ARCHITECTURE STUDENT CONTEST

21st INTERNATIONAL EDITION, BELGRADE 2026

ARCHITECTURE STUDENT CONTEST

MAKING THE WORLD A BETTER HOME

FOR WHOM?

Our proposal is guided by **bioclimatic** design, conceiving architecture as a **network of multispecies** in between environments. Our master plan promotes **renaturalization and community**, blending public realm with ecological systems while responding to **climate change.** The athlete´s housing uses flexible-structural logic and sustainable materials to enable **multi-comfort** and integration. The renewal adds an adaptive extension, reprogramming its uses for future needs within **regenerative architecture.**

GROUP 25 - COLOMBIA

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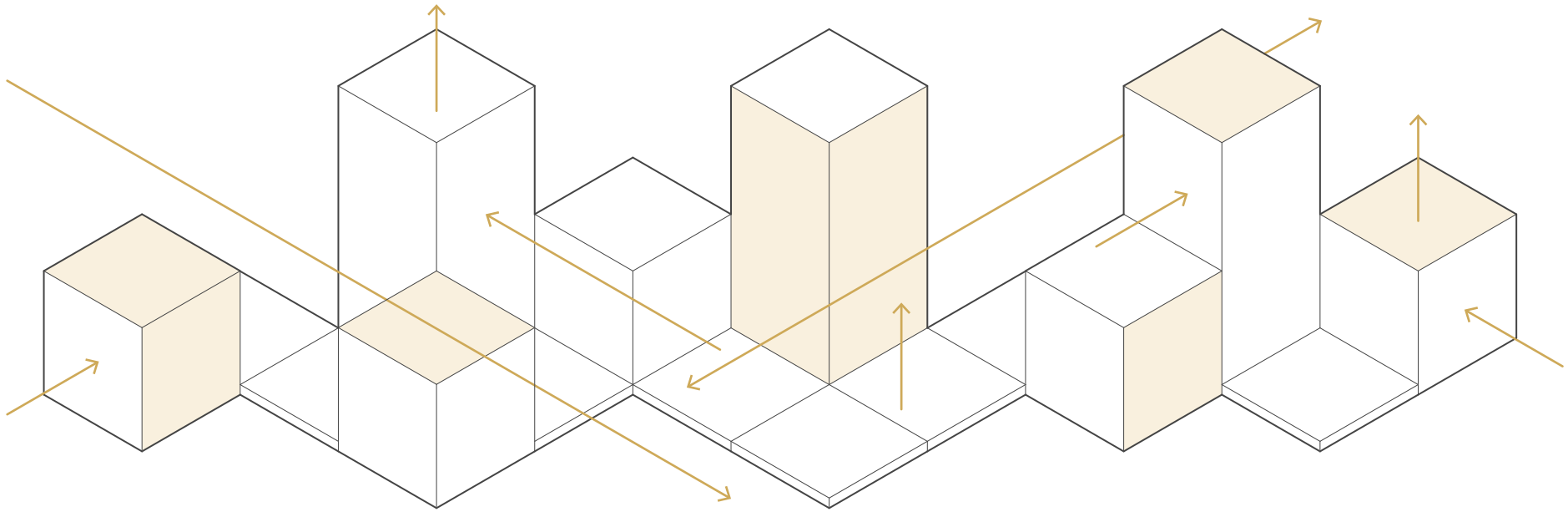
BEYOND FORM AND FUNCTION

Design constrained by rigid logics, ignoring environmental forces and living systems

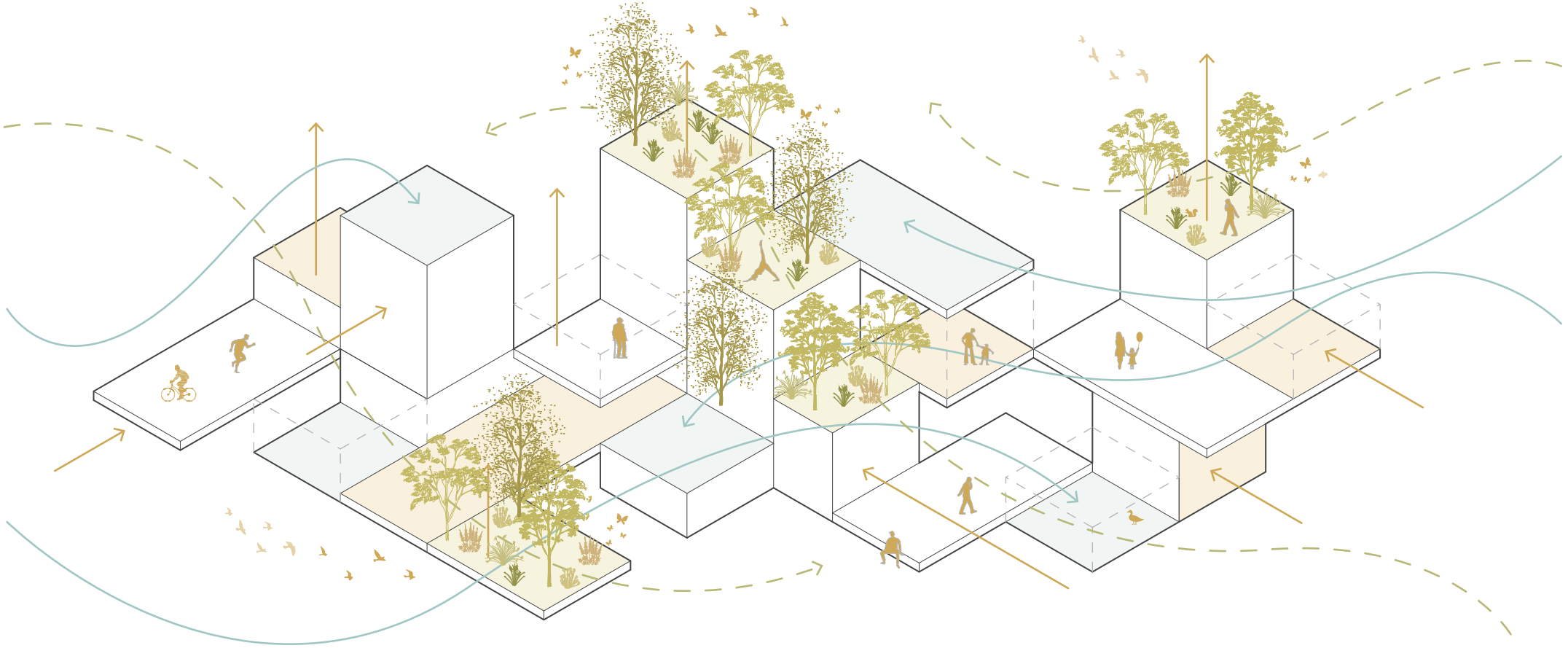


Form

Function

DESIGN GUIDED BY CLIMATE

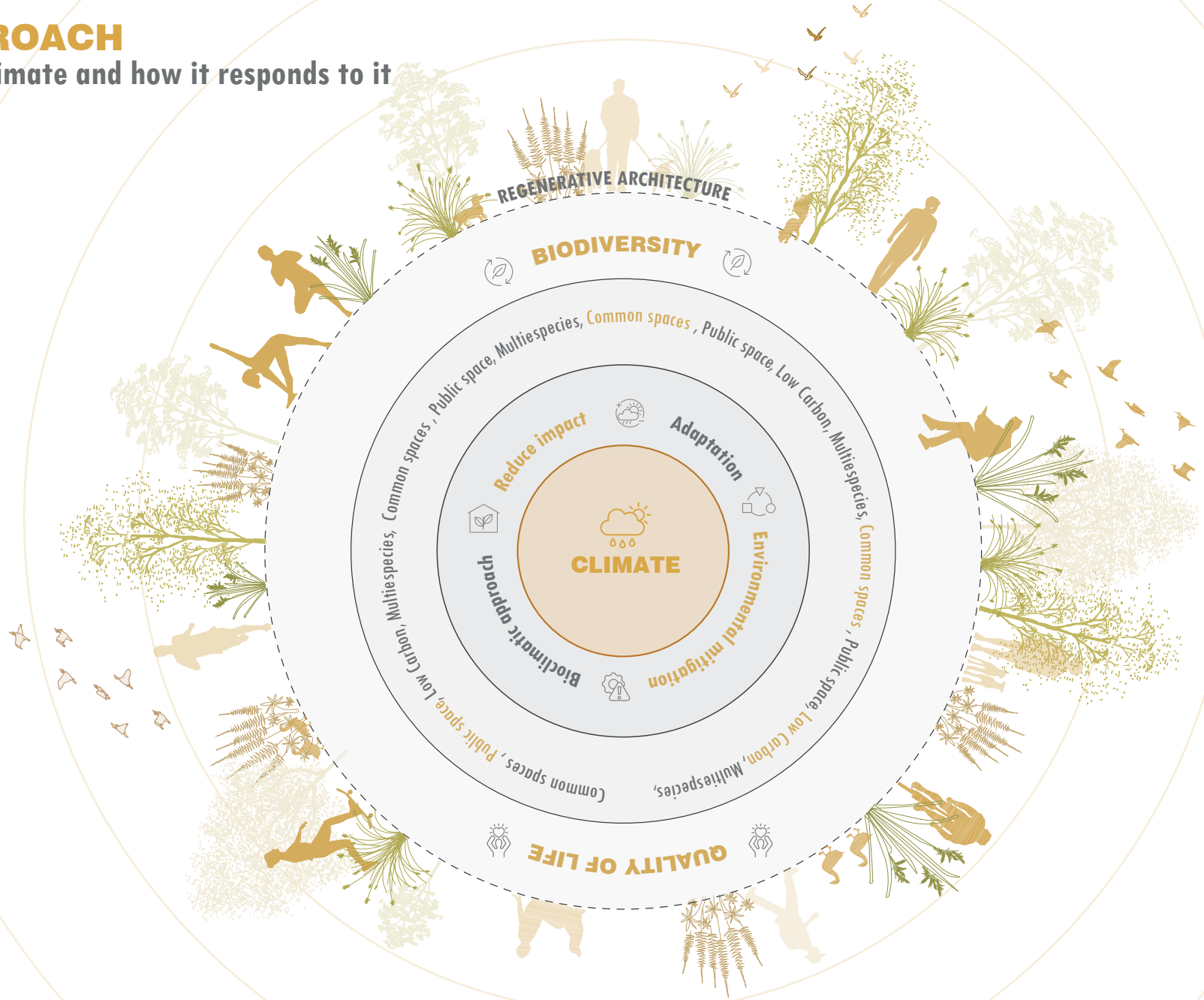
Architecture reduced to static objects, detached from climate, context, and life.



Ecology Water Rain Sun Wind Seasons

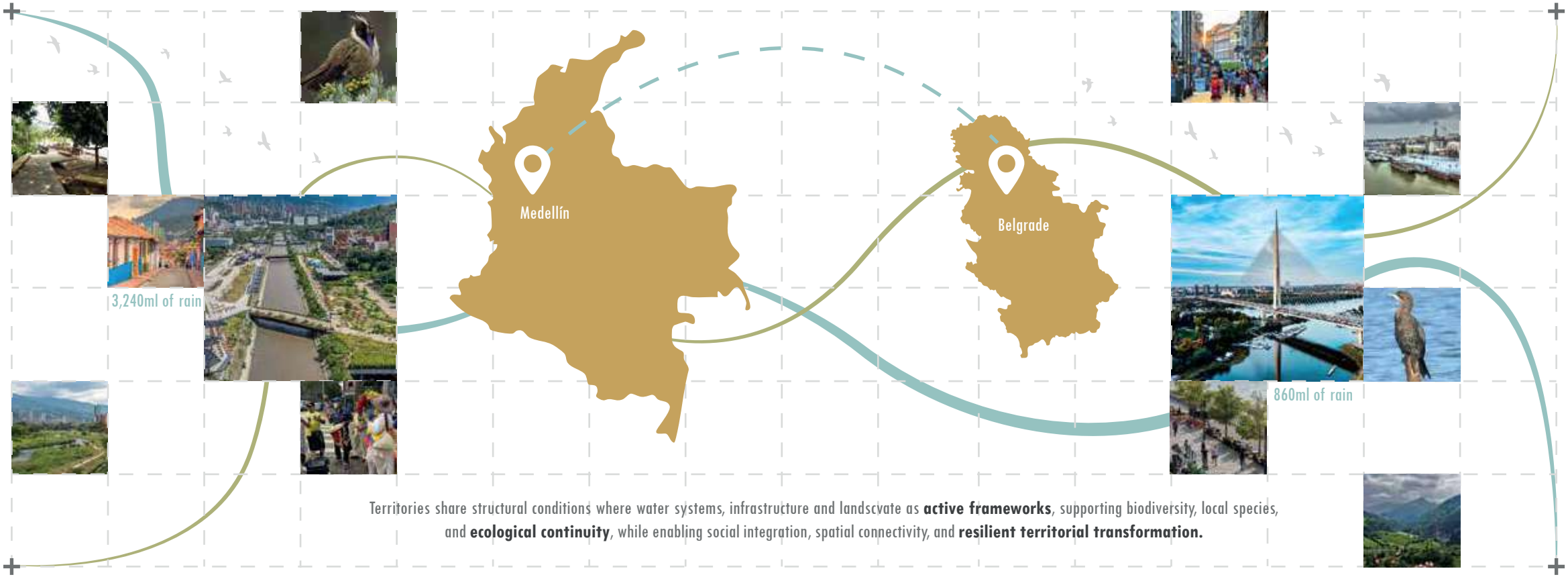
HOLISTIC APPROACH

Architecture is about climate and how it responds to it



CONNECTED TERRITORIES

Urban strategies across Colombia & Serbia



Territories share structural conditions where water systems, infrastructure and landscvate as **active frameworks**, supporting biodiversity, local species, and **ecological continuity**, while enabling social integration, spatial connectivity, and **resilient territorial transformation.**

Water as a natural structuring element.
Waterfront cities

Flood risk and water management.
Sponge cities

High Tree Canopy Coverage
Green Cities

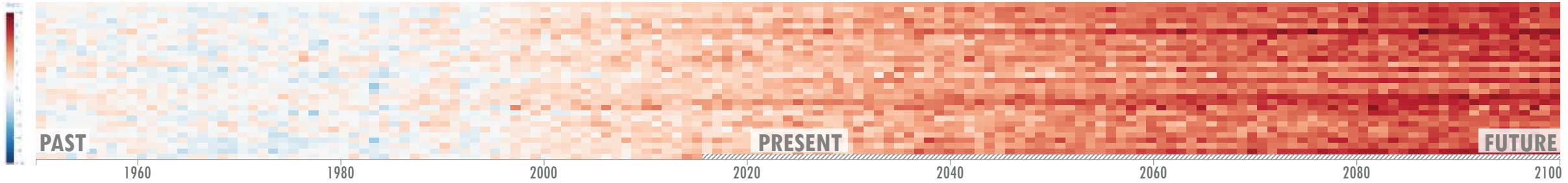
Sense of belonging and civic identity.
Community-based cities

Ecological Continuity
Living Urban corridor cities

UNDERSTANDING FUTURE CLIMATE SCENARIO

According to IPCC WGI SSP2_4.2 Interactive atlas:

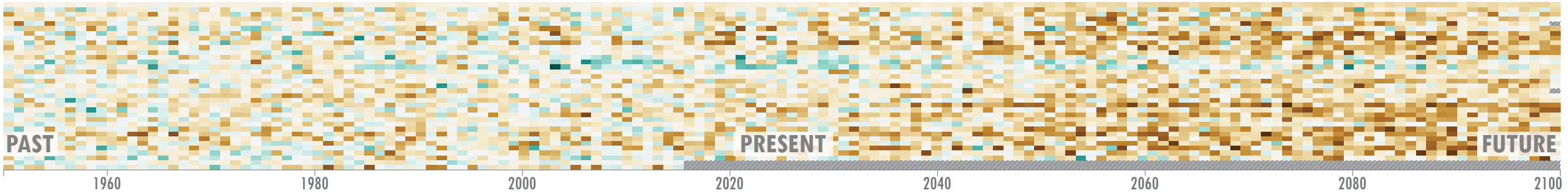
Maximum of maximum temperatures (TXx) - Change (deg C)



Climate stripes (anomalies rel. to a baseline).: Rows: Models (median on the top) Columns: Years

By 2100, maximum annual temperatures in the Mediterranean are projected to **increase by more than 6°C** under the SSP2-4.5 scenario.

