

Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

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ECOCITY
TRANSITION
LAB 2024

OCIC

EBLE MESSERSCHMIDT PARTNER
Architekten und Stadtplaner PartGmbB

with support from:

SMMR, **ITC**, **NU**, **IC**, **IC**

Build4People ECOCITY TRANSITION LAB 2024

KEY RESULTS

22 April 2024



Work Package #7
Work Package #6



Local Project
Management Partner



Work Package #1



Work Package #2



Work Package #3



Work Package #4



Work Package #5

Research Partners



Implementation Partners



Dissemination Partners



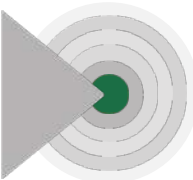
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Build4People Scientific Work Package Team Members

WP#1



Dr. Anke Blöbaum



Prof. Dr. Ellen Matthies



Mr. Andreas Deuß



Dr. Op Vanna



Dr. Sok Serey



Prof. Dr. Dirk Schwede



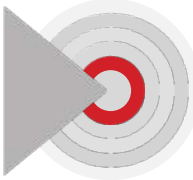
Ms. Christina Karagianni



Mr. Chanly Hash

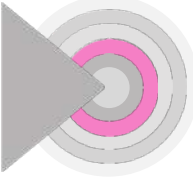


Dr. Virak Han



WP#2

WP#3



Mr. Rolf Messerschmidt



Mr. Oliver Lambrecht



Ms. Nuria Roig



Prof. Dr. Tep Makathy



Prof. Dr. Jan-Peter Mund



Mr. Gulam Mohiuddin



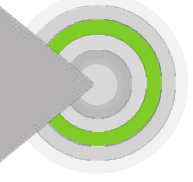
Dr. Sanara Hor



Mr. Sambath EUN

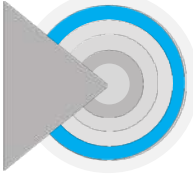


Mr. Chea Chetha



WP#4

WP#5



Prof. Dr. Lutz Katzschner



Mr. Sebastian Kupski



Dr. Janalisa Hahne



Dr. Nyda Chhin



Mr. Bunleng Se



Dr. Michael Waibel



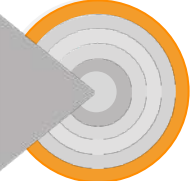
Dr. Thi Thu Thuy Nguyen



Dr. Sothun Nop



Dr. Seak Sophat

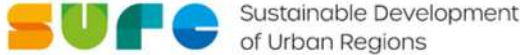


WP#6

All Graphs: Source B4P project.

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Build4People Ecocity Transition Lab 2024 *Summary and Wrap-UP*

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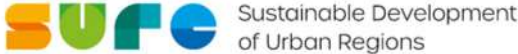
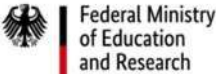
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Ecocity Transition Lab 2024 – Week Agenda

| | Wednesday 28 February | Thursday 29 February | Friday 01 March | Saturday 02 March | Monday 04 March | Tuesday 05 March | Wednesday 06 March |
|------------------|---|---|--|---|--|---|--|
| Morning | | <p>08:00 a.m. </p> <p>B4P ECTL 2024 Kick-off Conference</p> <p><i>Location:</i> Dara Airport City Hotel & Spa</p> | <p>Internal Team Work of all WPs and students</p> | <p>Sunday 03 March</p> <p>Meeting and Site Visit OCIC WP#3</p> | <p>Thematic Working Group WPs Place attachment & Urban Transformation: WP#1 + WP#6 + WP#3</p> <p><i>Location:</i> The Fortune Tower: Olympia C7 building</p> | <p>TOD Workshop jointly organised by SMMR & MPWT on Sustainable Mobility with a focus on Norea City </p> | <p>08:00 a.m. </p> <p>B4P ECTL 2024 Presentation Conference</p> <p><i>Location:</i> PP City Hall</p> |
| Afternoon | <p>Joint site visit to SMMR-Pop-Up Kiosk at Norea City followed by internal team meeting to prepare for B4P ECTL 2024</p> | <p>Parallel Thematic Working Groups with WPs and students: Neighbourhoods: WP#3/PUC/NORTON Mobility: SMMR+WP#3 Urban Green: WP#4/RUA</p> <p><i>Location:</i> The Fortune Tower: Olympia C7 building</p> | <p>Parallel Thematic Working Groups WPs und students Energy: WP#2/ITC Urban Climate: WP#5/RUPP + WP#3</p> <p><i>Location:</i> The Fortune Tower: Olympia C7 building</p> | <p>Internal Team Work WP#3</p> <p>Activities around SMMR-B4P-Pop-Up Kiosk, e.g. joint observation walks with local students</p> | <p>Internal Team Work of all WPs and students</p> | <p>B4P WP team preparation in regard of B4P ECTL 2024 Presentation Conference</p> | <p>Donor Lunch <i>Location:</i> Raffles Hotel</p> |



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Build4People Ecocity Transition Lab 2024 KICK-OFF CONFERENCE



“OCIC as developer, we build for the people. And we are very happy seeing the people are happy using our development. I am glad that Build4People came along when need them right now. I’m hoping to learn from Build4People team because there is no limit to learning.”
Touch Samnang, Deputy CEO of OCIC Group



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Build4People Ecocity Transition Lab 2024 KICK-OFF CONFERENCE



“Thanks to Build4People and local developers, we can have Phnom Penh city achieve the status of eco-city in the future.”

H.E. Imran Hassan, Vice-Governor of Phnom Penh City Hall



BPH-OCIC Cooperation

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Build4People Ecocity Transition Lab 2024



Site Visit



Kick-Off Conference



Signing Ceremony



Pop-up Kiosk



Q&A



OCIC Management



Site Visit

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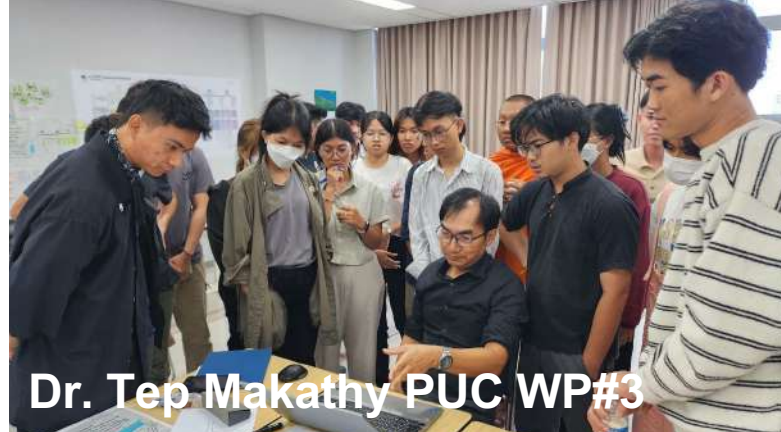
Build4People Ecocity Transition Lab 2024



Continuous Support form WP#3



ITC - WP#2



Dr. Tep Makathy PUC WP#3



RUPP - WP#5



SMMR - TSIPW



NU-PUC - WP#1



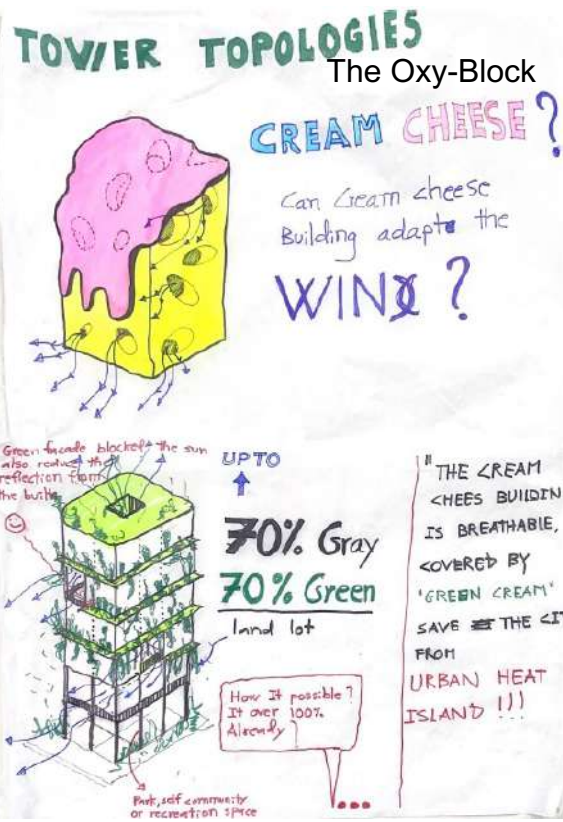
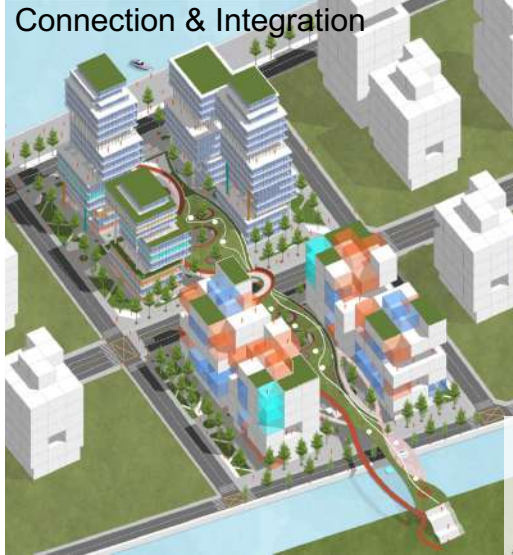
ICIC - ECTL 2024 Visit

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Sustainability Approaches for OCIC - Young perspectives

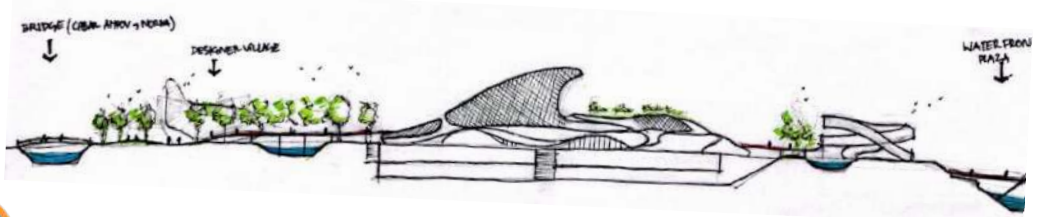


Landmark
Green Public Spaces
Cultural Infrastructure

Connectivity
Urban Integration

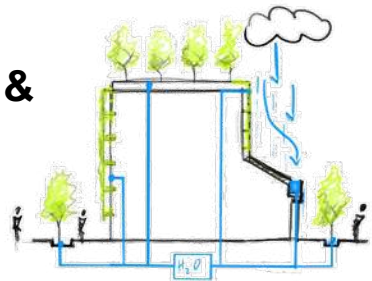
Climate Sensitive Principles-Block Level

