

RESTORE THE RIVERS BACK TO FUTURE: Sustainable Drainage System

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BACKGROUND

The research addresses the significance of river restoration and sustainable drainage systems (SUDS) in urban settings, specifically in Hong Kong. It highlights the negative impact of urbanization on rivers, emphasizing the need to restore the hydrological system by reconnecting river routes. The optimal utilization of stormwater resources also demonstrate for sustainable water management.

OBJECTIVES

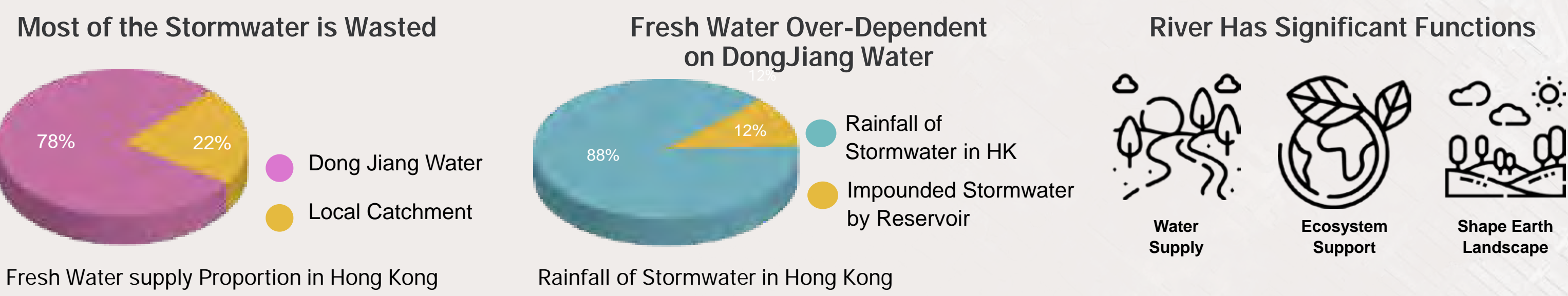
The research aims to propose a comprehensive plan for river restoration and SUDS implementation in Hong Kong, with a focus in Kowloon region. It aims to understand the history of urbanization in Kowloon, identify potential design areas, and create a sustainable city where rivers thrive, water resources are optimally utilized, and urban environments coexist harmoniously with nature.