Total precipitation (PR) - Change (%)

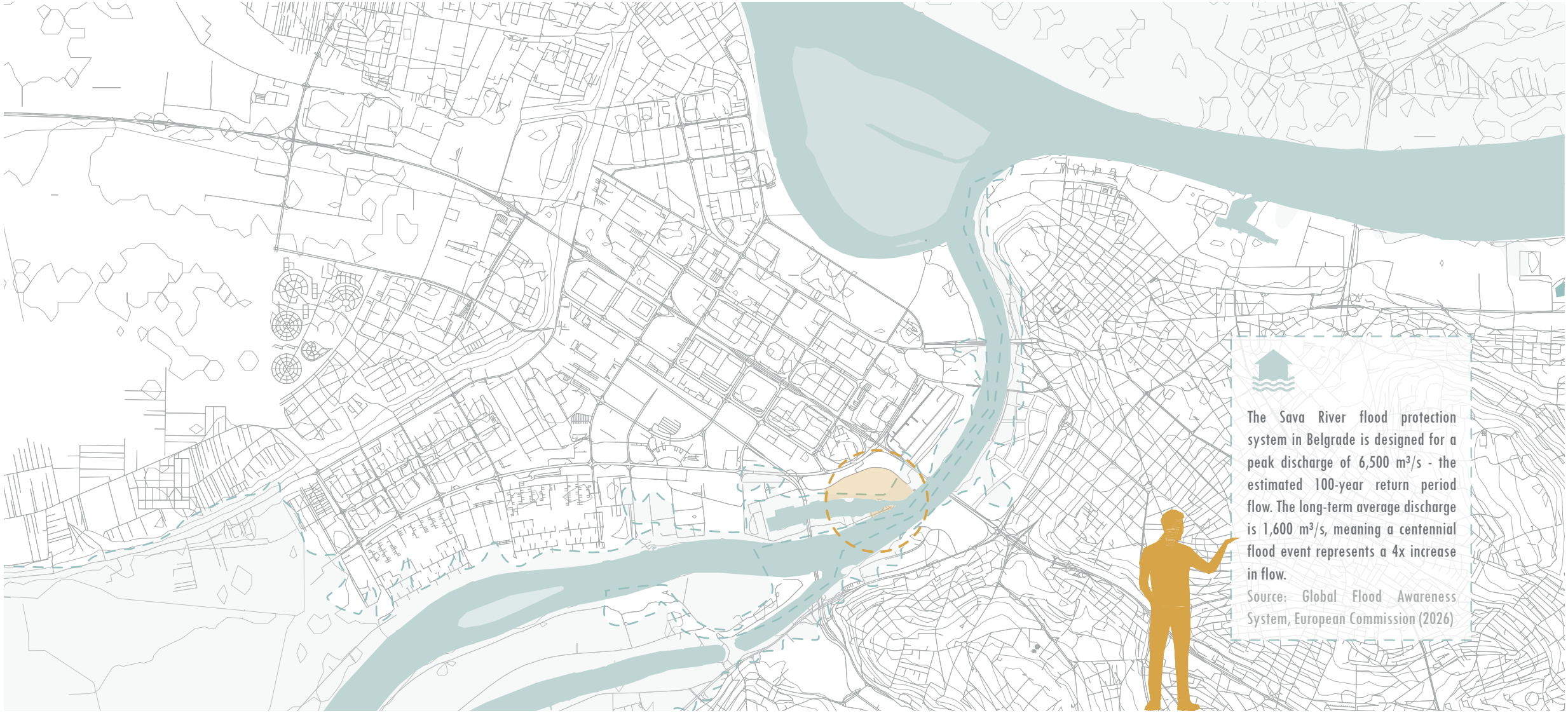


Climate stripes (anomalies rel. to a baseline).: Rows: Models (median on the top) Columns: Years

By 2100, annual precipitation in the Mediterranean is projected to **decrease by around 10–30%** under the SSP2-4.5 scenario.

FLOODWATER

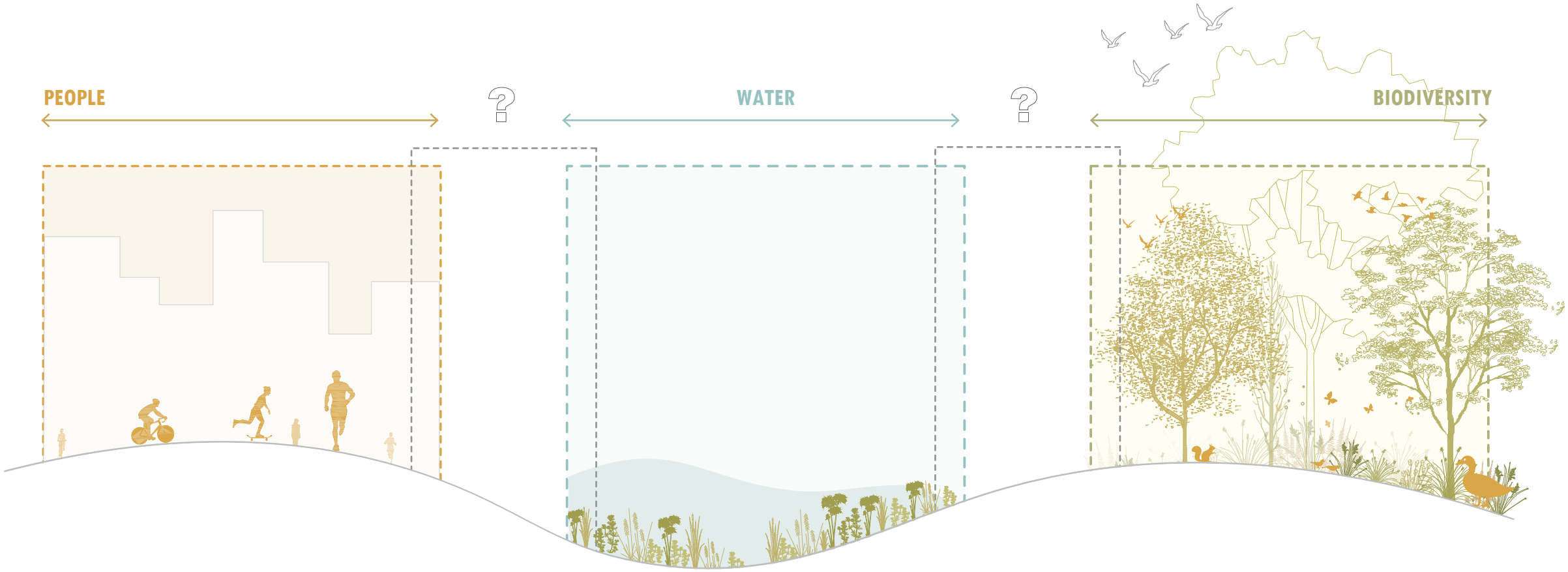
Historically, floods in Belgrade have reached 7 meters



Areas with flood hazard 100 year return period according to European Commission. (2026). Global Flood Awareness System. Copernicus Emergency Management Service.

COEXISTANCE CHALLENGE

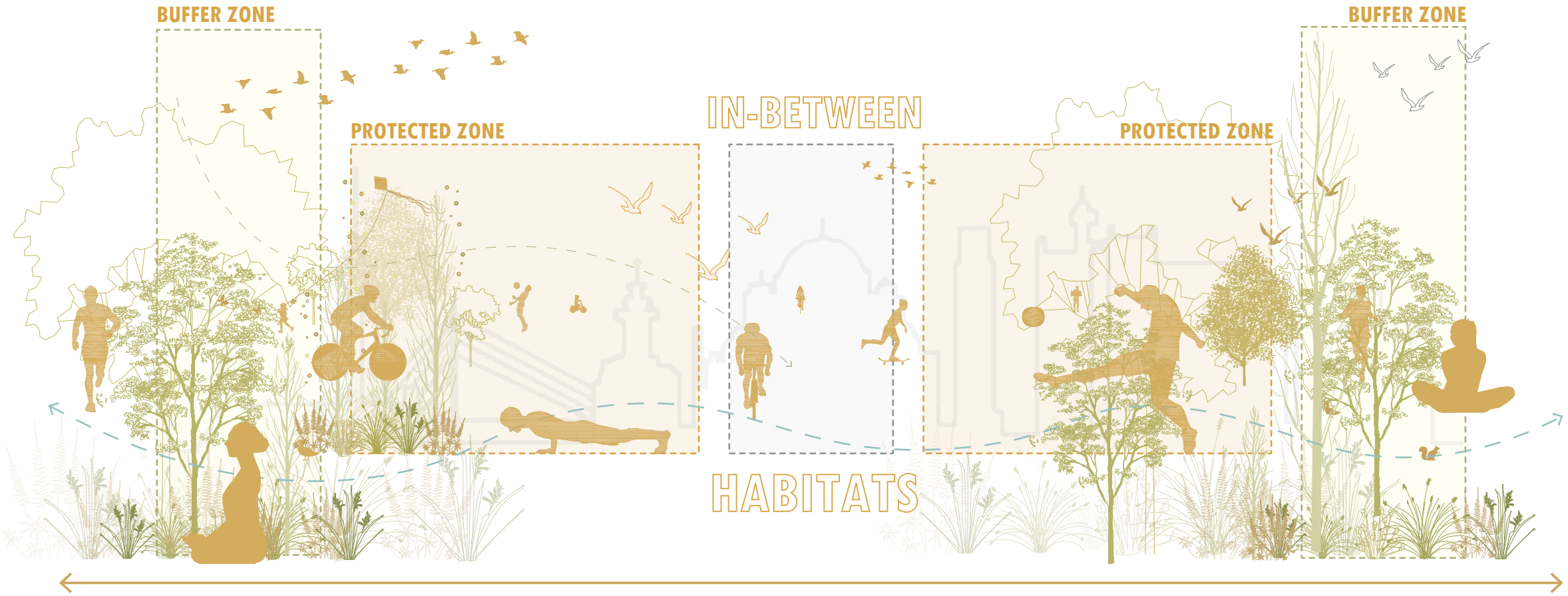
How can water, biodiversity and human occupation exist together within the same ecosystem?



How can water, biodiversity and human occupation exist together within the same ecosystem ?

