Watery Ground - Between Land and Water

Activating the lost mangrove coasts of Mumbai

Country / City	USA / New York City
University / School	Bernard and Anne Spitzer School of Architecture, City College of New York
Academic year	2019-2020
Title of the project	Watery Ground - Between Land and Water
Authors	Rujuta Naringrekar

TECHNICAL DOSSIER

Title of the project	Watery Ground - Between Land and Water
Authors	Rujuta Naringrekar
Title of the course	Studio VI
Academic year	2019-2020
Teaching Staff	Catherine Seavitt Nordenson
Department/Section/Program of belonging	Graduate Landscape Architecture Program
University/School	City College of New York

Written statement, short description of the project in English, no more than 250 words

Water is present is all forms within our environment, cycling from the sea to the air and back to the land. This thesis questions the binary of land and water in Mumbai, India, focusing on the blurred in-between where patches of mangroves mark the instability and flow that was once part of this stratum. The project re-imagines the interior coasts of Mumbai as an integrated social, ecological, and economic multi-species mangrove infrastructure that weaves through the city. This smart, soft new infrastructure has the capacity to mitigate and adapt to the impacts of climate change, including rising sea levels and increased rainfall from monsoons. In addition, the mangroves build resilience, filtering pollutants and absorbing floodwaters over time.

For further information
Máster d'Arquitectura del Paisatge -DUOT - UPC

T: + 34 93 401 64 11 / +34 93 552 0842
Contact via email at: biennal.paisatge@upc.edu

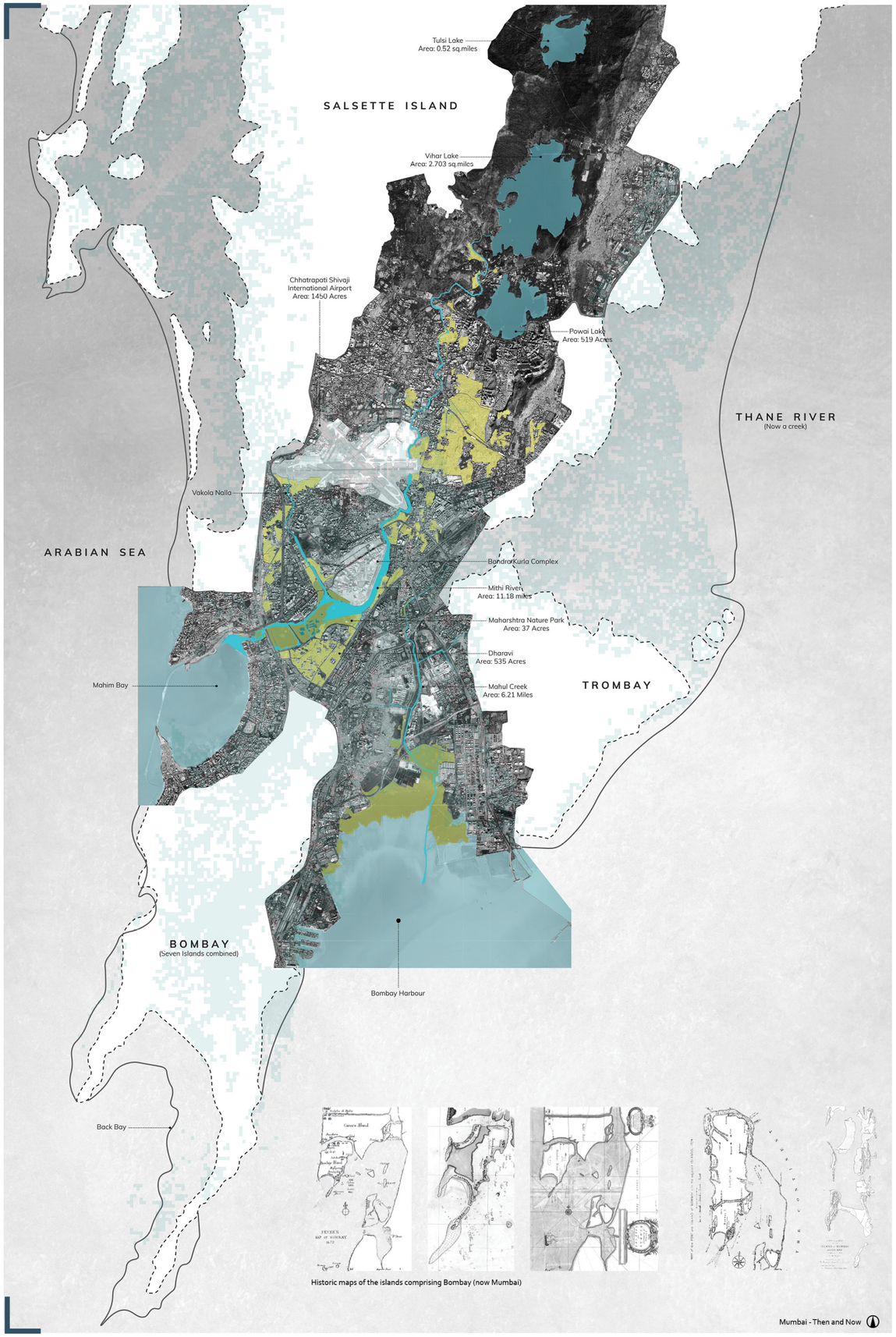
Máster d'Arquitectura del Paisatge -DUOT - UPC
ETSAB- Escola Tècnica Superior
d'Arquitectura de Barcelona
Avenida Diagonal, 649 piso 5
08028 Barcelona-Spain

