

CLIMATE CHANGE

100%

80%

BUILDINGS

RESOURCES

Integration of Climate Change Aspects into Urban Planning - Design Coding and Zoning -

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COMMUNITY

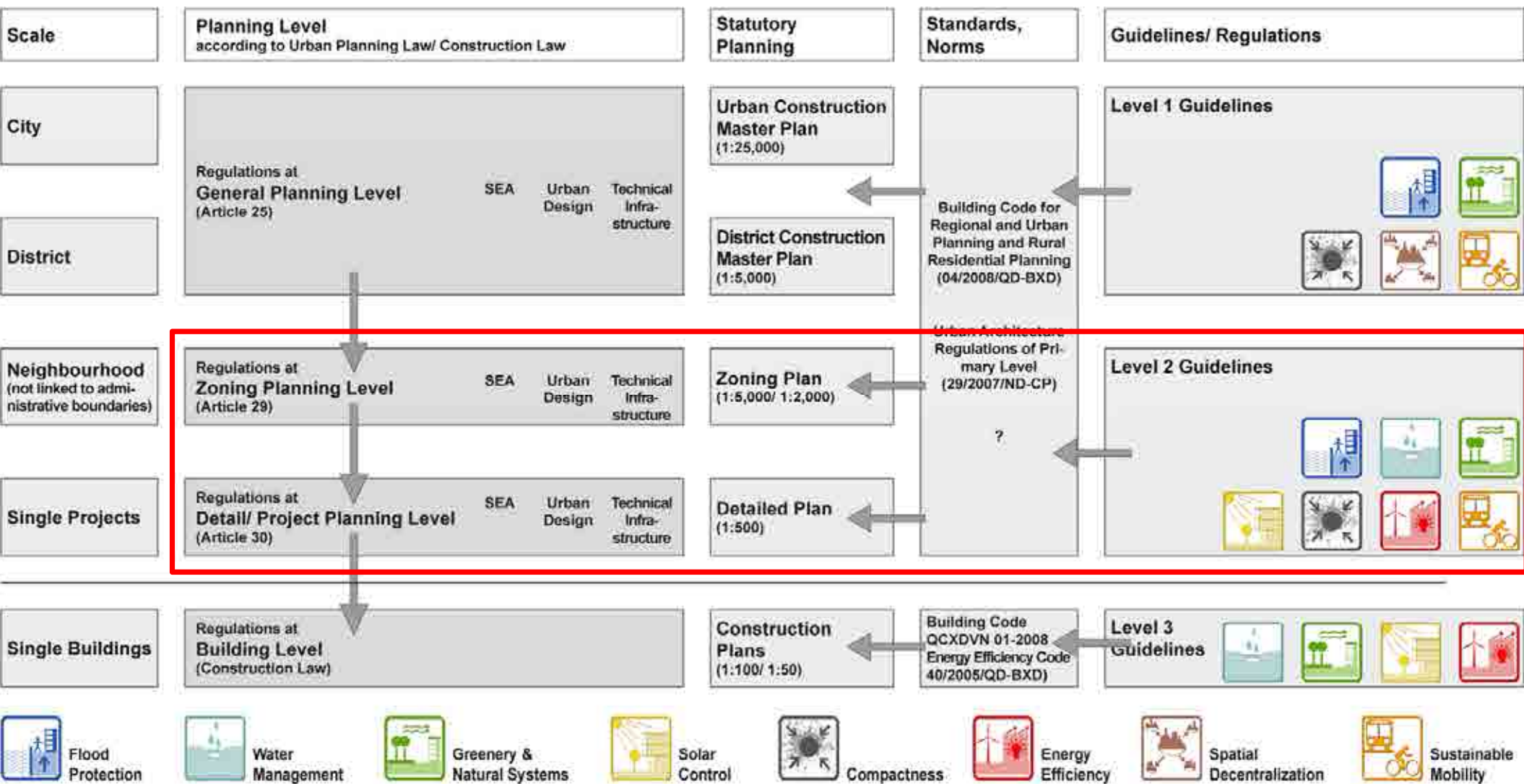


TRANSPORT

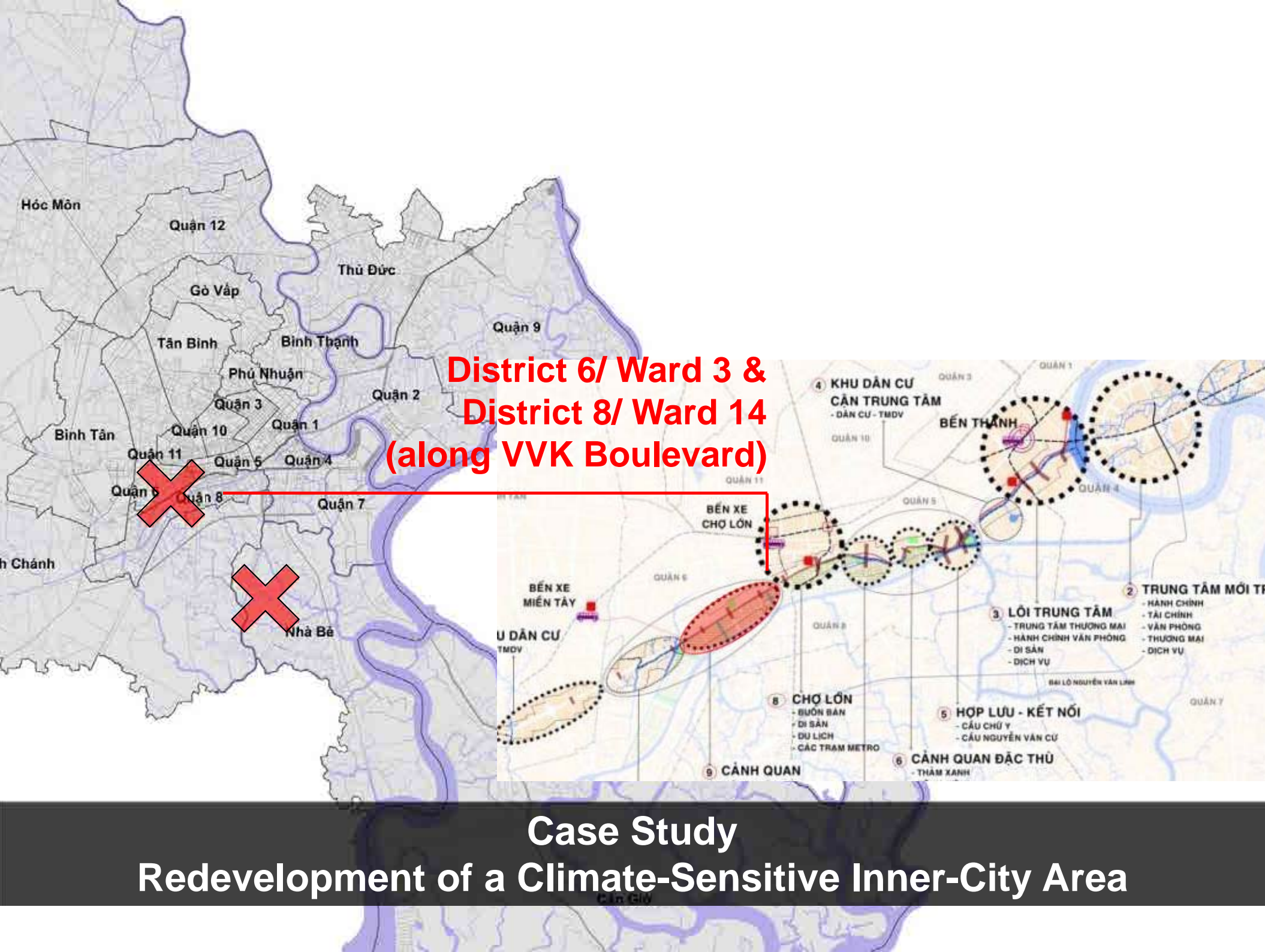