LAYERED SYSTEM OF TRANSITIONS

Three nested zones where human activity and ecological life share territory

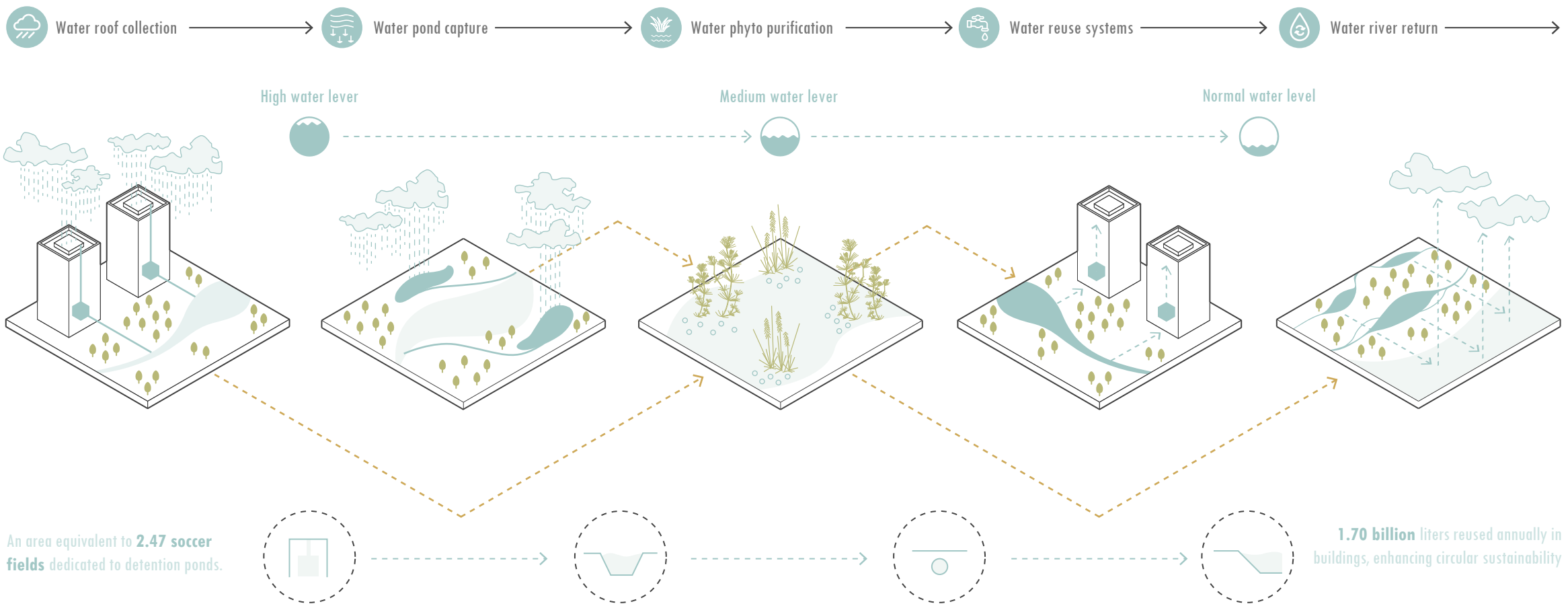


IN-BETWEEN HABITATS

URBAN STRATEGY

WATER FOR RESILIENT AND REGENERATIVE URBAN SYSTEMS

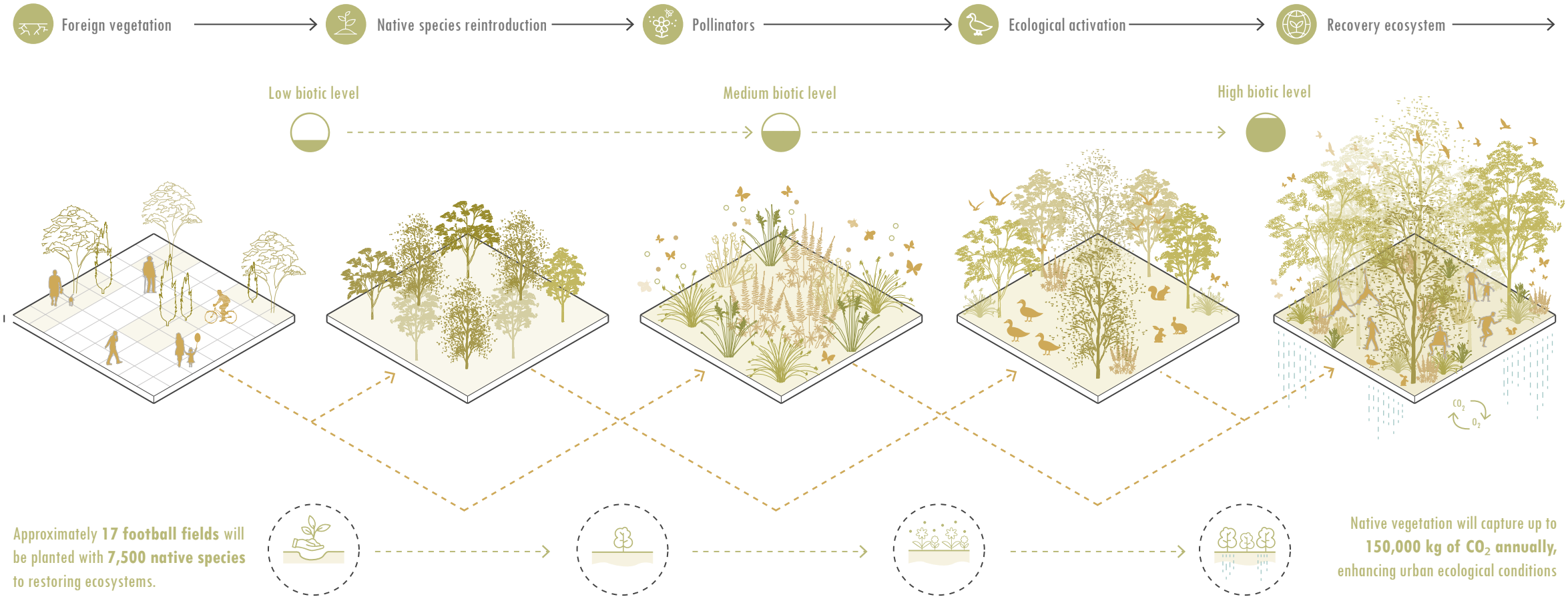
A circular and sustainable system where water acts as a dynamic agent, connecting architecture, landscape, and ecological processes



Water becomes a **circular system of sustainability**, seamlessly weaving architecture and landscape through **regenerative processes**, where every drop is transformed, sustains life, restores ecological balance, and redefines the relationship between nature and built form.

REVITALIZING BELGRADE´S NATURAL ECOSYSTEM

Recovering ecosystems through ecological activation and native biodiversity restoration



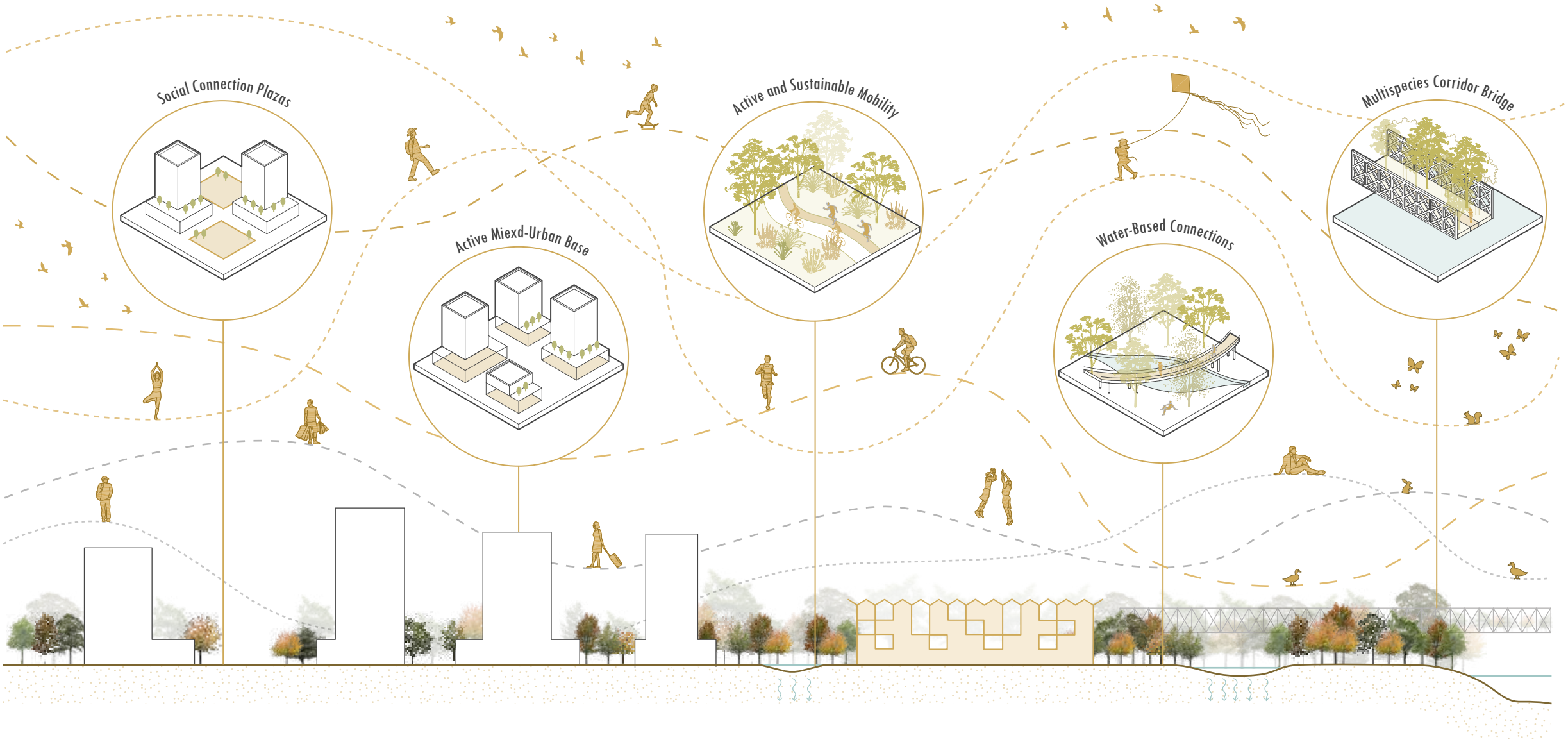
Approximately **17 football fields** will be planted with **7,500 native species** to restoring ecosystems.

Native vegetation will capture up to **150,000 kg of CO_2 annually,** enhancing urban ecological conditions

This strategy **restores natural ecosystems through ecological activation**, reintroducing native species, pollinators, and habitats. It enhances biodiversity, supports fauna return, **improves environmental quality**, and transforms degraded urban areas into resilient, **self-sustaining landscapes** within the city.

LIVING LANDSCAPE FRAMEWORK

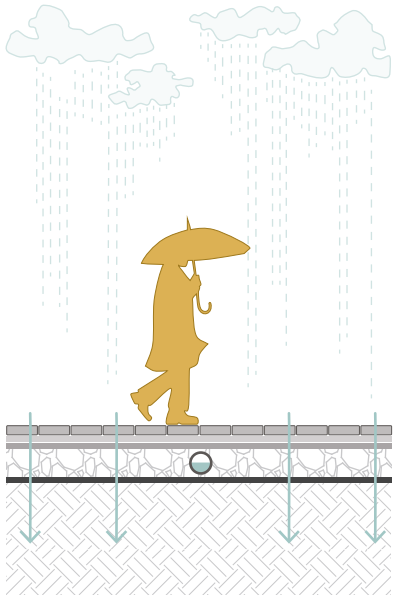
Connecting ecology, community, and movement through a multispecies landscape



SUSTAINABLE URBAN DRAINAGE SYSTEM

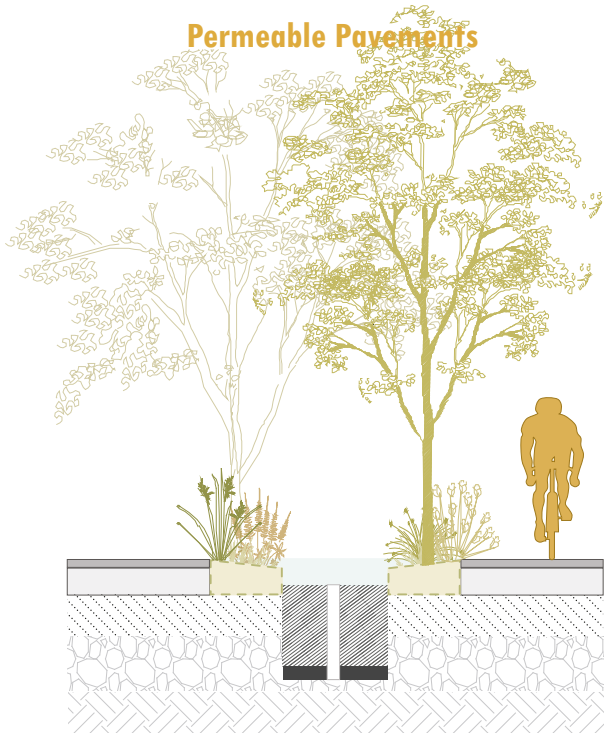
For resilient cities and infraestructure

Trenches and Infiltration



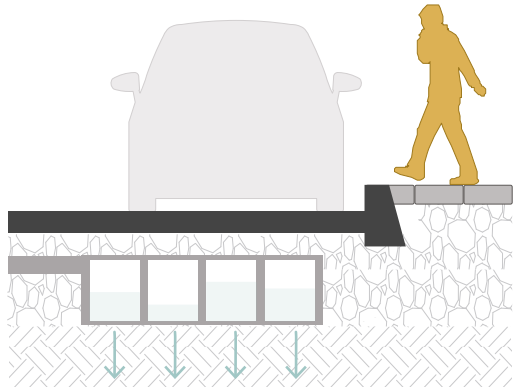
Each trench can retain up to **43% of the total runoff that reaches it**. Distributed infiltration systems reduce peak flows by an average of 13% during medium-sized storms.

Permeable Pavements



After 15 years without maintenance, it allows **400 mm of water to be drained per hour**, exceeding the 100 mm/h of an extreme storm. Reduces peak flow by retaining water in the sub-base and releasing it in a controlled manner.

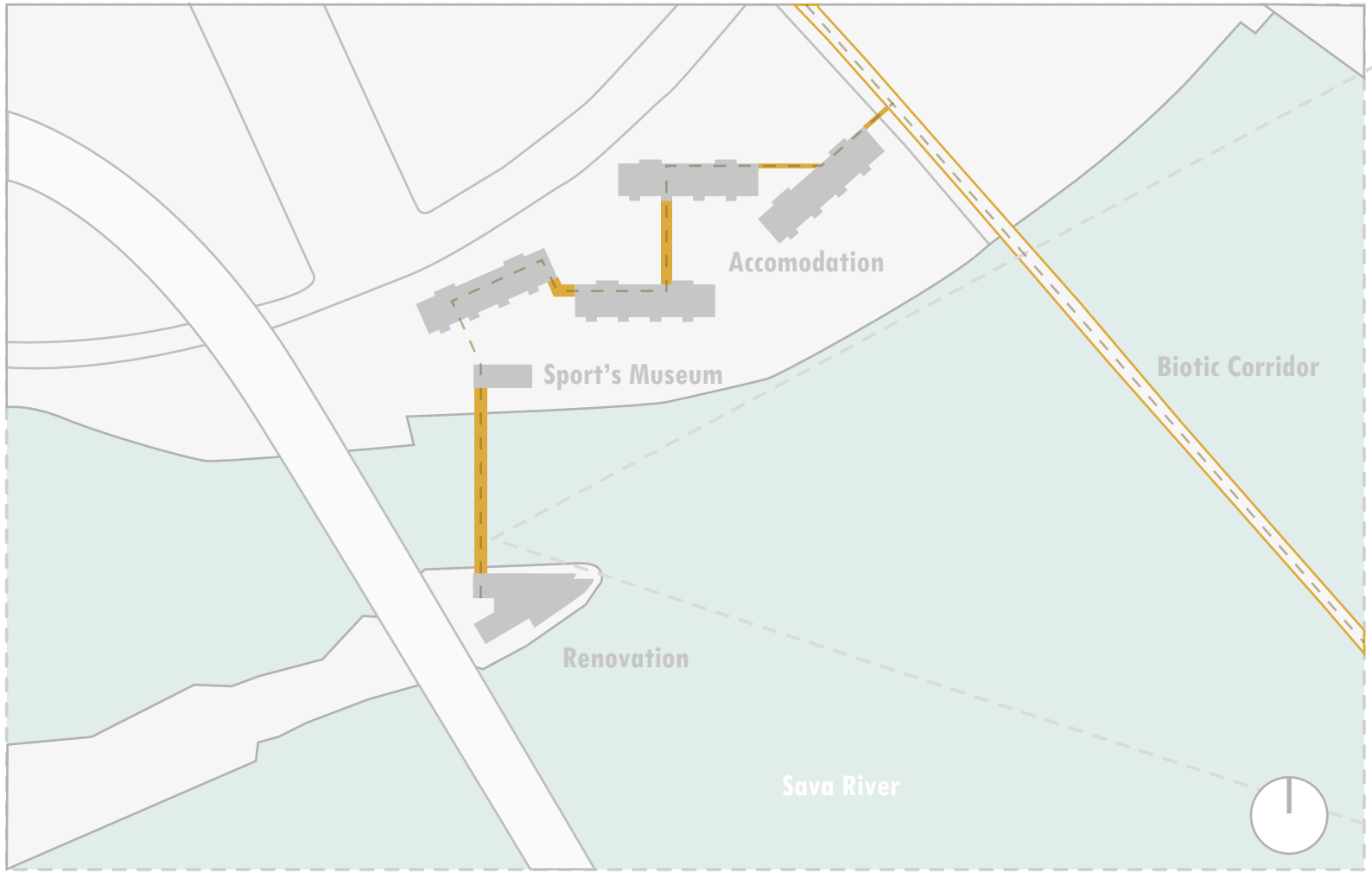
Reticular Deposits



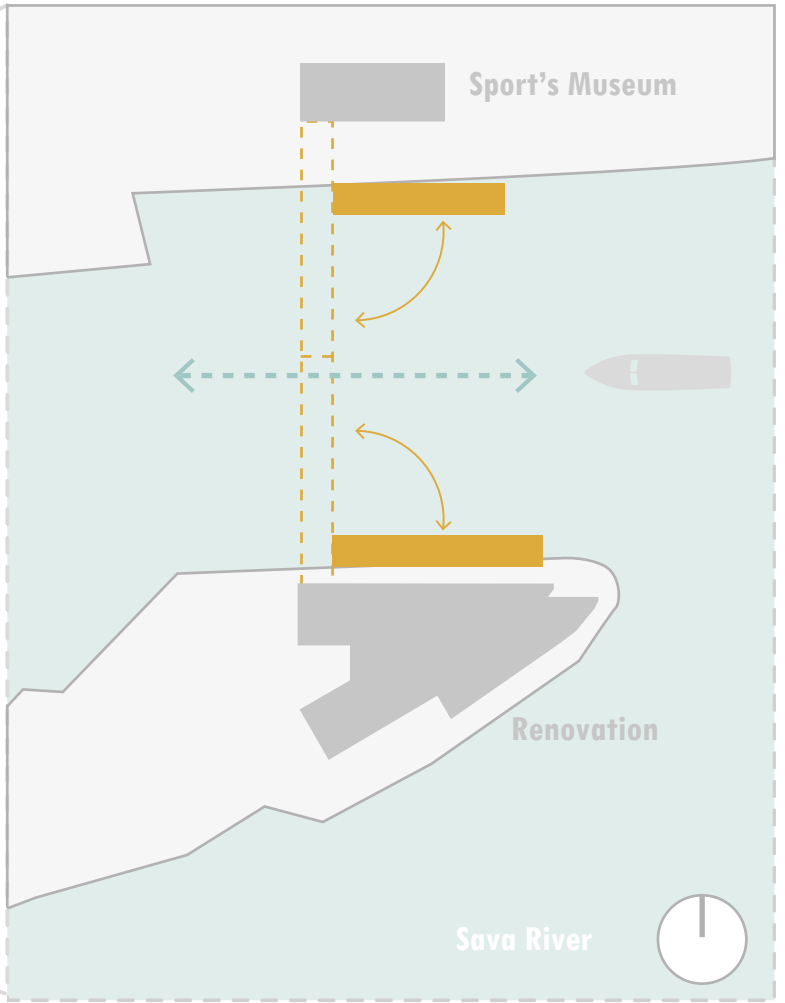
Designed for a service life of **40–50+ years.** The open-bottom design provides 95%+ void space, compared to **30–40%** in conventional pipe systems, requiring less excavation for the same volume.