THE SITE

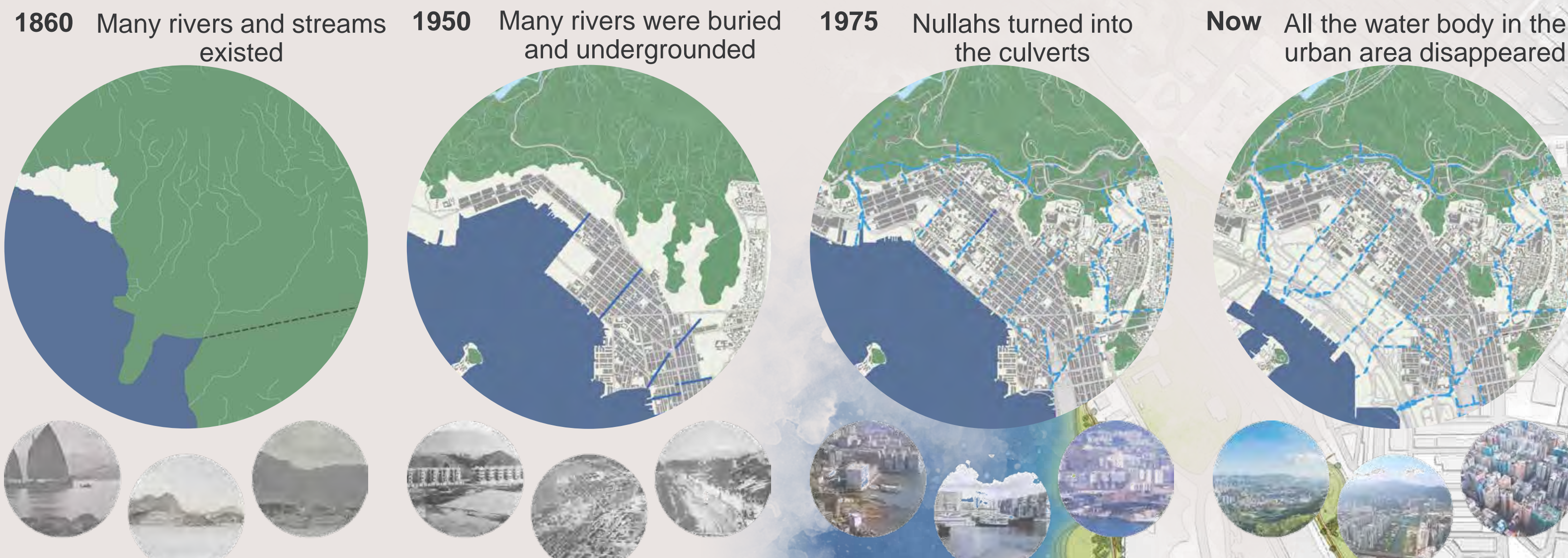


Kowloon

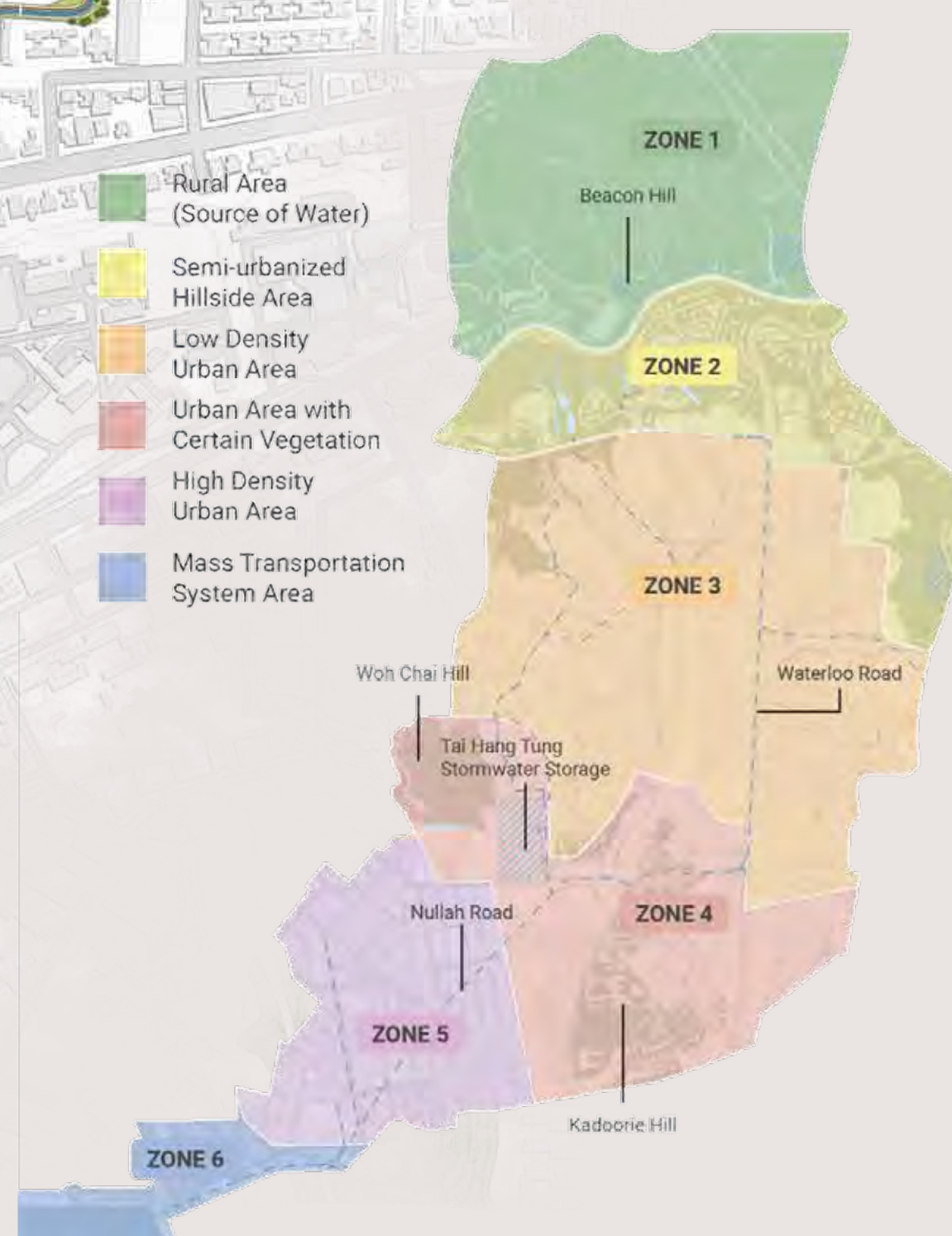
Hard Engineering Drainage System is Effective to Solve Flooding Problem... BUT WHAT WE HAVE MISSED?



