over 16.3 ha within the Muhima Sector, as highlighted in Figure A 4.14. The Nyabugogo Transport Hub and Market is an important commercial area – offering specialized businesses, despite it being an unusual sight for a commercial district to be surrounded by wetlands. The site is upwards sloping towards the north and culminates at the Nyarugenge Commercial District, forming the north-western part of the larger existing Kigali CBD. This section delineates the existing conditions of the planning area, context, opportunities, constraints and proposed land use concept for the Nyabugogo Transport Hub and Market.

A4.4.2 Existing Context

The Nyabugogo Transport Hub and Market is located in a city-level commercial district, housing varied commercial services at present – from wholesale activities (next to Avenue des Poids Lourds) to dynamic businesses (between south Boulevard de Nyabugogo and Prison Dominique Markeli).

Surrounded by a mixture of land uses, the Nyabugogo Transport Hub and Market is separated from the proposed Kigali CBD Wetland Park by Avenue des Poids Lourds on the northern side of the planning area; adjacent to the proposed medium-rise residential developments (in the vicinity of Avenue de Nyakanbanda) south of the site; flanked by a proposed commercial district located east of the site; and within the proximity of the existing Bus Terminal and proposed Taxi Terminal (thus forming the future transport hub), west of the Nyabugogo Transport Hub and Market. The presence of a transport hub translates to future opportunities of a more bustling wholesale centre in the vicinity.

The planning area is largely built-up with fine-grained developments and a few larger-scale developments (ie. wholesale centres) at the junction of Boulevard de Nyabugogo and Avenue de la Democratie, and north of Avenue des Poids Lourds.

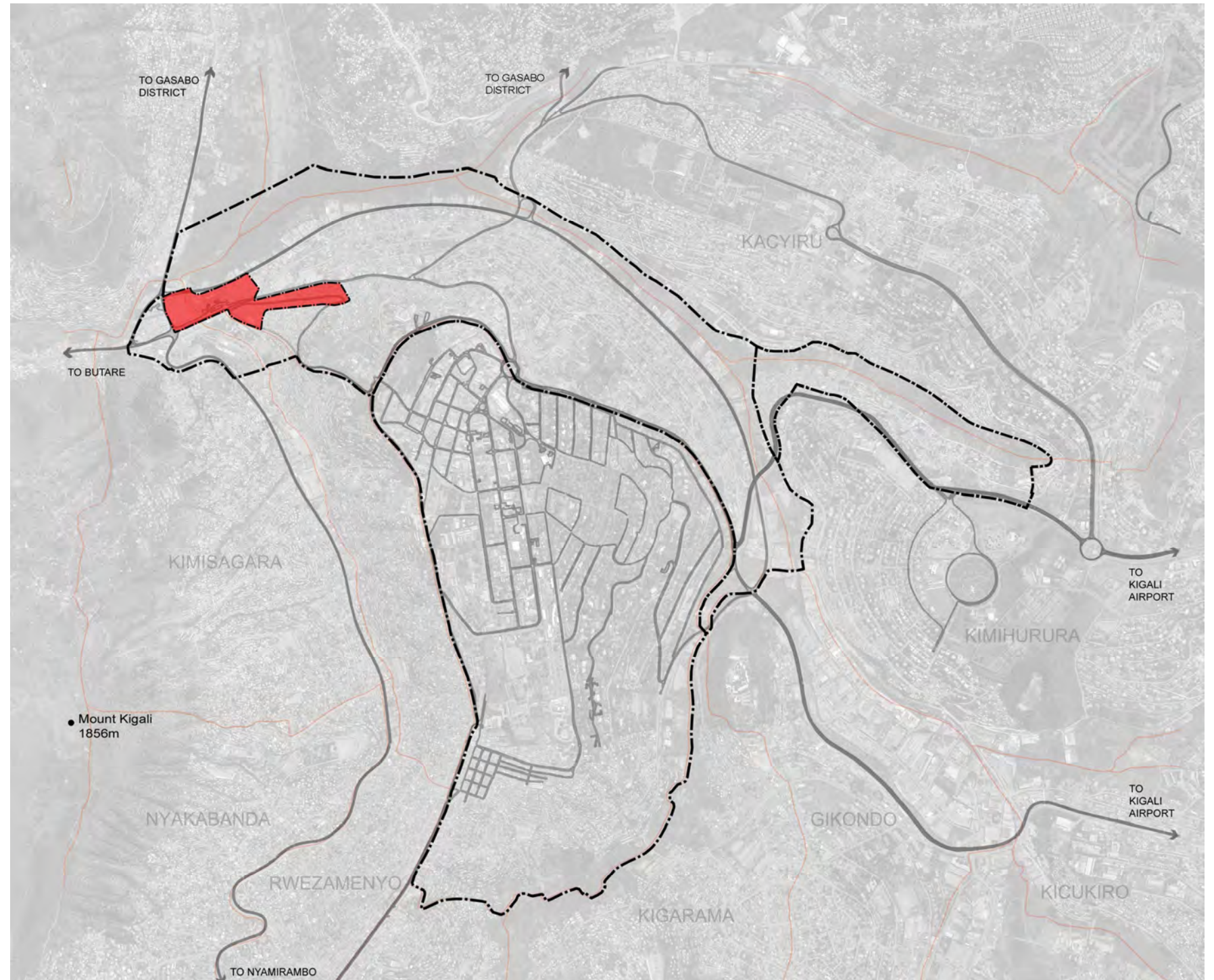


Figure A 4.14: Nyabugogo Transport Hub and Market – Location Plan.
Source: *Surbana*

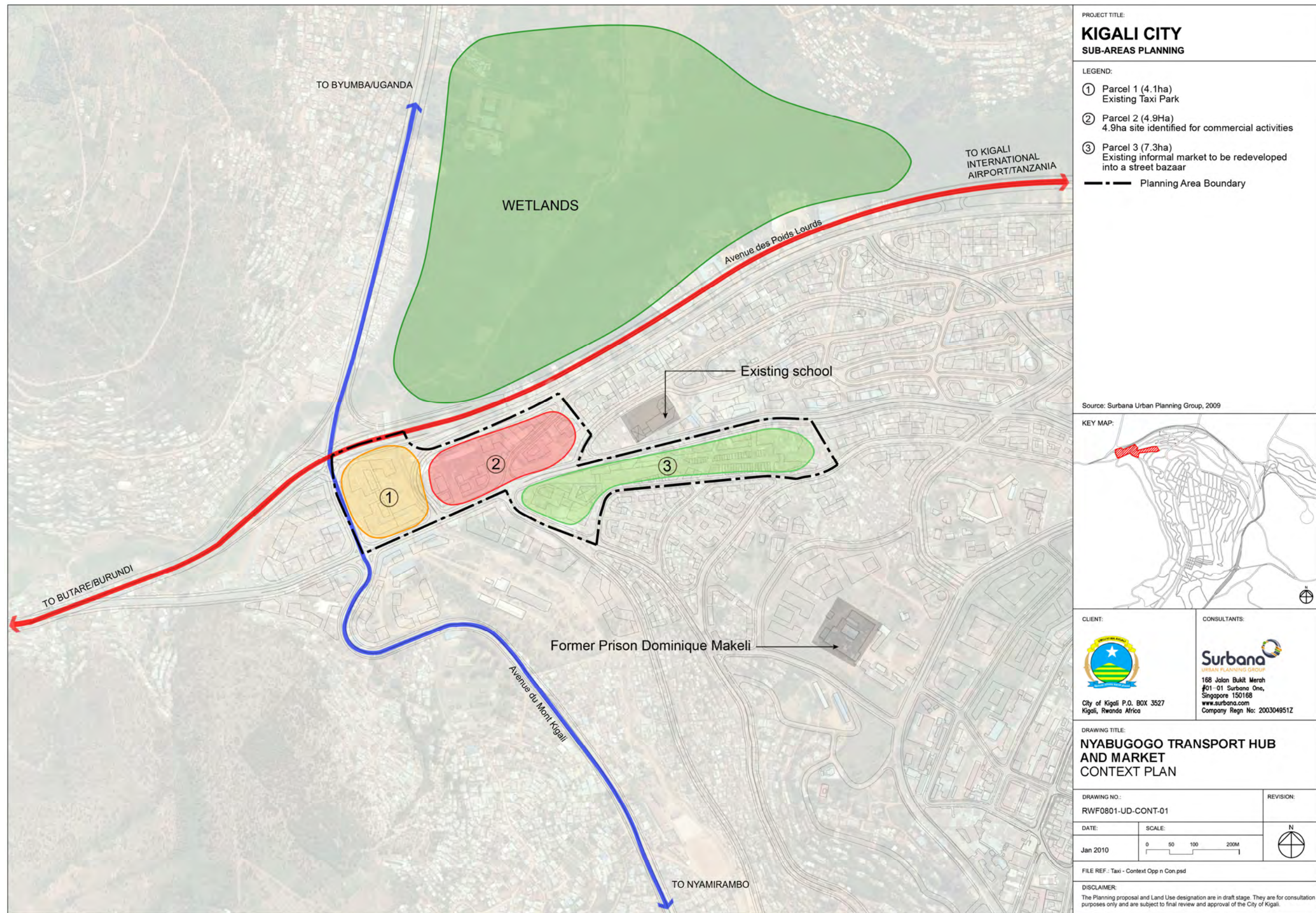


Figure A 4.15: Nyabugogo Transport Hub and Market – Context Plan.
Source: Surbana

A4.4.3 Nyabugogo Transport Hub and Market Opportunities, Constraints and Threats

Based on the context and the existing site conditions, the key opportunities, constraints and threats for the Nyabugogo Transport Hub and Market site have been generated as presented in Table A 4.3, Figure A 4.16

Table A 4.3: Nyabugogo Transport Hub and Market - Opportunities, Constraints, and Threats.

Issues	Opportunities	Constraints	Threats
Accessibility and Location	<ul style="list-style-type: none"> Nyabugogo Transport Hub and Market is highly accessible due to its strategic location at the intersection of 3 sectors, namely Muhima, Kanyinya and Gitega Sectors, and its direct connection to the CBD via Avenue des Poids Lourds. Redevelopment of the existing major taxi park into a transport hub will further increase its accessibility. 	<ul style="list-style-type: none"> Not Applicable 	<ul style="list-style-type: none"> Potential increase in vehicular traffic around Taxi Park could result in congestion and vehicular-pedestrian conflict.
Natural Features	<ul style="list-style-type: none"> Most of the site has a slope less than less 20% which is conducive for development. 	<ul style="list-style-type: none"> Not Applicable 	<ul style="list-style-type: none"> Increased commercial and recreational activities may create development pressures within and around the wetland areas.

Source: *Surbana*

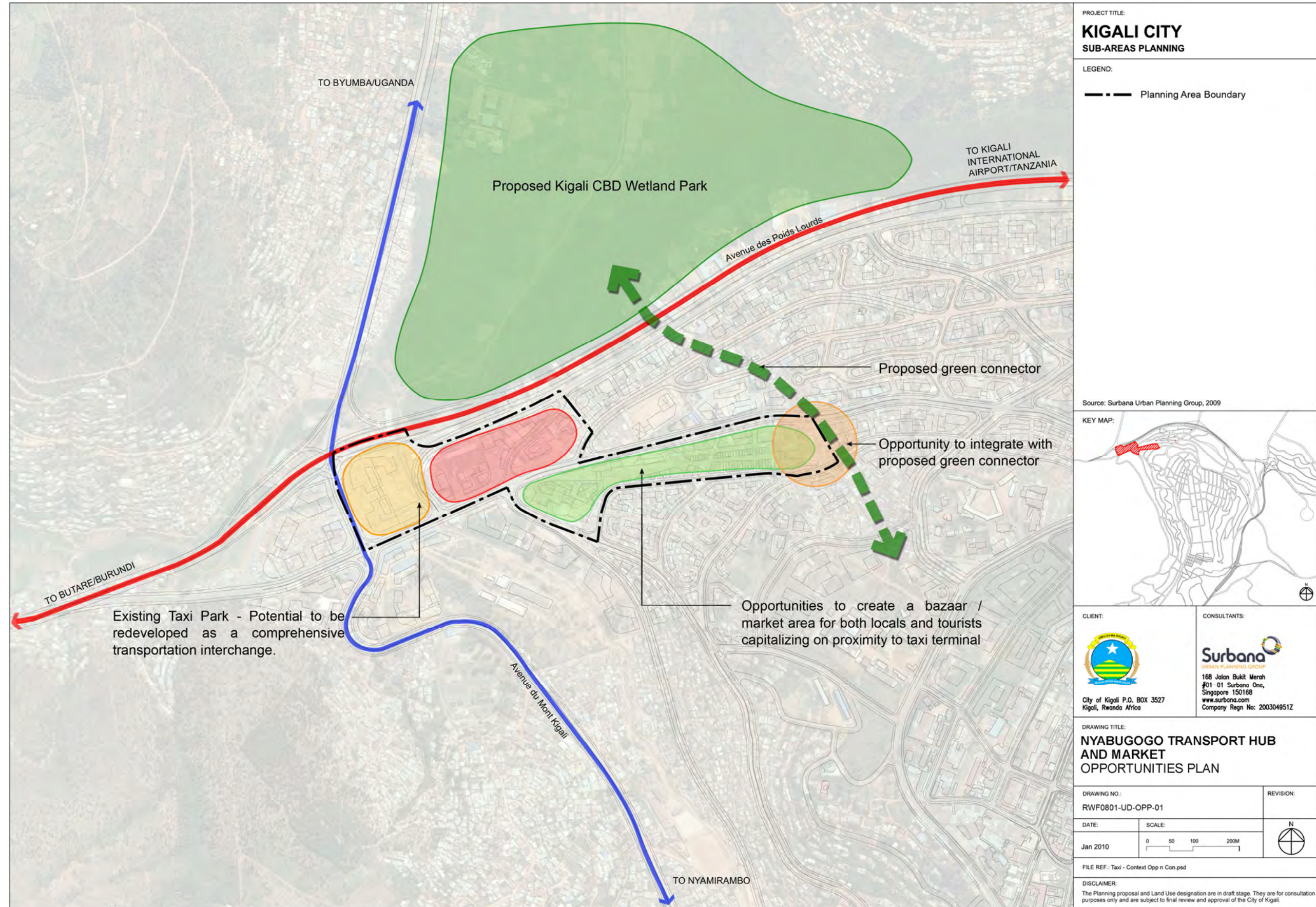
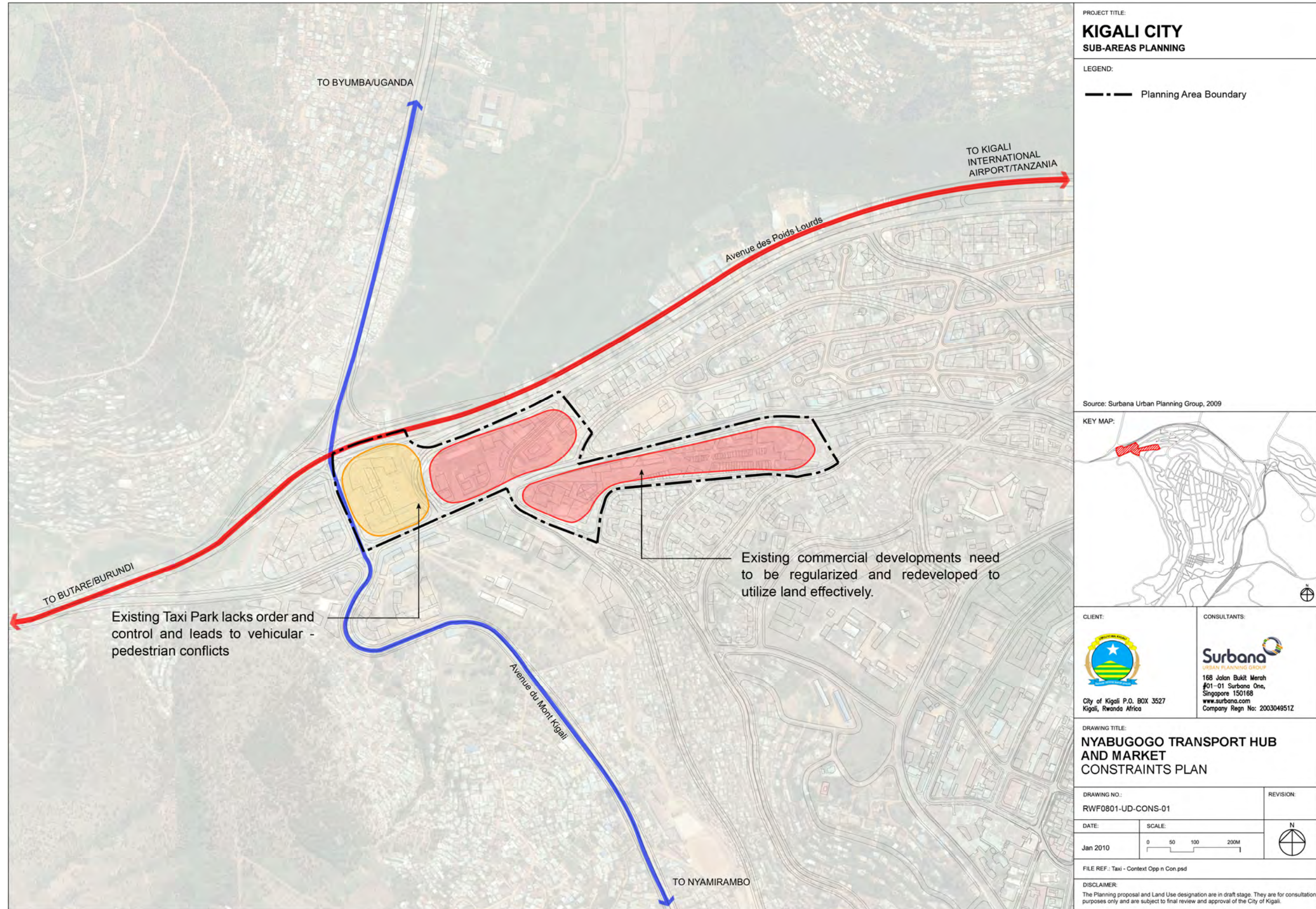