CONNECTIVITY

Promote active mobility and connect fragmented territories



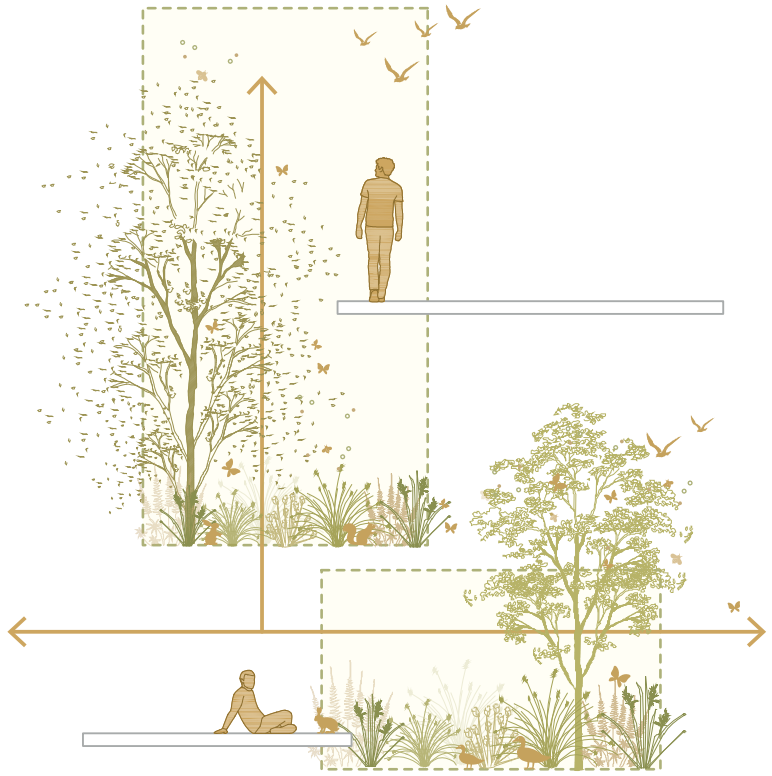
Connection of the Multispecies Infrastructures



Movable bridge for yachts and boats

MULTIESPECIES THRESHOLDS

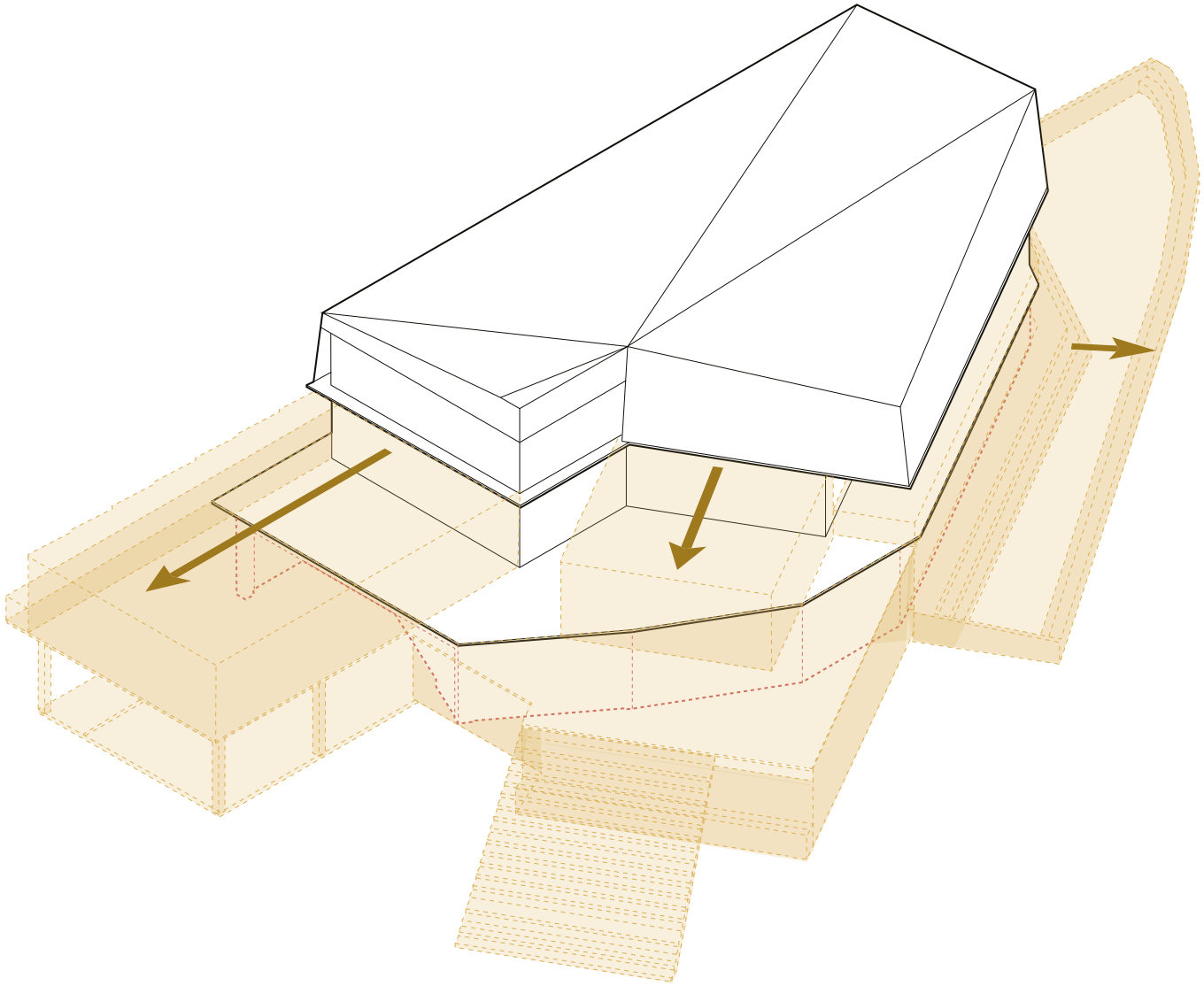
Activate edges and add threshold layers between the building and Sava.



The building's edges are not boundaries — they are thresholds. Each perimeter is designed as a **layered transition zone where architecture gives way to vegetation, water, and fauna**. From the aquatic ground-level border to the canopy terraces above, the façade dissolves into a **living margin shared by people, birds, and native species alike.**

FORMAL OPERATION

Public space addition for activity diversity and climatic strategy



Existing Building

↓

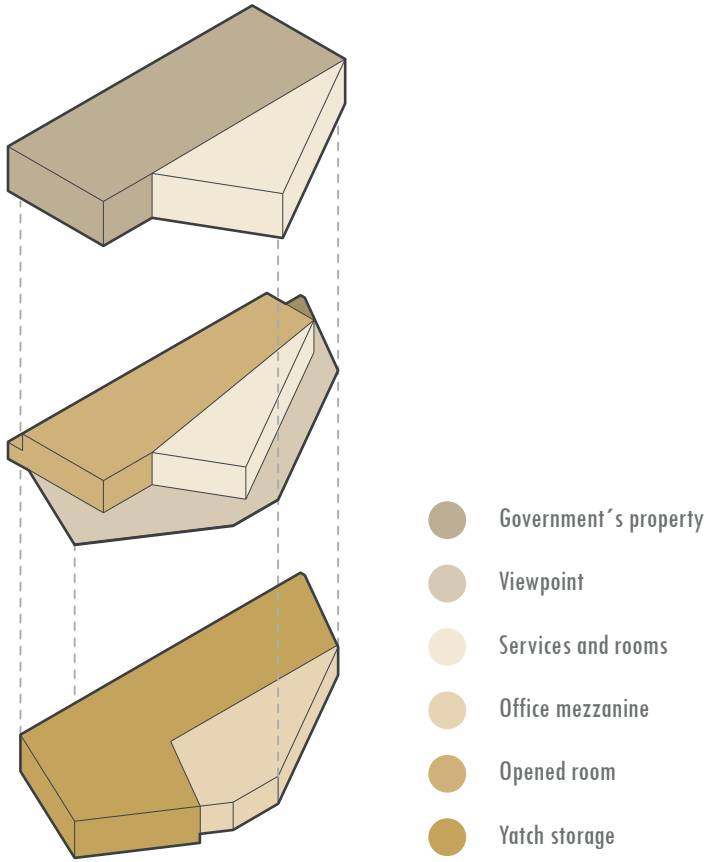
Operations

↓

Revitalized Building

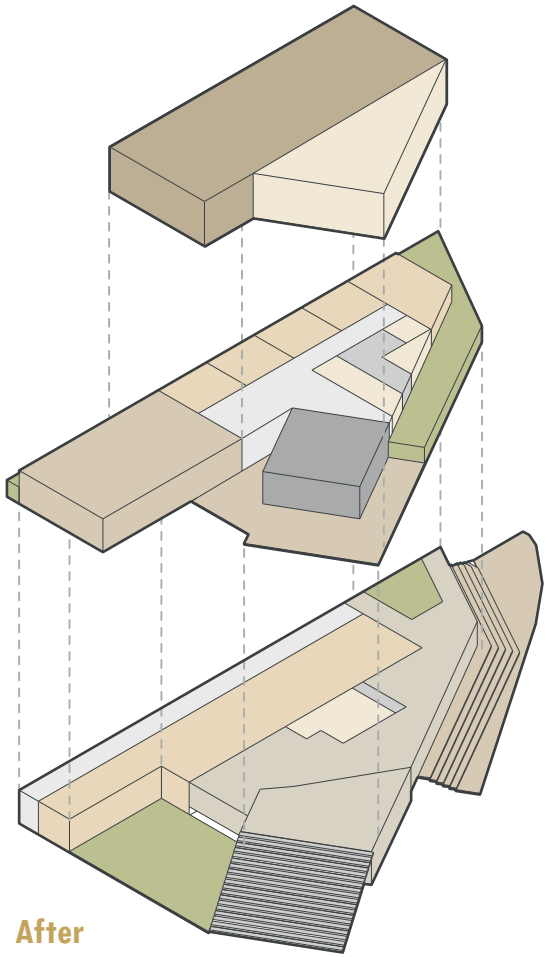
PROGRAM STRATEGIES

From private storage to public threshold - a building that unfolds toward the water



- Government´s property
- Viewpoint
- Services and rooms
- Office mezzanine
- Opened room
- Yatch storage

Before



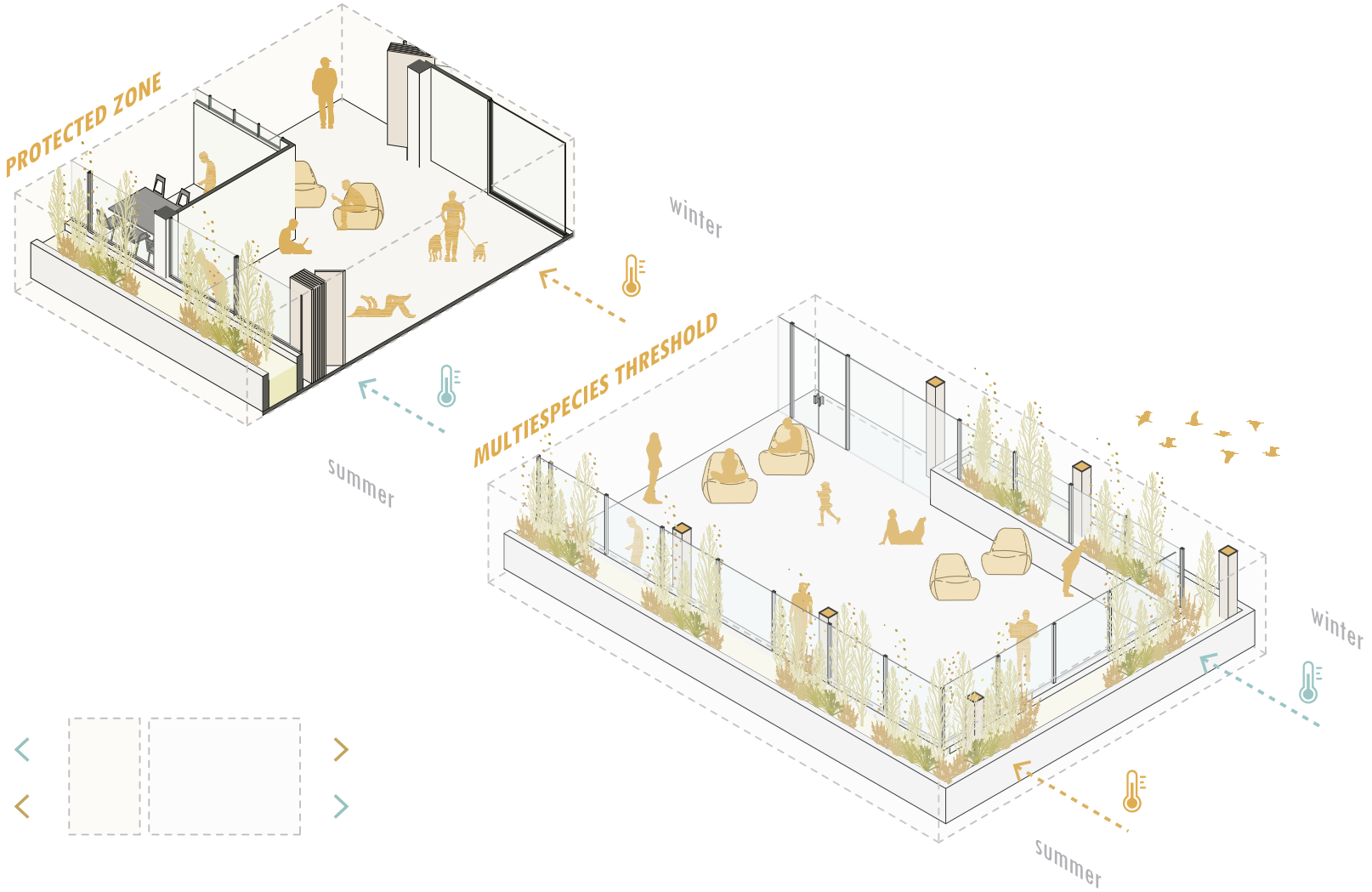
- Yatch Club Classroom
- Vertical circulation
- Horizontal circulation
- Services
- Local Cafe
- Viewpoint
- Government´s property
- Flexible rooms/offices
- Multiespecies thresholds