PLACEMAKING

ECOLOGY

2. DPA – Megacity Roundtable
HCMC Department of Planning and Architecture
15. March 2012 | TP Ho Chi Minh

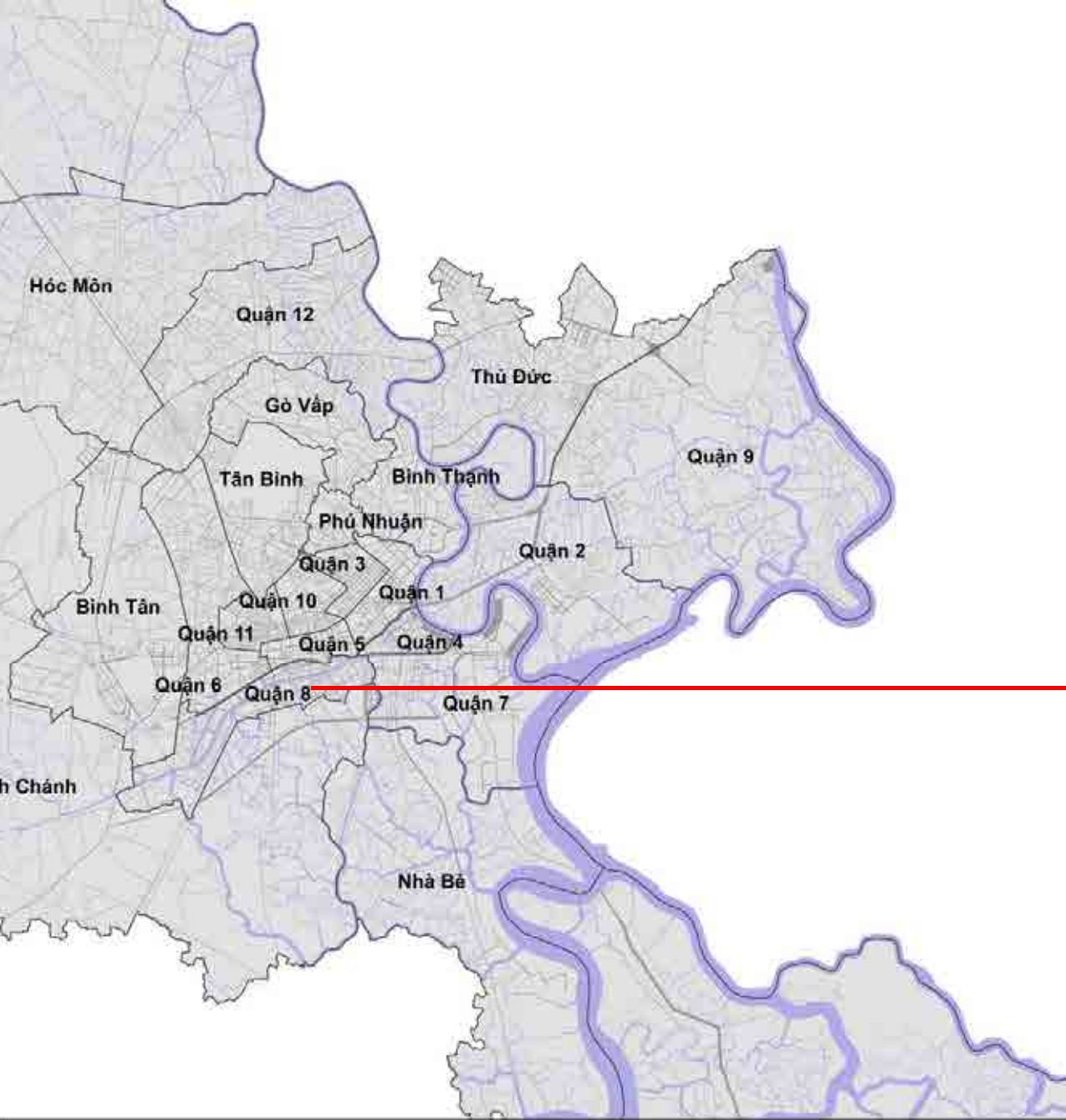


Integration of Design Principles for Climate Change Adaptation into Urban Development Projects