Climate Sensitive Principles – Building Level



Energy efficiency & cooling system
Water Resources

ITC

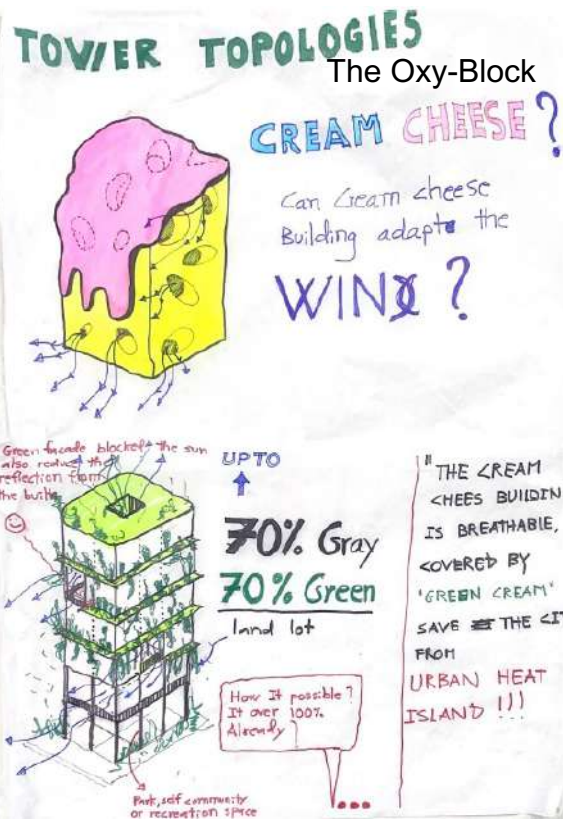
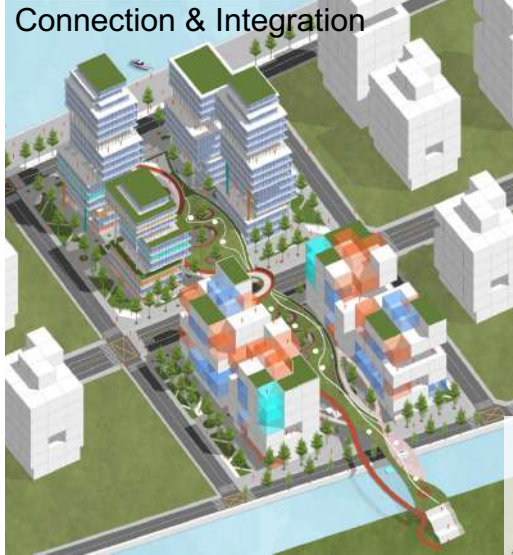


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Sustainability Approaches for OCIC - Young perspectives

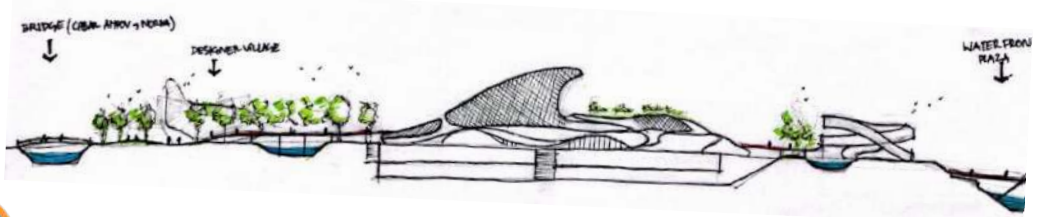


Landmark
Green Public Spaces
Cultural Infrastructure

Connectivity
Urban Integration

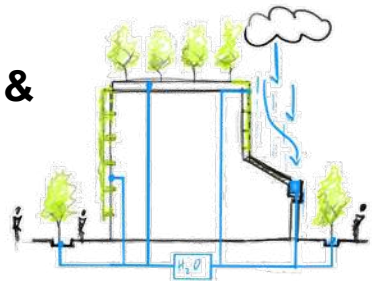
Climate Sensitive Principles-Block Level

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Energy efficiency & cooling system
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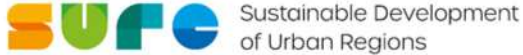


Sustainable Development of Koh Norea: Applied B4P Strategies, Guidelines and Criteria – Focus on Potentials for Integrated Urban Design



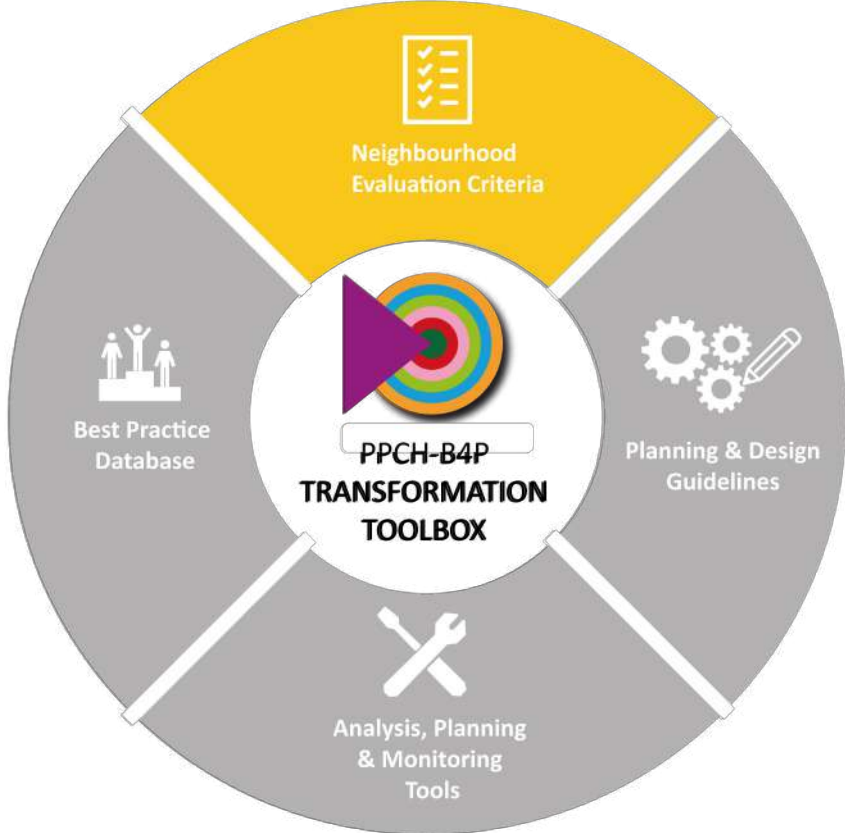
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PPCH-B4P TOOLBOX

The PCH-B4P-TRANSFORMATION TOOLBOX aims to provide criteria, guidelines and tools to different stakeholders in order to support **integrated neighbourhood planning** in Phnom Penh



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Neighbourhood Evaluation Criteria



INTEGRATED URBAN DESIGN

Building Density

Balanced Mix of uses

Daily needs and social infrastructure

Vibrant Public spaces/Place making

Neighbourhood and City Connectivity



BLUE GREEN INFRASTRUCTURE

Public Green Space

Biodiversity Friendly Design

Climate Sensitive Urban Design

Water Management



SUSTAINABLE MOBILITY

Pedestrian and bike Friendly Environment

Public Transport Infrastructure

Car- Reduced Neighbourhood

Infrastructure for Alternative Fuel Vehicles



CLIMATE PROTECTION AND ENERGY FLOWS

Energy Efficient Buildings

Energy Efficient Neighbourhoods

Life Cycle Oriented and Circular Design

Circular Neighbourhoods



SOCIAL INCLUSION AND LOCAL ECONOMY

Affordable Housing

Active Streets

Strengthening Local Economy

Social Mix and Diversity



GOVERNANCE AND PARTICIPATION

Community Involvement and Participation

Integrated Planning

Sustainable Lifestyles

** All include optional criteria*



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Neighbourhood Evaluation Criteria



BLUE GREEN INFRASTRUCTURE

Min. standard

Target

Public Green Space

Public green spaces 30 % of total development area

The design integrates additionally green and/or blue infrastructure

Biodiversity Friendly Design

Analysis of ecological conditions

Plan for habitat network conservation and / or restoration

Climate Sensitive Urban Design

Urban climate analysis has been conducted

All climate recommendations have been integrated

Water Management

Flood risk analysis has been conducted

Waste water management plan + water consumption reduction strategies

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Exemplar Strategies for Integrated Urban Design