After

New layers of public life emerge across the renovated structure: a local café, yacht club classrooms, and flexible offices and rooms **dissolve the boundary between the building and the waterfront.** Multispecies thresholds weave ecology into every edge, inviting both people and nature to inhabit the space — transforming a once private, mono-functional building into a **layered civic destination open to the city and the river.**

TRANSITION LAYERS

Buffer zone as passive strategy for climate regulation



BIOCLIMATIC STRATEGY

Bioclimatic Continuity Between Existing and New


ENVIRONMENT
SOCIALIZATION
DAILY ENCOUNTER
SERBIA REPORT

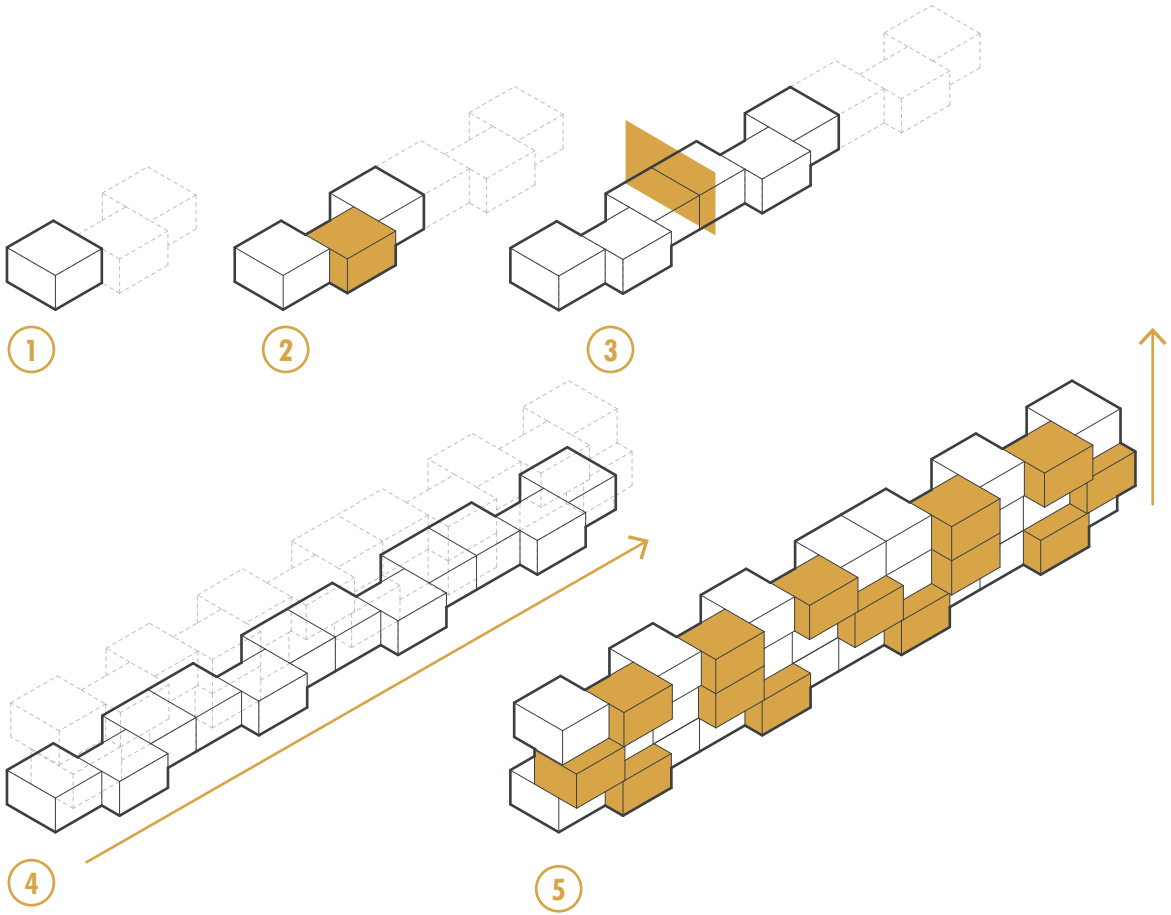
MULTIESPECIES THRESHOLDS

Where every edge becomes a climate device and a space for life

The transitional spaces operate simultaneously as bioclimatic regulators and ecological **thresholds**. Horizontally, they channel the Košava wind to promote **cross-ventilation** across all levels. Vertically, cascading vegetation creates shade, **reduces heat gain, and filters air** — while opening the building to birds, insects, and native flora. Every threshold is both a technical strategy and an inhabited edge: **a place where human activity, nature, and climate meet.**

FORMAL TRANSFORMATION

From unit to whole - a modular aggregation logic guided by program, climate, and future adaptability



Step 1: Basic program unit

Single habitation module — the irreducible element of the system

Step 2: Common spaces inserted

Shared program introduced between units — activating social exchange at every node

Step 3: Linear extension by mirror logic

The module-plus-commons unit is mirrored and extended — generating a consistent, scalable bar

Step 4: Floor completion

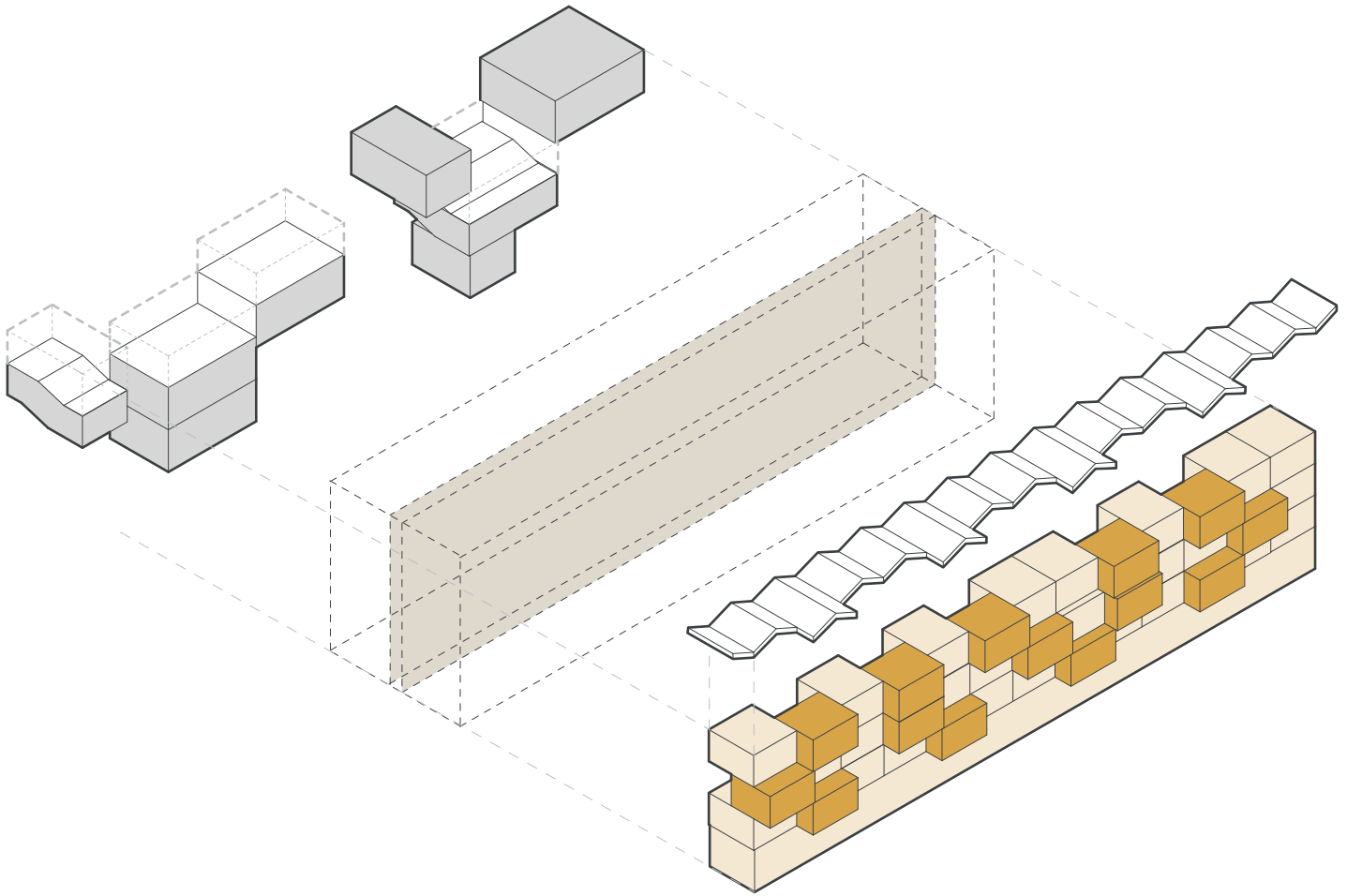
Full floor aggregation — habitation and common spaces establish the complete structural and programmatic layer

Step 5: Intermediate spaces added

Buffer zones introduced between volumes — simultaneously acting as climatic regulators, community thresholds, and future expansion capacity. In a crisis scenario, modules can open toward these spaces, adapting the building without structural intervention.

GENERAL GROUPING

Three layers - collective, circulation, and habitation - each positioned and formed by climate



Common spaces

North-facing collective program - diffuse light, thermal stability year-round

Circulation spine

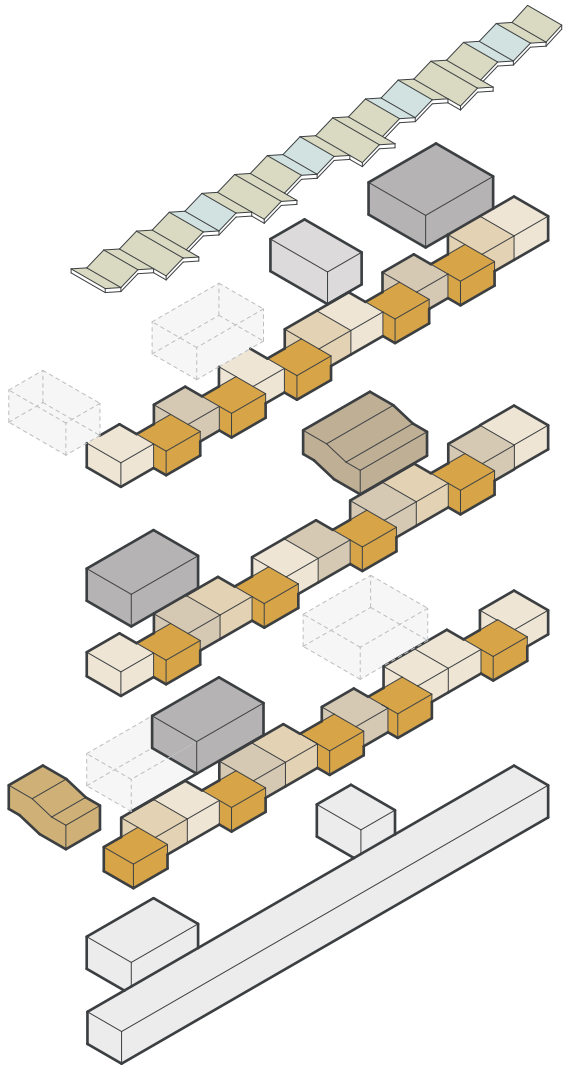
Longitudinal circulation as thermal buffer - separates habitation from collective program

Habitation units

South-facing rooms - maximizing natural light exposure and cross-ventilation driven by the Košava wind (SE, 25-43 km/h avg.), Belgrade's primary natural air purifier

PROGRAM DISTRIBUTION

A vertical stack of uses where every layer serves performance, wellbeing, and ecological life

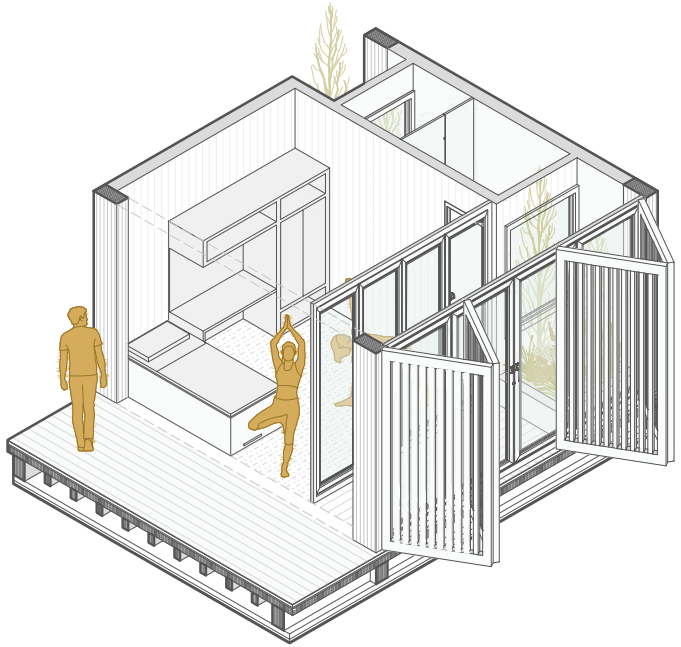


- **Green garden** - Reduces ambient temperature by up to 3°C, supporting local biodiversity
- **Water retention garden** - Retains up to 80% of roof precipitation - passive stormwater management integrated into the program
- **Outdoor common areas** - Open-air exposure reduces stress and accelerates athletic recovery
- **Covered public space** - Wind-protected for year-round usability
- **Yoga and pilates room** - Dedicated recovery space - reduces injury risk by up to 30%
- **Communal kitchen** - Communal eating improves team cohesion and supports athletic nutrition
- **Multipurpose area** - Adaptable beyond competition season
- **TB Single Room** - 60% distributed across the four towers
- **TA Double Room** - 30% distributed across the four towers
- **TC Accesible Room** - 10% distrubiited across the four towers
- **Tv game room** - Mental decompression - social recovery is as critical as physical rest
- **Transitional spaces** - Climate buffer, community threshold, and future expansion