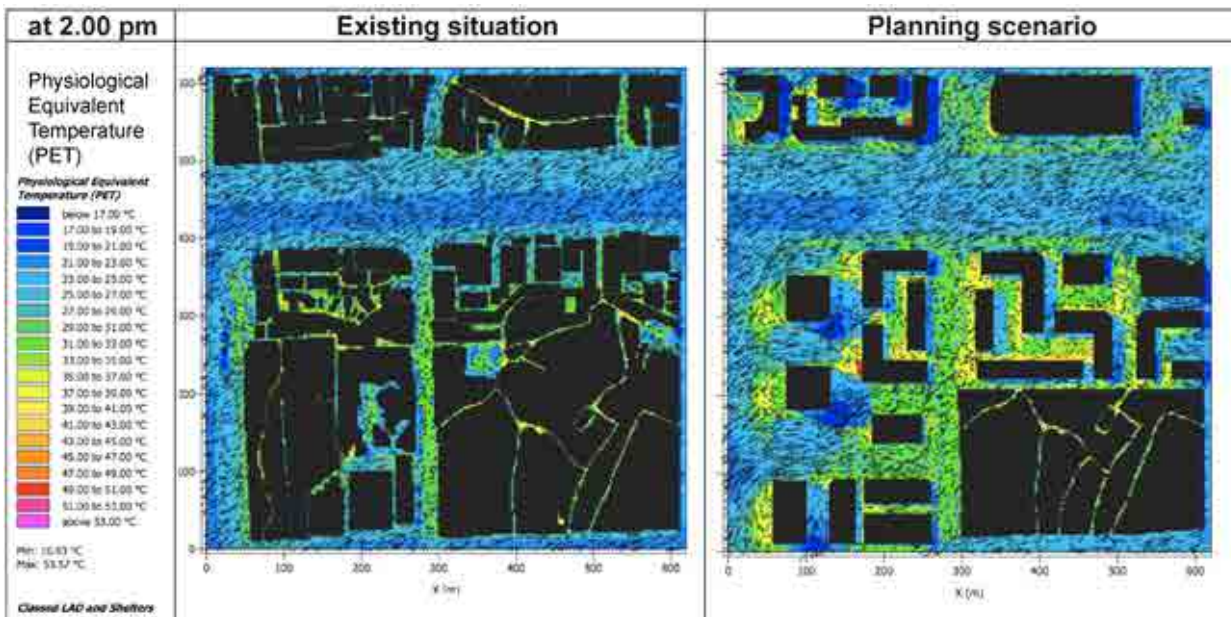


**District 6/ Ward 3 &
District 8/ Ward 14
(along VVK Boulevard)**

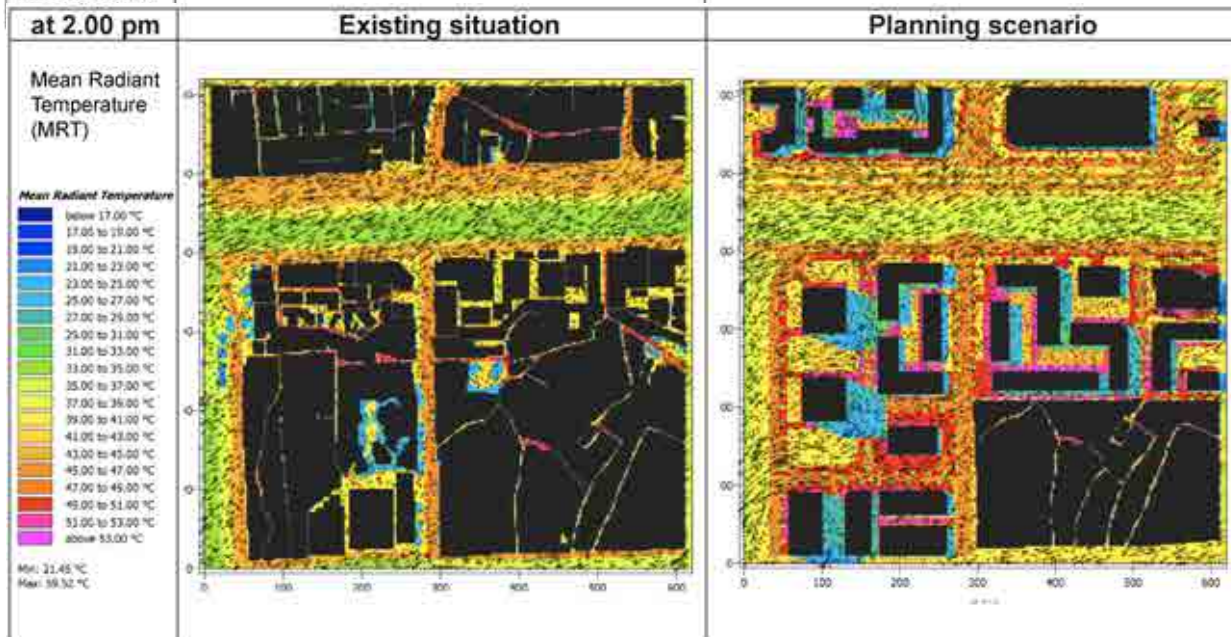
Case Study Redevelopment of a Climate-Sensitive Inner-City Area



Design Proposals for a Redevelopment and Increase of Land Utilization along VVK Boulevard