| | INTEGRATED URBAN DESIGN | VIBRANT PUBLIC SPACE | SUSTAINABLE MOBILITY | CLIMATE PROTECTION AND ENERGY FLOWS | SOCIAL INCLUSION AND LOCAL ECONOMY | GOVERNANCE AND PARTICIPATION | |
|--|---|---|--|--|--|---|--|
| SHORT TERM QUICK WINS | ANALYSIS CURRENT SITUATION AND QUANTITATIVE ASPECTS 1 LOCAL CHARACTER Analyse local character: >Historical landscape values and patterns >Main neighbourhood areas: connectivity >through urban structure >Urban landmarks SOCIAL INFRASTRUCTURE Identify which social infrastructure is available in the surrounding area: >Educational >Cultural >Recreational Infrastructure PUBLIC SPACE Provide enough public spaces within the neighbourhood: >Squares >Sidewalks >Pedestrian areas | VIBRANT PUBLIC SPACE Outline neighbourhood public and green space layout: >Hierarchy >Character >Connectivity | NEIGHBOURHOOD MOTORIZED MOBILITY Efficient: >bikes and >bicycles >PPGSP p.57 CITY- NEIGHBOURHOOD MOBILITY NETWORK Provide sufficient and reliable transport options that strengthen a city scale mobility plan | ENERGY BUDGET Estimate a energy budget >Building | AFFORDABLE HOUSING Include affordable housing options within new urban developments, as stated in the National Housing Policy (2014) "all citizens have the right to adequate housing" (PPUR) (PPGSP) | SUSTAINABLE LIFESTYLES Promote sustainable lifestyles (PPGSP): >Waste reduction/ separation >Water consumption reduction >Energy consumption reduction | NEIGHBOURHOOD INNOVATION & ENTREPRENEURSHIP >Mobilize local intangible values (including art, music, culture, local products, etc.) >Promote NBH sense of community, identity and prosperity. |
| | UNDERSTANDING SUSTAINABILITY POTENTIAL 2 COMPREHENSIVE URBAN CONCEPT Define an urban structure that clearly integrates an analysis of the site to be developed. BALANCED MIX OF USES Procure a balanced ratio of uses outlining the share of: >Commercial >Educational >Working hubs >Cultural >Recreational VIBRANT PUBLIC SPACE Outline neighbourhood public and green space layout: >Hierarchy >Character >Connectivity CLIMATE SUSTAINABILITY Understanding climate conditions: >Urban Climate >Air quality >Wind direction >Outdoor thermal comfort | NEIGHBOURHOOD MOBILITY CONCEPT Talks and to make function as a >neighbourhood Define potential mobility hubs close to high-density mixed-use areas (neighbourhood hubs) Integration of existing modes of transport (e.g. Tuk Tuks) Apply strategies to reduce primary energy building demand: >Passive design >Building Climate Interaction >Greenroofs | NEIGHBOURHOOD MOBILITY CONCEPT Talks and to make function as a >neighbourhood Define potential mobility hubs close to high-density mixed-use areas (neighbourhood hubs) Integration of existing modes of transport (e.g. Tuk Tuks) Apply strategies to reduce primary energy building demand: >Passive design >Building Climate Interaction >Greenroofs | LOW-ENERGY DEMAND BUILDING Apply strategies to reduce primary energy building demand: >Passive design >Building Climate Interaction >Greenroofs | ENERGY EFFICIENT NEIGHBOURHOODS >Neighbourhood solarization Reduce the use of unsustainable materials: >Concrete >Sand >Steel Prepare a waste management concept for the neighbourhood >Bio waste >Plastic >Glass >Aluminium >General waste | SOCIAL MIX & DIVERSITY Consider the durability and quality of building materials and appliances to find long-term economical solutions >Design and construction >Maintenance Diversify building typologies to target different population groups Procure mixed-use typologies on tactical areas: >Lively groundfloors >Activated facades | INTEGRATED PLANNING Apply an integrated planning approach: >Charrette Potential fields include: >Heritage preservation, >Community art, >Cultural events (art, music, etc.) >Environmental education >Innovative small businesses >Technology mobilization |
| | COHESIVE URBAN STRUCTURE Define an urban concept based on a local character analysis: >Harmonious urban transitions >Urban functions related to building uses URBAN DESIGN STANDARDS Define design standards align with the local character and development plan: >Activated Facades >Activated Groundfloors >Material standards >Roof usage >Private/Semi-private public green spaces >Placemaking. Define design standards for: >Attractive >Safe >Accessible >Connected >Multifuse >...public spaces >...placemaking- | TRANSIT-ORIENTED DEVELOPMENT Integrate Modal Transfer Centers connecting neighbourhood mobility networks and city-scale transport LOW TRAFFIC NEIGHBOURHOOD Provide strategically located district parking options within the neighbourhood (PPGSP p.58) ENERGY EFFICIENCY & RENEWABLES Integrate strategies to maximise energy efficiency: >Efficient appliances >Solar shading systems >Improve glazing >Improve building envelope Integrate renewable energy >PV panels | TRANSIT-ORIENTED DEVELOPMENT Integrate Modal Transfer Centers connecting neighbourhood mobility networks and city-scale transport LOW TRAFFIC NEIGHBOURHOOD Provide strategically located district parking options within the neighbourhood (PPGSP p.58) ENERGY EFFICIENCY & RENEWABLES Integrate strategies to maximise energy efficiency: >Efficient appliances >Solar shading systems >Improve glazing >Improve building envelope Integrate renewable energy >PV panels | REJECTED HEAT FOR DOMESTIC HOT WATER HEATING >Central chillers for efficient production of cooling with cold storage to move the peak load in the night >Appliances integration for noise reduction INCREASE THE USE OF ENVIRONMENTALLY FRIENDLY AND HEALTHY BUILDING MATERIALS Facilitate an efficient neighbourhood waste management: >Location of collection points >Waste collection schedule | Consider the Life Cycle Cost analysis of the building to find long-term economical solutions >Design >Construction Diversify building typologies to target different population groups Outline the share of: >Different typologies >Mix-use areas | STRENGTHENING LOCAL ECONOMY Define design standards to procure vibrant, diverse neighbourhood commercial hubs: >Lively groundfloors >Activated facades Provide spaces for the informal sector: >Weekly farmer market >Monthly flea market >Seasonal markets | INCENTIVISING SUSTAINABILITY Align reward systems with sustainability goals >Tax incentives >Financial support Establish neighbourhood innovative center (nic): place to facilitate and monitor NBH-based projects/initiatives that collaborate with residents and partners to improve the quality of life and support stronger communities. |
| DESIGN VIBRANT NEIGHBOURHOODS 4 DEVELOPMENT OF ADEQUATE PLANNING INSTRUMENTS Procure integrated and comprehensive multilevel planning instruments: >Land Use Master Plan >Urban Development plan >Partial Development plan (B-Plan) | SHARED MOBILITY Support alternative mobility options: >Carpooling >Bike sharing >Cargo bikes /Tuk Tuk INFRASTRUCTURE FOR ALTERNATIVE FUEL VEHICLES Define: >Car-reduced areas >Preferred parking spaces for E-cars >E-mobility infrastructure >Solar Tuk Tuks (PPGSP p.57) ENERGY STANDARDS Define energy-efficiency standards that prescribe the energy performance of buildings and neighbourhoods Apply strategies to reduce energy neighbourhood demand: >Integrate district cooling systems Use Life Cycle Assessment as tool to evaluate environmental impacts of buildings and neighbourhoods >Design >Construction >Use >End-of-life phases | SHARED MOBILITY Support alternative mobility options: >Carpooling >Bike sharing >Cargo bikes /Tuk Tuk INFRASTRUCTURE FOR ALTERNATIVE FUEL VEHICLES Define: >Car-reduced areas >Preferred parking spaces for E-cars >E-mobility infrastructure >Solar Tuk Tuks (PPGSP p.57) ENERGY STANDARDS Define energy-efficiency standards that prescribe the energy performance of buildings and neighbourhoods Apply strategies to reduce energy neighbourhood demand: >Integrate district cooling systems Use Life Cycle Assessment as tool to evaluate environmental impacts of buildings and neighbourhoods >Design >Construction >Use >End-of-life phases | MONITOR ENERGY CONSUMPTION Monitor annual energy consumption and compare with initial energy budget MONITOR WASTE GENERATION Monitor annual household waste generation | Consider the Life Cycle Cost analysis of the building to find long-term economical solutions >Design >Construction >Use >End-of-life phases Diversify building typologies to target different population groups Outline the share of: >Different typologies >Mix-use areas | SHARING ECONOMY Promote sharing economy schemes >Bartering PUBLIC PARTICIPATION Support participation in decision making processes NEIGHBOURHOOD EVALUATION New developments need to fulfill sustainability and quality of life evaluation criteria | NEIGHBOURHOOD MANAGEMENT Implement a neighbourhood management scheme NATIONAL - CITY LEVEL COORDINATION There is a strategic coordination between MUMUPC, Ministry of Transport, Ministry of Environment and city administration to develop and update planning instruments | |
| MID-LONG TERM MONITORING AND MANAGEMENT 5 | MONITORING AND MANAGEMENT 5 DEVELOPMENT OF ADEQUATE PLANNING INSTRUMENTS Procure integrated and comprehensive multilevel planning instruments: >Land Use Master Plan >Urban Development plan >Partial Development plan (B-Plan) | MONITORING AND MANAGEMENT 5 DEVELOPMENT OF ADEQUATE PLANNING INSTRUMENTS Procure integrated and comprehensive multilevel planning instruments: >Land Use Master Plan >Urban Development plan >Partial Development plan (B-Plan) | CAR USAGE REGULATION Introduce vehicle restriction programs to limit the number allowed to drive per day: >Prevent old cars from driving in the city >Prevent cars from driving on certain days | MONITOR ENERGY CONSUMPTION Monitor annual energy consumption and compare with initial energy budget MONITOR WASTE GENERATION Monitor annual household waste generation | NEIGHBOURHOOD MANAGEMENT Implement a neighbourhood management scheme NATIONAL - CITY LEVEL COORDINATION There is a strategic coordination between MUMUPC, Ministry of Transport, Ministry of Environment and city administration to develop and update planning instruments | NICE CITY NETWORK Link and integrate municipal strategy to stimulate urban sustainable transformation through innovative entrepreneurship. | |

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Exemplar Strategies for Sustainable Mobility

| | INTEGRATED URBAN DESIGN | BLUE GREEN INFRASTRUCTURE | SUSTAINABLE MOBILITY | CLIMATE PROTECTION AND ENERGY FLOWS | SOCIAL INCLUSION AND LOCAL ECONOMY | GOVERNANCE AND PARTICIPATION | |
|--|---|---|---|---|--|---|-------------------------------|
| 1 ANALYSIS CURRENT SITUATION AND QUANTITATIVE ASPECTS | LOCAL CHARACTER Analyze local character: -Historical landscape values and patterns -Main neighbourhood areas: connectivity through urban structure -Urban landmarks SOCIAL INFRASTRUCTURE Identify which social infrastructure is available in the surrounding area: -Educational -Cultural -Recreational infrastructure PUBLIC SPACE Provide enough public spaces within the neighbourhood: -Squares -Playgrounds -Sidewalks -Pedestrian areas | PUBLIC GREEN SPACE Provide enough green spaces, public accessible, within the neighbourhood WATER BUDGET Estimate a water budget -Neighbourhood -Building | NEIGHBOURHOOD NON-MOTORIZED MOBILITY Provide sufficient pedestrian- and bike-friendly areas and networks (PPGSP p.57) CITY-NEIGHBOURHOOD MOBILITY NETWORK Provide sufficient and reliable transport options that strengthen a city scale mobility plan | ENERGY BUDGET Estimate an energy budget -Building | AFFORDABLE HOUSING Include affordable housing options within new urban developments, as stated in the National Housing Policy (2014) "all | SUSTAINABLE LIFESTYLES Promote sustainable lifestyles (PPGSP): -Waste reduction/separation -Water consumption NEIGHBOURHOOD INNOVATION & ENTREPRENEURSHIP -Mobilize local intangible values (including art, music, culture, local products, etc.) -Promote NBIH sense of community, identity and prosperity. | |
| 2 UNDERSTANDING SUSTAINABILITY POTENTIAL | COMPREHENSIVE URBAN CONCEPT Define an urban structure that clearly integrates an analysis of the site to be developed. BALANCED MIX OF USES Procure a balanced ratio of uses outlining the share of: -Commercial -Educational -Working hubs -Cultural -Recreational VIBRANT PUBLIC SPACE Outline neighbourhood public and green space layout: -Hierarchy -Character -Connectivity | CLIMATE SENSITIVE URBAN DESIGN Understanding of local climate conditions -Urban Climate Map: - Air paths - Wind direction - Outdoor thermal comfort ECOSYSTEMS PROTECTION AND RESTORATION Protect existing green spaces/biodiversity corridors and water bodies with high ecological quality (PPGSP p.53) | NEIGHBOURHOOD MOBILITY CONCEPT Integration of existing modes of transport (e.g. Tuk Tuks) Apply strategies to reduce priority energy building demand: -Passive design -Build - Climate Interaction -Green roofs | | LOW-ENERGY DEMAND BUILDING ENERGY EFFICIENT & RENEWABLES Integrate strategies to maximize energy efficiency -Efficient appliances -Solar shading system -Improve glazing -Improve building envelope -Integrate renewable energy -PV panels | WORKING GROUP -Identify fields include: -Heritage preservation, community art, cultural events (art, music, etc.) -Environmental education -Innovative small businesses -Technology mobilization NICE CENTER -Establish neighbourhood innovative center for entrepreneurship (NICE): -Use to facilitate and foster NBIH-based sectors/initiatives -Collaborate with residents and partners -Improve the quality of and support stronger municipalities. | |
| 3 QUICK WINS | COHESIVE URBAN STRUCTURE Define an urban concept based on a local character analysis: -Harmonious urban transitions -Urban functions related to building uses URBAN DESIGN STANDARDS Define design standards align with the local character and development plan: -Activated Facades -Activated Groundfloors -Material standards -Roof usage -Private/Semi-private public green spaces -Placemaking. Define design standards for: -Attractive -Safe -Accessible -Connected -Multiscale -Public spaces -Placemaking. | BLUE - GREEN INFRASTRUCTURE Develop mitigation and compensation strategies -Green infrastructure (GI) (PPGSP p.53, p.68). -Interconnected green spaces with high ecological quality -Stormwater management (Hb5) -Green roofs -Green facades REDUCE WATER CONSUMPTION Apply strategies to reduce water consumption on a building and neighbourhood level: -Rainwater collection -Reuse grey water -Xeriscaping | WALKABLE NEIGHBOURHOODS Define adequate pedestrian and bike networks considering safety and inclusion standards: -Pedestrian-bike crossings -Pedestrian streets -Bike lanes TRANSIT-ORIENTED DEVELOPMENT Integrate Modal Transfer Centers connecting neighbourhood mobility networks and city-scale transport LOW-TRAFFIC NEIGHBOURHOOD Provide strategically located district parking options within the neighbourhood (PPGSP p.58) | WALKABLE NEIGHBOURHOODS Define adequate pedestrian and bike networks standards: ->Pedestrian-bike crossings ->Pedestrian streets ->Bike lanes TRANSIT-ORIENTED DEVELOPMENT Integrate Modal Transfer Centers connecting neighbourhood mobility networks and city-scale transport LOW-TRAFFIC NEIGHBOURHOOD Provide strategically located district parking options within the neighbourhood (PPGSP p.58) | TRANSIT-ORIENTED DEVELOPMENT Integrate Modal Transfer Centers connecting neighbourhood mobility networks and city-scale transport LOW-TRAFFIC NEIGHBOURHOOD Provide strategically located district parking options within the neighbourhood (PPGSP p.58) | ENERGY STANDARDS Define energy efficiency standards that prescribe energy performance of buildings/ neighbourhood | VIBRANT NEIGHBOURHOODS |
| 4 VIBRANT NEIGHBOURHOODS | DEVELOPMENT AND UPDATE OF ENVIRONMENTAL PLANNING TOOLS Plan the strategic location of green spaces to favour biodiversity corridors -Green Infrastructure plan (Khan) -Landscape Management plan (City) Procure the continuous update of environmental planning instruments: -Urban Climate Map | | SHARED MOBILITY Support alternative mobility options: -Carpooling -Bike sharing -Cargo bikes /Tuk Tuk INFRASTRUCTURE FOR ALTERNATIVE FUEL VEHICLES Define: -Car-reduced areas -Preferred parking spaces for E-cars -E-mobility infrastructure -Solar Tuk Tuks (PPGSP p.57) | ENERGY STANDARDS Define energy efficiency standards that prescribe energy performance of buildings/ neighbourhood | NATIONAL - CITY LEVEL COORDINATION There is a strategic coordination between MUMUPC, Ministry of Transport, Ministry of Environment and city administration to develop and update planning instruments | NICE CITY NETWORK Link and integrate municipal strategy to stimulate urban sustainable transformation through innovative entrepreneurship. | |
| 5 MONITORING AND MANAGEMENT | DEVELOPMENT OF ADEQUATE PLANNING INSTRUMENTS Procure integrated and comprehensive multilevel planning instruments: -Land Use Master Plan -Urban Development plan -Partial Development plan (B-Plan) | | MONITOR WATER CONSUMPTION Monitor annual water consumption and compare with initial water budget | MONITOR ENERGY CONSUMPTION Monitor annual energy consumption and compare with initial energy budget | MONITOR WASTE GENERATION Monitor annual household waste generation | NEIGHBOURHOOD MANAGEMENT Implement a neighbourhood management scheme | |