TYPOLOGIES ADAPTABILITY

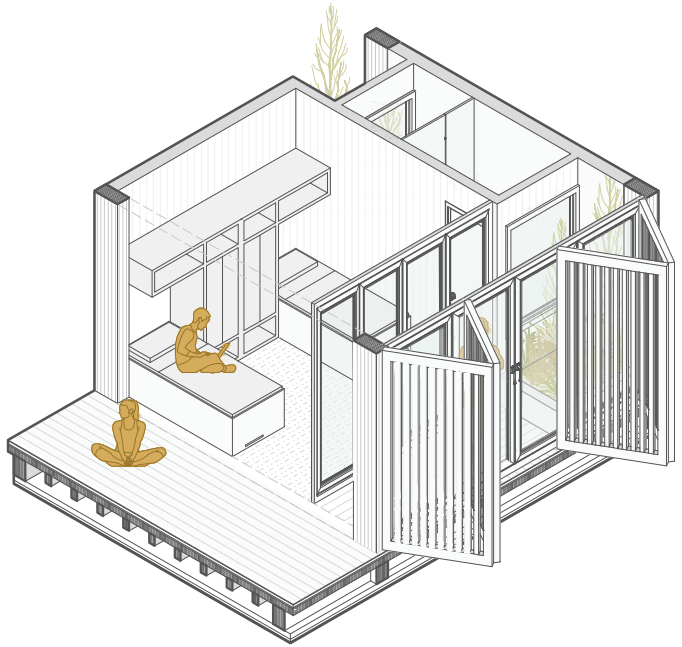
Three adaptable typologies designed for present performance and future transformation

TA Single Room



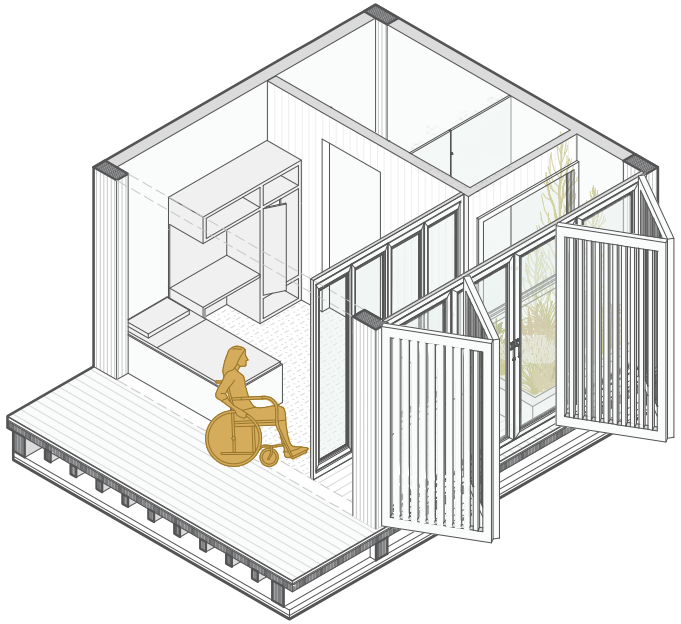
A private retreat for individual focus: one bed, a personal threshold terrace, and direct views to the landscape. Designed for **demountable reconfiguration** — a future studio or office with zero structural intervention.

TB Double Room



The same module, doubled — two beds, **shared threshold terrace, and a flexible layout** that adapts to teammates or traveling pairs. Convertible into a larger single suite or collaborative workspace post-competition.

TC Accesible Room

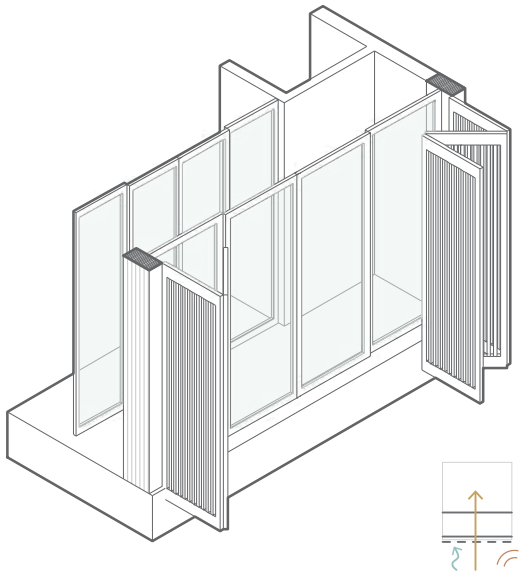


Full universal design compliance: wider clearances, adaptable fixtures, and a threshold terrace accessible at grade. **Future-proof** for residential, medical, or hospitality use without modifying the structural shell.

ADAPTABLE AND RESILIENT FACADE

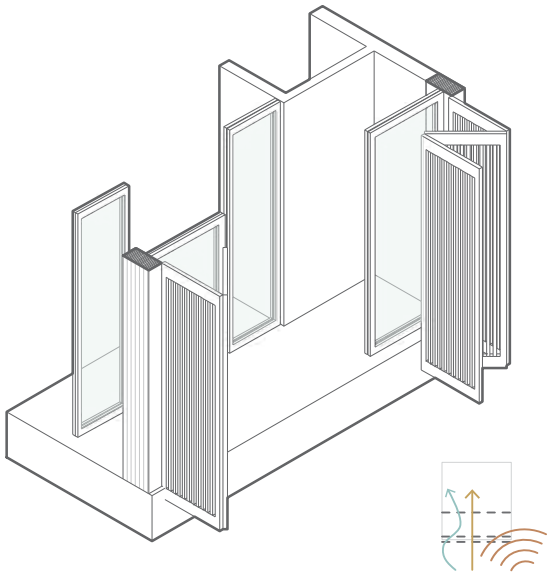
A demountable timber screen system modulates solar exposure, ventilation, and thermal performance across Belgrade's four distinct seasonal conditions.

Winter



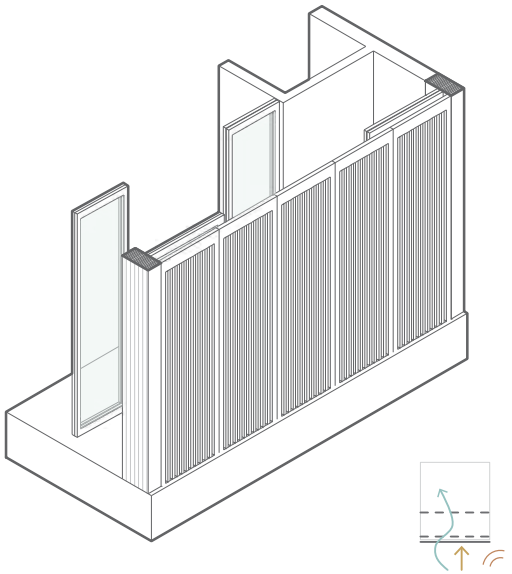
The closed timber screen blocks cold Danube winds and **retains solar gains** through direct glazing exposure. Interior temperatures are stabilized by the CLT thermal mass. **Acoustic attenuation remains constant** through the sealed PVB laminate unit.

Spring



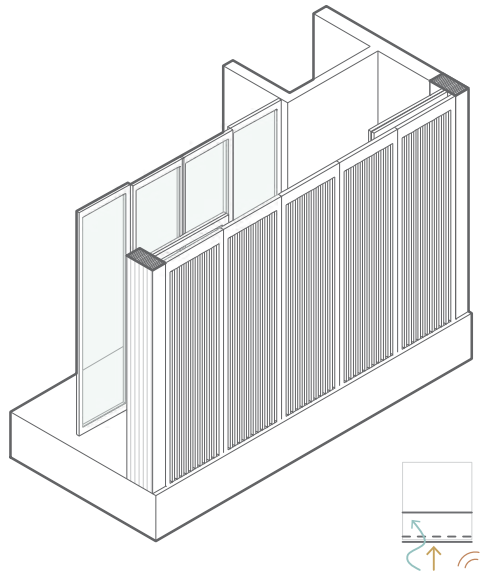
Panels partially open to channel mild riverside breezes, introducing **natural ventilation** as exterior temperatures moderate. Diffuse solar radiation penetrates the screen; **interior and exterior temperatures begin to equalize.** The acoustic layer continues to buffer waterfront noise.

Summer



The fully deployed screen **intercepts peak solar angles**, preventing overheating in athlete rest areas. **Ventilation is redirected through controlled gaps** rather than direct openings. **Interior temperatures remain decoupled from the high exterior thermal load.**

Autumn

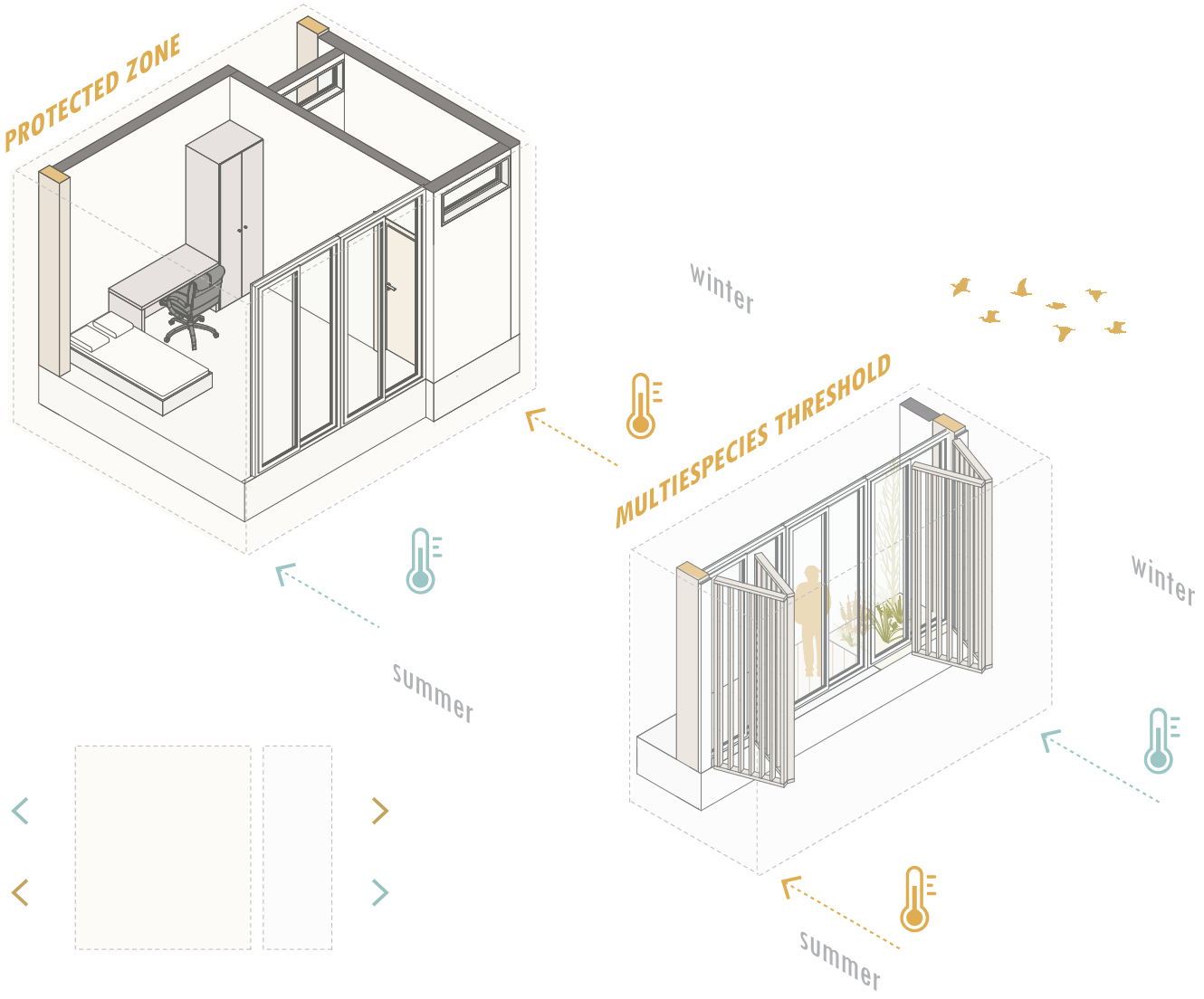


Panels rotate to harness prevailing breezes for passive pre-cooling before mechanical systems engage. Solar exposure is moderated as sun angles lower. **The thermal gap between interior comfort and exterior variability narrows naturally.** Noise buffering persists through the fixed glazing layer.

Meeting LEED Credits MRc3, MRc4, EAc2, EQc2

TRANSITION LAYERS

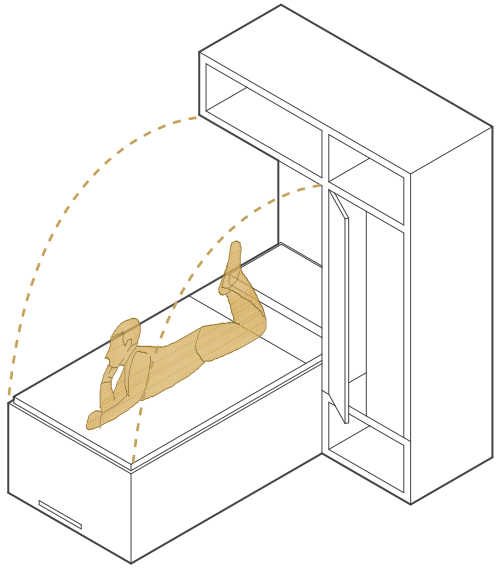
Buffer zone as passive strategy for climate regulation



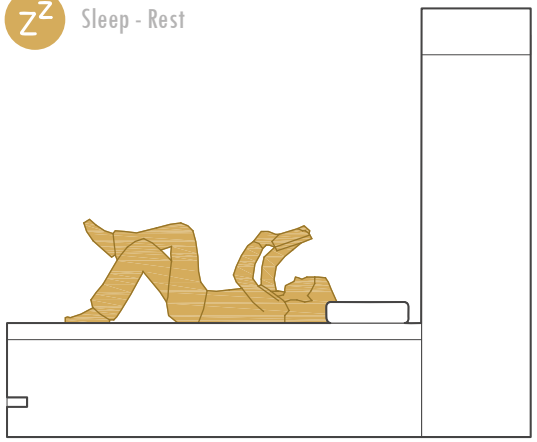

TAURASI
3
STEWART
30
SEMANA DE ENTRENAMIENTO
DÍA
MAÑANA
TARDE
LUNES
8:00 FUERZA
17:00 TÉCNICA INDIV
MARTES
8:00 TIRO
18:00 PARTIDO vs. ZVEZ
MIÉRCOLES
8:00 FUERZA
17:00 TÁCTICA EQUIPO
JUEVES
8:00 RECUPERACIÓN
18:00 PARTIDO vs. BUDUĆ
VIERNES
8:00 TIRO
17:00 TÉCNICA INDIV.
SÁBADO
10:00 ACTIVACIÓN
20:00 PARTIDO vs. PARTIZ
DOMINGO
DESCANSO
RECUPERACIÓN / MOVILIDAD
MIND OVER