Figure A 4.16: Nyabugogo Transport Hub and Market – Opportunities Plan.
Source: Surbana



PROJECT TITLE:
**KIGALI CITY
SUB-AREAS PLANNING**

LEGEND:
- - - Planning Area Boundary

Source: Surbana Urban Planning Group, 2009

KEY MAP:

CLIENT:

City of Kigali P.O. BOX 3527
Kigali, Rwanda Africa

CONSULTANTS:

168 Jalan Bukit Merah
#01-01 Surbana One,
Singapore 150168
www.surbana.com
Company Regn No: 200304951Z

DRAWING TITLE:
**NYABUGOGO TRANSPORT HUB
AND MARKET
CONSTRAINTS PLAN**

DRAWING NO: RWF0801-UD-CONS-01	REVISION:
DATE: Jan 2010	SCALE: 0 50 100 200M

FILE REF: Taxi - Context Opp n Con.psd

DISCLAIMER:
The Planning proposal and Land Use designation are in draft stage. They are for consultation purposes only and are subject to final review and approval of the City of Kigali.

Figure A 4.17: Nyabugogo Transport Hub and Market – Constraints Plan.
Source: Surbana

A4.4.4 Concept Plan

The existing Nyabugogo Taxi Park consist of largely unregulated and privately run mini-buses, which can cause haphazard vehicular traffic in the vicinity and thus result in congestion and a pedestrian-unfriendly environment.

It is proposed that the Taxi Park be upgraded into an integrated Transport Hub, to allow for a more organized flow of public transport, and thus creating a safer environment for both vehicles and pedestrians.

The proposed Transport Hub is also to be integrated with commercial / office facilities, to create a 'one-stop' destination.

The existing informal markets on the southern side of Boulevard de Nyabugoro are proposed to be redeveloped as a pedestrianised street bazaar and market area, retaining the low-rise character of the area.

The pedestrianised street would be a vibrant outdoor area with distinctive sculptural shading structures and outdoor refreshment areas. It would also serve as a safe pedestrian-friendly connection between the proposed Transport Hub on the west to the proposed green connector to the east that leads to the proposed Kigali CBD Wetland Park.

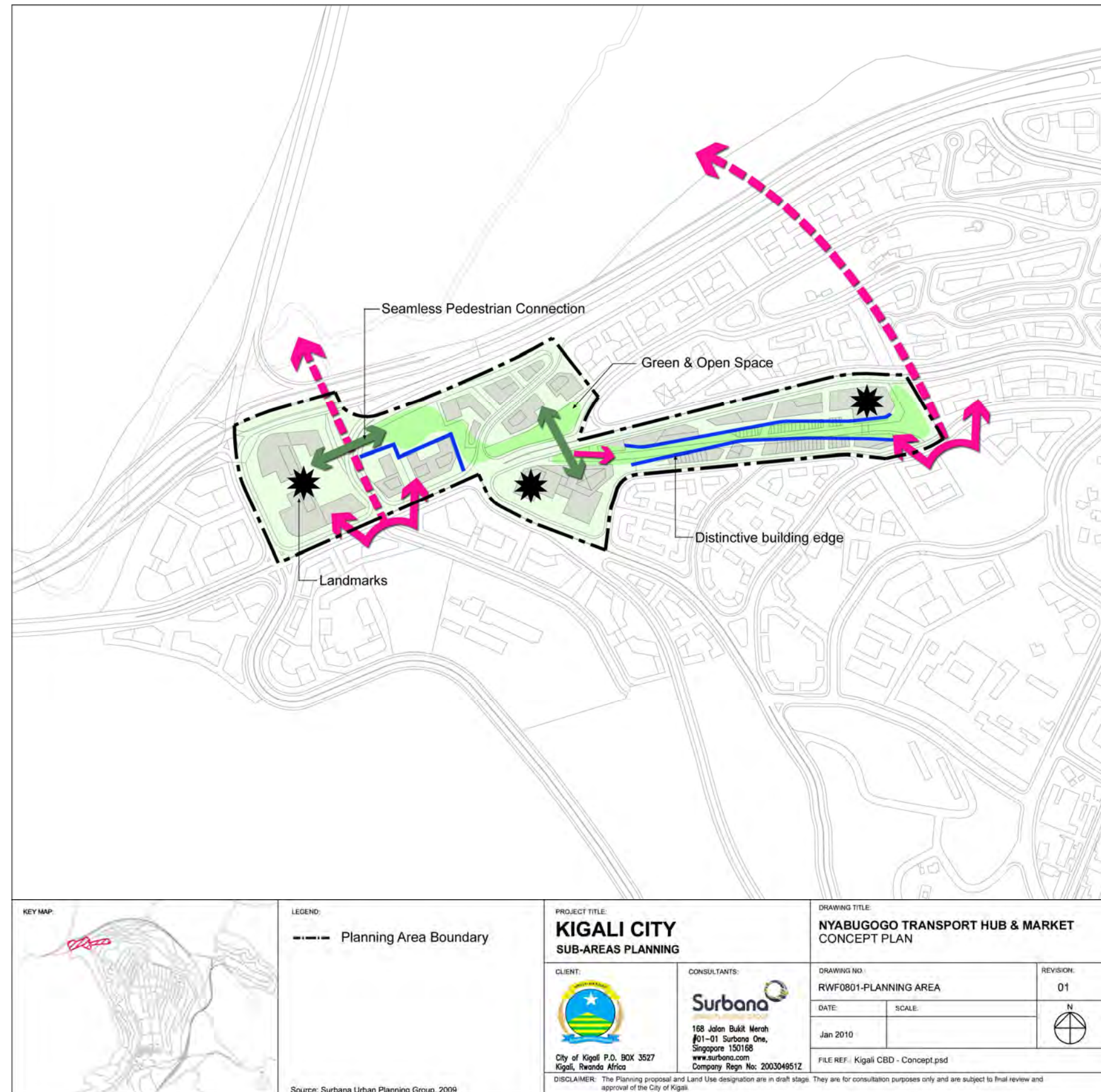


Figure A 4.18: Nyabugogo Transport Hub and Market – Concept Plan.
Source: Surbana

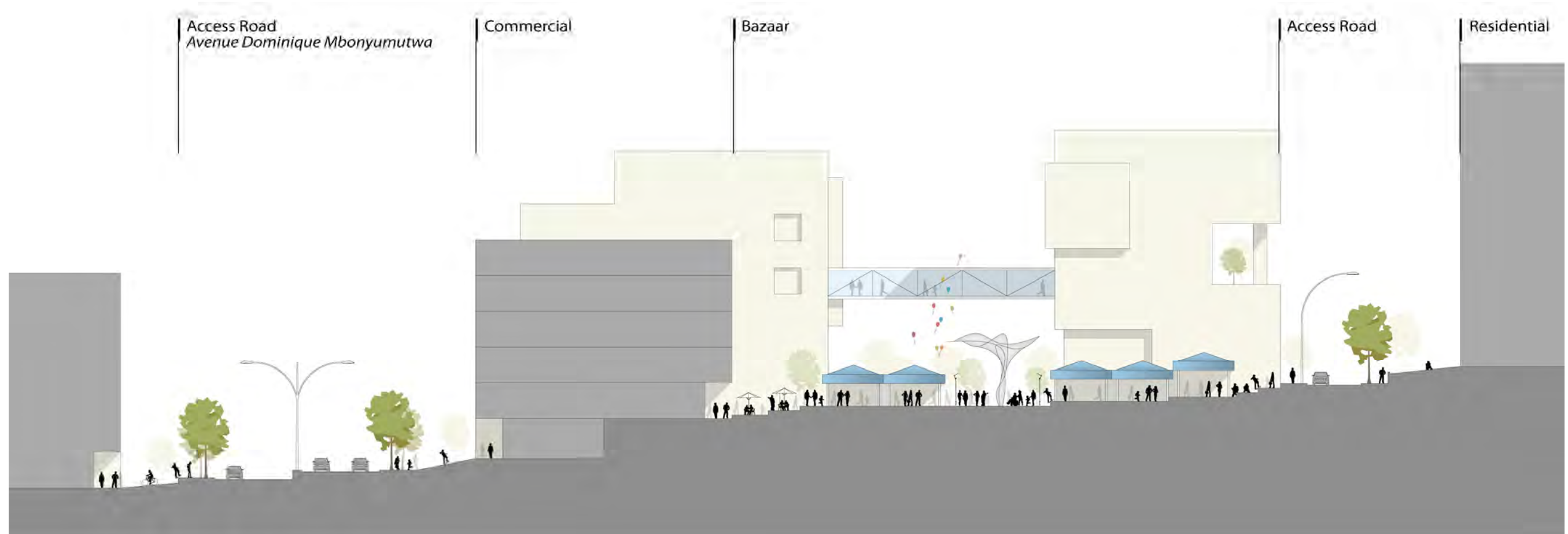
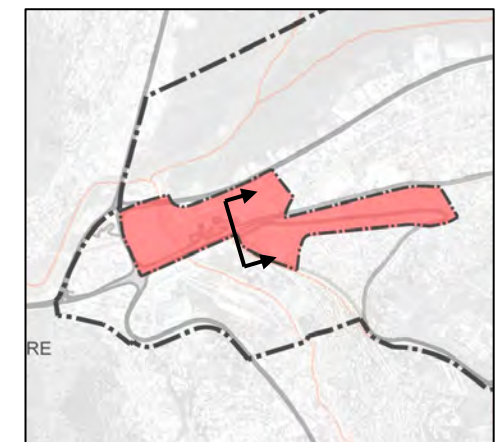


Figure A 4.19: Nyabugogo Transport Hub and Market – Key Section.
Source: *Surbana*



A4.5 Kigali CBD Wetland Park

A4.5.1 Introduction

Generally speaking, a wetland is an area of land whose soil is saturated with moisture either permanently or seasonally.

The wetlands which abut Muhima Sector and Kimicanga have been selected to be converted into the Kigali CBD Wetland Park, which complements the new developments in the CBD as well as providing attractive recreational venues within the City. This section presents the context of the Kigali CBD Wetland Park site and identifies its opportunities, constraints and threats, as well as proposed concept and structure plan.

A4.5.2 Context

Kigali largely has three types of wetlands: **lacustrine** (associated with lakes), **riverine** (associated with rivers), and **palustrine** (associated with marshes and swamps). 77% of wetlands in Kigali are category 1¹ wetlands and can thus offer many important benefits such as a source of good quality water as well as a means for flood attenuation and erosion mitigation. However, currently, most of the wetlands around the urban areas are surrounded by densely populated steep slopes, intensively used for cultivation or industrial uses and are severely damaged. In Rwanda, wetlands are protected and their utilization is regulated by the Organic Law which mandates an environmental impact assessment for activities which make use of water from the wetlands, control of the discharge into the wetlands as well as stipulate setbacks for industries and construction. As per the Organic Law a setback of 20m is mandatory for all constructions from the approved wetland boundaries.

The site selected for the proposed Kigali CBD Wetland Park runs along the northern and eastern periphery of the Muhima Sector. Figure A 4.20 shows the location and planning area of the Kigali CBD Wetland Park.

The catchment within which the Kigali CBD Wetland Park is located has a watershed area of 51.22 km². The area of the proposed Kigali CBD Wetland Park is 165 ha. It is bounded by Kimicanga on the east and the steep slopes of Kacyiru, Gisozi and Gatsata hills on the north.

¹ Category 1 wetlands are unique and rare, more sensitive to disturbances, and impossible to replace within a human lifetime. They perform many important functions.

Appendix 3 provides a more detailed explanation of wetlands, their classification, and successful case studies which are relevant to the study of wetlands in Kigali.

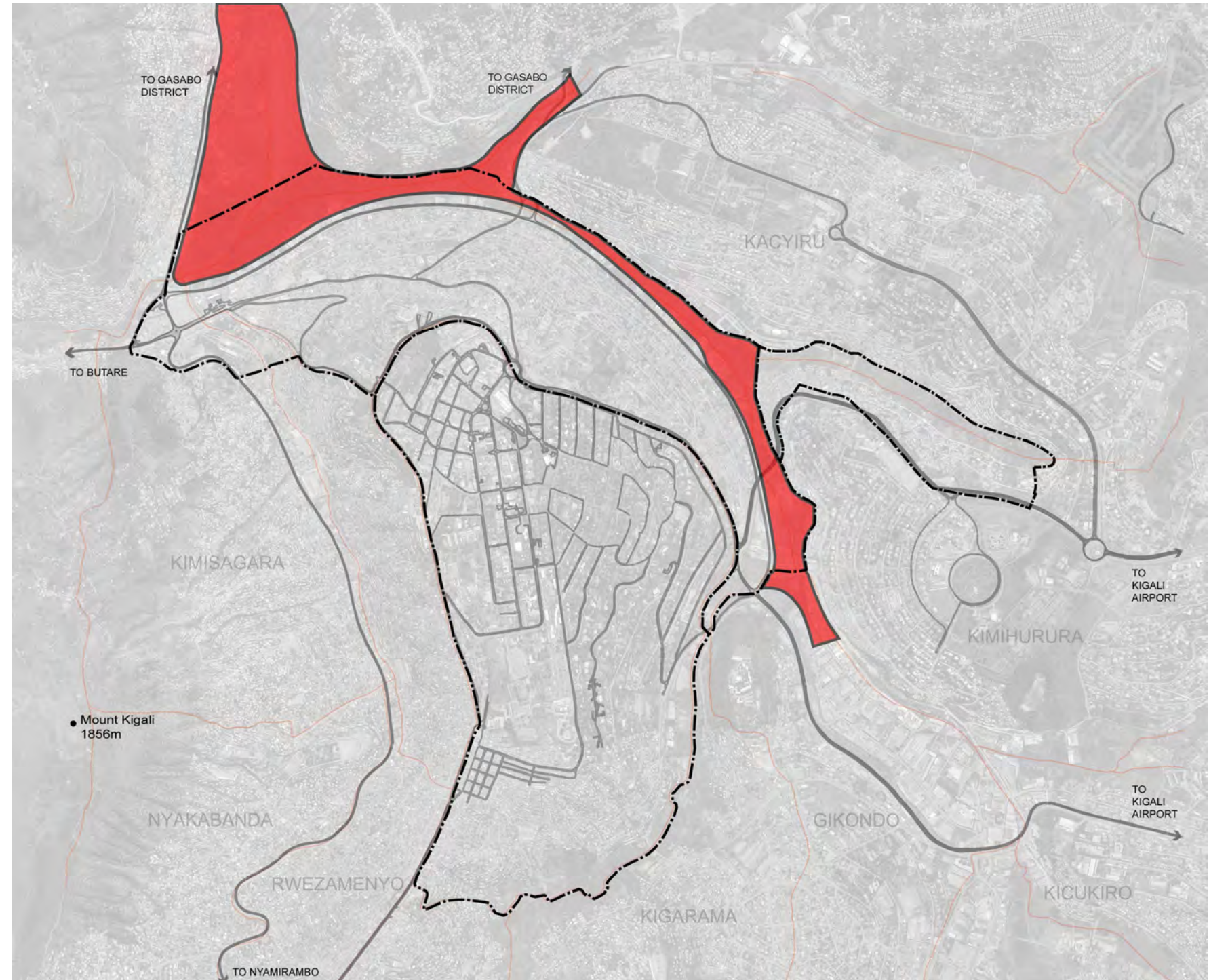


Figure A 4.20: Kigali CBD Wetland Park – Location Plan.
Source: *Surbana*

A4.5.3 Opportunities, Constraints and Threats

Based on the context and the existing site conditions, the key opportunities, constraints and threats for the Kigali CBD Wetland Park have been generated as presented in Table A 4.4 and Figure A 4.21 and Figure A 4.22. These opportunities, constraints and threats form the basis for the development of the design proposal for the Kigali CBD Wetland Park.