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Exemplar Strategies for Blue-Green Infrastructure

| | INTEGRATED URBAN DESIGN | BLUE GREEN INFRASTRUCTURE | CLIMATE SENSITIVE URBAN DESIGN | CLIMATE PROTECTION AND ENERGY FLOWS | SOCIAL INCLUSION AND LOCAL ECONOMY | GOVERNANCE AND PARTICIPATION | | | |
|--|--|--|---|--|--|---|--|---|---|
| SHORT TERM QUICK WINS | ANALYSIS CURRENT SITUATION AND QUANTITATIVE ASPECTS 1 LOCAL CHARACTER Analyse local character: >Historical landscape values and patterns >Main neighbourhood areas: connectivity through urban structure >Urban landmarks SOCIAL INFRASTRUCTURE Identify which social infrastructure is available in the surrounding area: >Educational >Cultural >Recreational Infrastructure PUBLIC SPACE Provide enough public spaces within the neighbourhood >Squares >Playgrounds >Sidewalks >Pedestrian areas | PUBLIC GREEN SPACE Provide enough green spaces, public accessible, within the neighbourhood >Neighbourhood >Building | Understanding of local climate conditions >Urban Climate Map: - Air paths - Wind direction - Outdoor thermal comfort | ENERGY BUDGET Estimate an energy budget >Building | AFFORDABLE HOUSING Include affordable housing options within new urban developments, as stated in the National Housing Policy (2014) "all citizens have the right to adequate housing" (PPUR) (PPGSP) | SUSTAINABLE LIFESTYLES Promote sustainable lifestyles (PPGSP): >Waste reduction/separation >Water consumption reduction >Energy consumption reduction | NEIGHBOURHOOD INNOVATION & ENTREPRENEURSHIP >Mobilize local tangible and intangible values (including art, music, culture, local products, etc.) >Promote NBH sense of community, identity and prosperity. | | |
| | UNDERSTANDING SUSTAINABILITY POTENTIAL 2 COMPREHENSIVE URBAN CONCEPT Define an urban structure that clearly integrates an analysis of the site to be developed. BALANCED MIX OF USES Procure a balanced ratio of uses outlining the share of: >Commercial >Educational >Working hubs >Cultural >Recreational VIBRANT PUBLIC SPACE Outline neighbourhood public and green space layout: >Hierarchy >Character >Connectivity | CLIMATE SENSITIVE URBAN DESIGN Understanding of local climate conditions >Urban Climate Map: - Air paths - Wind direction - Outdoor thermal comfort ECOSYSTEMS PROTECTION AND RESTORATION Protect existing green spaces/biodiversity corridors and water bodies with high ecological quality (PPGSP p.53) WASTE MANAGEMENT Plan and write an water treatment plan (PPUR) p. | Planning Optimisations: > Urban density > Building disposition > Building / street orientations > Vegetation and open spaces > Urban and building GI optimisation > Building materials | LOW-ENERGY DEMAND BUILDING Apply strategies to reduce primary energy building demand: >Passive design >Building Climate Interaction >Greenroofs | ENERGY EFFICIENT NEIGHBOURHOODS >Neighbourhood solarization | LIFE CYCLE-ORIENTED DESIGN Reduce the use of unsustainable materials: >Concrete >Sand >Steel >Plastic >Glass >Aluminium >General waste | SOCIAL MIX & DIVERSITY Consider the durability and quality of building materials and appliances to find long-term economical solutions >Design and construction >Maintenance | SOCIAL MIX & DIVERSITY Diversify building typologies to target different population groups ACTIVE STREETS Procure mixed-use typologies on tactical areas: >Lively groundfloors >Activated facades | COMMUNITY INVOLVEMENT Support information and consultation processes INTEGRATED PLANNING Apply an integrated planning approach: >Charrette Potential fields include: >Heritage preservation, >Community art >Cultural events (art, music, etc.) >Environmental education >Innovative small businesses >Technology mobilization |
| | COHESIVE URBAN STRUCTURE Define an urban concept based on a local character analysis: >Harmonious urban transitions >Urban functions related to building uses URBAN DESIGN STANDARDS Define design standards align with the local character and development plan: >Activated Facades >Activated Groundfloors >Material standards >Roof usage >Private/Semi-private public green spaces >Placemaking. Define design standards for: >Attractive >Safe >Accessible >Connected >Multiscale >Public spaces >Placemaking | BLUE - GREEN INFRASTRUCTURE Develop mitigation and compensation strategies >Green Infrastructure (GI) (PPGSP p.53, p.66). Interconnected green spaces with high ecological quality >Stormwater management (M5) >Green roofs >Green facades REDUCE CONSUMPTION Apply strategies to reduce domestic hot water consumption >Building envelope >Solar shading systems >Improve glazing >Improve building envelope >Integrate renewable energy >PV panels | | LOW TRAFFIC NEIGHBOURHOOD Provide strategically redistrict parking provisions within the neighbourhood (PPGSP p.58) ENERGY EFFICIENCY & RENEWABLES Integrate strategies to maximise energy efficiency >Efficient appliances >Solar shading systems >Improve glazing >Improve building envelope >Integrate renewable energy >PV panels | REJECTED HEAT FOR DOMESTIC HOT WATER HEATING >Central chillers for efficient production of cooling with cold storage to move the peak load in the night >Appliances integration for noise reduction | INCREASE THE USE OF ENVIRONMENTALLY FRIENDLY AND HEALTHY BUILDING MATERIALS Facilitate an efficient neighbourhood waste management: >Location of collection points >Waste collection schedule | CONSIDER THE LIFE CYCLE COST ANALYSIS OF THE BUILDING TO FIND LONG-TERM ECONOMIC SOLUTIONS >Design >Construction >Use >End-of-life phases | STRENGTHENING LOCAL ECONOMY Define design standards to procure vibrant, diverse neighbourhood commercial hubs >Lively groundfloors >Activated facades Provide spaces for the informal sector >Weekly farmer market >Monthly flea market >Seasonal markets | NEIGHBOURHOOD COMMITTEES Support the creation of neighbourhood committees INCENTIVISING SUSTAINABILITY Align reward systems with sustainability goals >Tax incentives >Financial support Establish neighbourhood innovative center for place to facilitate and monitor NHH-based projects/initiatives that collaborate with residents and partners to improve the quality of life and support stronger communities. |
| VIBRANT NEIGHBOURHOODS 4 DEVELOPMENT AND UPDATE OF ENVIRONMENTAL PLANNING TOOLS Plan the strategic location of green spaces to favour biodiversity corridors >Green Infrastructure plan (Khan) >Landscape Management plan (City) Procure the continuous update of environmental planning instruments: >Urban Climate Map | ENVIRONMENTAL PLANNING TOOLS Procure the continuous update of environmental planning instruments: >Urban Climate Map | ENVIRONMENTAL PLANNING TOOLS Procure the continuous update of environmental planning instruments: >Urban Climate Map | | ENERGY STANDARDS Define energy efficiency standards that prescribe the energy performance of buildings and neighbourhoods >Integrate district cooling systems | USE LIFE CYCLE ASSESSMENT AS TOOL TO EVALUATE ENVIRONMENTAL IMPACTS OF BUILDINGS AND NEIGHBOURHOODS >Design >Construction >Use >End-of-life phases | CONSIDER THE LIFE CYCLE COST ANALYSIS OF THE BUILDING TO FIND LONG-TERM ECONOMIC SOLUTIONS >Design >Construction >Use >End-of-life phases | SHARING ECONOMY Promote sharing economy schemes >Bartering PUBLIC PARTICIPATION Support participation in decision making processes NEIGHBOURHOOD EVALUATION New developments need to fulfill sustainability and quality of life evaluation criteria | | |
| MONITORING AND MANAGEMENT 5 DEVELOPMENT OF ADEQUATE PLANNING INSTRUMENTS Procure integrated and comprehensive multilevel planning instruments: >Land Use Master Plan >Urban Development plan >Partial Development plan (B-Plan) | MONITOR CONSUMPTION Monitor annual energy consumption and compare with initial energy budget | MONITOR WASTE GENERATION Monitor annual household waste generation | NEIGHBOURHOOD MANAGEMENT Implement a neighbourhood management scheme | NATIONAL - CITY LEVEL COORDINATION There is a strategic coordination between MUMUPC, Ministry of Transport, Ministry of Environment and city administration to develop and update planning instruments | NICE CITY NETWORK Link and integrate municipal strategy to stimulate urban sustainable transformation through innovative entrepreneurship. | | | | |

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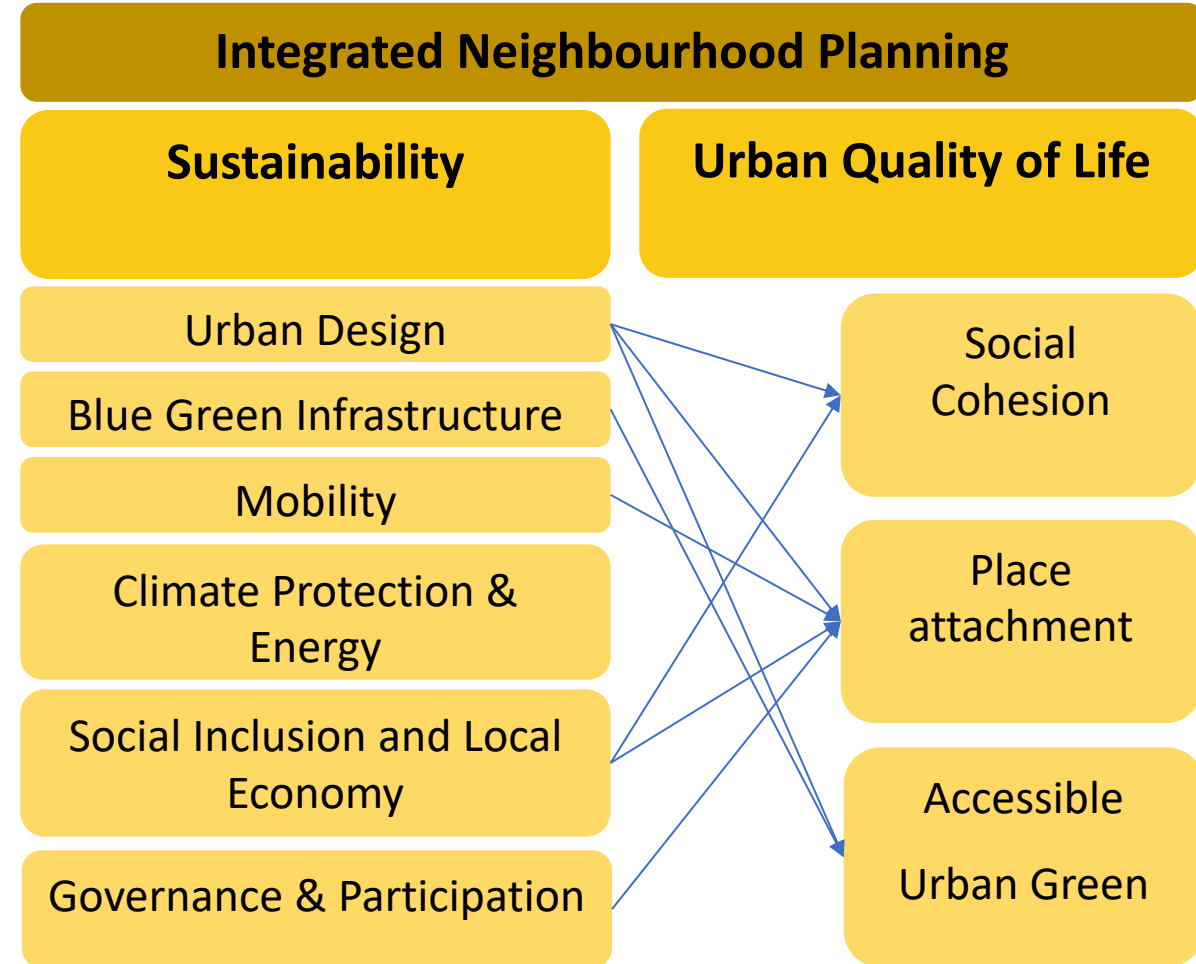