CLIMATE CHANGE AGAIN

11th International Biennial Landscape Barcelona

Barcelona September 2020

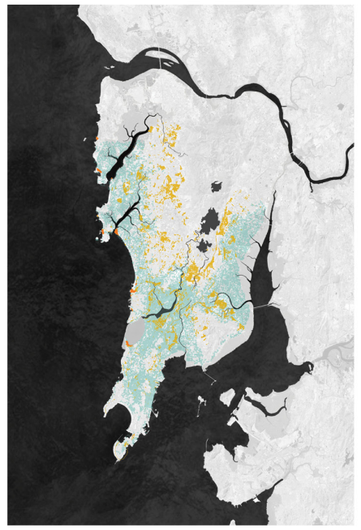
SCHOOL PRIZE



Historic maps of the islands comprising Bombay (now Mumbai)

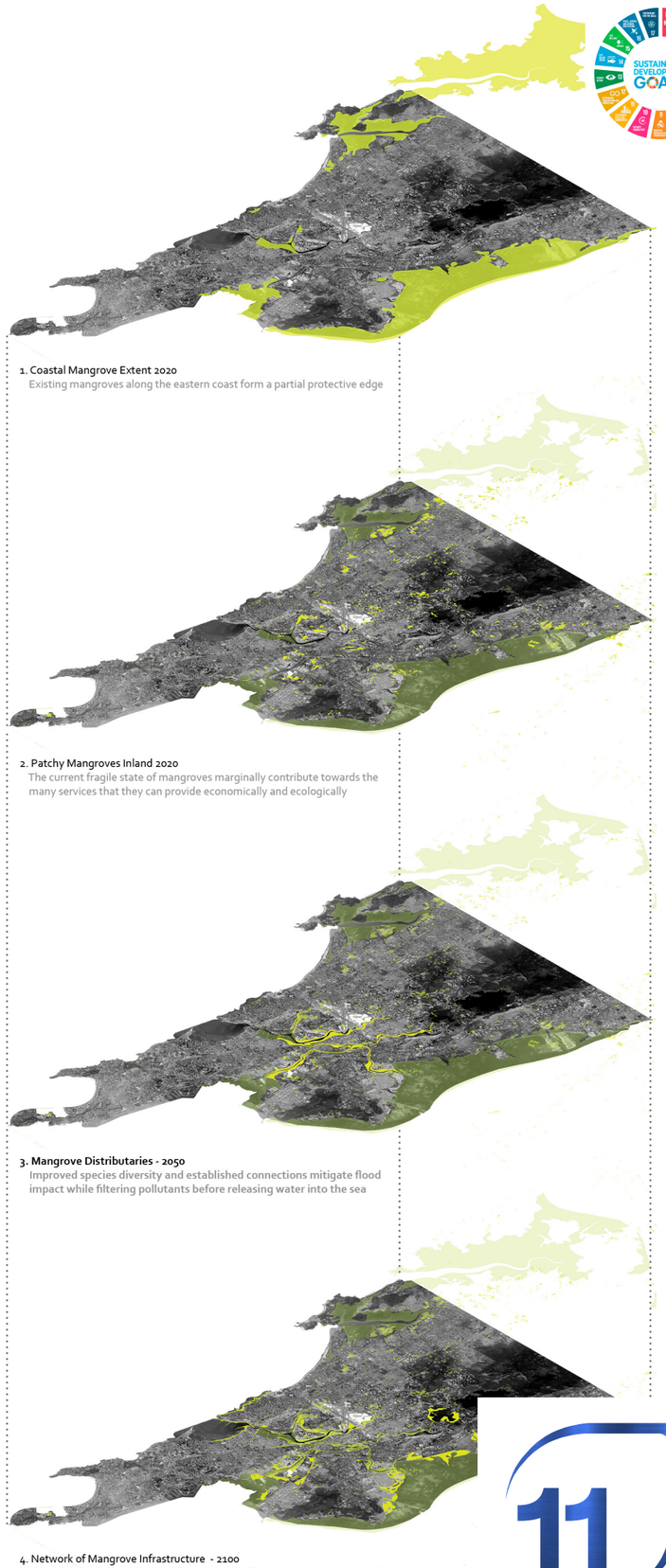
Mumbai - Then and Now

Flatness of the Topography