Urbanization Historical Map in Kowloon



6 Strategic Zones



METHODOLOGY

Historical Maps

Provide insights into historical development, urbanization, water body transformation, and impact on the hydrological system

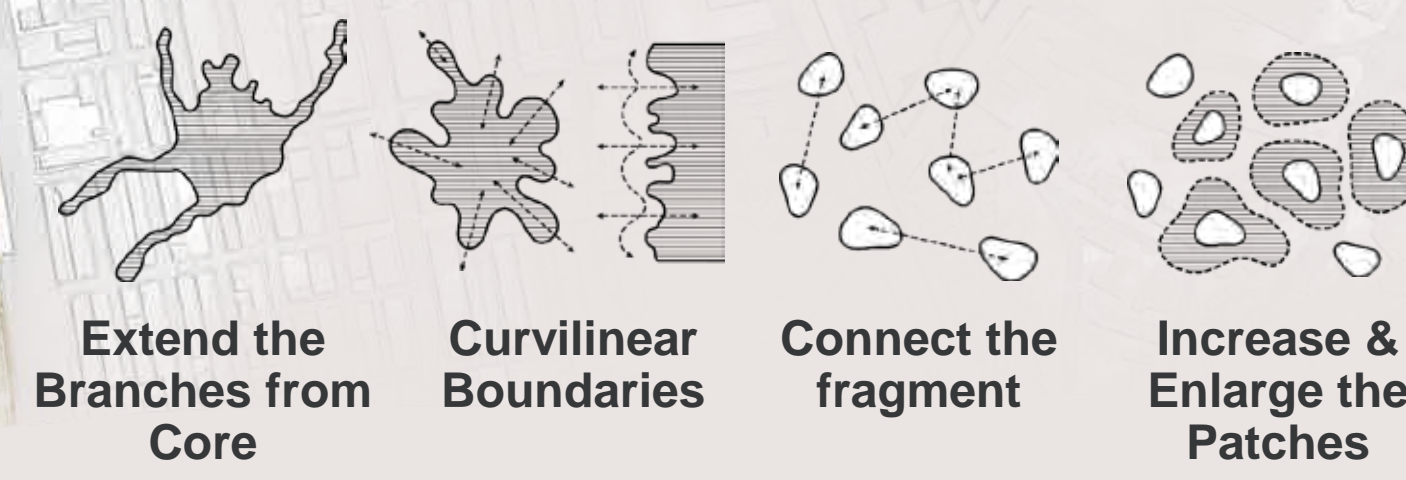
GIS

Overlay various data sets, such as topography, land use, and hydrological information to create a comprehensive understanding

Literature Review

Gather relevant information and research findings related to river restoration, sustainable drainage systems, and urban hydrology

Ecological Principles



FINDINGS

Ecological Principles

The integration of landscape ecological principles into the design to enhance ecological value

Strategic Zones Design

Six strategy zones are defined with specific design schemes to complete the hydrological system

SUDS

Establish a sustainable drainage systems that can reuse the stormwater and mitigate future flooding risk

Case Study

Serve as references and sources of inspiration, to learn from successful examples and identify strategies

Assessment Mechanism

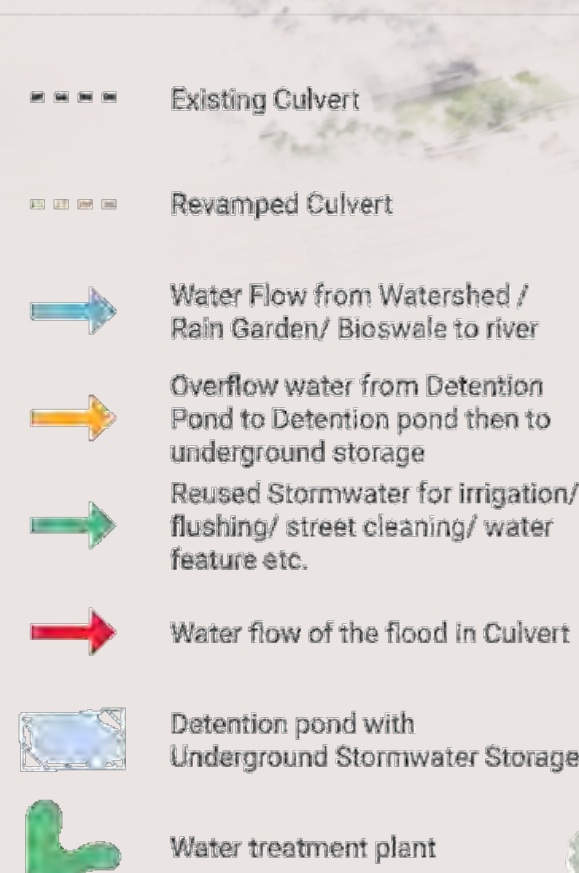
Evaluate and assess different river route proposals; compare and analyze the potential outcomes and impacts

Research by Design

Use the design process to generate new knowledge and insights through experimentation and exploration



Sustainable Drainage System



CONCLUSION

The research provides a comprehensive roadmap for policymakers and urban planners to restore rivers, implement sustainable drainage systems, and create a harmonious balance between urban development and the preservation of natural heritage in Hong Kong.