Table A 4.4: Kigali CBD Wetland Park - Opportunities, Constraints and Threats.

Issues	Opportunities	Constraints	Threats
Environmental Context	<ul style="list-style-type: none"> 2 wet seasons with an average rainfall of over 1000mm ensure good water supply. High humidity with moderate temperature reduces evaporative losses of water. 	<ul style="list-style-type: none"> Limited water shed and limited rainfall – requires creation of water storage areas to ensure perennial supply of water into the Wetland Park. Soil (large amount of quartzite, metaquartzite and schist) has lesser water retention capacity. Steep slopes at along the sides of the wetlands with poor erosion control measures lead to adding high quantities of sedimentation into the wetlands. 	<ul style="list-style-type: none"> N/A
Surrounding Context	<ul style="list-style-type: none"> High pedestrian accessibility to wetlands from all sides. Potential to create linear parks along wetland which can double up as an Environmental Buffer Zone which traps pollutants from the surface water flow. 	<ul style="list-style-type: none"> Most of these wetlands are surrounded by densely populated steep slopes, intensively used for settlement structures, cultivation and grazing. Large areas of former wetlands have been converted to other uses and are severely damaged. 	<ul style="list-style-type: none"> If not intervened adequately, the increased development density may further compromise the quality of the wetlands.
Development Potential	<ul style="list-style-type: none"> The site is under government ownership and is available for development. The lost wetlands can be re-constructed to create source of clean water. The wetlands can be developed to create picturesque recreational and educational venues which complement and enhance the CBD developments. The wetlands can provide new habitats for the flora and fauna of the region. 	<ul style="list-style-type: none"> The slope of the site may restrict the development of higher density developments. Existing developments within the wetland. Unmanaged public access in the wetland creates noise and garbage problems Infrastructure developments create hard edges to wetlands and add to water, air and noise pollution Road interchanges could create bottle necks and obstruct water flow in the wetlands Management of constructed wetlands is costly 	<ul style="list-style-type: none"> N/A

Source: *Surbana*

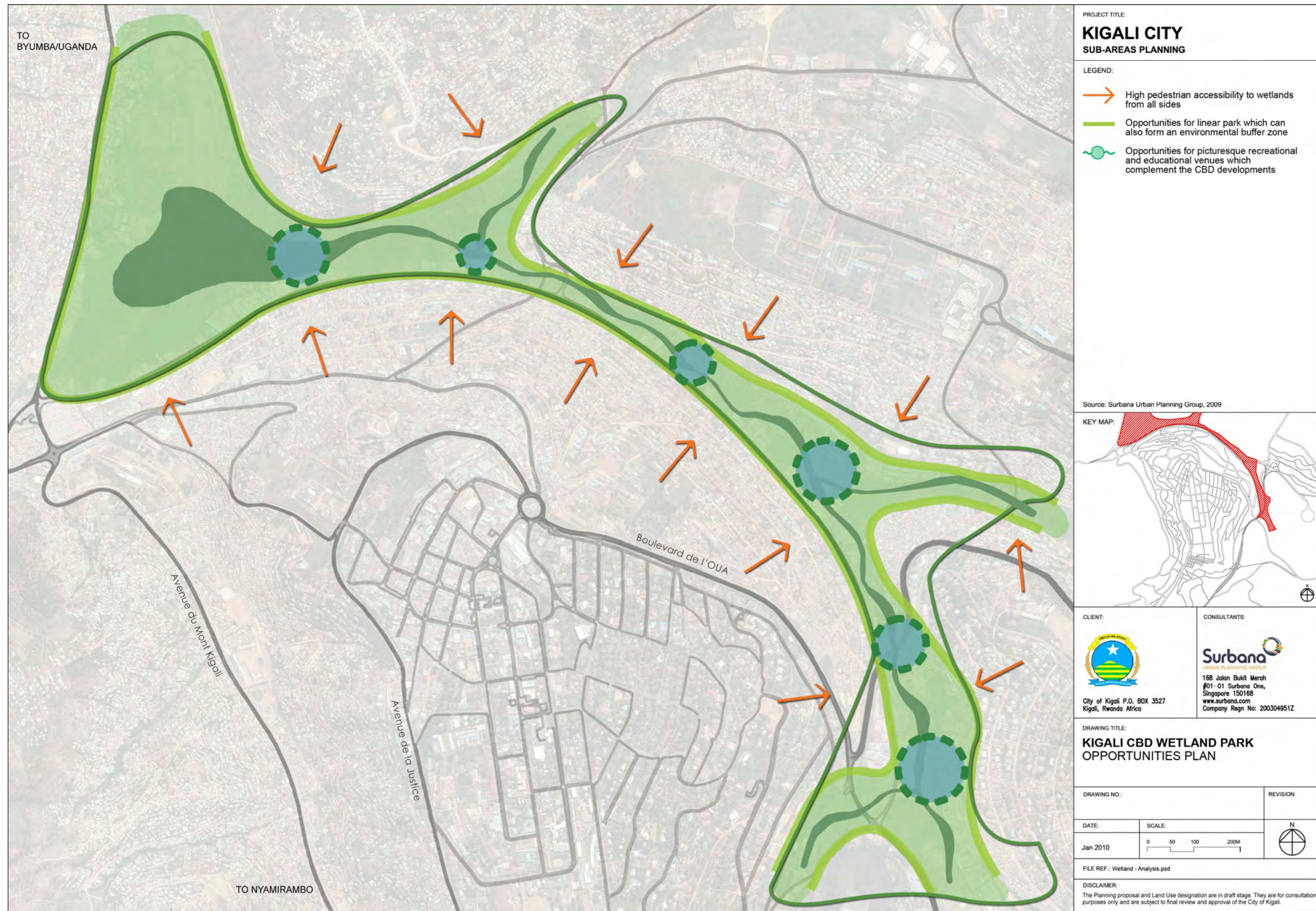


Figure A 4.21: Kigali CBD Wetland Park – Opportunities Plan.
 Source: Surbana

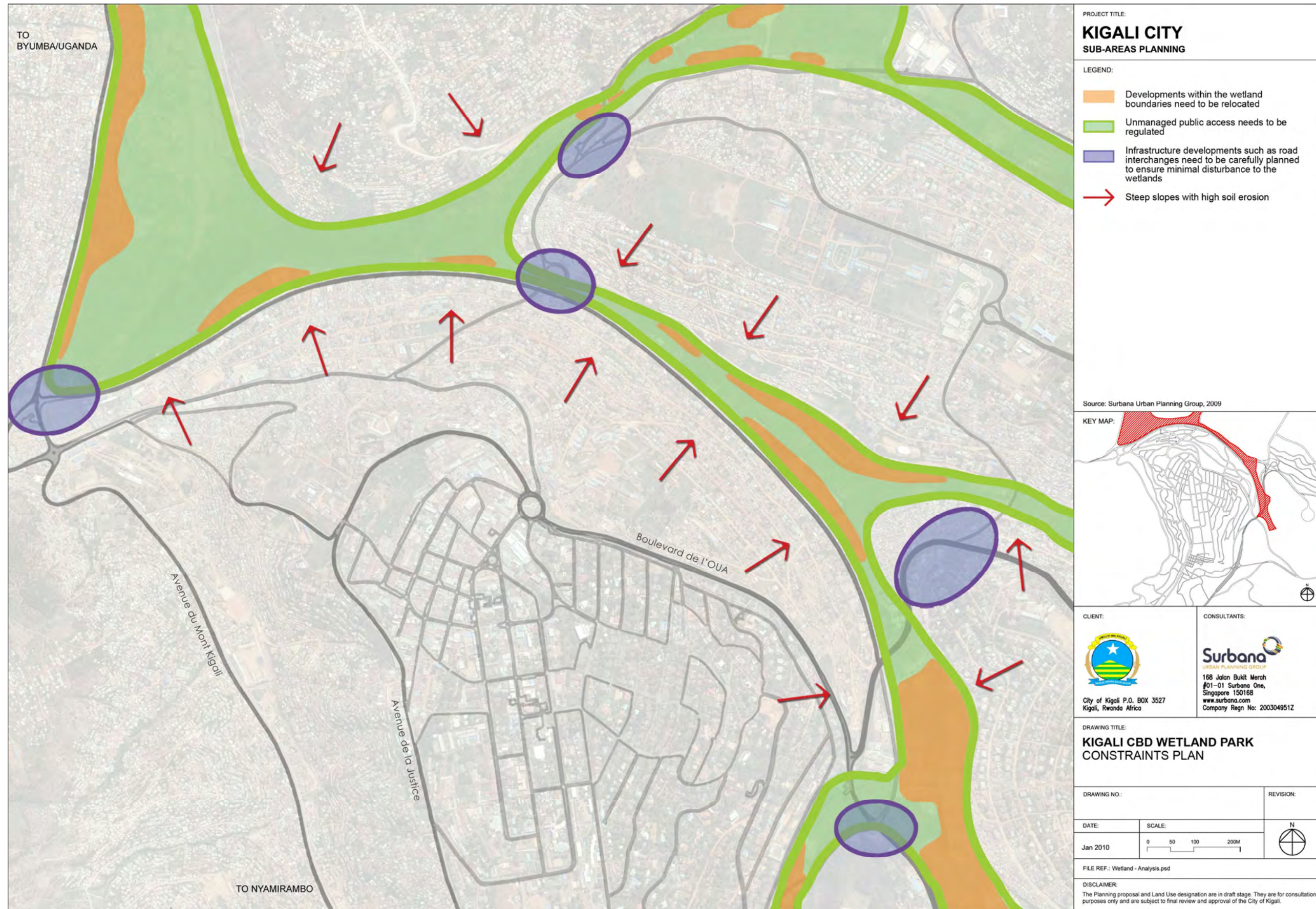


Figure A 4.22: Kigali CBD Wetland Park – Constraints Plan.
Source: Surbana

A4.5.4 Concept and Structure Plan

The Kigali CBD Wetland Park is proposed to be developed in the watershed which has its catchment in Nyarugenge, Muhima, Kacyiru and Kimihurura area. The general direction of the flow of water is westwards. The water within the wetlands flows from the Gikondo towards Muhima, where the Nyabugogo River discharges into the wetlands. From there on it moves in the direction of the Nyabugogo Transport Hub and Market, where it is collected into a large retention area. The concept for the Wetland Park proposes to create 2 water trap areas along the Nyabugogo and the Yanze River, thus ensuring a perennial supply of water into the Park. 4 water trap areas are proposed along the length of the Park, at junctions where rivers and stream discharge water into them.

Figure A 4.23 and Figure A 4.24 illustrate Kigali CBD Wetland Park Concept and Structure Plan.