A Planning Process that Aims to Enhance Quality Of Life

The objective of an integrated neighbourhood planning process is to enhance the quality of life of its inhabitants and to ensure its long term sustainability – environmental, social and economical-

The *most relevant* psychological and transdisciplinary determinants of subjective urban quality of life in Phnom Penh, based on household survey (N=714)

- (1) Place attachment
- (2) Social cohesion
- (3) Accessible urban green



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Summary Pop-Up Kiosk

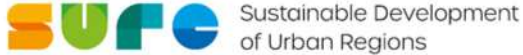
- Green Spaces
- Waste Management
- Communal Public Spaces
- Transportation
- Influence of Gender
- Influence of Age
- Attraction of Public Space

Phnom Penh



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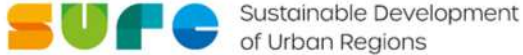


Ecocity Transition Lab 2024 – Koh Norea Masterplan and B4P Sustainability Goals



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INTEGRATED URBAN DESIGN – Urban Concept and Structure

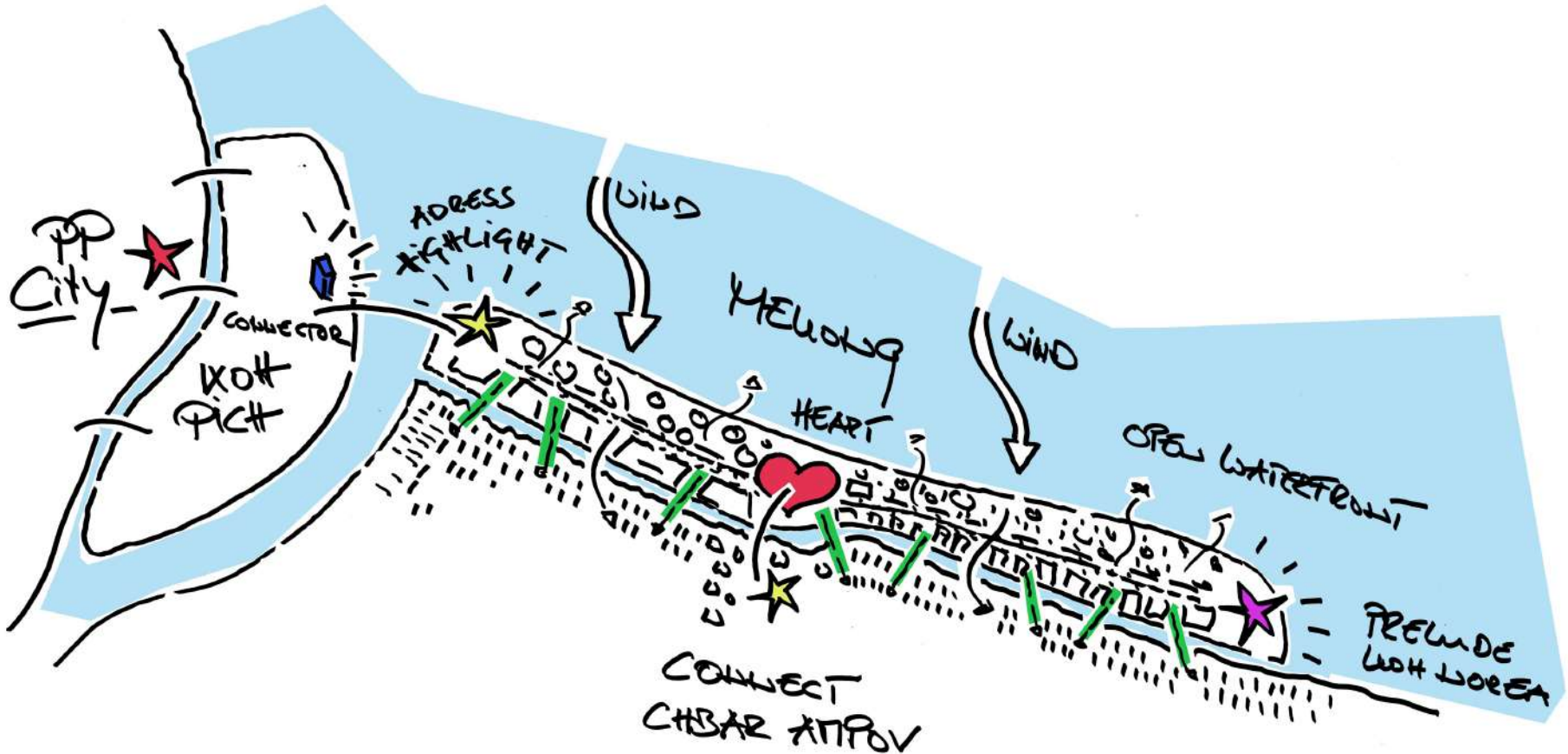
COMPREHENSIVE
URBAN CONCEPT

↓

HARMONIOUS
URBAN TRANSITIONS

↓

DEFINITION OF
URBAN FUNCTIONS



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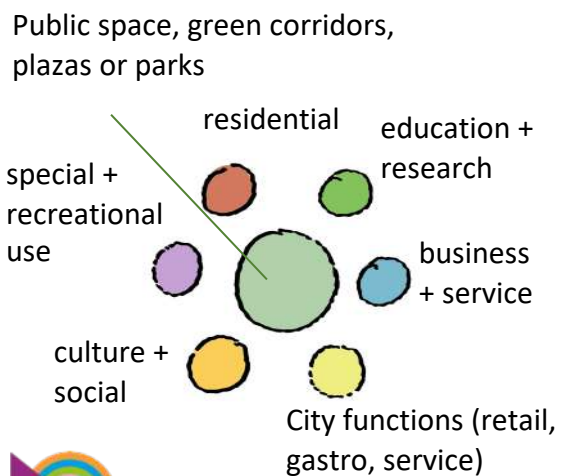
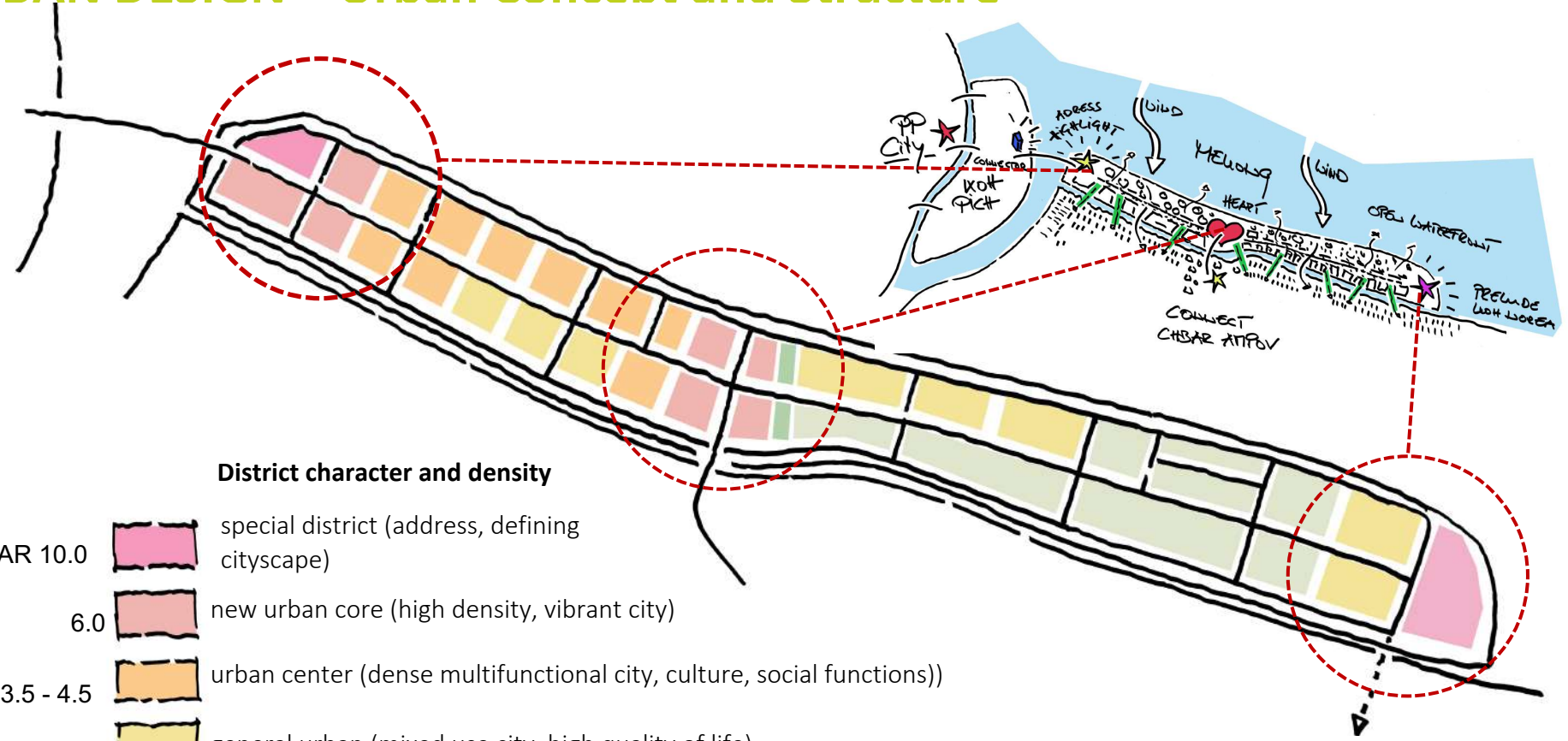


INTEGRATED URBAN DESIGN – Urban Concept and Structure

DISTRICT CHARACTER

↓

BALANCED MIX OF USES



District character and density

| | | |
|-----------|--|---|
| FAR 10.0 | | special district (address, defining cityscape) |
| 6.0 | | new urban core (high density, vibrant city) |
| 3.5 - 4.5 | | urban center (dense multifunctional city, culture, social functions)) |
| 3.0 - 3.5 | | general urban (mixed use city, high quality of life) |
| 2,5 | | housing / borreys (mix of residential typologies, social infrastructure, daily needs) |