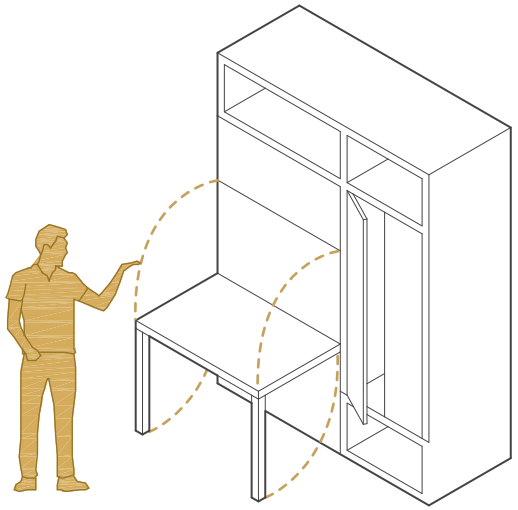
FLEXIBLE INTERIOR FURNITURE

Adaptability to make the most of the space

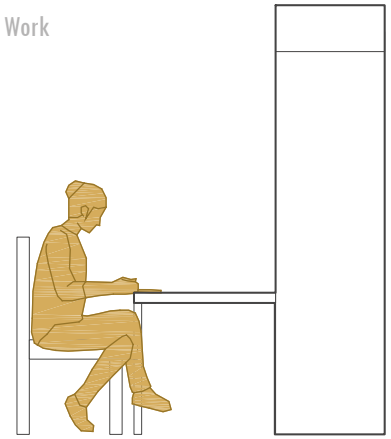


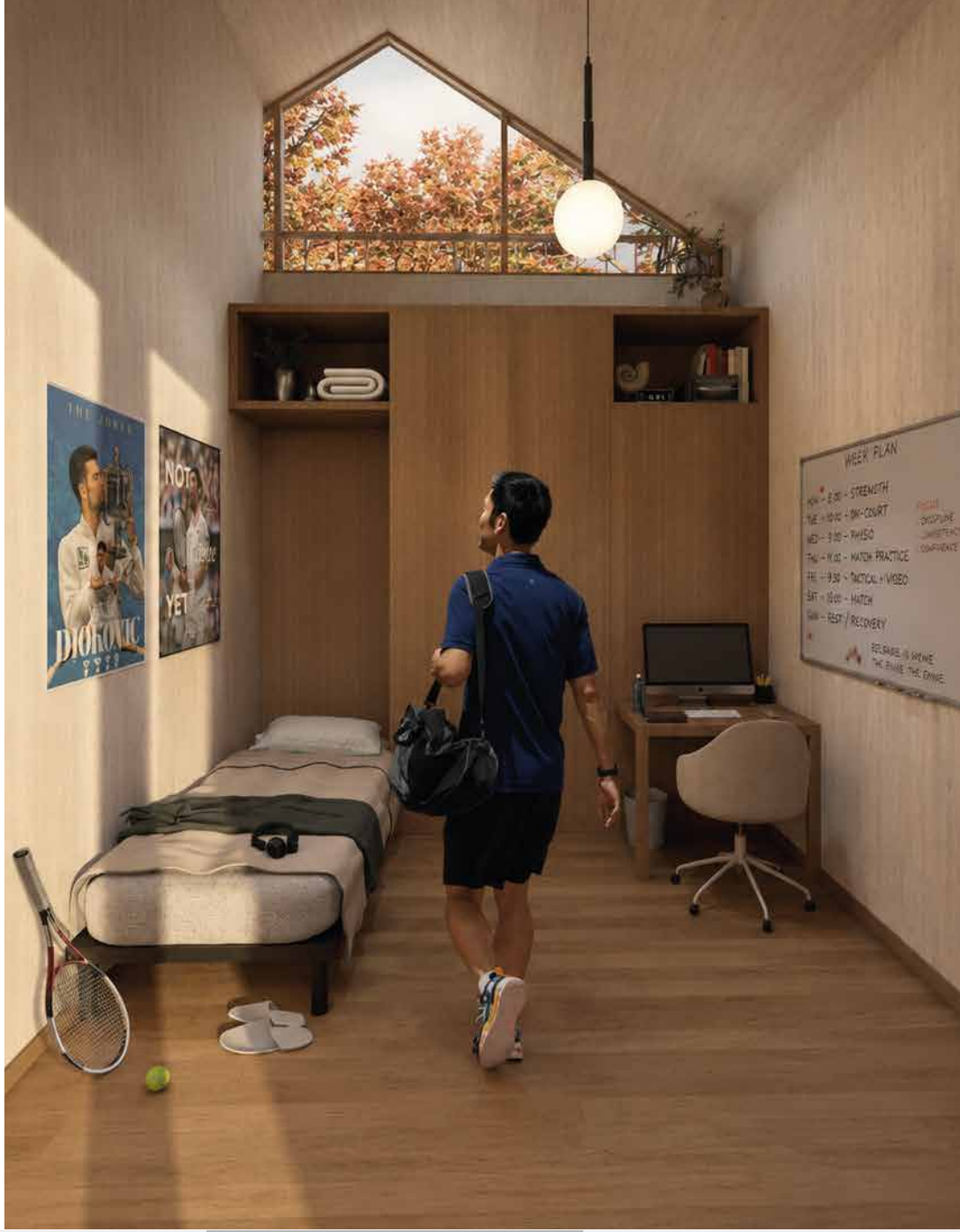
Sleep - Rest





Study - Work



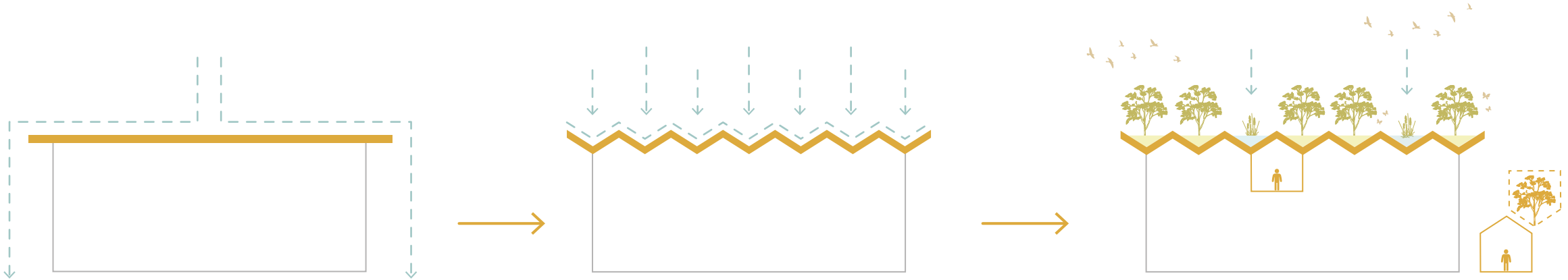


BIOCLIMATIC STRATEGY

Reimagining the Section Through Climate

WATER AS A MULTIESPECIES CATALYST

Collected water supports habitats, microclimates, and shared ecological processes within the building



Water goes to waste

Roofs are designed to keep people inside from getting wet, but if they're meant to handle water, why divert it instead of interacting with it?

Water is collected

Water is an active element in the ecosystem, architecture must not only protect it but also take advantage of all the benefits it offers.

Water as the catalyst for an ecosystem

Water is life—or at least it has the power to create it—which is why this project views it more as an ally than as a real problem.

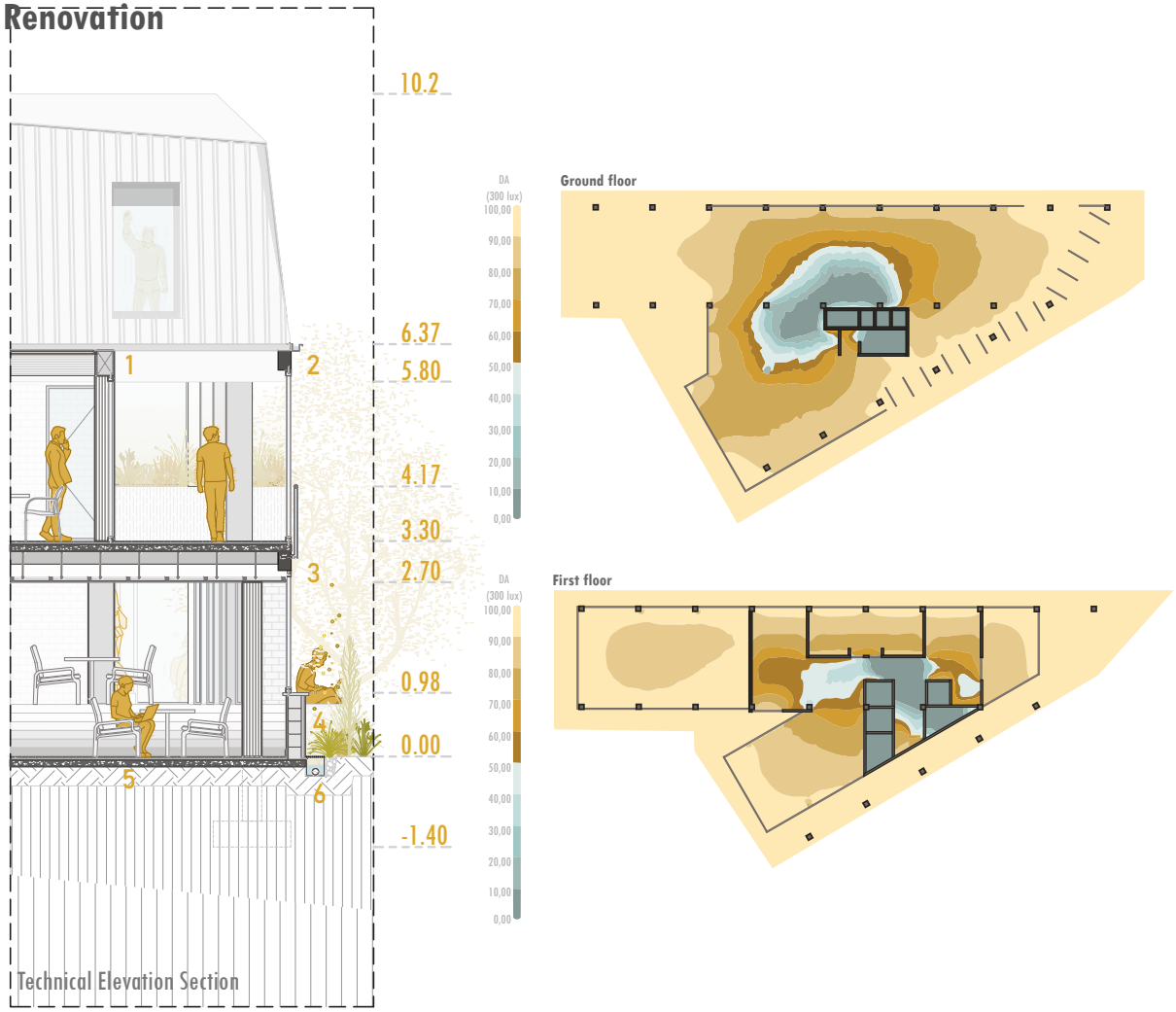
COMPETITION TARGETS

Velux natural daylight performance simulation

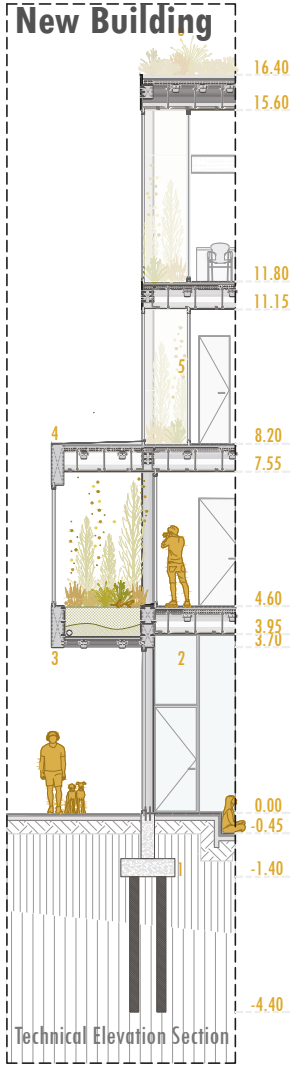
Meeting LEED Credits IPp1, IPp3, WEp1, EAc4, MRp2, MRc1, MRc2, MRc3, MRc4, MRc5,

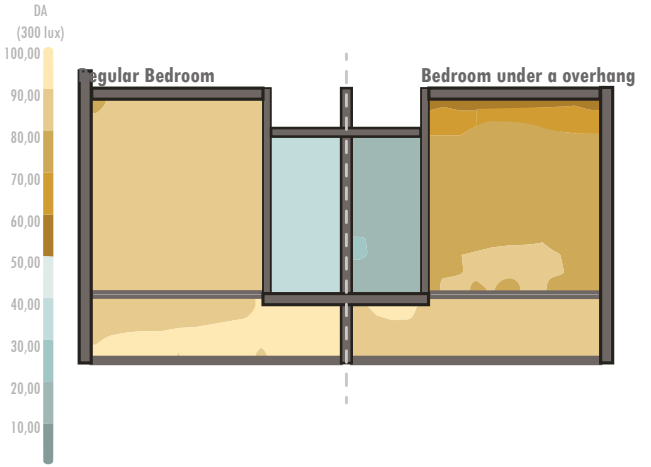
Daylight Visualizer

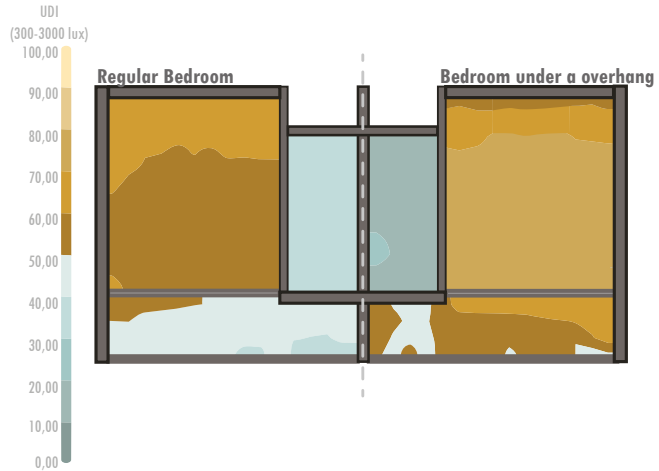
Renovation



New Building







SAINT-GOBAIN ecophon SAINT-GOBAIN isover SAINT-GOBAIN weber SAINT-GOBAIN placo SAINT-GOBAIN pam SAINT-GOBAIN

COMPETITION TARGETS

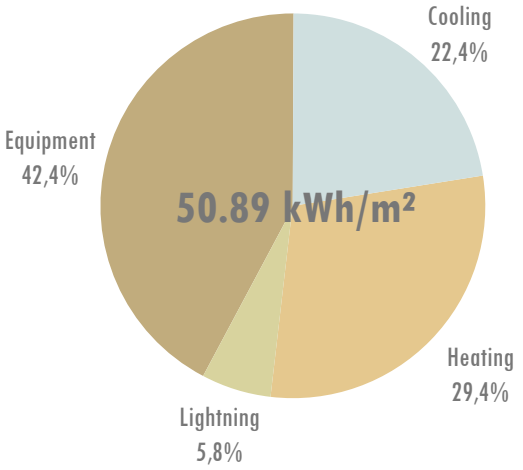
Climate Studio energy consumption simulation