Informal settlements and *Koliwada* most vulnerable to tidal and monsoon flooding (flood risk 2050), shown in blue

Developing the coastal and riverine connections to create mangrove distributaries that recreate interior coasts



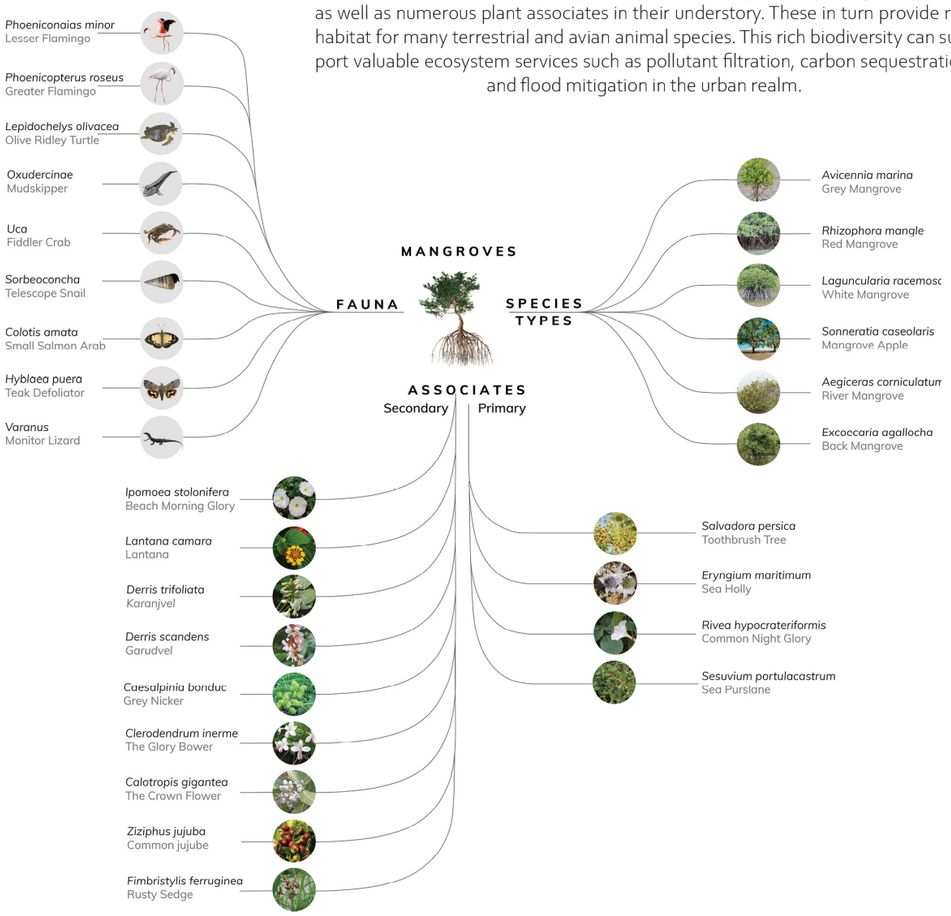
1. Coastal Mangrove Extent 2020
Existing mangroves along the eastern coast form a partial protective edge