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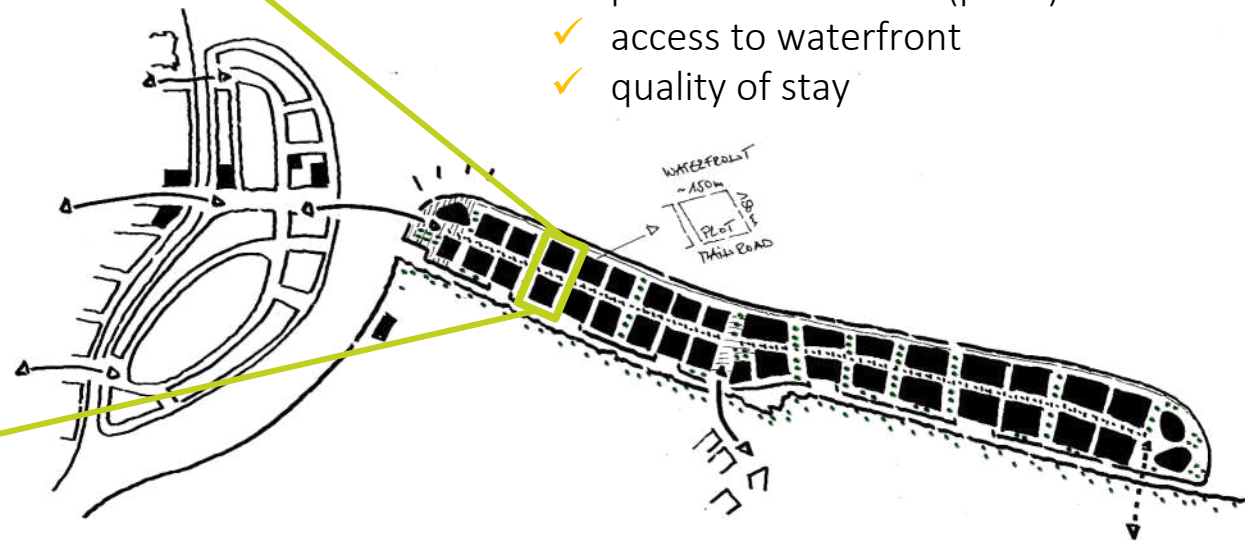
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INTEGRATED URBAN DESIGN – Urban Concept and Block-Structure

PUBLIC SPACE

- Squares
- Playgrounds
- Sidewalks
- Pedestrian Areas



Exemplary block implementation

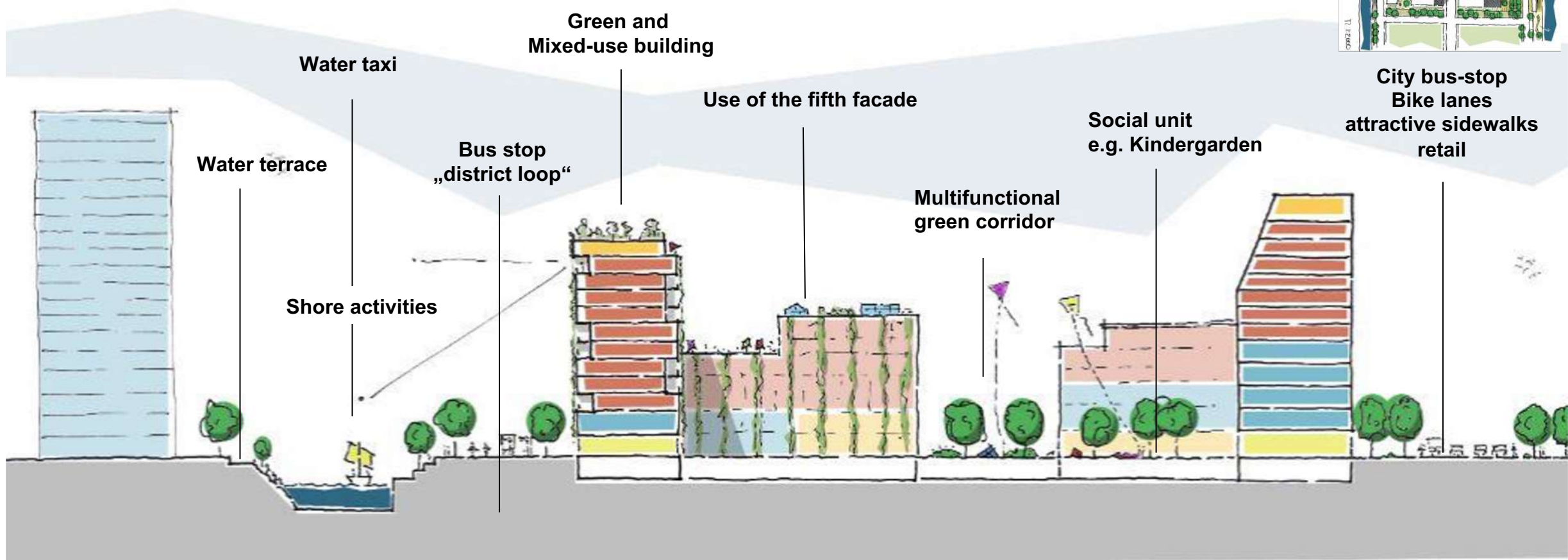
- ✓ general urban / urban center
- ✓ green corridors / ventilation
- ✓ different characters of green spaces
- ✓ mixed use / different typologies
- ✓ FAR ca. 3.0 – 4.0
- ✓ various heights
- ✓ places of transition (plaza)
- ✓ access to waterfront
- ✓ quality of stay

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INTEGRATED URBAN DESIGN – Urban Concept and Block-Structure



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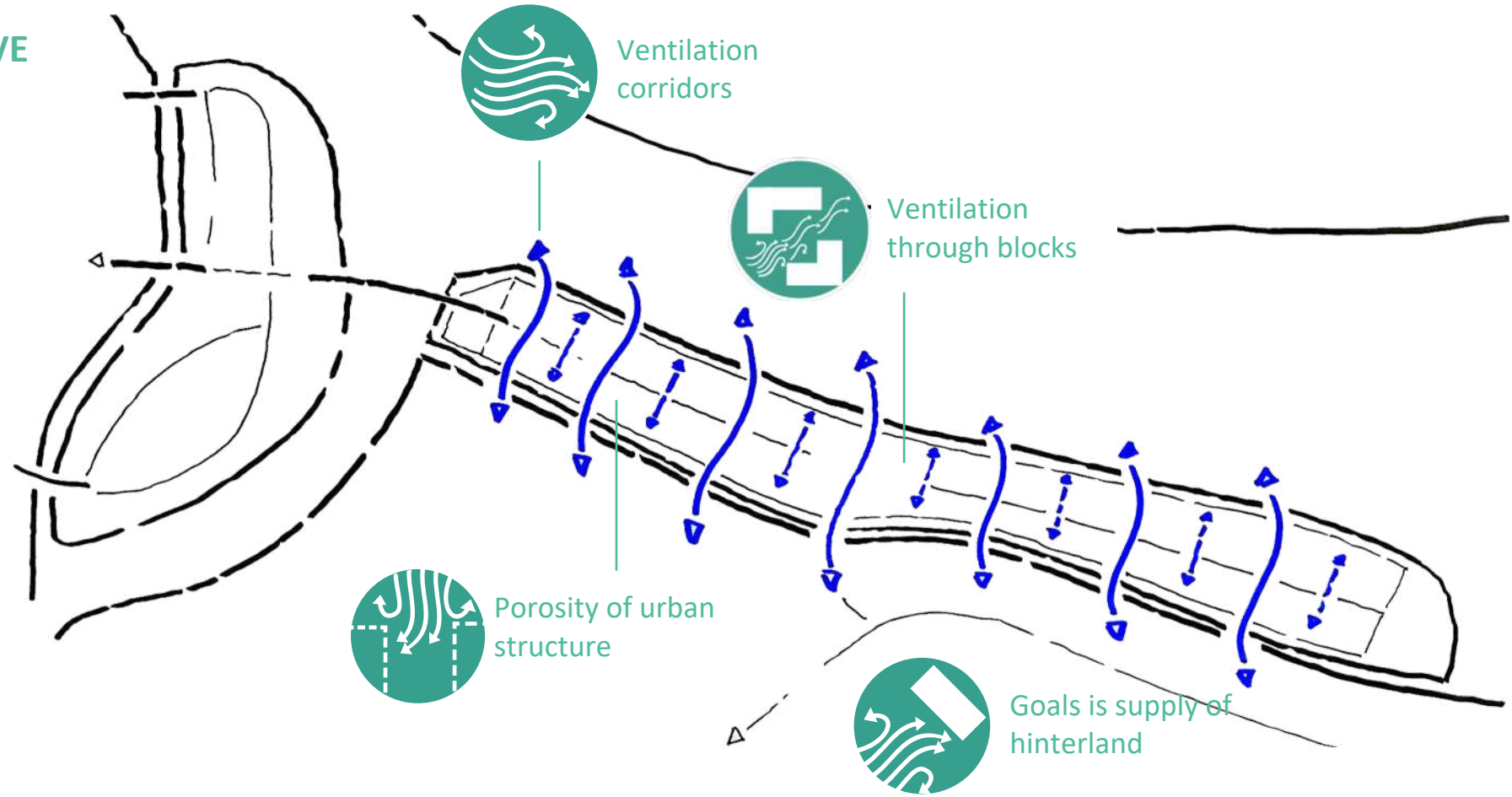
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BLUE GREEN INFRASTRUCTURE – Climate Sensitive Urban Design

CLIMATE SENSITIVE URBAN DESIGN

- Wind
- Thermal Radiation
- Temperature
- Precipitation



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BLUE GREEN INFRASTRUCTURE – Climate Sensitive Urban Design

CLIMATE SENSITIVE URBAN DESIGN

- Wind
- Thermal Radiation
- Temperature
- Precipitation

Ventilation through Blocks

Ventilation corridors for channeling wind (>30 m)