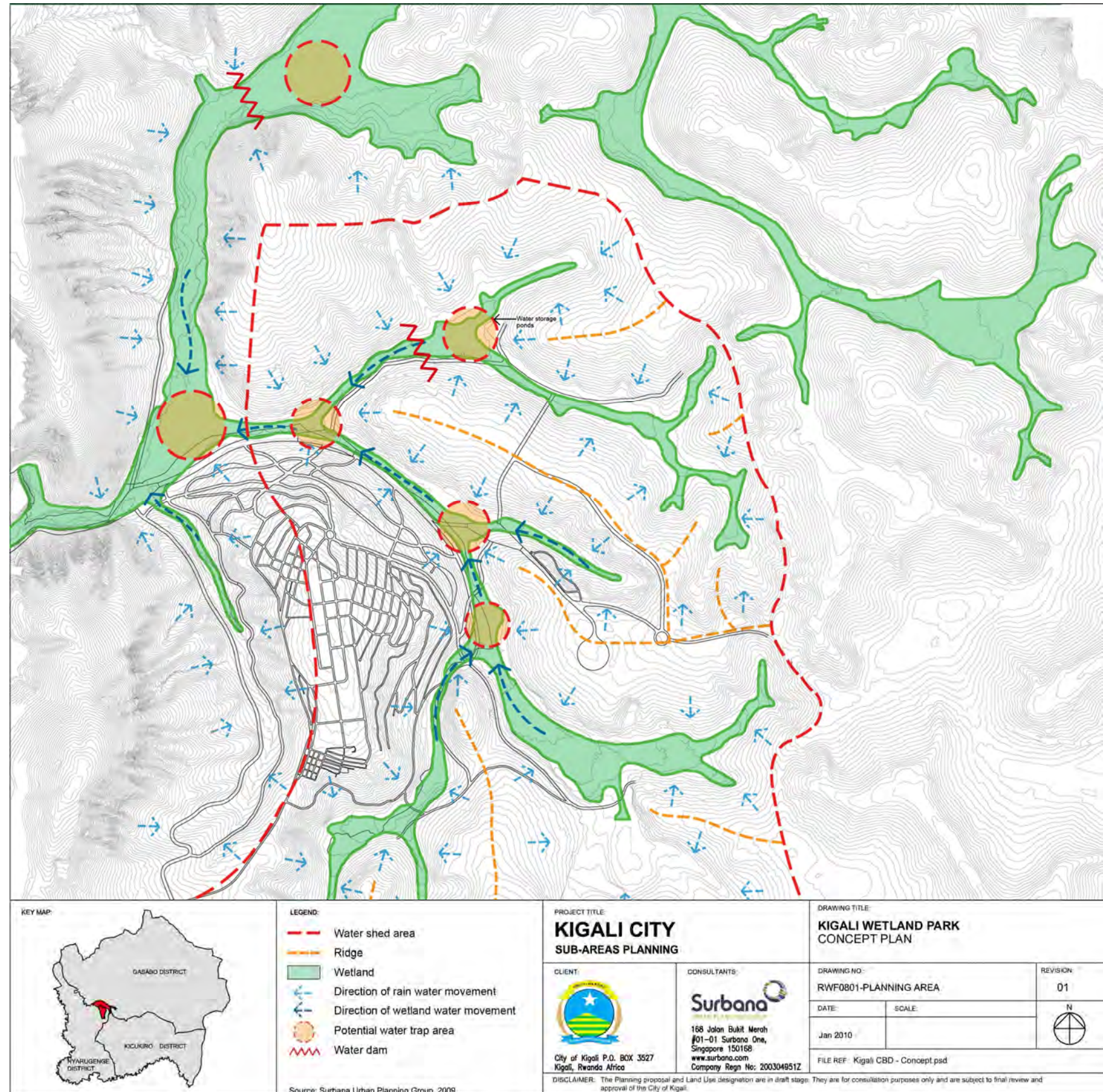


Figure A 4.23: Kigali CBD Wetland Park – Concept Plan.
 Source: Surbana

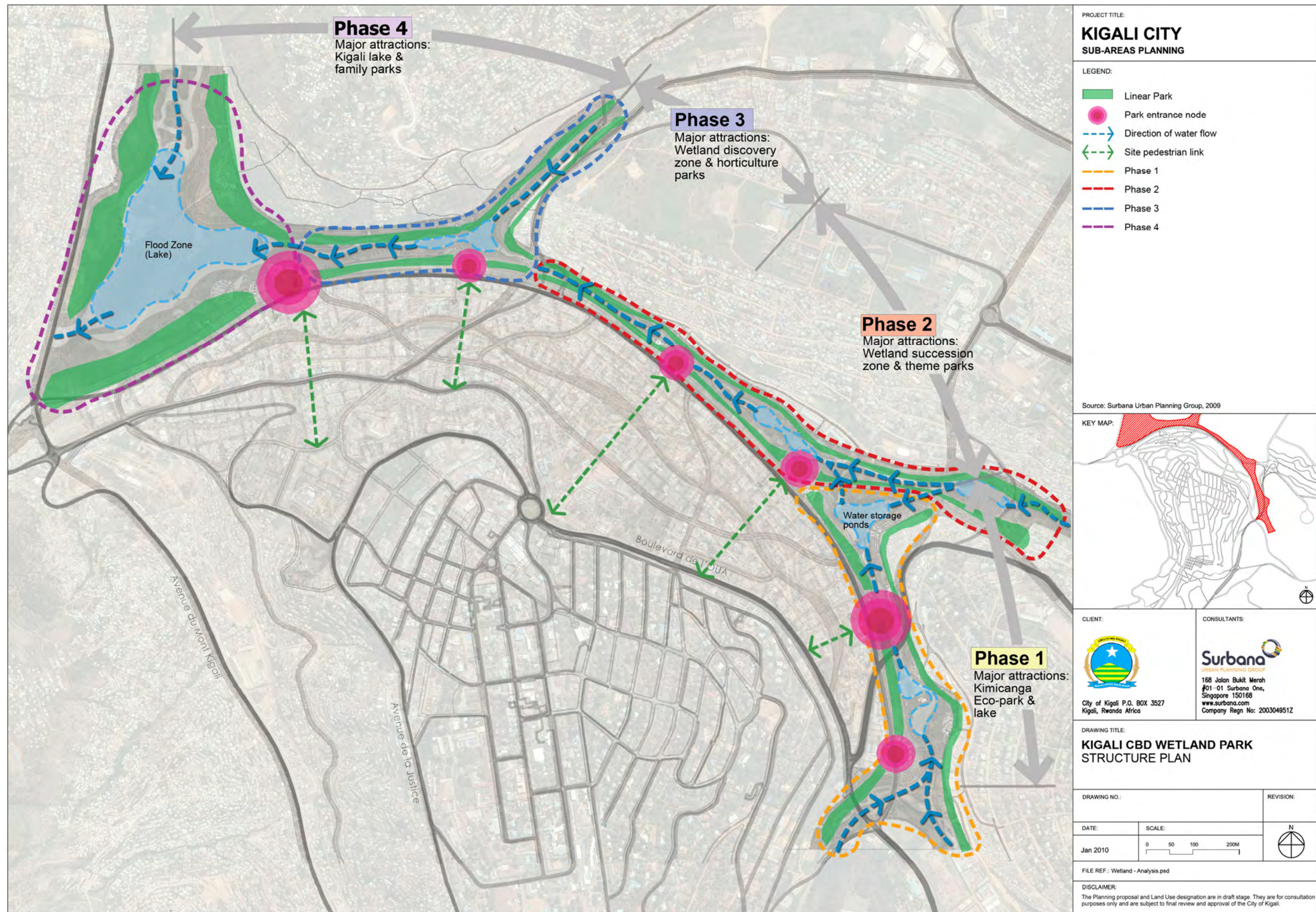


Figure A 4.24: Kigali CBD Wetland Park – Structure Plan.
Source: Surbana

APPENDIX 5: KEY FEATURES IN NYARUGENGE SECTOR

A5.1 Planning Areas

Appendix 5 presents the location, context, opportunities, constraints, threats and proposed land use concept for 3 selected key feature areas in Nyarugenge Sector, as shown in Figure A 5.1 and described below:

Centre Ville Roundabout Redevelopment - The existing City Centre located in the area of the Centre Ville Roundabout is proposed to be revitalized.

Nyarugenge Heritage Village – Strategically located in the western part of the Nyarugenge Sector, the Nyarugenge Heritage Village is a short distance away from the Centre Ville Roundabout Redevelopment and surrounded by various existing and new landmarks. The Nyarugenge Heritage Village is proposed to be an intimate low-rise low-density commercial and cultural district that is pedestrian-friendly.

Statehouse Site Redevelopment - The Statehouse is proposed to be relocated, allowing for the redevelopment of the site and its surrounding developments into a high-end premium residential community with state of the art supporting amenities.

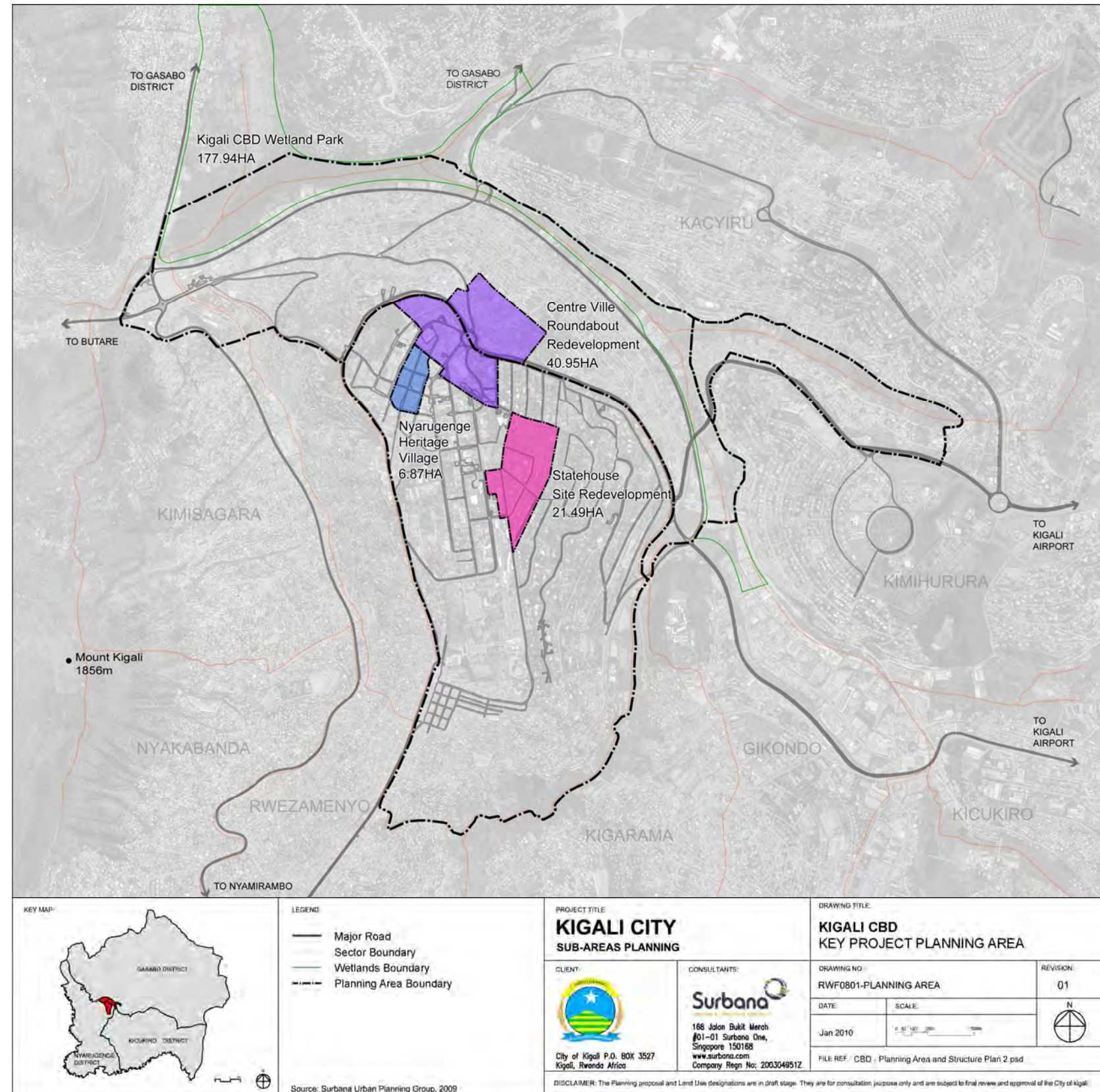


Figure A 5.1: Kigali CBD – Key Feature Areas in Nyarugenge Sector.
Source: Surbana

A5.2 Centre Ville Roundabout Redevelopment

A5.2.1 Introduction

The existing City Centre located around the Centre Ville Roundabout covers an area of 41.25 ha, while the site proposed for the New CBD Core covers an area of 17.6 ha. The location and extent of the planning area is indicated in Figure A 5.2: This section presents the development context, opportunities, constraints and threats as well as the proposed concept for the New CBD Core.

A5.2.2 Context

The New CBD Core is strategically located at the centre of the CBD area, adjacent to the Avenue des Poids Lourdes. The New CBD core is located just below the Centre Ville Roundabout. Avenue des Poids Lourdes is proposed to be redeveloped as an expressway offering east-west connectivity to the CBD Core. The area slopes towards the wetlands, across which lies Kacyiru, the hill which houses a number of embassies and important government buildings.

Analysis of the overall land form and the topographic features indicates a general slope which is less than 20% and hence conducive for development.

Figure A 5.3 presents the Context Plan for the New CBD Core area.

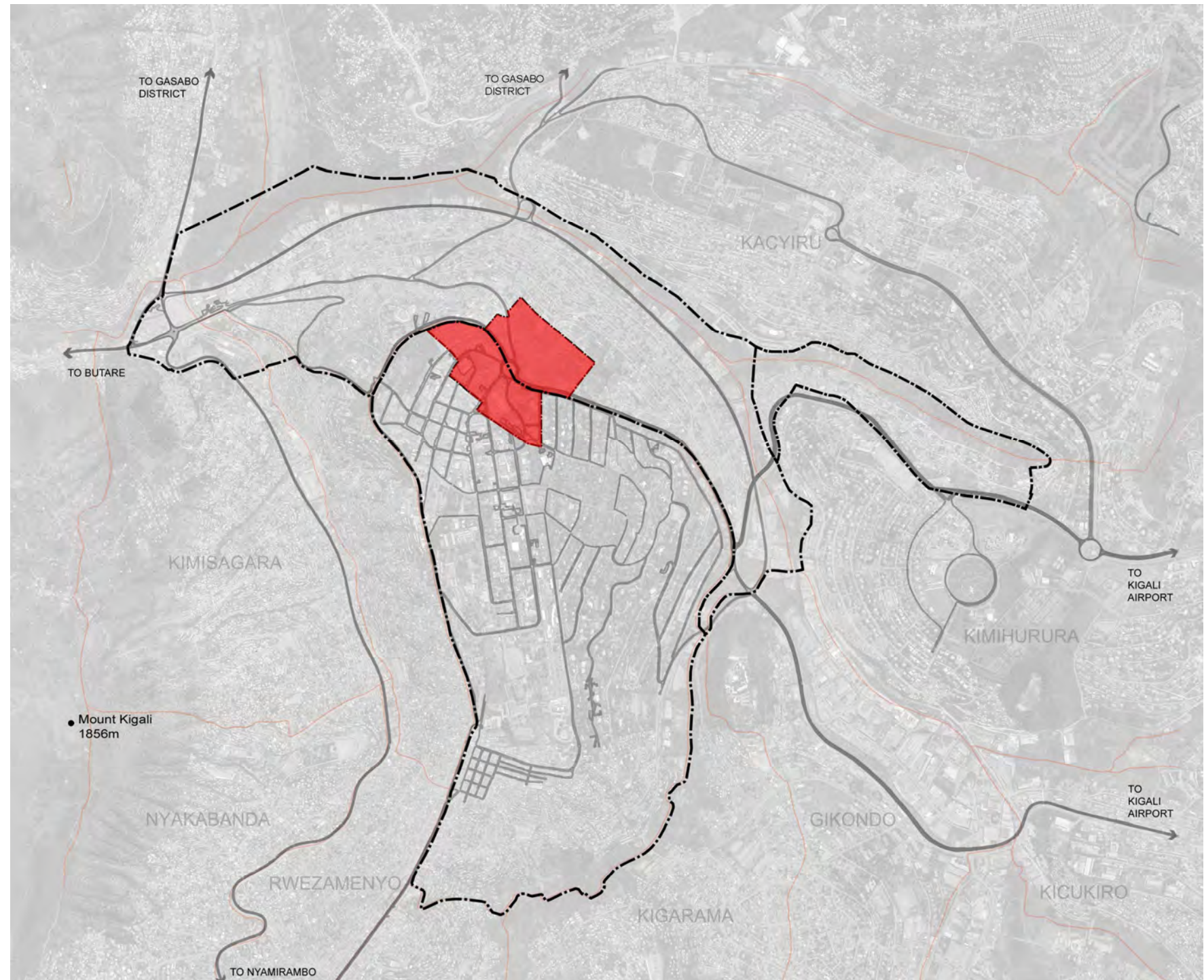


Figure A 5.2: Centre Ville Roundabout Redevelopment – Location Plan.
Source: *Surbana*

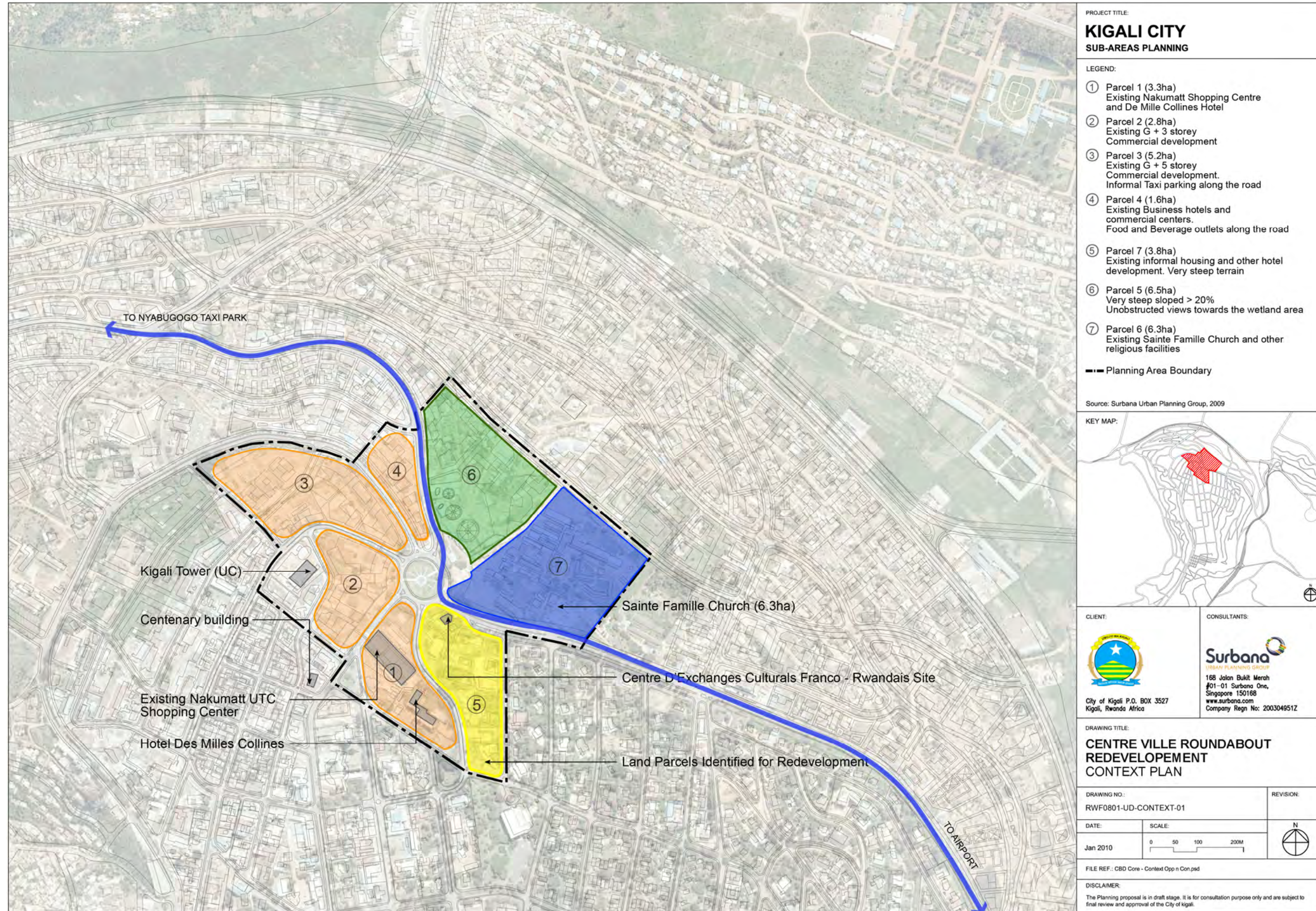


Figure A 5.3: Centre Ville Roundabout Redevelopment – Context Plan.
Source: Surbana

A5.2.3 Centre Ville Roundabout Redevelopment – Opportunities, Constraints and Threats

Based on the context and the existing site conditions, the key opportunities, constraints and threats for the New CBD Core have been generated as presented in Table A 5.1 and Figure A 5.4 and Figure A 5.5.

Table A 5.1: Centre Ville Roundabout Redevelopment - Opportunities, Constraints and Threats.

