NEW NEIGHBORHOOD FOR EDUCATIONAL WONDER

adaptability | community | sustainability

1 MAIN ENTRANCE VIEW

1

NEW

Neighborhood for Educational Wonder. An adaptable platform with boundless possibilities and expansive potential.

This project aims to cultivate a strong sense of community through the design of an educational neighborhood that prioritizes adaptability, flexibility, and sustainability.

Central to this vision are indoor and outdoor courtyards that serve as communal hubs, fostering social interaction and collaboration among students, educators, and the local people.

The school and classroom modules are organized around open spaces to maximize natural light and air. Classrooms are strategically positioned to overlook green areas, creating a healthy and engaging learning environment that fosters a strong indoor-outdoor relationship. Common areas form the central educational axis between the primary school, gymnasium and lyceum.

The shelter space, with access points near educational hubs and an additional entrance near an external kindergarten, serves as an emergency refuge and educational area, including workshop rooms for various learning activities, and is equipped with an extra power system.

The building has a prefabricated load-bearing wall structure and is energetically autonomous by adopting low-carbon approaches that reduce its environmental footprint. The high efficiency plants and the technological strategies ensure thermal and acoustic comfort for the users.

Overall, the design integrates educational value, outdoor connectivity, and key functional features, creating a supportive, adaptable, and enriching environment for all users.

1.1 DESIGN PRINCIPLES TOOLKIT

A modular customizable system that offers endless possibility for flexibility and reconfigurability.

The design is centered on three main principles:

- **Adaptability and flexibility**
- **Courtyards and community**
- **Sustainability and resilience**

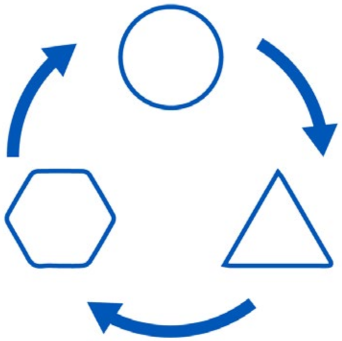
To address the principle of adaptability, a modular customizable system is proposed, offering flexibility and reconfigurability. This system predominantly utilizes concrete and timber, selected for their widespread availability and quick deployment across the country.
Additionally, the implementation plan includes various options for the reuse of scraps, such as landscape infill and iconic exterior facades. Notably, finishing products are crafted from a specially formulated mixture of recovered aggregates, comprising entirely recycled minerals.
This approach aligns with a production philosophy rooted in innovation and sustainability, ensuring resource efficiency and environmental responsibility throughout the project lifecycle.

The void, serving as the heart of the proposal, embodies the essence of community within a multipurpose educational neighborhood. Functioning as the nucleus from which the entire design emanates, the courtyards serve as the most public spaces, adaptable to diverse functions and atmospheres. Whether covered or uncovered, verdant or equipped, these courtyards are envisioned as dynamic hubs of activity, evolving to suit the needs of the hosted functions.
The framework of the courtyards cascades through the connections and

The reuse of scraps as landscape infill, iconic exterior facades and finishings. These products are crafted from a specially formulated mixture of recovered aggregates, comprising entirely recycled minerals.

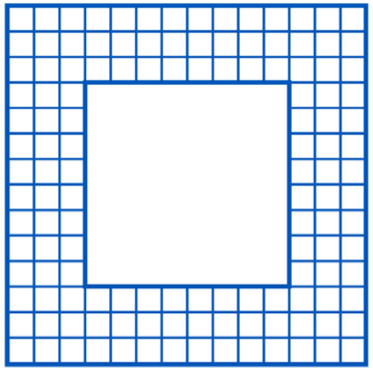
functions between them.
By designing around this public void, the project opens boundless possibilities for creating dynamic and engaging spaces that resonate with the vibrancy of community life.

To address sustainability, the design is conceptualized as a modular system that can be easily assembled and dismantled. Incorporating principles of design for disassembly, the prefabricated components offer customization to suit specific site conditions while significantly reducing construction timelines and minimizing CO_2 emissions.
Designed as a modular system, the architecture allows for the use of the buildings depending on occupancy levels, maximizing resource efficiency and reducing waste.
Additionally, ample green spaces are integrated throughout the neighborhood, promoting biophilia and enhancing overall well-being.
The counter-walls serve a dual purpose, hosting natural insulation to optimize energy efficiency while housing the mechanical, electrical, and plumbing systems within a compact footprint. Further sustainability features include the incorporation of photovoltaic panels to generate renewable energy and the implementation of green roofs to mitigate heat island effects and promote biodiversity.