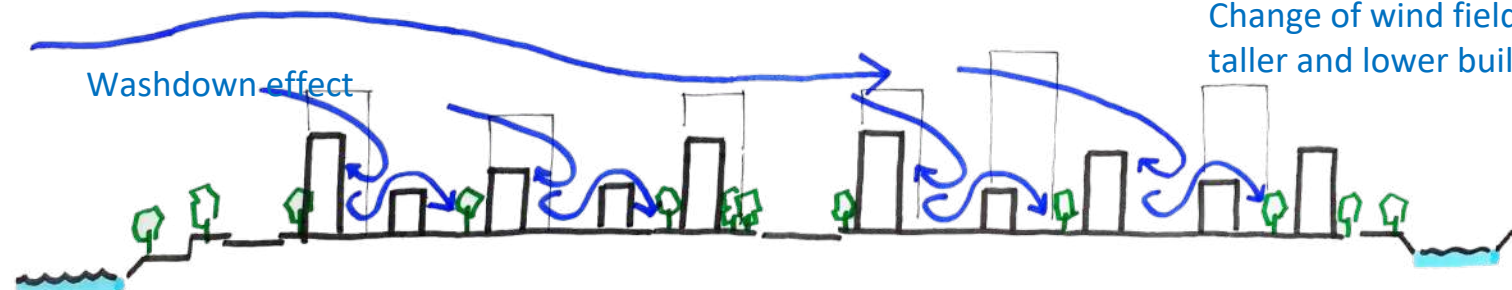
High rises: Towers instead of slabs

Link corridors - block

Green areas with trees for comfortable walking

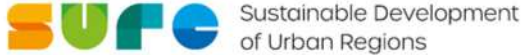
Washdown effect

Change of wind field by mix of taller and lower buildings



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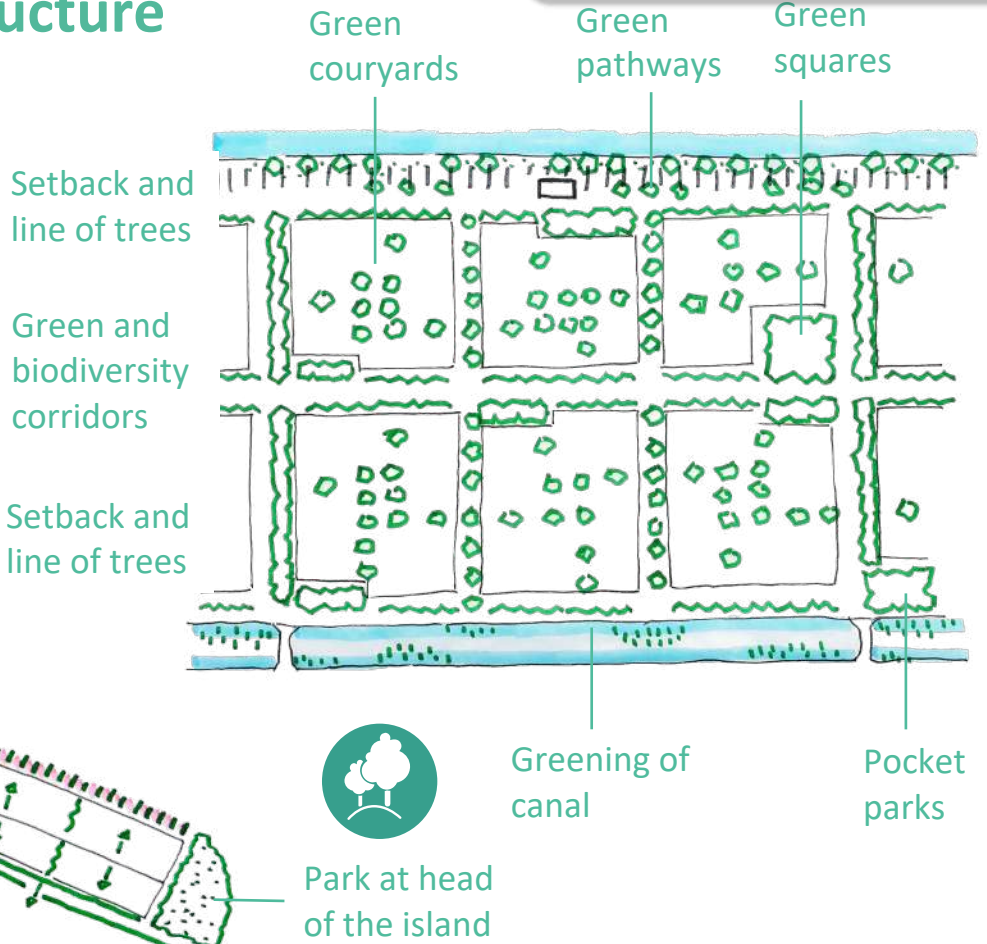
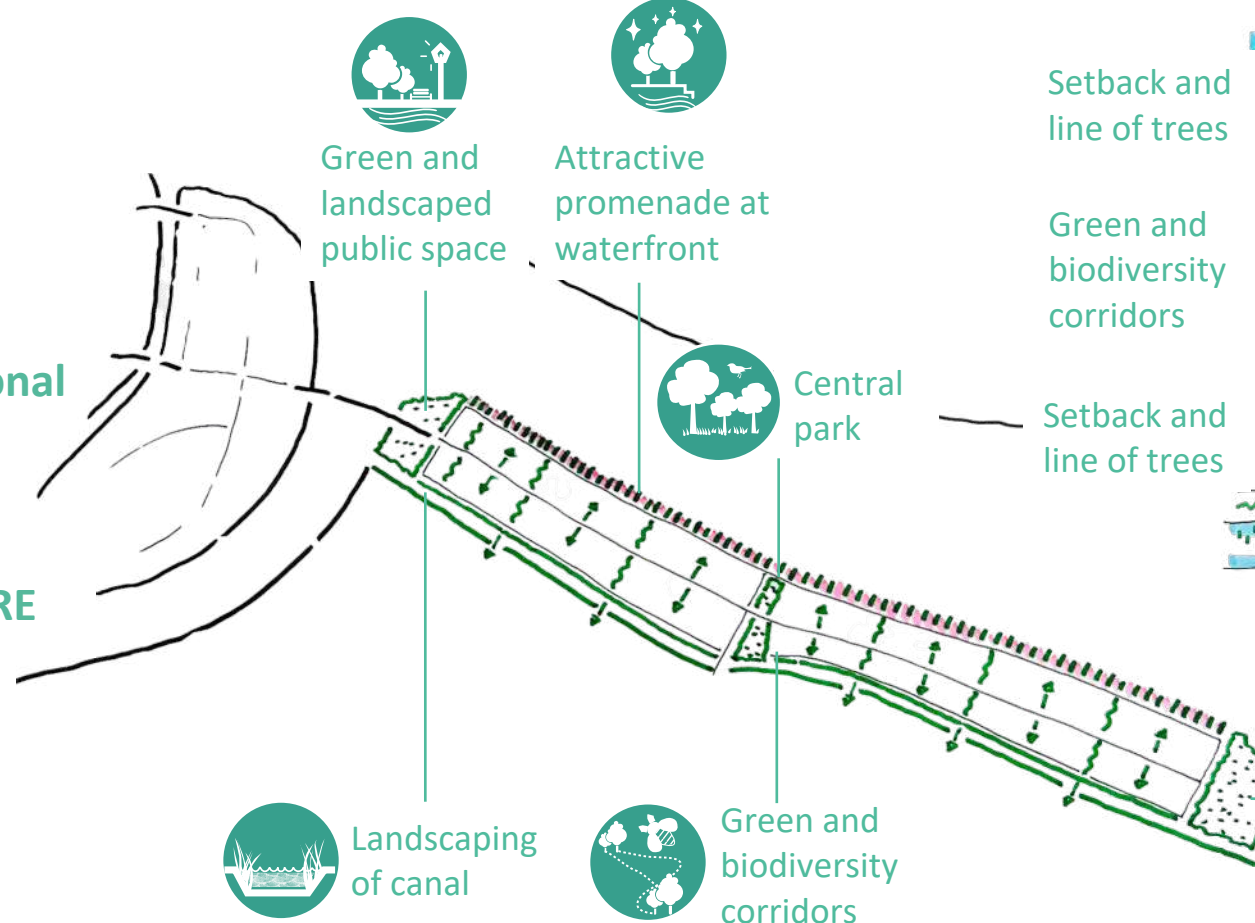
BLUE GREEN INFRASTRUCTURE – Green infrastructure



PUBLIC GREEN SPACE

- Sufficient
- Accessible
- Attractive
- Multifunctional

BLUE GREEN INFRASTRUCTURE



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BLUE GREEN INFRASTRUCTURE –Green infrastructure



Hamburg Hafencity



Transsolar, Cobe Werftquartier, Bremerhaven

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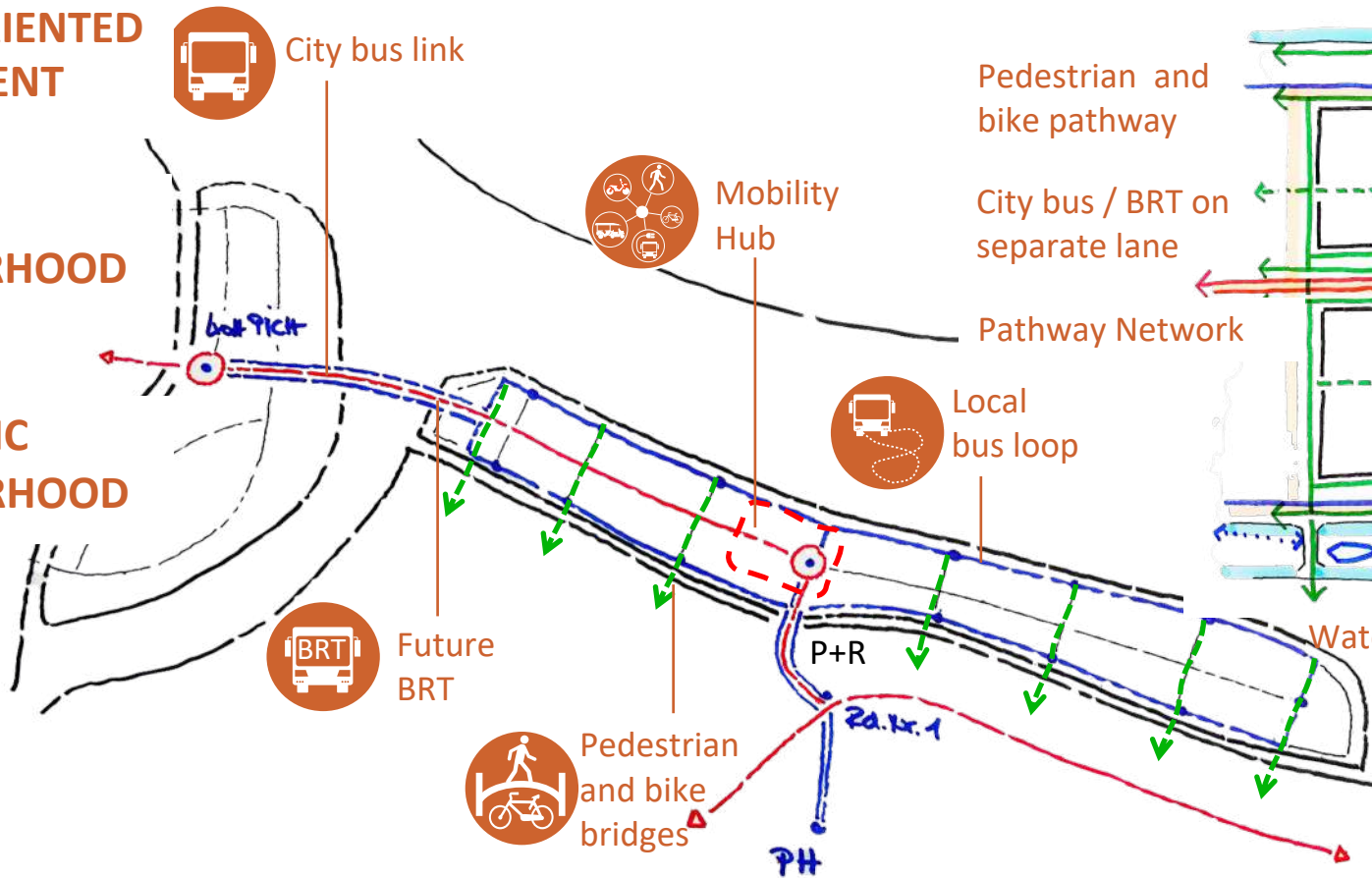


SUSTAINABLE MOBILITY – Transit Oriented Development

TRANSIT ORIENTED DEVELOPMENT

WALKABLE NEIGHBOURHOOD

LOW TRAFFIC NEIGHBOURHOOD



Mesh of pedestrian pathways < 100 m

Terminal riverboat

Pedestrian and bike pathway

City bus / BRT on separate lane

Pathway Network

Local bus loop

Watertaxi

Pedestrian and bike bridges

Multimodal Transport Hub

Local bus loop

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SUSTAINABLE MOBILITY – Transit Oriented Development

- I. Urban transport facilitates access to “revenue generating activities”.
- II. Improved public spaces encourages people to “spend more time” in Koh Norea.
- III. Increased people density translates into superior market opportunities for international and local businesses.

The MTR Corporation in Hong Kong operates not just as a transport operator but also as a major real estate developer. "Rail plus Property" model, where transport hubs are developed with retail and residential projects to create self-sustaining ecosystems (e.g., Kowloon Station development).

The integrated approach of TOD in Hong Kong



The SMMR project
Sustainable Mobility in Medium-sized Metropolitan Regions of ASEAN

TOD as a moneymaking strategy !



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SOCIAL INCLUSION AND LOCAL ECONOMY

ACTIVE STREETS

- Mixed-use buildings
- Lively ground floors
- Activated façades

STRENGTHENING LOCAL ECONOMY

- Promoting local markets: seasonal, flea market, local farmers.