Issues	Opportunities	Constraints	Threats
Connectivity and Circulation	<ul style="list-style-type: none"> Centre Ville Roundabout is connected via Boulevard de l'OUA to key developments such as the Kigali International Airport, the Nyabugogo Taxi Park, the existing Nyarugenge CBD etc. Such central location and high accessibility offers great opportunities for a development and high land value. 	<ul style="list-style-type: none"> The existing road network may not be sufficient to address the added increase in development around the Roundabout. Unregulated pedestrian connections and crossings lead to vehicular - pedestrian conflict around the Roundabout. 	<ul style="list-style-type: none"> The potential increase in vehicular traffic along the Centre Ville Roundabout area could result in congestion and intensify the vehicular-pedestrian conflict.
Topography and Natural Features	<ul style="list-style-type: none"> The existing topography and developments around the Roundabout allow the development of pedestrian connections to the Muhima CBD Core Area. The steep area next to the St. Famille Church, with strategic views can be developed as an iconic development. 	<ul style="list-style-type: none"> The steep terrain and undulating topography may impose road widening constraints. 	<ul style="list-style-type: none"> Not applicable
Surrounding Context	<ul style="list-style-type: none"> The close proximity to the proposed new CBD Core, the existing Nyarugenge CBD, the proposed Phase 1 site, helps further increase the land value and development potential for the parcels surrounding the Roundabout, thus promoting their redevelopment. 	<ul style="list-style-type: none"> Not applicable 	<ul style="list-style-type: none"> Not applicable
Existing Land Use	<ul style="list-style-type: none"> The high demand for commercial space in Kigali creates new economic opportunities for the areas around the Roundabout. Existing low density development allows for the intensification and redevelopment of parcels to optimise the development potential. The existing religious and cultural uses around the roundabout provide an interesting mix of land uses vibrancy around the City Centre. 	<ul style="list-style-type: none"> Currently there are several key commercial developments existing as well as under construction, which need to be retained and may create access and development constraints. The current development around the Roundabout is sporadic and fragmented. This needs to be regularised in order to create an attractive urban design for the site. There are a several high density commercial developments in and around the site, which are deficient in adequate car parking and other public facilities, requiring mitigation strategies to avoid hampering the quality of the site. There is a lack of recreational and public spaces in the area around the Roundabout. Sites need to be identified to meet the parks and open space demands. 	<ul style="list-style-type: none">

Source: Surbana

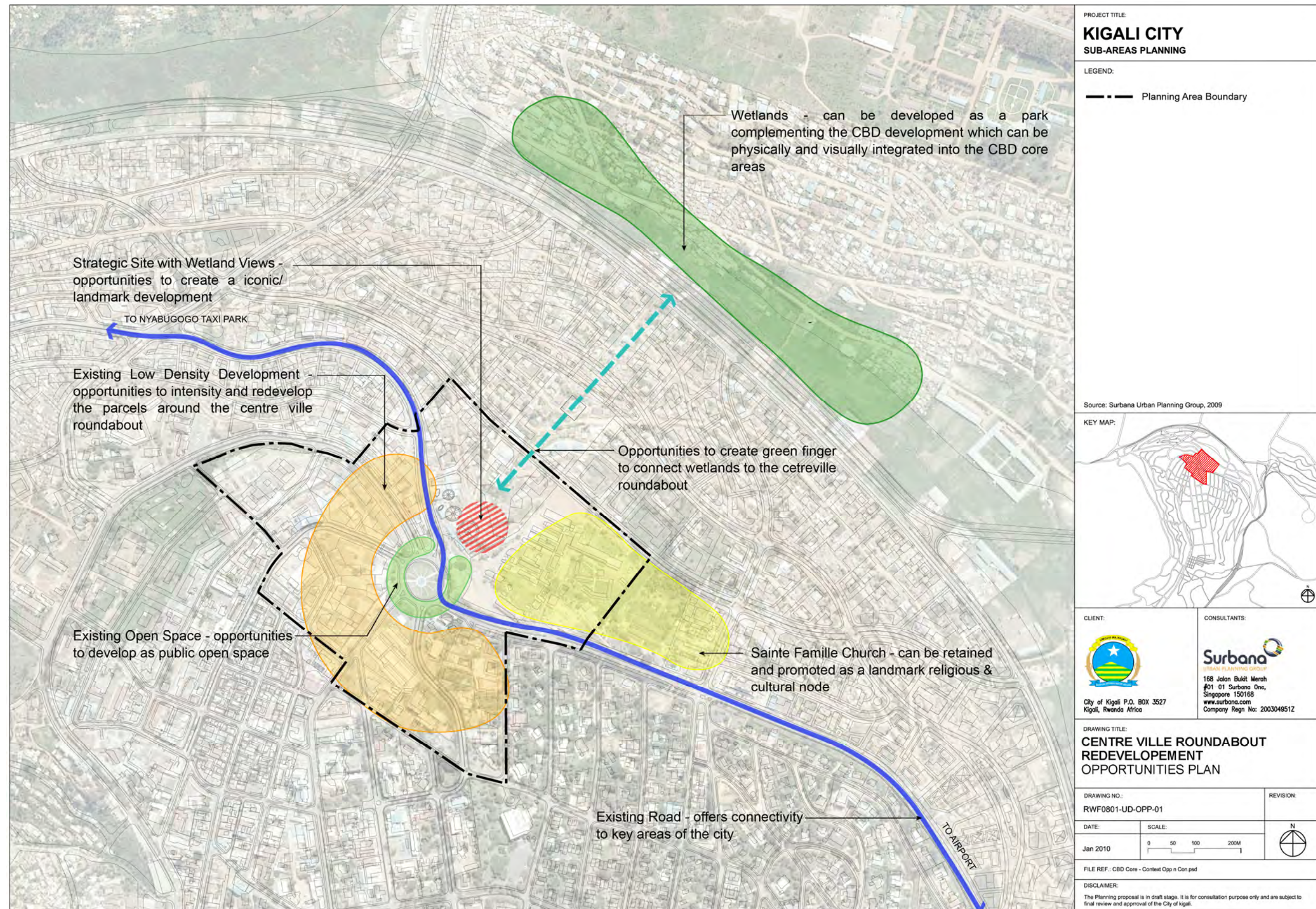


Figure A 5.4: Centre Ville Roundabout Redevelopment – Opportunities Plan.
Source: Surbana

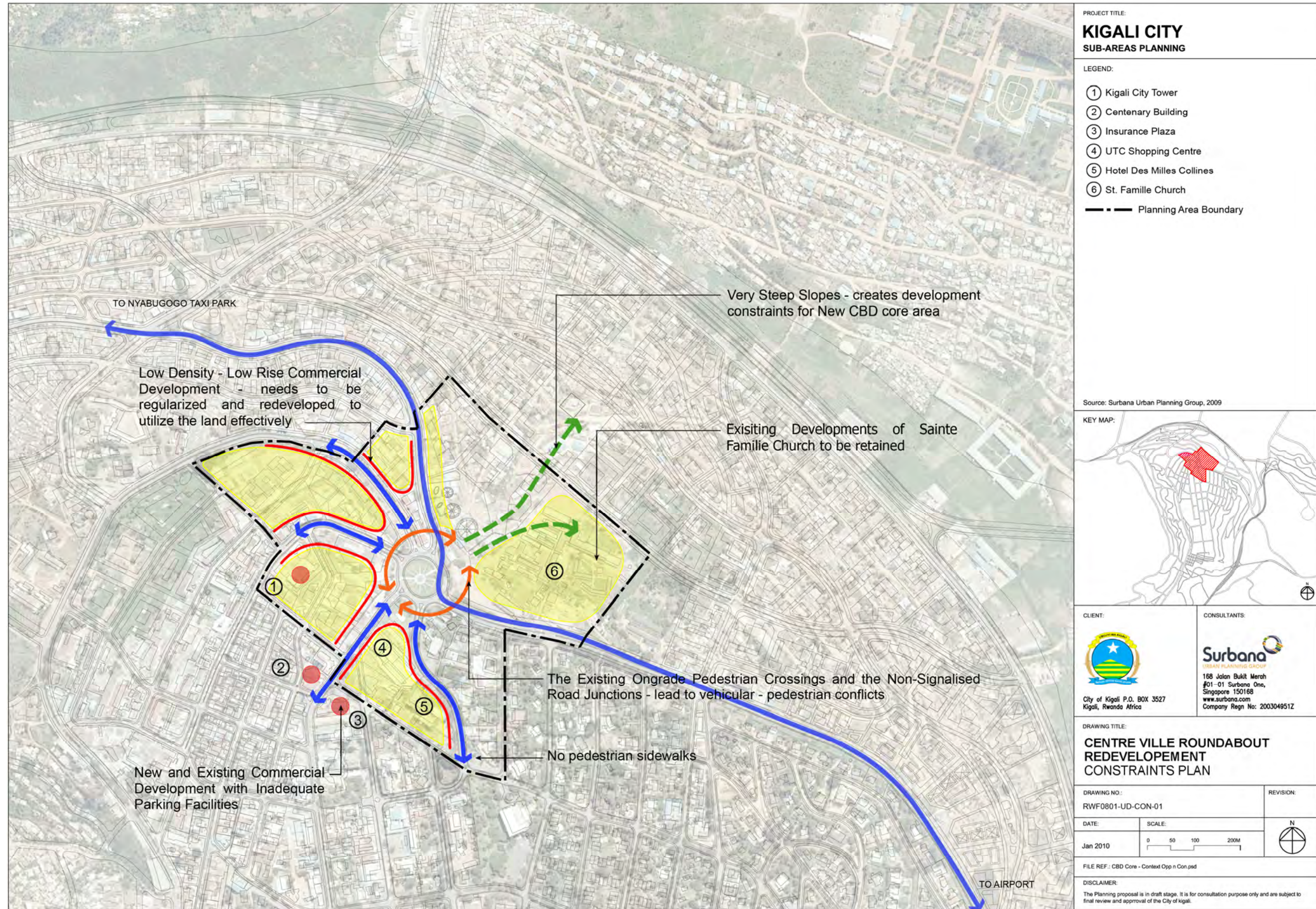


Figure A 5.5: Centre Ville Roundabout Redevelopment – Constraints Plan.
Source: Surbana

A5.2.4 Concept Plan

To separate the vehicular – pedestrian traffic at the Centre Ville Roundabout and to promote better pedestrian connectivity between the various parcels, an elevated pedestrian deck is proposed over the Centre Ville Roundabout. The elevated deck would not only provide a safe environment for pedestrians, but also direct access to the adjacent buildings on the upper levels. This would ease potential traffic congestion at the Centre Ville Roundabout due to increased developments and on-grade pedestrian crossings. The elevated deck would also connect to the buildings on the various parcels on upper levels, thus improving connectivity.

A ring of open space is also proposed to be kept around the roundabout. From this, various ‘green fingers’ would extend outwards to other parts of the city, creating an extensive pedestrian-friendly green network.

On the northern side of the Centre Ville Roundabout, an iconic ‘rock’ hotel is proposed as a landmark to the area, taking advantage of its strategic location along the view corridor towards the wetlands and the vantage panorama views due to the height difference between the Centre Ville Roundabout area and the wetlands.

A distinctive building edge is proposed around the main roundabout and along the view corridor towards the wetlands, to create a distinctive identity to the key feature area.

The existing Sainte Famille Church towards the east of the roundabout is also proposed to be conserved as a cultural landmark, enhancing the historical and cultural values of the Centre Ville Roundabout area and catering to both locals and tourists.

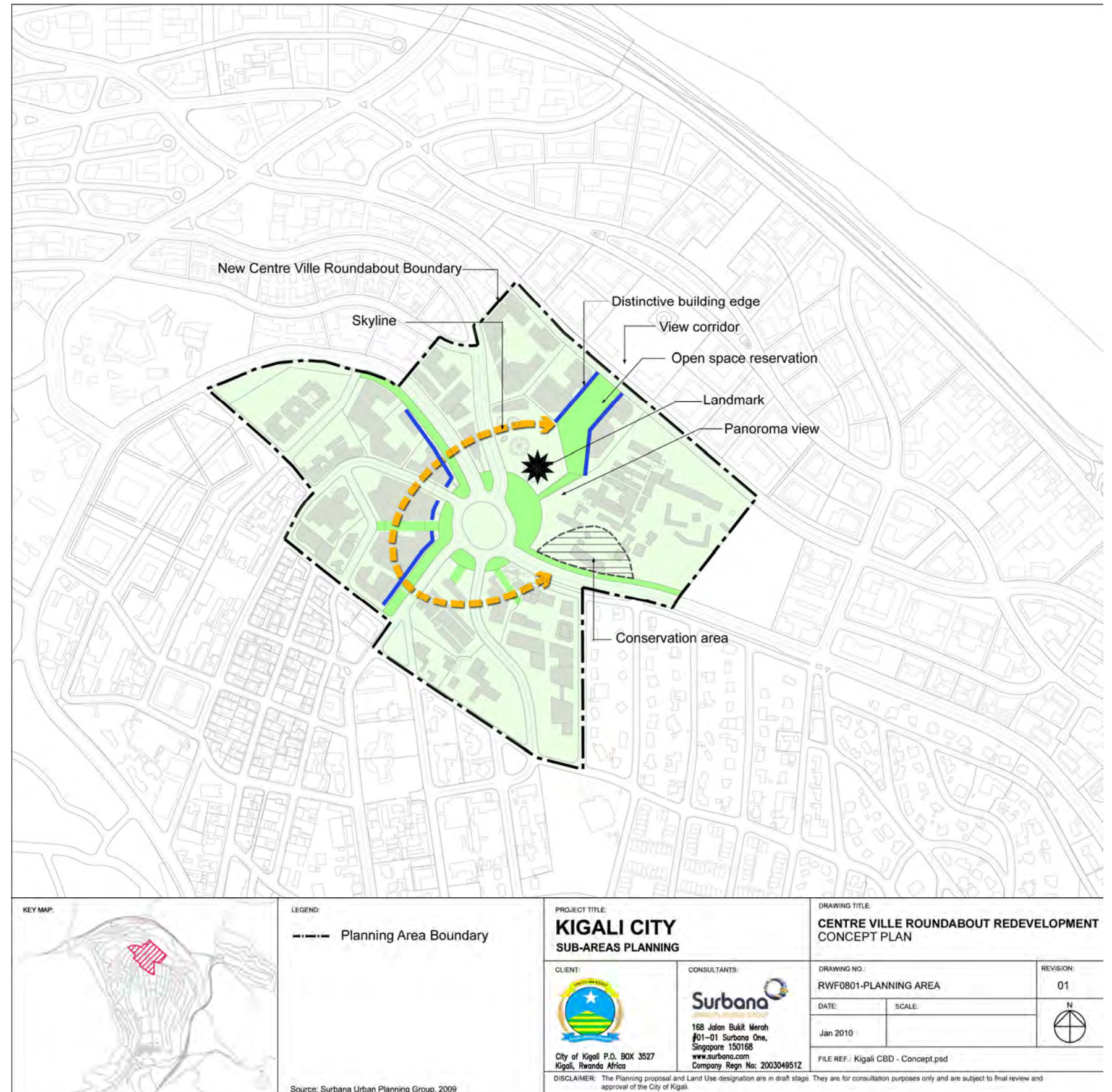


Figure A 5.6: Centre Ville Roundabout Redevelopment –Concept Plan.
Source: Surbana

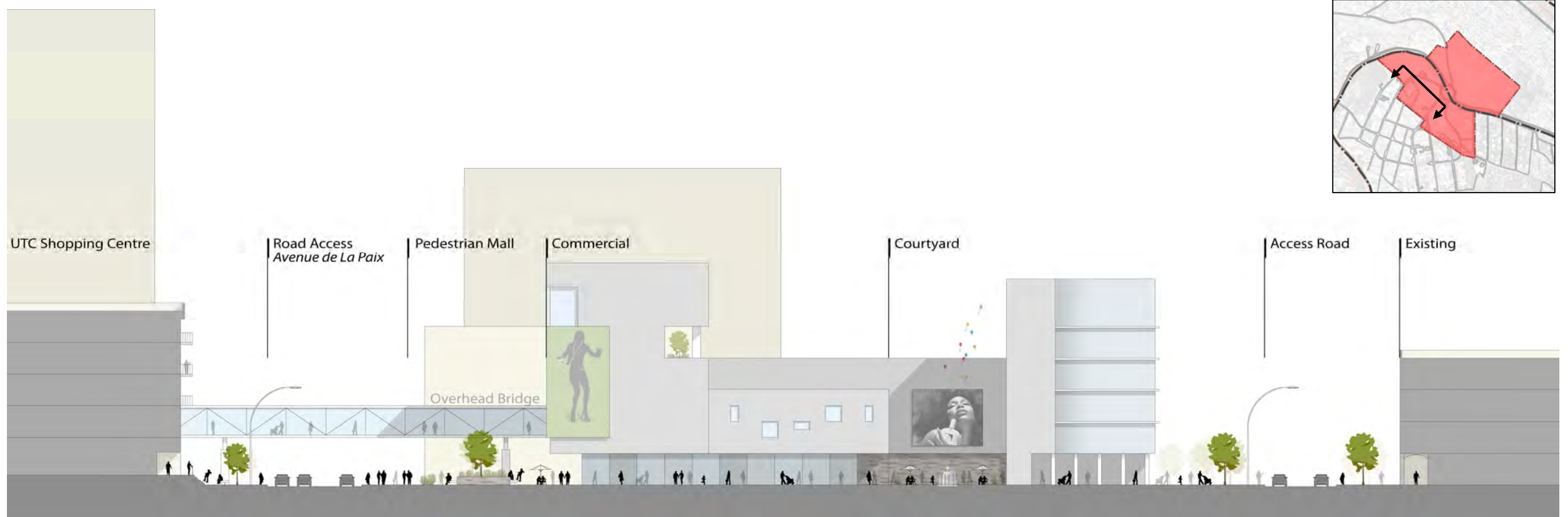


Figure A 5.7: Centre Ville Roundabout Redevelopment – Key Sections.