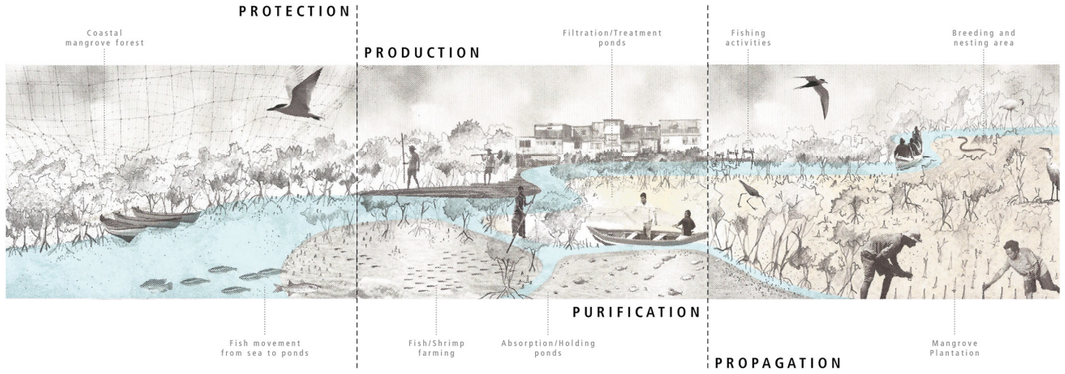
2. Patchy Mangroves Inland 2020
The current fragile state of mangroves marginally contribute towards the many services that they can provide economically and ecologically

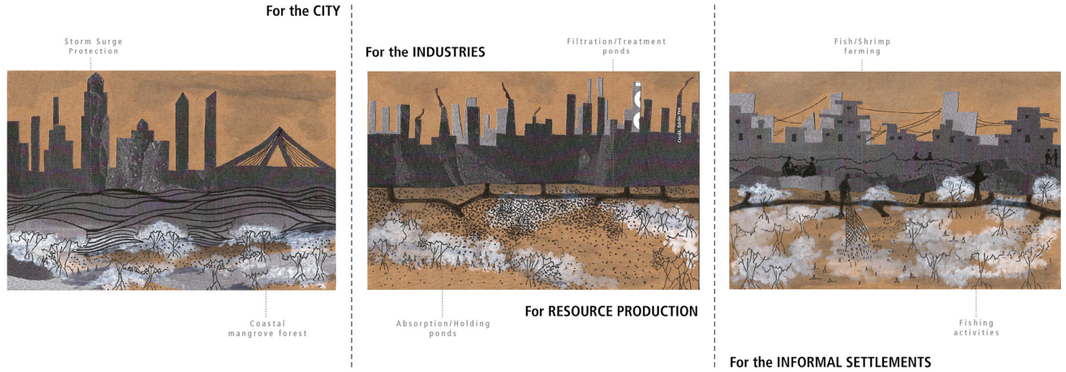
3. Mangrove Distributaries - 2050
Improved species diversity and established connections mitigate flood impact while filtering pollutants before releasing water into the sea

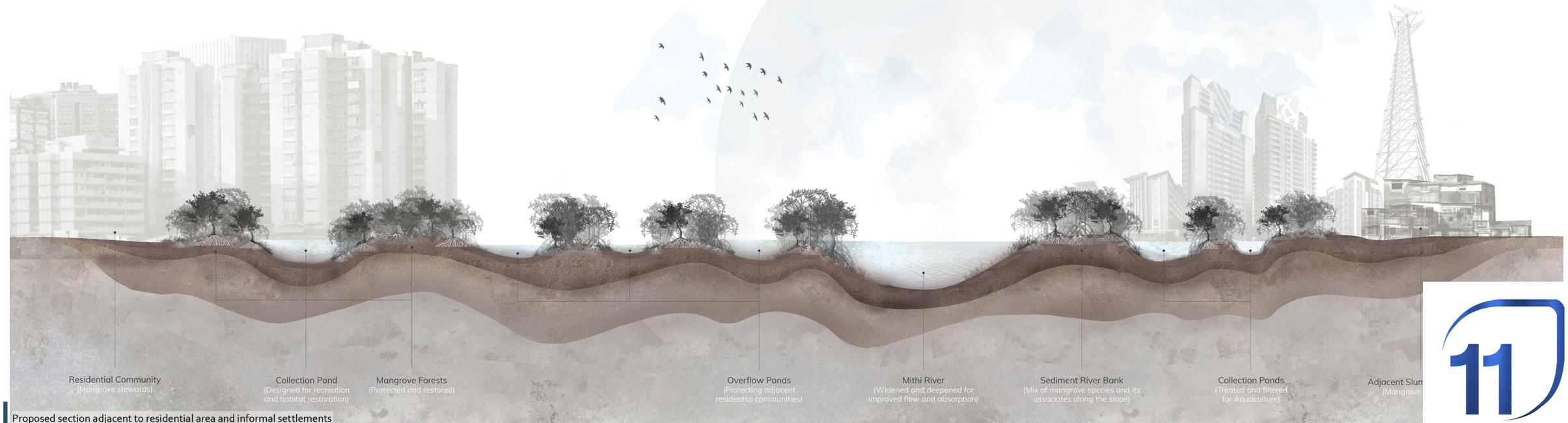
4. Network of Mangrove Infrastructure - 2100
The multi-faceted, multi-species mangrove infrastructure spreads across the landscape to adapt and mitigate impacts of climate change, sea level rise, and local urban conditions of flooding, and water filtration