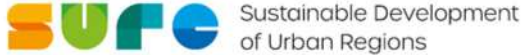


Hamburg-Hafencity



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CLIMATE PROTECTION AND ENERGY FLOWS – Energy efficiency and Renewables

ENERGY EFFICIENCY RENEWABLES

-Buildings

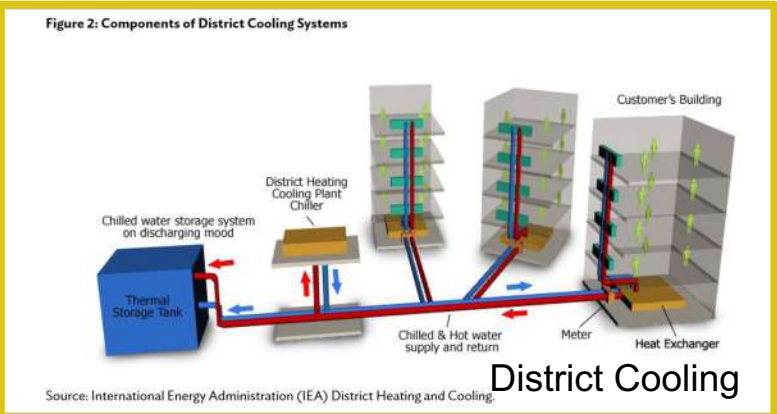
- Efficient appliances
- Improved building envelope
- Integrate renewable energy



PV-Facade



Greening



PVs on roof and green facades

-Neighbourhoods

- Integrate district cooling systems



PVs on facades



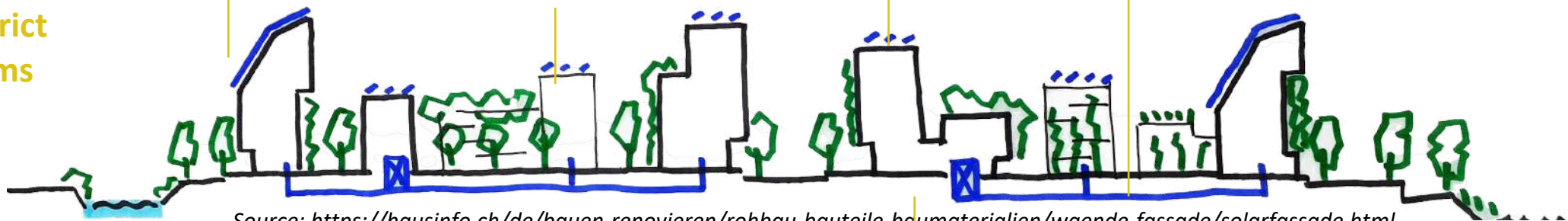
Green roofs, facades and courtyards



PV panels



District cooling network



Source: <https://hausinfo.ch/de/bauen-renovieren/rohbau-bauteile-baumaterialien/waende-fassade/solarfassade.html>

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GOVERNANCE AND PARTICIPATION

COMMUNITY INVOLVEMENT



NEIGHBOURHOOD COMITEES



PUBLIC PARTICIPATION



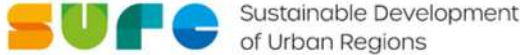
Community Planing Tampere-Finland

Source: von Zadow International, Eble Messerschmidt Partner, JTP, etc.



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GOVERNANCE AND PARTICIPATION Co-working, art & entrepreneurship spaces



These sort of spaces should be promoted in Norea City



Urban Art
Example from India

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GOVERNANCE AND PARTICIPATION Good practice example



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GOVERNANCE AND PARTICIPATION Good practice example



07. June 2023

Shaping the sustainable building of tomorrow: Joint building certification by HafenCity Hamburg and the German Sustainable Building Council unveiled



Overview
Masterplan
A flexible basic matrix as the point of departure for good urban development
[Read more](#)

Overview
Facts & figures
157 ha area, 7500 homes, 45,000 jobs ... HafenCity and its development in figures
[Read more](#)

On-site HafenCity
Quarters
Ten sometimes very differing quarters make up HafenCity, each has its own individual profile - and brings new qualities to Hamburg's city center.
[Read more](#)

Urban development
Social issues
Urbanity in a social context
[Read more](#)

Urban development
Mobility
Smart Mobility is an important element of sustainable urban development.



Urban development
Sustainability
HafenCity makes varied contributions to sustainability in a wide range of areas.
[Read more](#)

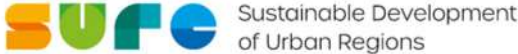
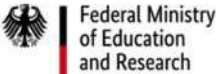


BPH-OCIC Cooperation

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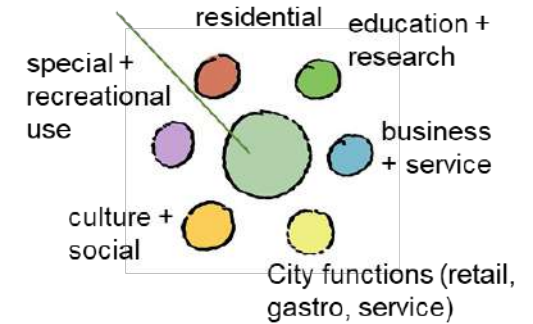


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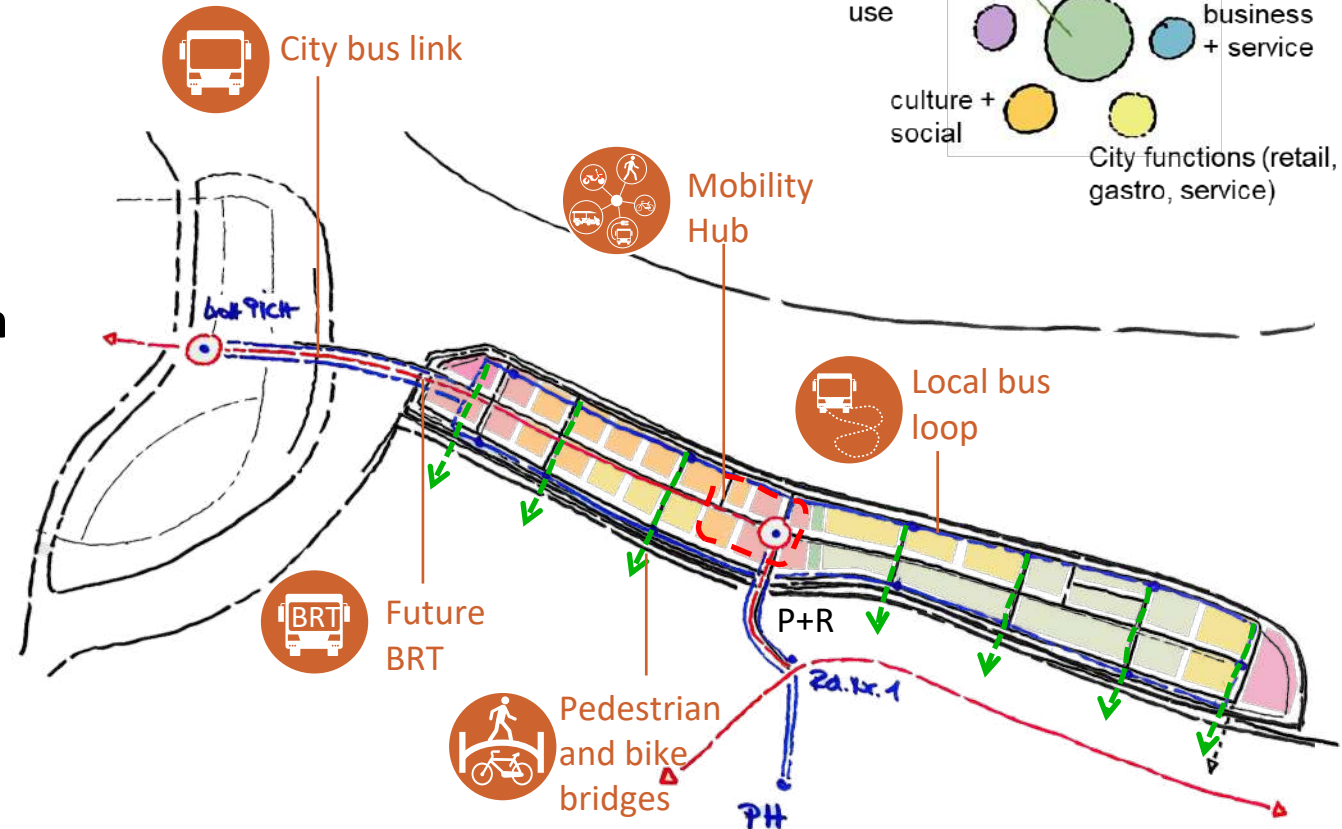
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Public space, green corridors, plazas or parks



- **The integration of land use and mobility planning** is key to outline a holistic approach that ensures economic, environmental and social benefits (TOD)
- **Higher quality neighbourhood planning can be achieved by minding the immediate urban context:** Land use, density, character and connectivity, hubs, building typology(ies)
- **The application of pivotal strategies such as climate responsive design,** require the consideration of both, the neighbourhood level and the urban block level.



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ECTL 2024 Take Away Messages

- **Participatory planning tools such as the Pop-up Kiosk provide valuable information about market demand** in terms of urban qualities. What is vital to adequately respond with the right product, in this case, real state developments?
- **A multidisciplinary planning team is key to achieve the best possible product**, in terms of neighbourhood planning, with the best cost-effect balance.



Pop-up kiosk dot voting key findings with planning implications:



- ✓ **Public space and urban green features** (greenery, trees, parks)
- ✓ **Effective waste management**
- ✓ **Preferences for improving transportation**

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Way Forward after the ECTL 2024 – short-term:

A cooperation between B4P/SMMR – OCIC could be formalized on the following purposes **for infusing cutting-edge sustainability** into Koh Norea:

- **Experimental application of the B4P Strategies and Guidelines** for enhancing the sustainability performance of the masterplan (climate sensitive design on block level, programming land use for a most vibrant neighbourhood hubs and attractive public spaces, etc.)
- Developing of Norea City as a **Transit Oriented Development (TOD)** with integrated mobility and land-use planning (together with SMMR, e.g. options for tactical mobility investment)
- **Consulting of OCIC Design and Implementation Process on block level** (e.g. regular reviewing proposals of OCIC consultants or project developers)



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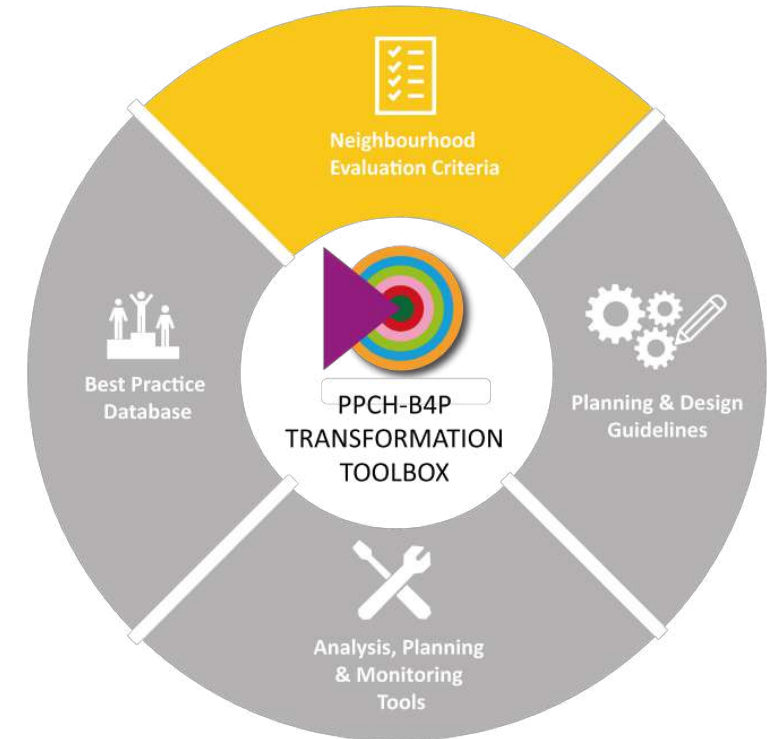
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Way Forward after the ECTL - from 2025 on:

Outlook for involving PPCH + OCIC in B4P Implementation Phase (to be expanded and further discussed):

- Involvement of PPCH + OCIC for **developing PPCH-B4P Transformation Toolbox** as integrative instrument to enable PPCH to better measure sustainability (e.g. empowering OCIC to apply sustainability criteria)
- **Application of B4P Sustainability Criteria** to Koh Norea and mutual improvement of project and evaluation approach, sustainability certification (together with DGNB)
- Support and consultancy for **strengthening participatory processes** (process design, formats, integration of outcomes)
- To be continued...



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Architekten und Stadtplaner PartGmbB

with support from:

Build4People ECOCITY TRANSITION LAB 2024

KEY RESULTS

22 April 2024

Thanks for your kind attention!



Work Package #1



Work Package #1



Work Package #2



Work Package #3



Work Package #4



Work Package #5

Research Partners



Implementation Partners



Dissemination Partners