Source: *Surbana*

A5.3 Nyarugenge Heritage Village

A5.3.1 Introduction

The Nyarugenge Heritage Village forms part of the existing Kigali CBD. It covers approximately 6.8 ha as illustrated in Figure A 5.8. This section delineates the existing conditions of the planning area, therein providing a context for the proposed land use concept for the Nyarugenge Heritage Village.

A5.3.2 Context

Strategically located in western Kigali CBD, Nyarugenge Heritage Village is adjacent to the Centre Ville Roundabout Redevelopment of Kigali City.

Leveraging on its strategic location, the Nyarugenge Heritage Village is naturally part of the city level commercial district – the commercial core of the Nyarugenge CBD.

Nyarugenge Heritage Village is located within areas of largely built-up commercial buildings and hotels, and is strewn with civic and cultural landmarks (eg. Aga Khan Islamic Centre, Mosque and Church), thus infusing the area with a tinge of the heritage flavour. This trait can be further capitalized to create a unique identity for the Nyarugenge Heritage Village.

The Nyarugenge Heritage Village is also near to important buildings such as educational institutions including KIST to the south, and the hospital far south of the planning area; and the Kigali City Hall to the east and Rwanda Government Building to the far east of the site.

Apart from these traditional buildings, new commercial buildings/developments have also sprouted up on the outskirts of the Nyarugenge Heritage Village. For example, the Kigali Market and the Kigali City Tower, which is envisaged as a future landmark building in the area.

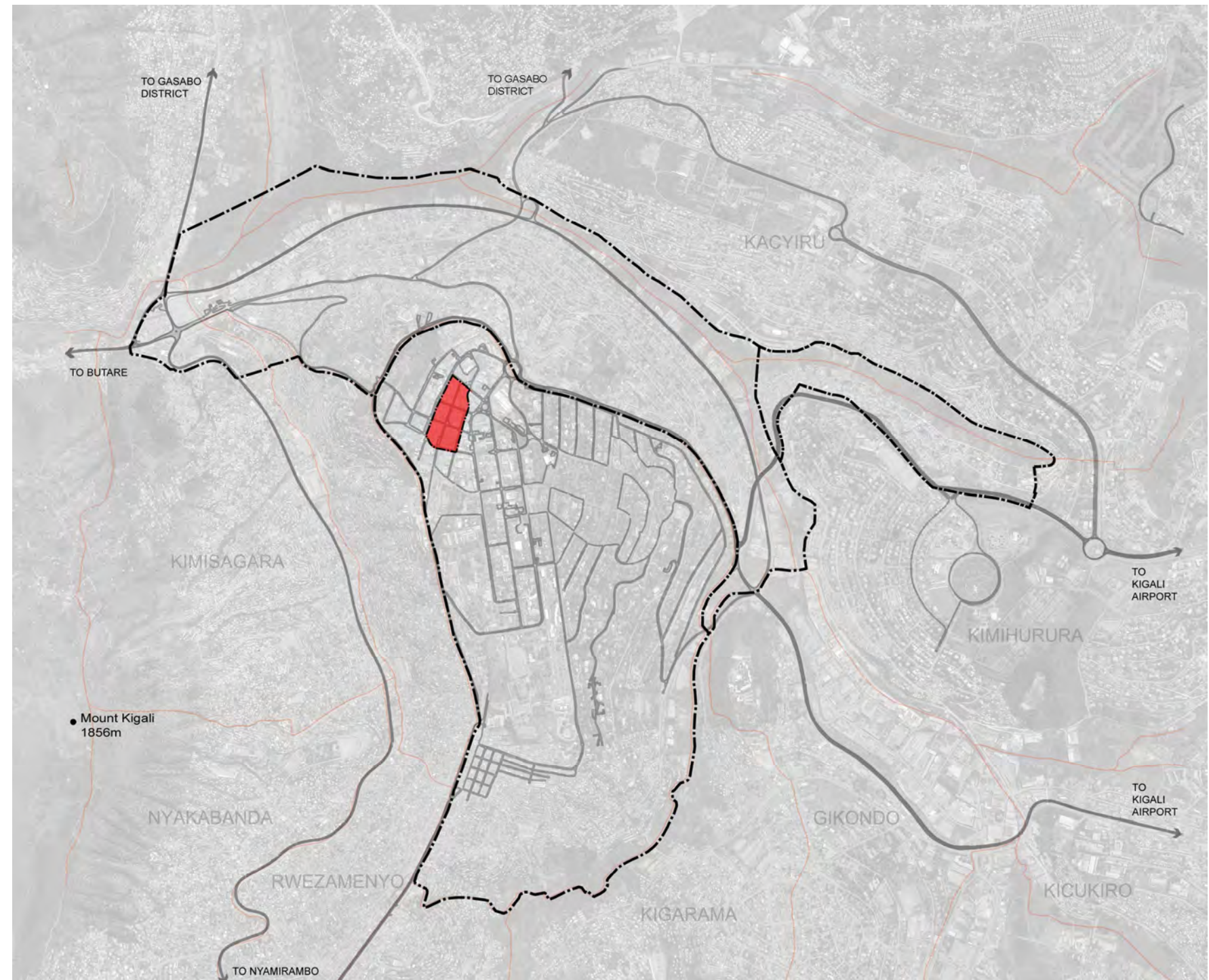


Figure A 5.8: Nyarugenge Market and Heritage Area – Location Plan.

Source: *Surbana*

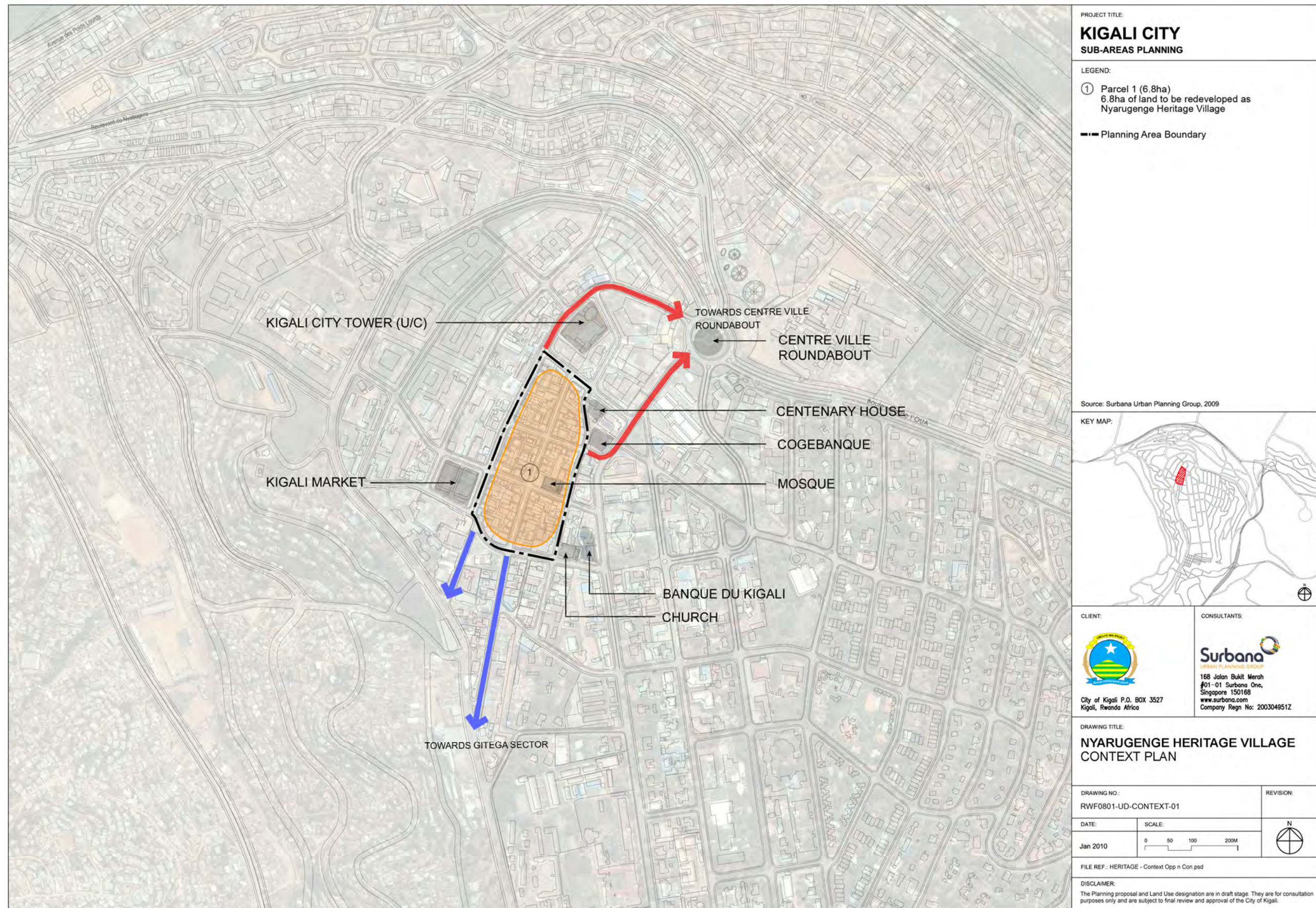


Figure A 5.9: Nyarugenge Market and Heritage Area – Context Plan.
 Source: Surbana

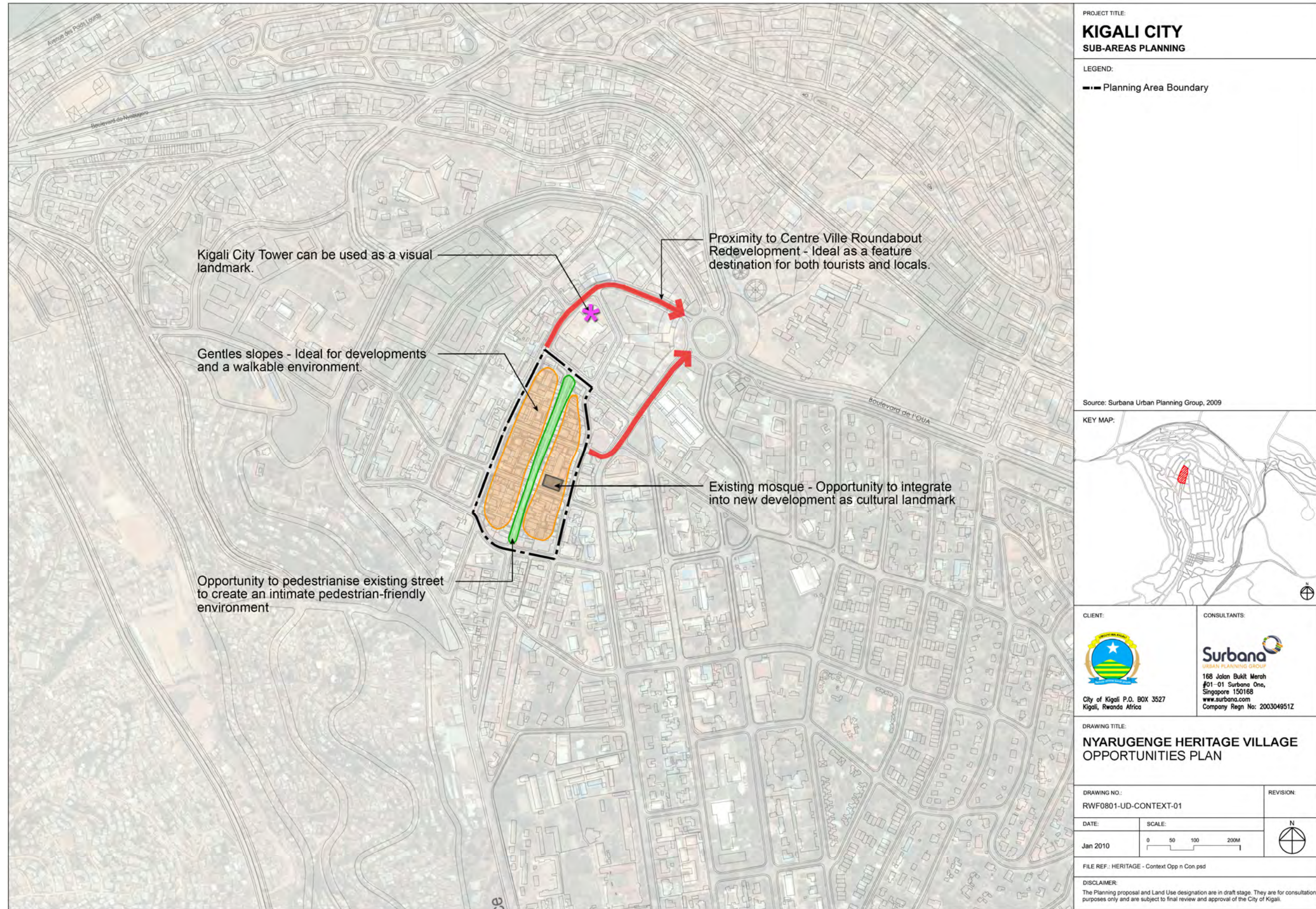


Figure A 5.10: Nyarugenge Market and Heritage Area – Opportunities Plan.
 Source: Surbana

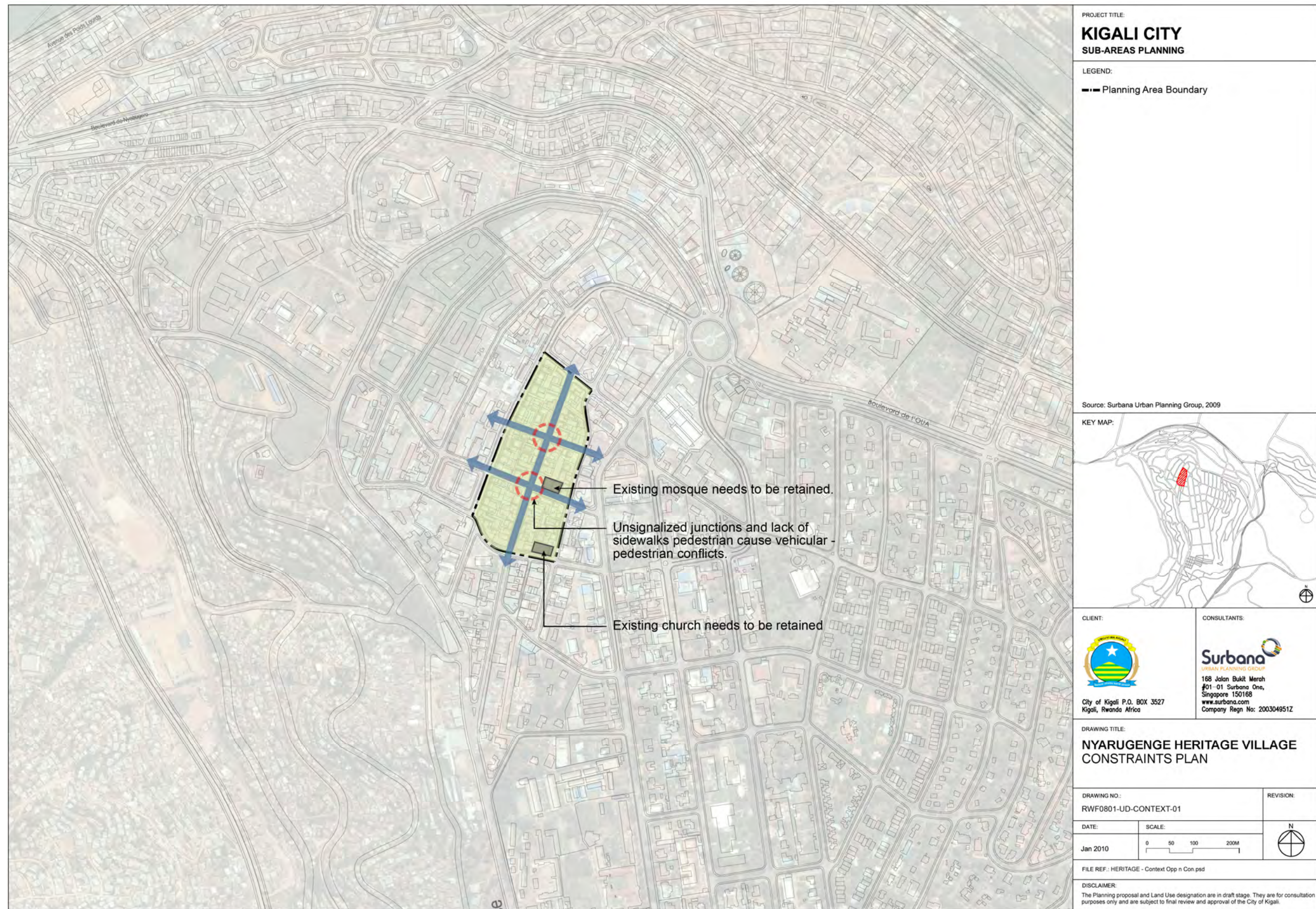


Figure A 5.11: Nyarugenge Market and Heritage Area – Constraints Plan.
 Source: Surbana

A5.3.3 Concept Plan

Bearing in mind the unique flavour of the planning area, it is envisioned that the Nyarugenge Heritage Village retains its heritage roots and is proposed to be developed as a commercial area with tourism influence.