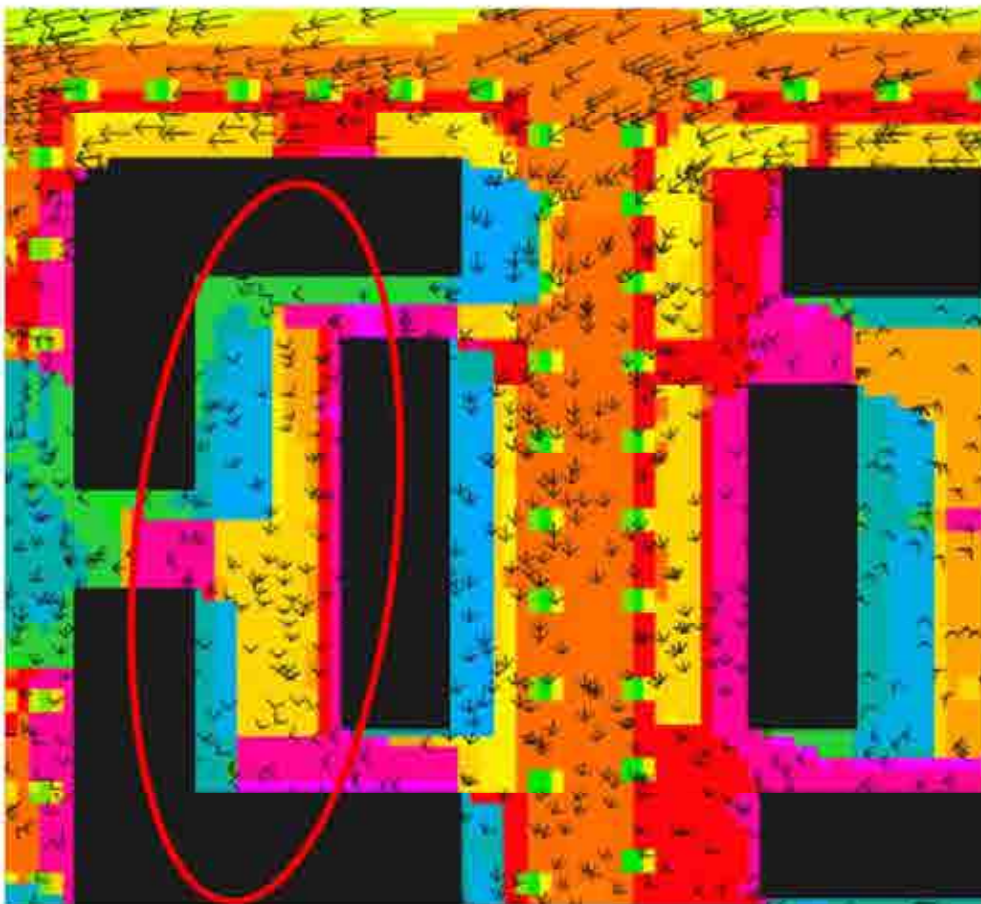
- Assessment of Environmental and Climate Change Impacts is required
- Link to SEA & Climate Proofing



**Exemplary Simulation of Micro-Climate
(Existing Situation & Urban Design Proposal)**

Problem

- Low ventilation/ Blocking of winds

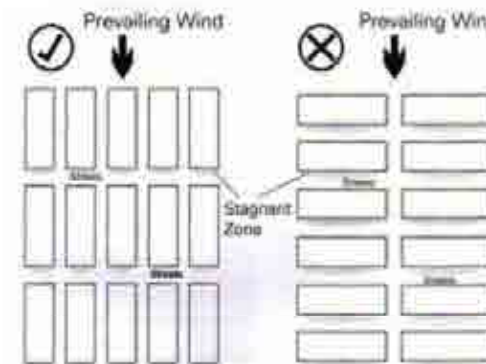


Wind

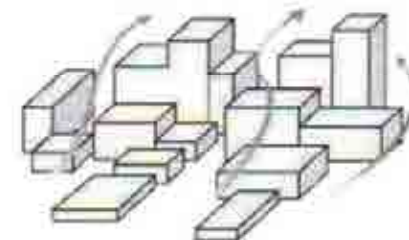
- 1.00 m/s
- 2.00 m/s
- 3.00 m/s
- 4.00 m/s
- 5.00 m/s

Solutions

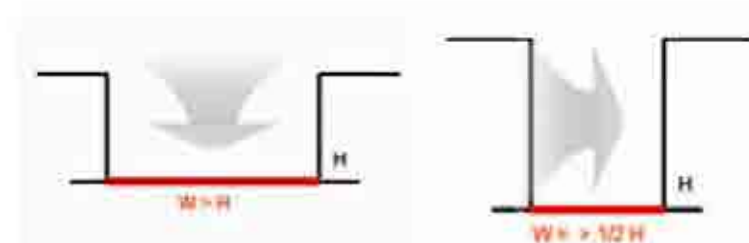
- Adjust the orientations of buildings and streets



- Varyify building heights



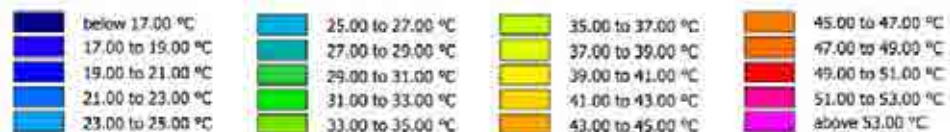
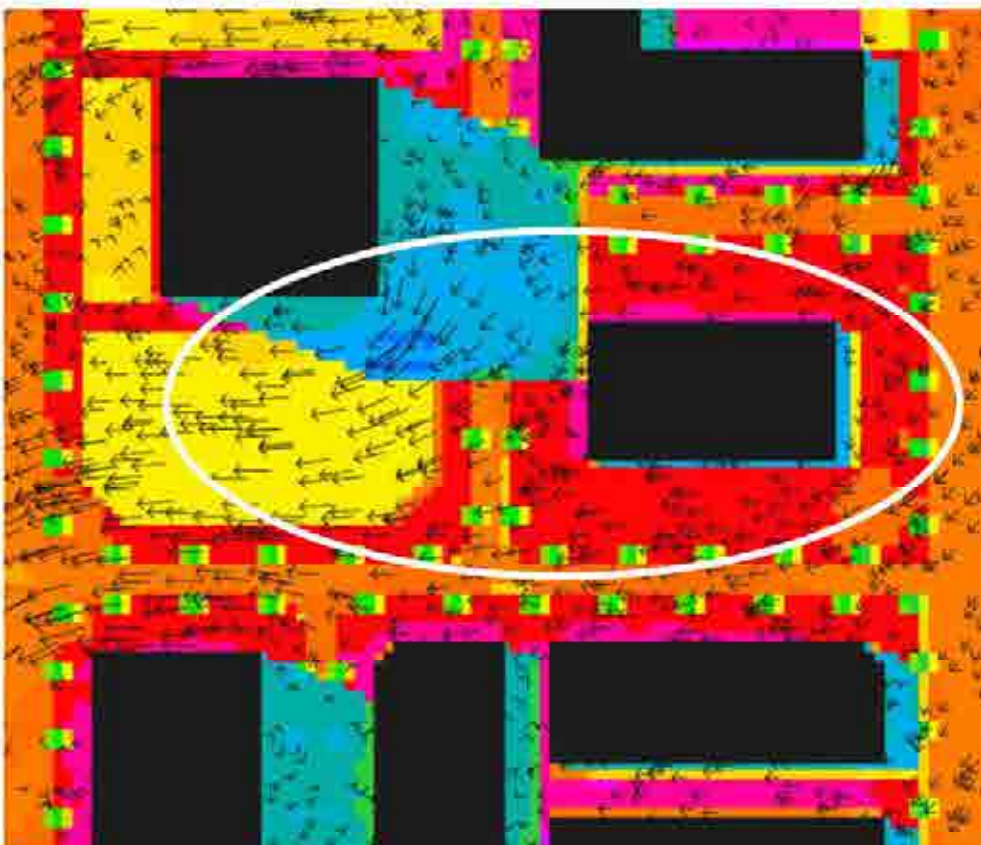
- Adjust distances between buildings