Meeting LEED Credits IPp1, IPp3, WEp1, EAc4, MRp2, MRc1, MRc2, MRc3, MRc4, MRc5,

Renovation

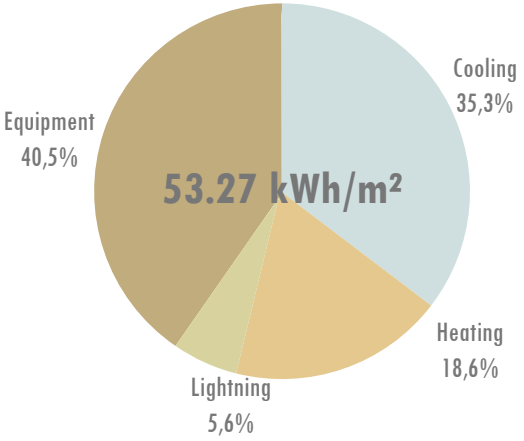
Annual energy consuption for a regular office of the project - Present (2026)

Total- 1027 kWh
Heating- 302 kWh - 14.96kwh/m²
Cooling- 230 kWh - 11.39kwh/m²
Lightning- 60 kWhv- 2.97kwh/m²
Equipment- 435kWh - 21.55kwh/m²



Annual energy consuption for a regular office of the project - Future (2080)

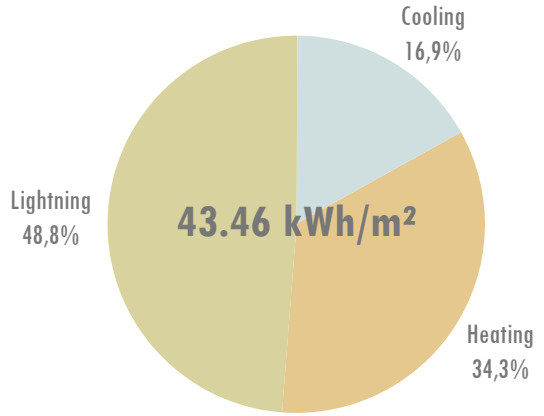
Total- 1075 kWh
Heating- 200 kWh - 9.91kwh/m²
Cooling- 380 kWh - 18.8kwh/m²
Lightning- 60 kWh - 2.97kwh/m²
Equipment- 435kWh - 21.55kwh/m²



New Building

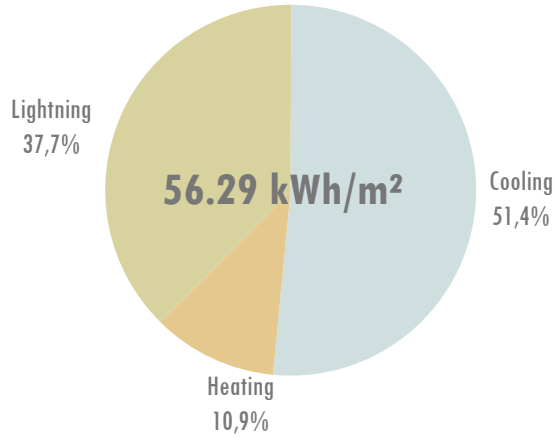
Annual energy consuption f or a regular bedroom of the project - Present (2026)

Total- 539 kWh
Heating- 185 kWh - 14.91kwh/m²
Cooling- 91 kWh - 7.33kwh/m²
Lightning- 263 kWh - 21.20kwh/m²



Annual energy consuption for a regular bedroom of the project - Future (2080)

Total- 698 kWh
Heating- 76 kWh - 7.33kwh/m²
Cooling- 359 kWh - 28.95kwh/m²
Lightning- 263 kWh - 21.20kwh/m²

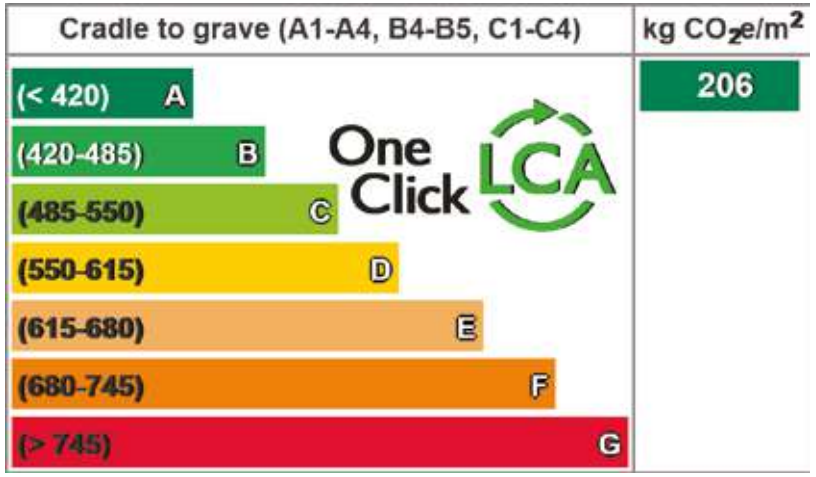


COMPETITION TARGETS

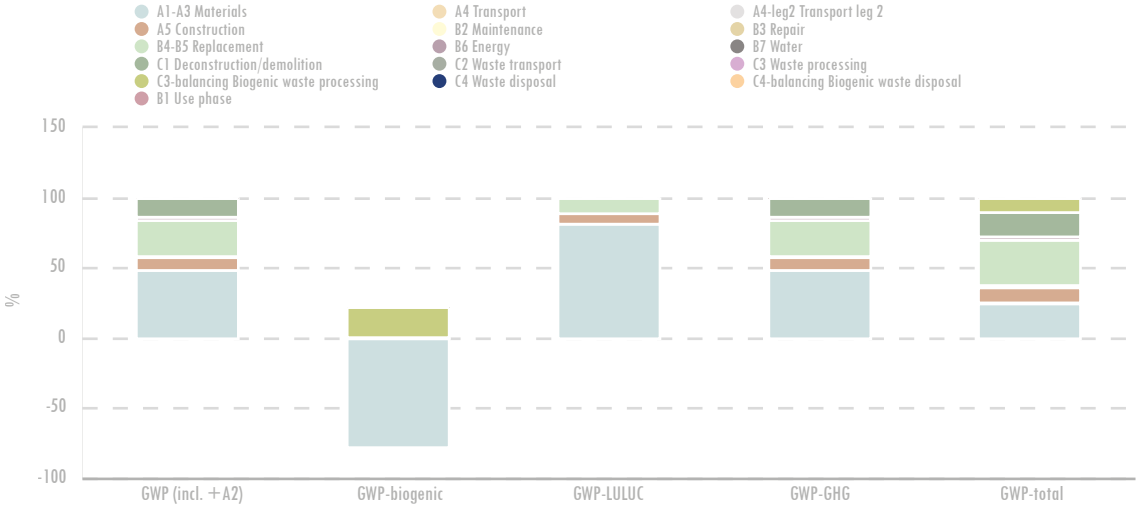
ONECLICK LCA embodied carbon simulation

Meeting LEED Credits IPp1, IPp3, WEp1, EAc4, MRp2, MRc1, MRc2, MRc3, MRc4, MRc5,

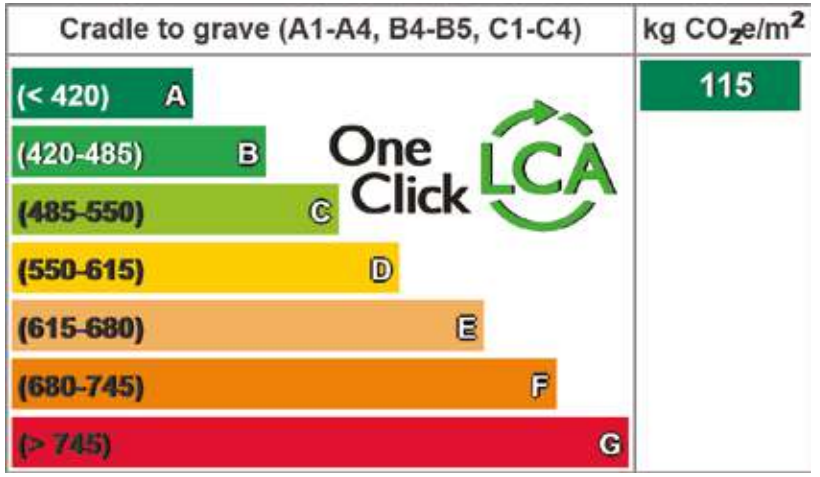
Renovation



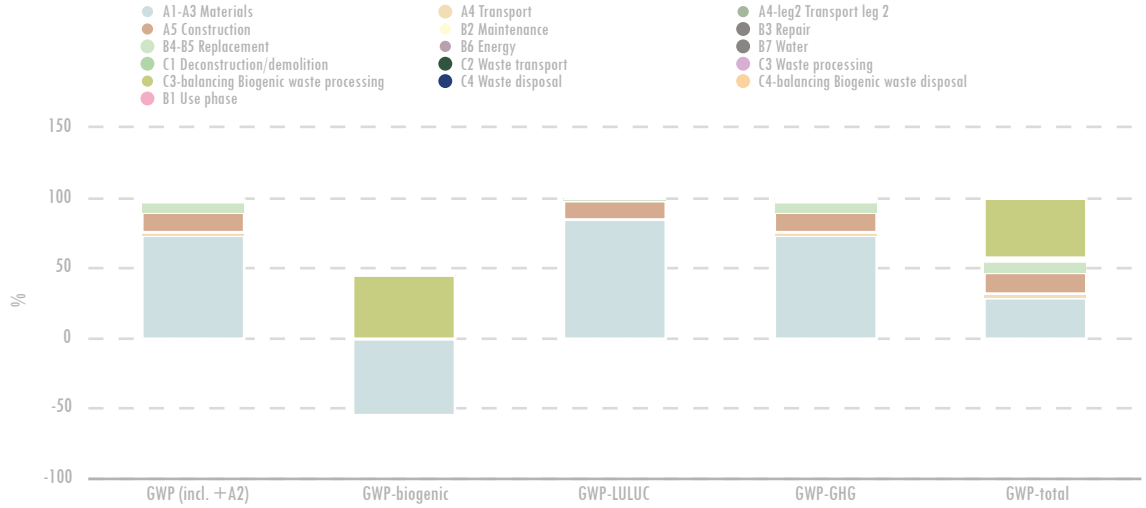
Life-cycle impacts by stage as stacked columns



New Building



Life-cycle impacts by stage as stacked columns




MULTICOMFORT

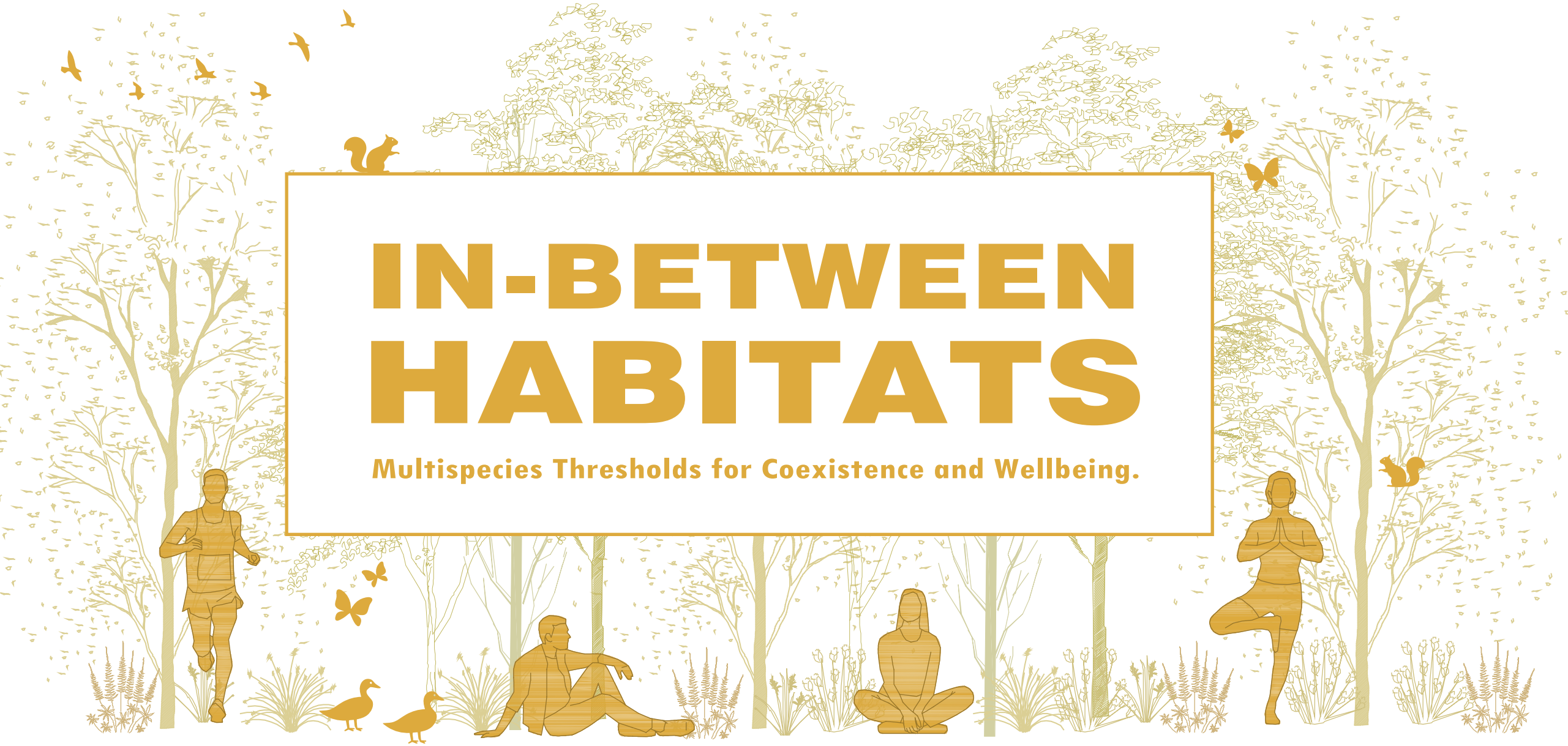
TOWARD A MULTISPECIES FUTURE

Designing for Belgrade taught us that **architecture is never neutral**. Every edge, every material, **every threshold is a decision about who and what belongs**. These five principles guided our project and will guide everything we design after it.

- Climate is not a constraint. It is the brief.
- Thresholds is where architecture begins.
- A building that cannot adapt will not survive.
- Sustainability must be measurable to be meaningful.
- Architecture belongs to more than its users.

THRESHOLDS

PLACES OF COEXTISTENCE



IN-BETWEEN HABITATS

Multispecies Thresholds for Coexistence and Wellbeing.