As such, the rule of thumb is for the grain and texture of the old town area to remain; and the trucks and major wholesale activities to be relocated. With the redistribution of activities within (and out of) the Nyarugenge Heritage Village, it is imperative to strike a delicate balance between non-gentrification of the district and creating an environment suitable for the (new) commercial and retail market.

The path along Rue de Karisimbi is proposed for conversion into the main pedestrian street (illustrated in Figure A 5.12). The existing mosque and church within the Nyarugenge Heritage Village are also to be retained and integrated into the new developments, serving as cultural landmarks and enhancing the flavour of the area.

A public plaza is proposed in front of the existing mosque as aforementioned, and integrated with the pedestrianised street of Rue de Karisimbi, serving both as a gathering/event space and a foreground for the conserved mosque.

The Kigali City Tower, one of the tallest buildings in the area, also serves as a visual landmark at the end of the pedestrianised street, and facilitates wayfinding (see Figure A 5.12)

Sidewalks of the streets connecting to the Nyarugenge Heritage Village are proposed to be improved and upgrade to promote pedestrian connectivity to the area.

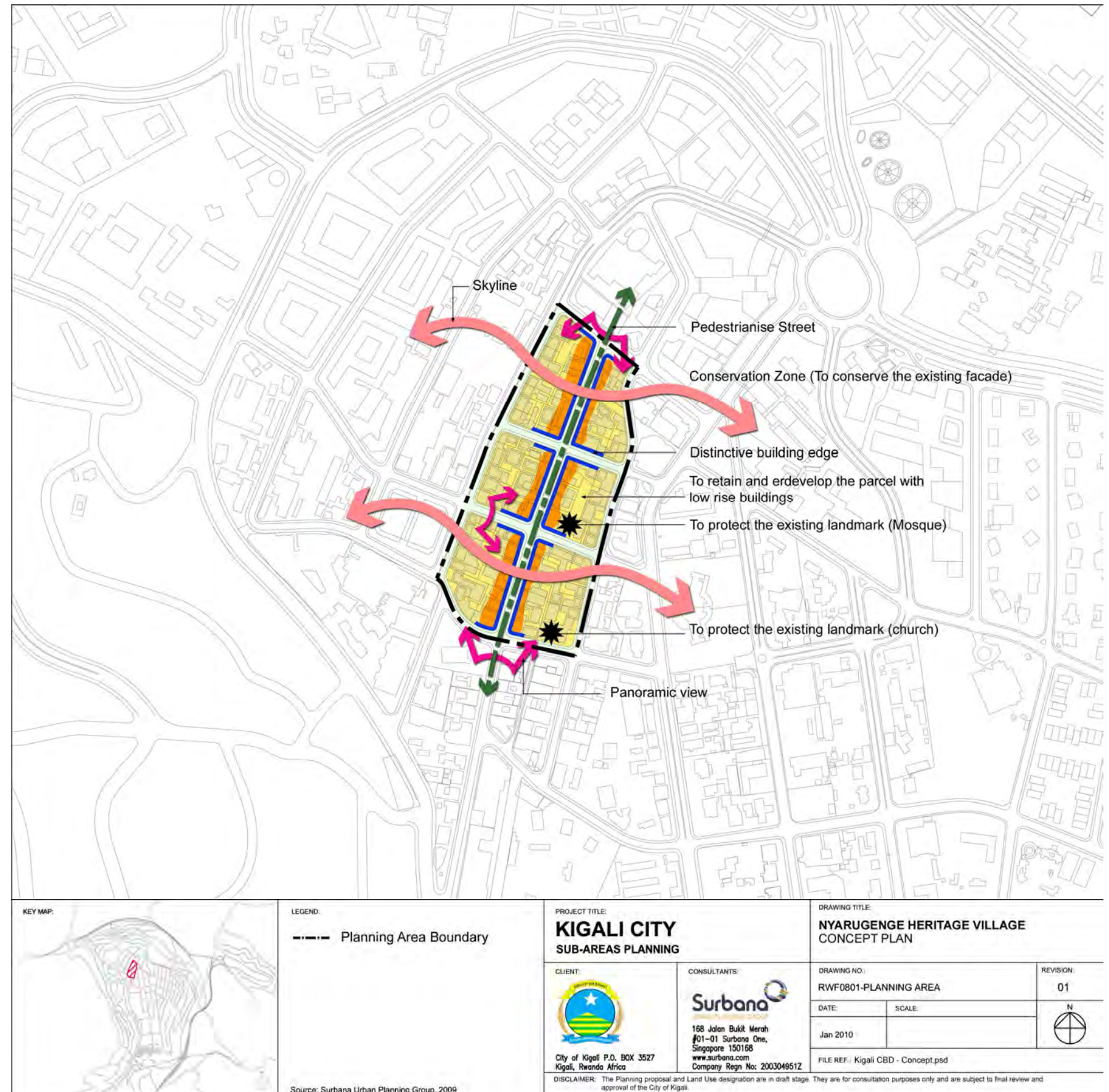
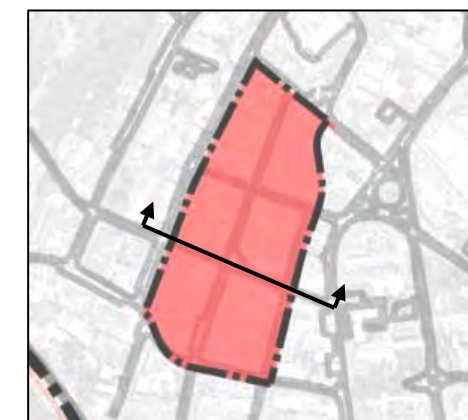


Figure A 5.12: Nyarugenge Heritage Village –Concept Plan.
 Source: Surbana



Figure A 5.13: Nyarugenge Heritage Village – Key Section.
Source: *Surbana*



A5.4 Statehouse Site Redevelopment

A5.4.1 Introduction

The Statehouse is currently located in Upper Kiyovu, about 560m from the Centre Ville Roundabout Redevelopment. The Statehouse site covers an area of 21.62 ha, which includes the Statehouse and the residential parcels around it, is currently cordoned off from public use. The location and extent of this area reserved for the Statehouse is indicated in Figure A 5.14. This section presents the development context, opportunities and constraints as well as the proposed concept for the Statehouse Site Redevelopment.

A5.4.2 Context

The Statehouse Site Redevelopment is surrounded by key civic, commercial and institutional buildings on the west; and low-rise, high-ended residential developments on the east. Figure A 5.14 shows the surrounding context and key buildings in the Statehouse Site Redevelopment.

The land area for the Statehouse Site Redevelopment comprises of 16.6 ha of government-owned land currently under residential use. The residential plots have an average size of 2 ha with an average density of 10 dwelling units per ha (DU/ha).

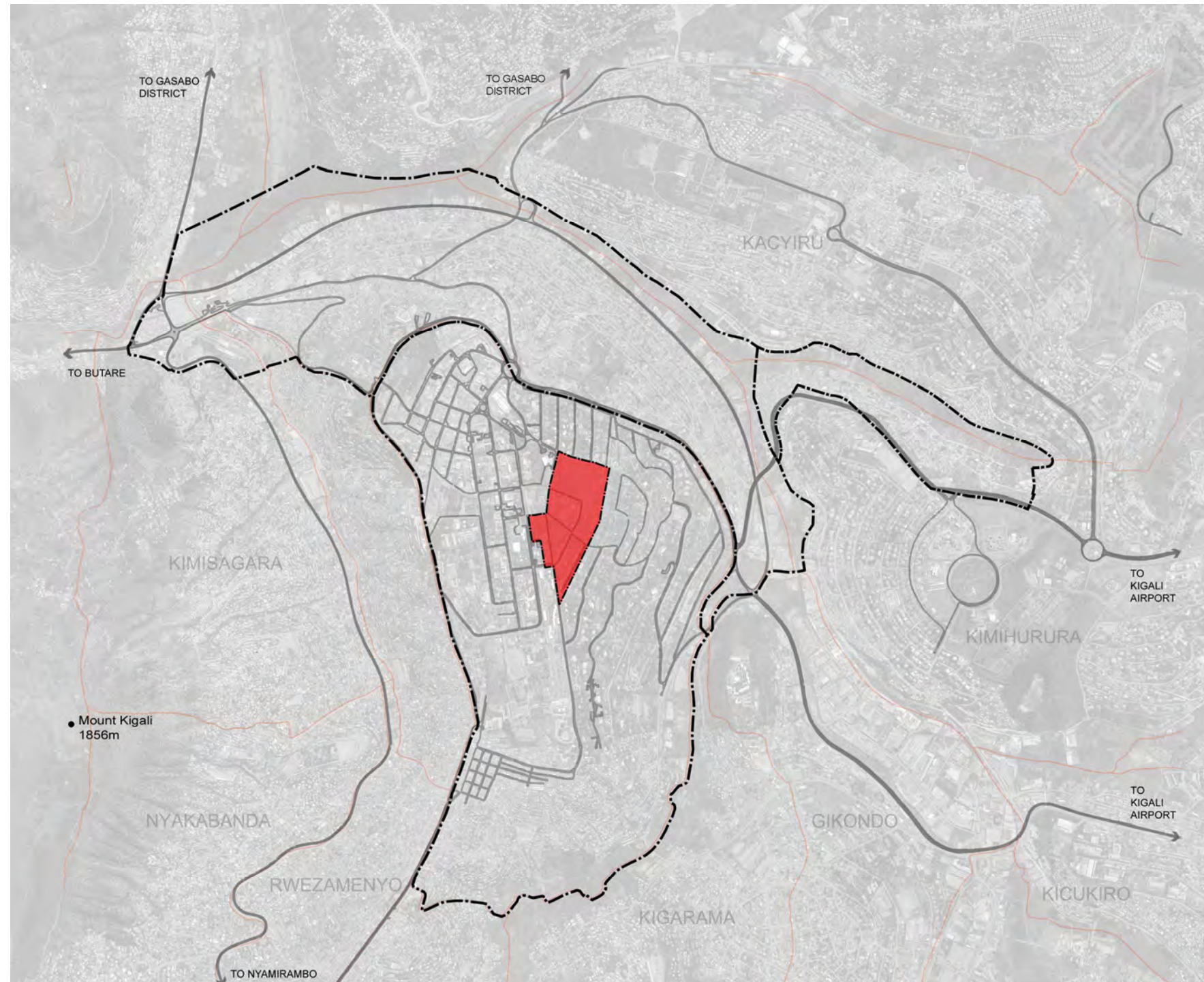


Figure A 5.14: Statehouse Site Redevelopment – Location Plan.

Source: *Surbana*

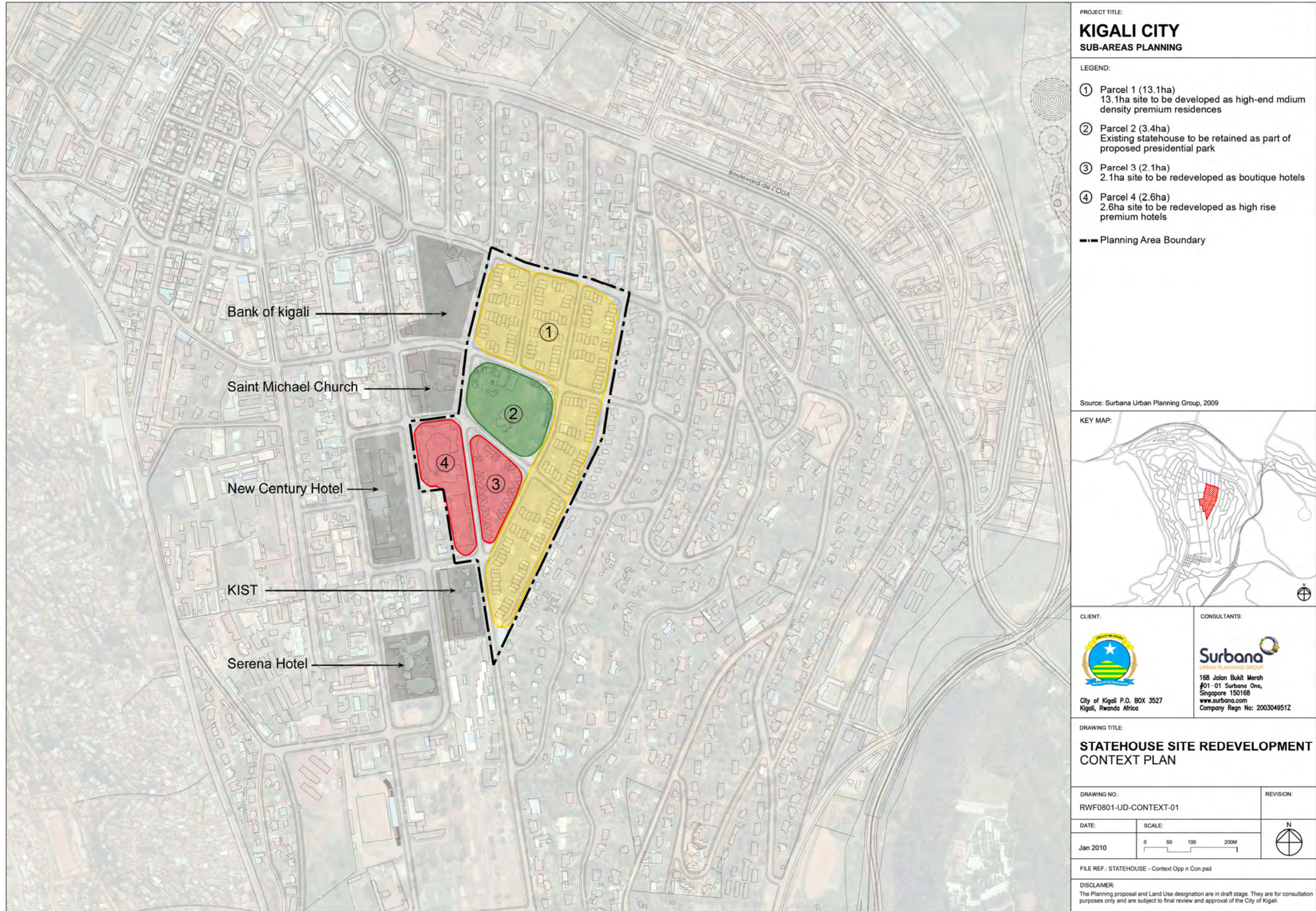


Figure A 5.15: Statehouse Site Redevelopment – Context Plan.
Source: Surbana

A5.4.3 Opportunities, Constraints and Threats

Based on the context and the existing site conditions, the key opportunities, constraints and threats for the Statehouse site have been generated as presented in Table A 5.2 and Figure A 5.16 and Figure A 5.17.