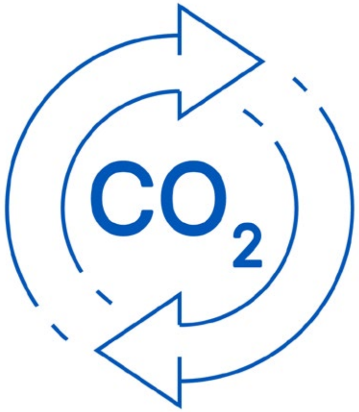
ADAPTABILITY

The principle of adaptability is addressed with a modular customizable system that allow flexibility and reconfigurability from the urban level to the detail of the product.



COURTYARDS

Designing around a public void, whether covered or uncovered open up possibilities for dynamic and engaging spaces.



SUSTAINABILITY

Generating renewable energy and implementing green roofs to mitigate heat island effects and through modularity and prefabrication reducing construction timelines in the effort to reduce carbon dioxide emissions.

2 DESIGN THE SYSTEM

An adaptable system that guarantee flexibility from the masterplan design to the product.

The aim of the project is responding to the educational needs of Ukraine today, combining learning and educational spaces to supplementary functions for the local community.

The design presents a modular and flexible system spread on the project site that stands as an educational neighborhood, where pupils are involved in different extracurricular activities following the concept of full-day school.

Built space modules converge around open areas, fostering a harmonious indoor-outdoor relationship that allows natural light and air to enrich the overall environment and to create an engaging and healthy learning atmosphere.

The building appears as a flat porous volume with a specific disposition of spaces. The same spaces could be rearranged in many different ways thanks to the grid structure.

The flexibility and the versatility of this system are granted by the chosen prefab technology based on digitalization of processes. The factory production, transportation and installation of ready-made blocks allow to reduce logistic costs, save resources and significantly increase the construction pace.

The building is energetically autonomous and adopts low-carbon approaches that reduce its environmental footprint.

2.1
DESIGN FOR ADAPTABILITY
CONSISTENTLY SITE SPECIFIC

A flexible platform on the urban level and a modular customizable system on the product level that prioritizes flexibility and reconfigurability.

The project is organized as a grid of modules, a large spatial device that promises infinite possibilities of interior recombination from within the certainty of its boundary.

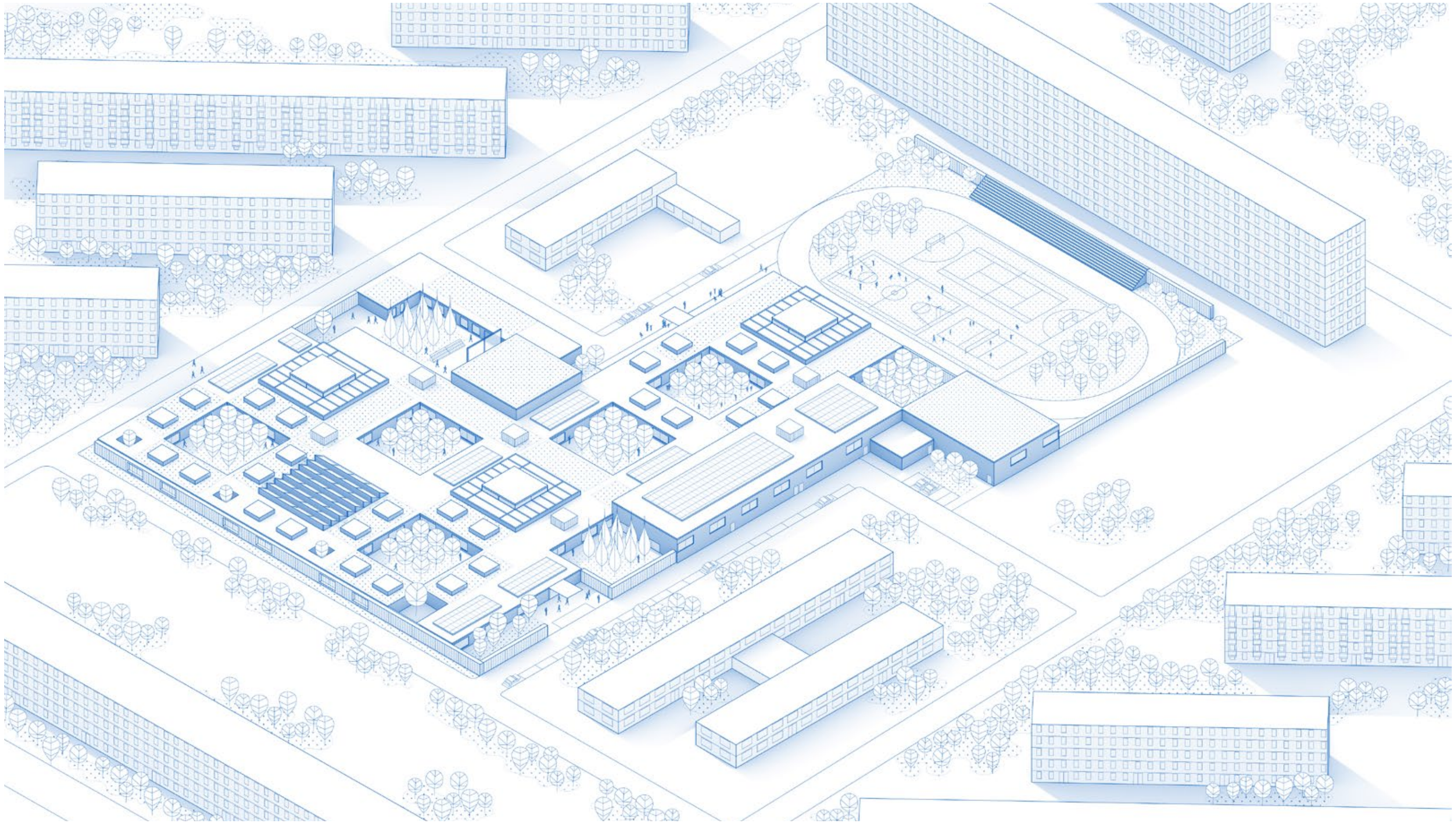
The principle of adaptability is at the forefront of the proposed design, which comprises of a flexible platform on the urban level and a modular customizable system at the product level, ensuring the flexibility and reconfigurability priority.