Mumbai's climate has the capacity to support a diversity of many mangrove species, as well as numerous plant associates in their understory. These in turn provide rich habitat for many terrestrial and avian animal species. This rich biodiversity can support valuable ecosystem services such as pollutant filtration, carbon sequestration, and flood mitigation in the urban realm.

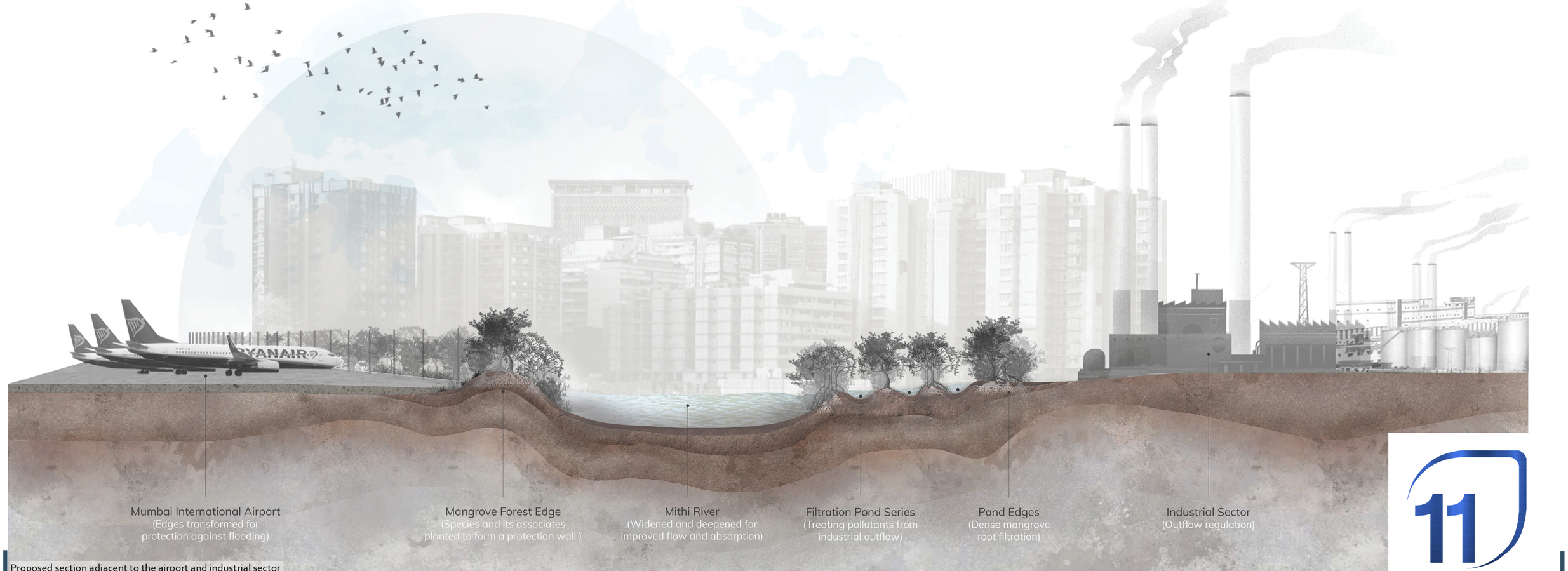








Proposed section adjacent to residential area and informal settlements



Proposed section adjacent to the airport and industrial sector