Table A 5.2: Statehouse Site Redevelopment - Opportunities, Constraints, and Threats.

Issues	Opportunities	Constraints	Threats
Surrounding Context	<ul style="list-style-type: none"> The Statehouse site is located adjacent to important commercial and institutional developments in the existing CBD. This increases the development potential of the site and offers opportunities for higher density development. The site is also located adjacent to high-end bungalow area. This offers an opportunity for premium housing development. The President's current residence is located in the middle of the site. This historic and important building offers opportunity for cultural and premium recreational development. 	<ul style="list-style-type: none"> Developments on this site need to maximise on the development potential due to its proximity to the CBD as well as ensure the preservation of the quiet residential character of its surroundings. It needs to act as a buffer between the CBD and the high-ended bungalow developments. 	<ul style="list-style-type: none"> The increased development density may compromise the privacy, security and character of the neighboring bungalow developments. Improper redevelopment of the Statehouse building and parcel may compromise the heritage / historic value of the site.
Developable Land	<ul style="list-style-type: none"> The site is under government ownership and is available for development upon the relocation of the Statehouse. Large block sites offer an opportunity for development of luxury houses and hotels. 	<ul style="list-style-type: none"> The Statehouse site needs to be preserved as a heritage building. 	<ul style="list-style-type: none"> Not Applicable

Source: *Surbana*

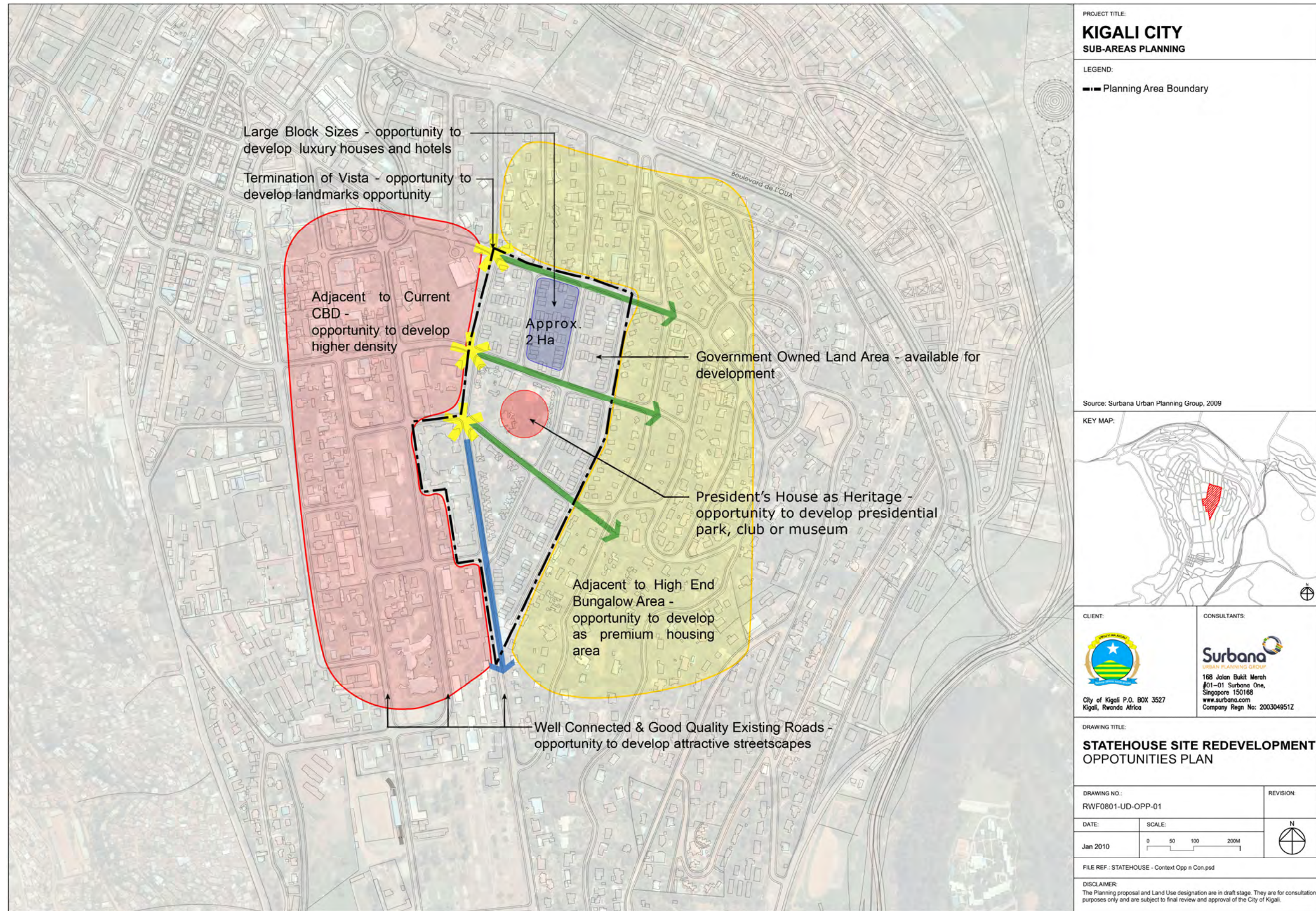


Figure A 5.16: Statehouse Site Redevelopment - Opportunities Plan.
Source: Surbana

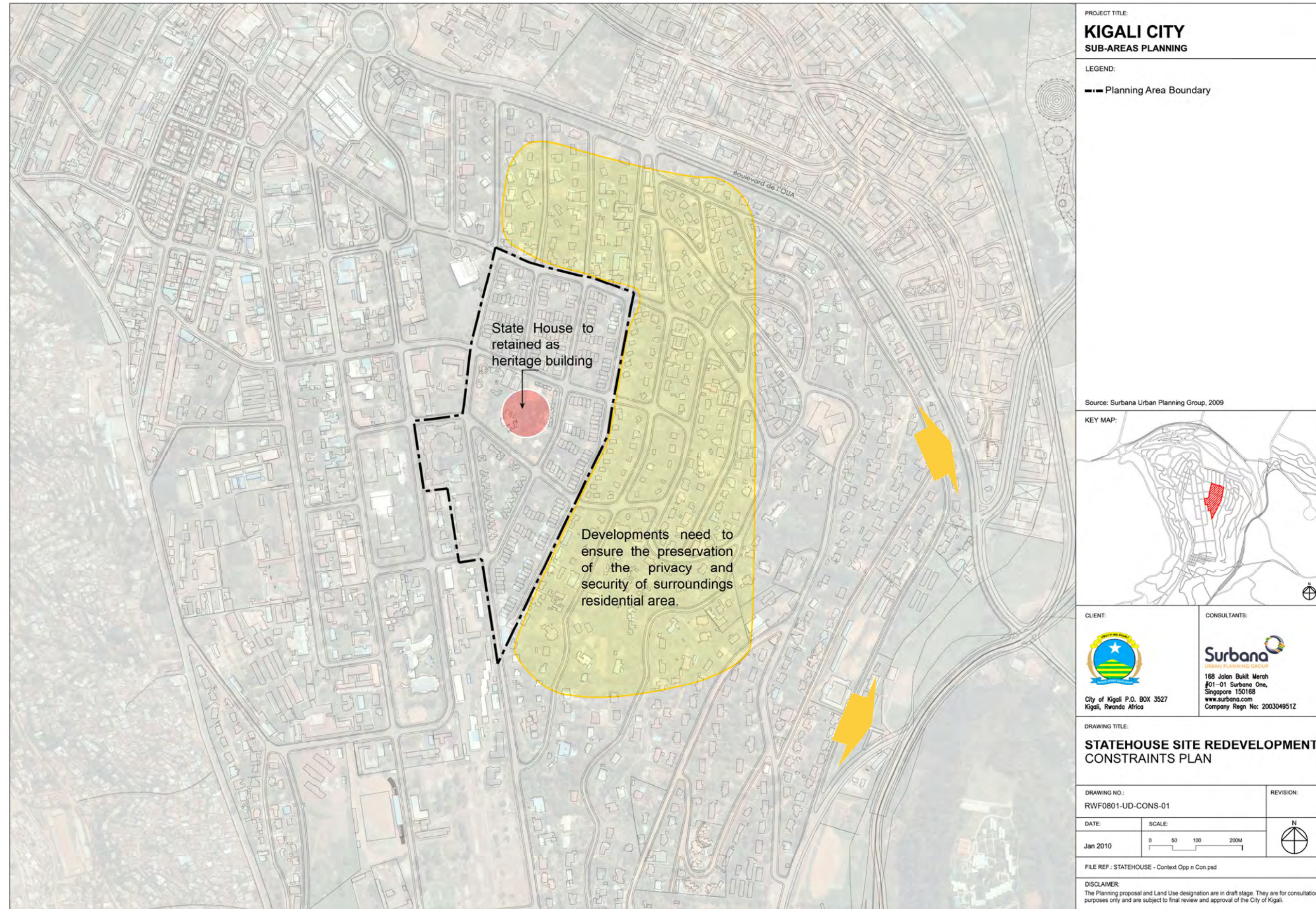


Figure A 5.17: Statehouse Site Redevelopment - Constraints Plan.
Source: Surbana

A5.4.4 Concept Plan

The Statehouse site is located in a prime area, the land value of which is further expected to increase due to the redevelopment of the existing City Centre located in close proximity. The proposed concept for the redevelopment of the Statehouse site was guided by the following principles:

- **Encouraging Redevelopment:** In order to maximize on the increasing land value and the development potential a general densification of the land parcels is proposed.
- **Promoting Design Excellence:** There is a great demand for high-end modern housing presently in Kigali due to the influx of expats and the increasing wealth of the locals who are benefiting from the rapidly growing economy. In order to target this group, the new proposals in the Statehouse site must have a distinctive contemporary architectural character. The streetscape should be developed by themeing to impart a unique identity to the development.
- **Managing Social Impact:** Great care must be taken to ensure that the privacy, security and character of the existing residential developments of the surrounding is not compromised. The heritage value of the Statehouse needs to be preserved.

Based on the analysis of the existing conditions as well as in line with the guiding principles discussed above, the concept for the development of the Statehouse Site is developed as follows:

- **Presidential Park**
Low-rise, cultural and exclusive recreational developments leveraging on the historic value of the site and the high-ended nature of the surrounding residential developments.
- **Residential Developments**
High-end, medium density premium residences, buffering high-rise CBD developments and the quiet low-rise residences.
- **Premium Hotels**
High-rise, high-ended premium hotels, forming a part of the neighboring hotel cluster.
- **Boutique Hotels**
Low-rise, exclusive themed hotels, in character with neighboring housing developments.
- **Improve Streetscapes**
Provide developers incentives to enhance the existing streetscapes, to match the high-ended character of the proposed developments.

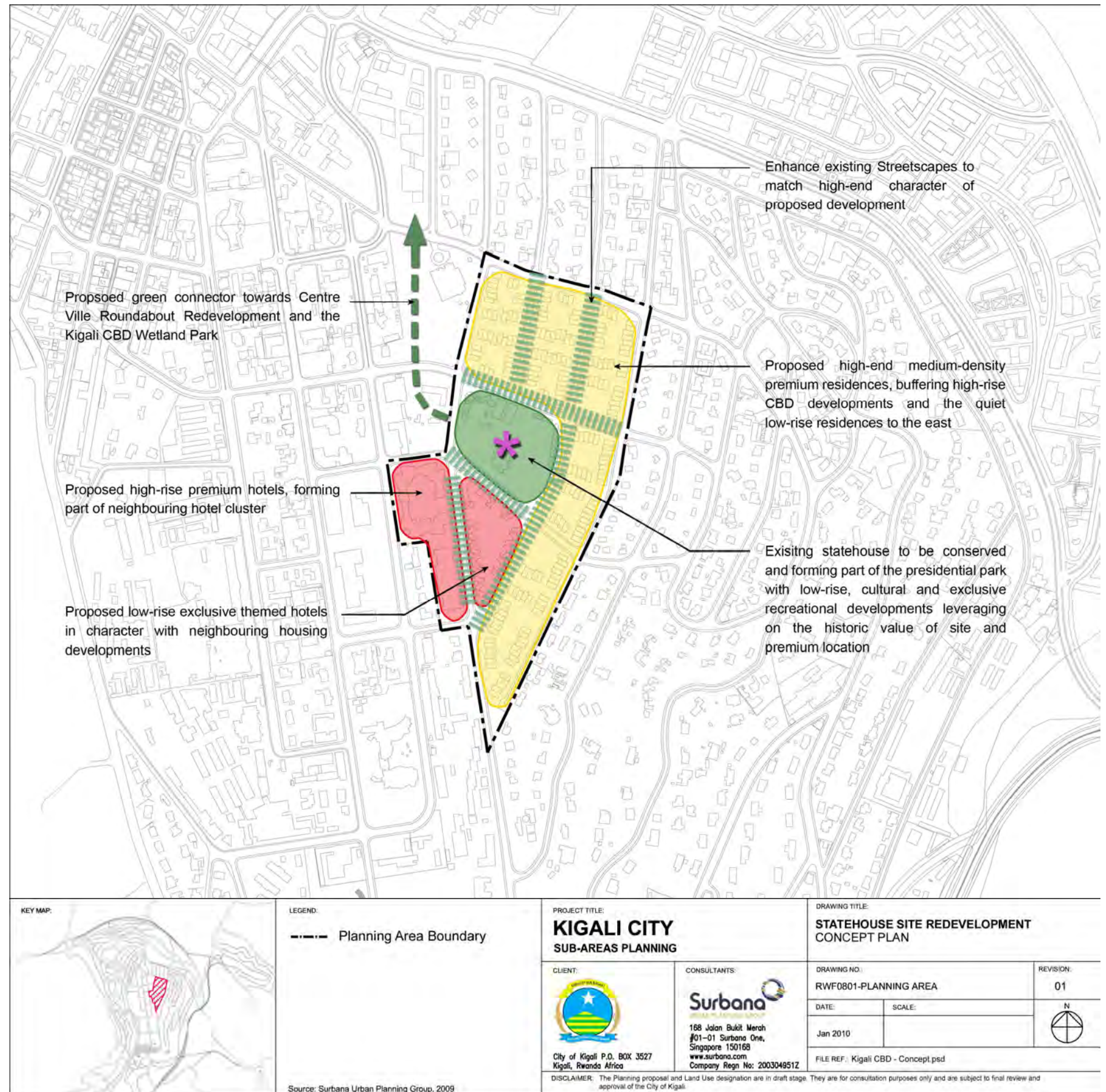


Figure A 5.18: Statehouse Site Redevelopment – Concept Plan.
Source: Surbana

BIBLIOGRAPHY

- Community Development Plan Nyarugenge District, December 2005.
- City of Kigali, Low Cost House, 2007.
- City of Kigali, Housing in Kigali Informal Housing Survey, 2008.
- Japan Engineering Consultants, The Study for Improvement of Urban Transport in Kigali City, September 2004.
- Kigali City Development Plan, May 2008.
- KIST, Kigali Economic Development Strategy, November 2001.
- Ministry of Infrastructure, National Human Settlement Policy in Rwanda, July 2004.
- Ministry of Infrastructure, National Urbanization Policy in Rwanda, April 2007.
- Ministry of Finance and Economic Planning, Rwanda Vision 2020, July 2000.
- Norplan, Study of Storm Water Drainage Management and Erosion Control for Kigali City: Preliminary Study Report (Volume 2: Preliminary Design Study for Priority Program), November 2007.
- Norplan, Study of Storm Water Drainage Management and Erosion Control for Kigali City: Technical Study Report (Volume 1), August 2007.
- OZ Architecture, Kigali Conceptual Master Plan Existing Conditions Analysis, March 2007.
- OZ Architecture, Kigali Conceptual Master Plan, November 2007.
- PUDI, Manuel de la Construction des Routes au Rwanda, October 2008.
- Republic of Rwanda, Organic Law, May 2005.
- SGI, Eaux pluviales, February 2008.
- SGI, Eaux usées, March 2008.
- SGI, Rapport d'avant projet sommaire, October 2008.
- STUDI International, Additional Study for the Paving of Roads in the City of Kigali, July 2008.
- Urban Environmental Infrastructure in Kigali City Rwanda, (MSc Thesis Environmental Sciences by James C. Sano).
- WSUD Engineering Procedures: Stormwater (Melbourne Water 2005).