Drawing Recommendations/ Requirements for Urban Design
Example: Orientation of Buildings

Problem

- Uses of materials (building and pavement materials)

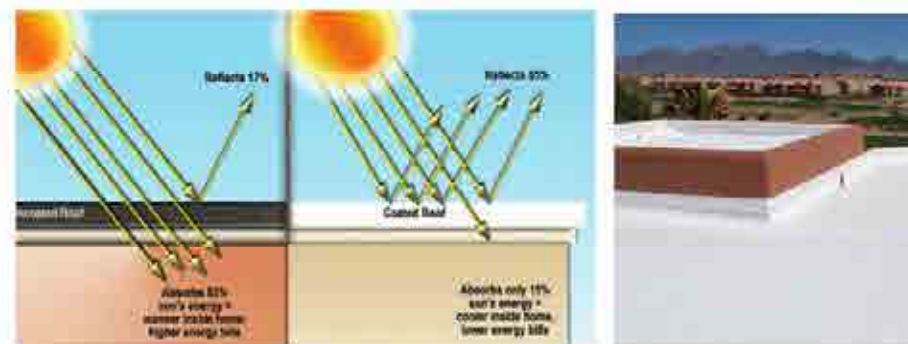


Solutions

- Use bright and permeable pavements

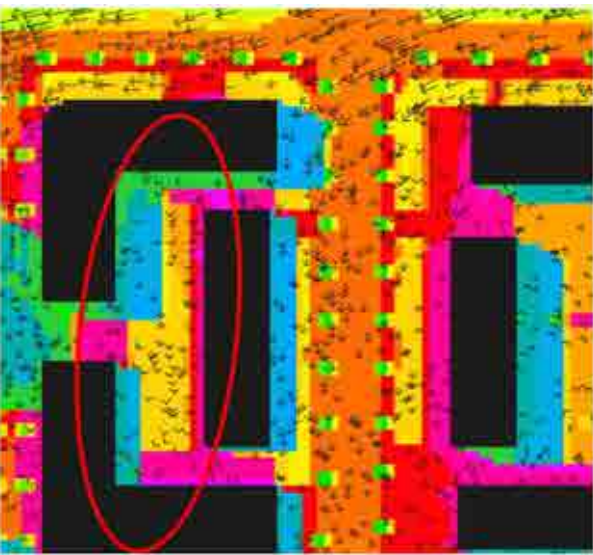


- Use reflective roofs

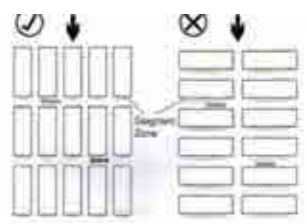


- Limit glass on façade

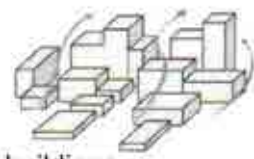
Drawing Recommendations/ Requirements for Urban Design
Example: Use of Pavement Materials



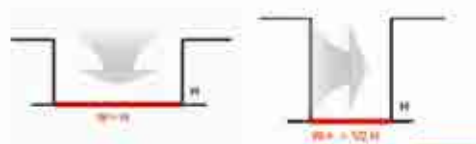
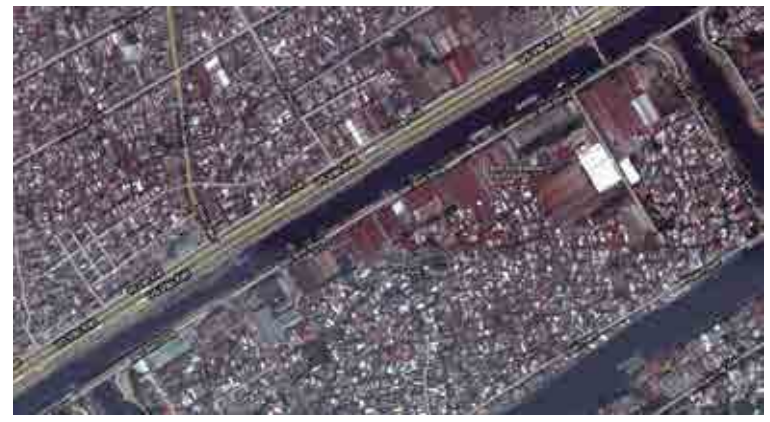
Wind
 1.00 m/s
 2.00 m/s
 3.00 m/s
 4.00 m/s
 5.00 m/s



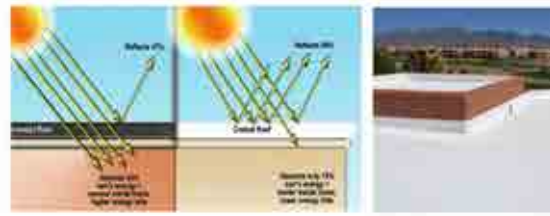
- Varyify building heights



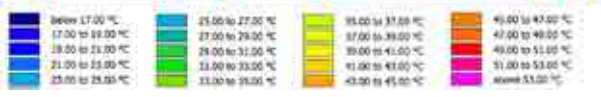
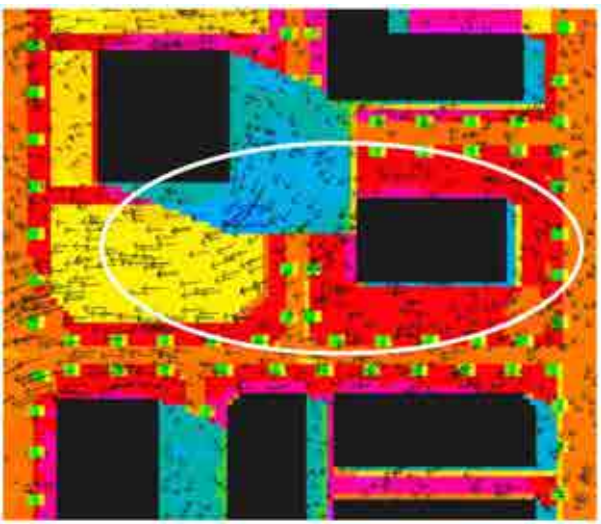
- Adjust distances between buildings



- Use reflective roofs



- Limit glass on façade



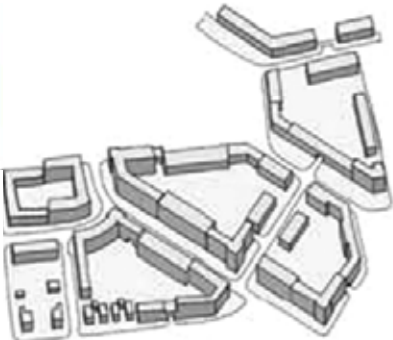
Effective Implementation into Development Project through Formal/ Regulatory Instruments?



Movement and Connections



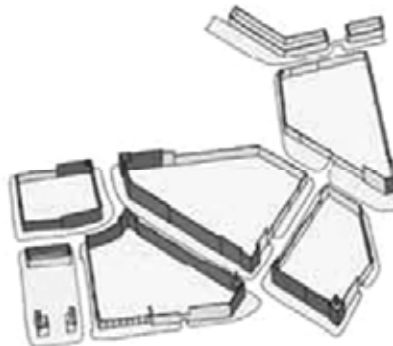
Green Infrastructure



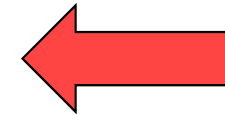
Block Structure



Green Open Space



Façades and Public Realm



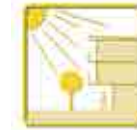
Flood Protection



Water Management



Greenery & Natural Systems



Solar Control



Compactness



Energy Efficiency

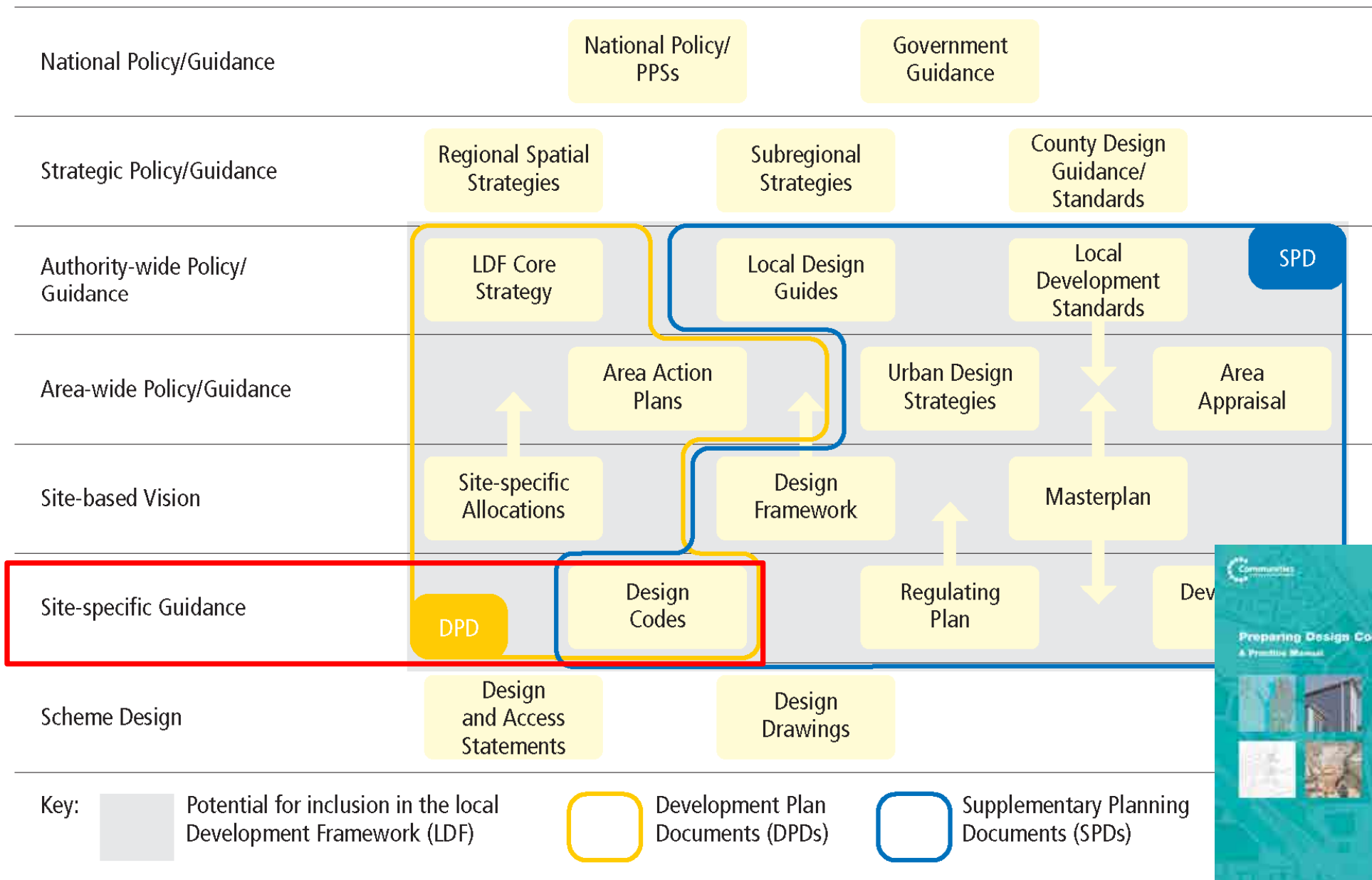


Spatial Decentralization

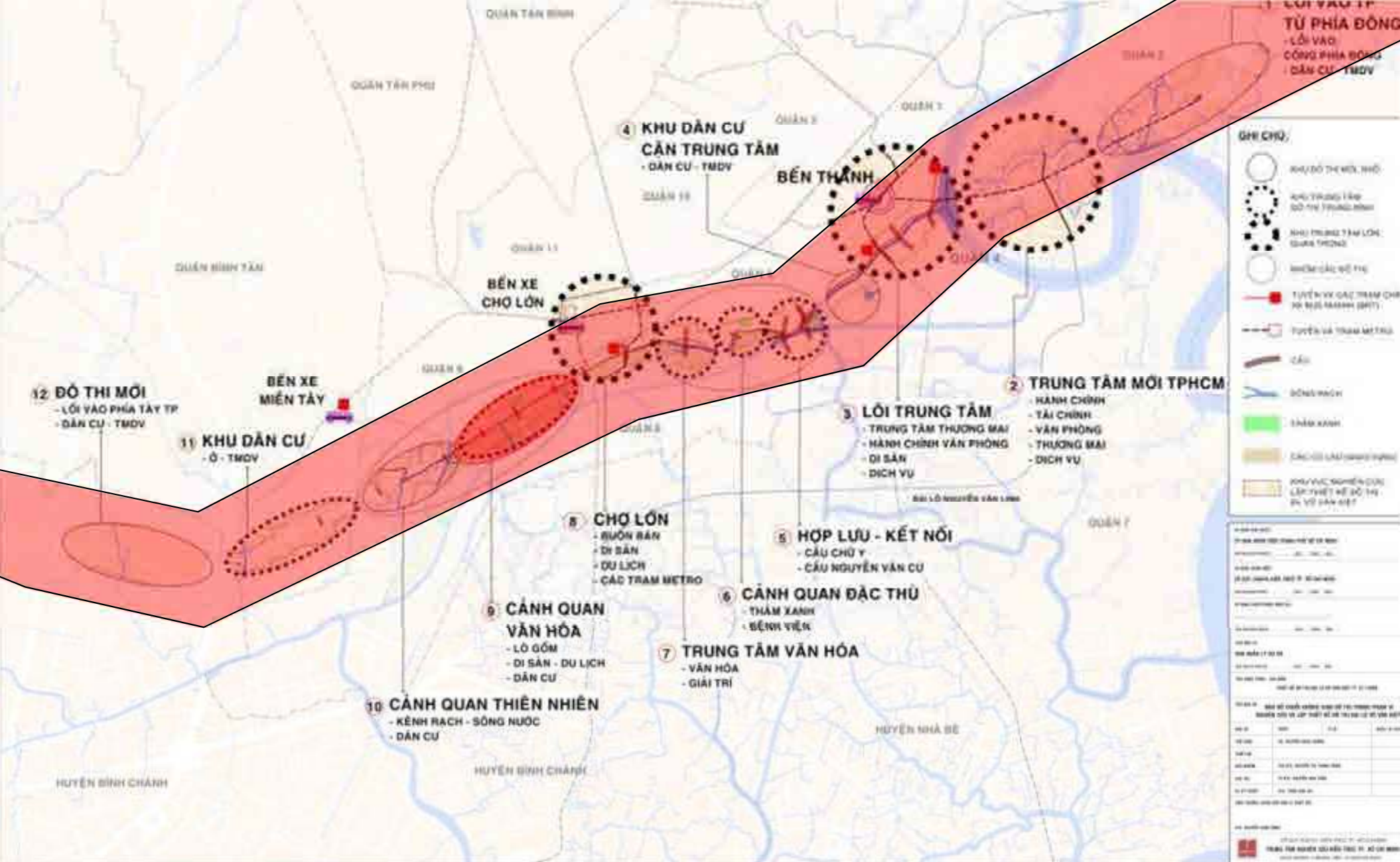


Sustainable Mobility

Option – Design Coding



Set-up of Specific Urban Design Requirements (Mandatory for a single Developer/ Project)



Option – Zoning

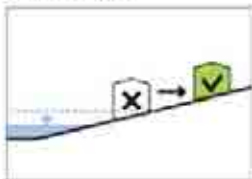


Flood Protection

Guidelines to reduce impacts and damages by water from heavy rain events, storm surges, sea level rise and tidal flooding

Option	Urban Design Guideline	Implementation	Risks	Conflicts/Synergies
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FP-Land-01



Designation of construction and non-construction areas according to flood risk and elevation of site.

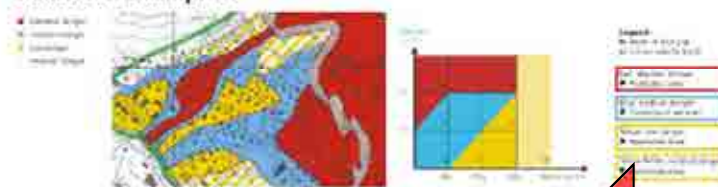
Ban on any building construction on areas below 2m - 3m^{1,2} above mean sea level.

Value to be determined according to projected flood levels, local site elevation and vulnerability of proposed constructions.

Deterrence of developers due to reduced construction area

XX-Xxx-XX
XX-Xxx-XX

Utilization examples

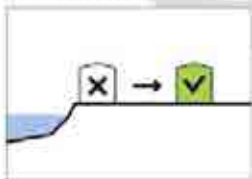


Hazard mapping for urban areas for different types of hazards in Switzerland (Source: PLANAT 2005: 16)

¹According to 2020 Decision of the Prime Minister of the Government Concerning Drainage Plan of Ho Chi Minh City [Decision 752/QĐ-TTg] housing lots shall be 2m above mean sea level or higher.

²According to ICEM land with a height of 1 - 3m will be flooded regularly with the tidal oscillations (ICEM 2009: 27).

FP-Land-02



Set-back of constructions from river banks, flood plains, flood ways (bayou) and generally flood-prone areas.

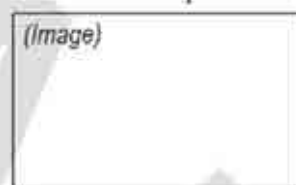
Required set-back line in a distance from 10m - 50m¹ to river banks, flood plains and ways. Set-back has to be developed as step-by embankment to provide additional water storage.

Value to be determined according to projected maximum water flow volumes and vulnerability of proposed constructions.

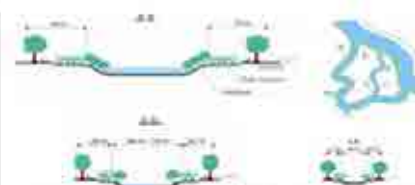
Deterrence of developers due to reduced construction area.

XX-Xxx-XX
XX-Xxx-XX

Utilization examples



Title (Source: xxx)



Improvement proposal for HCMC's canal embankment (Nikken Sekkei 2007: 5-106)

¹HCMC People's Committee Decision 150 [Decision 150/2004/QĐ-UB] sets up the standard of minimum embankment and levee width by 10m to 50m according to a ranking of rivers and canals into four categories.

Designation of development zones with prohibition on building construction (land use control)



Flood Protection



Water Management



Greenery & Natural Systems



Solar Control



Compactness



Energy Efficiency

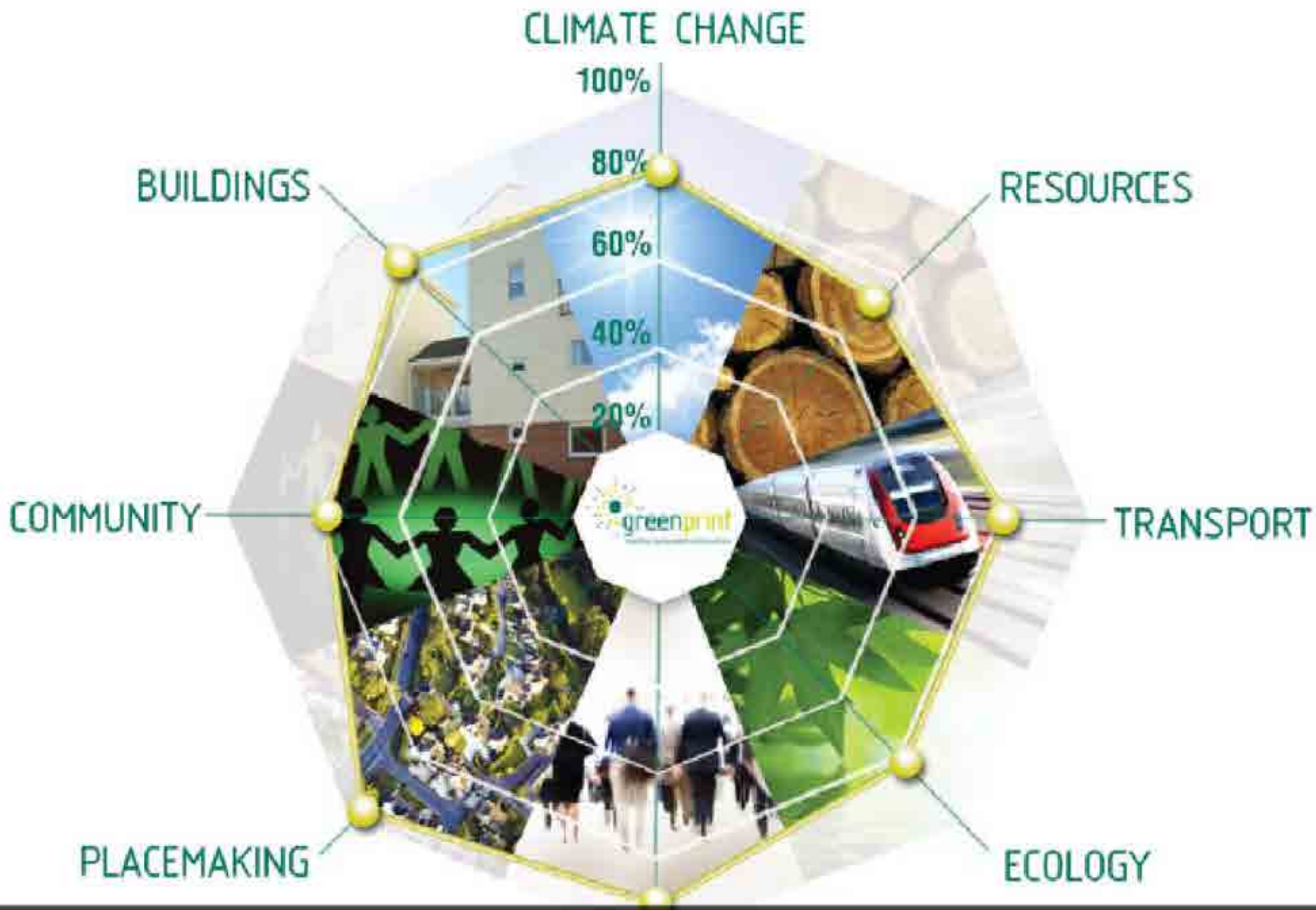


Spatial Decentralization



Sustainable Mobility

Set-up of Area-wise Urban Design Requirements (Mandatory for a all Projects within a Zone)



Thank You for Your Attention!

BUSINESS