This formal and spatial matrix is capable of combining diverse elements while maintaining the identity of each, giving rise to the characteristic of porosity and interconnectivity and leads to the riconfiguration of the same spaces in the other two sites B and C.

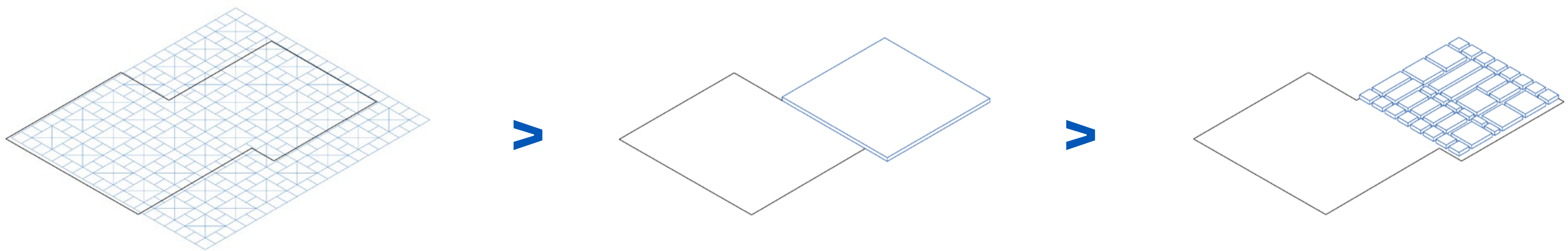
The system components are durable, adaptable, and easily assembled. This offers flexibility for the schools to shape learning environments that suit their identities.

Since children spend the most of their time at school the spatial quality is paramount. The classrooms and other common spaces, like the leisure rooms and the sports courts, receive natural light from the large windows integrated into the overall prefabricated structure and from the roof.

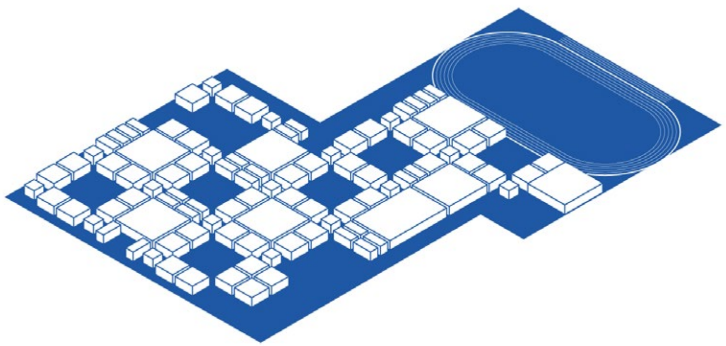
The grid layout helps to create a fluent and direct connection between these indoor areas and the outdoor minimising the need for communal corridors.



2 ISOMETRIC VIEW . LAYOUT A

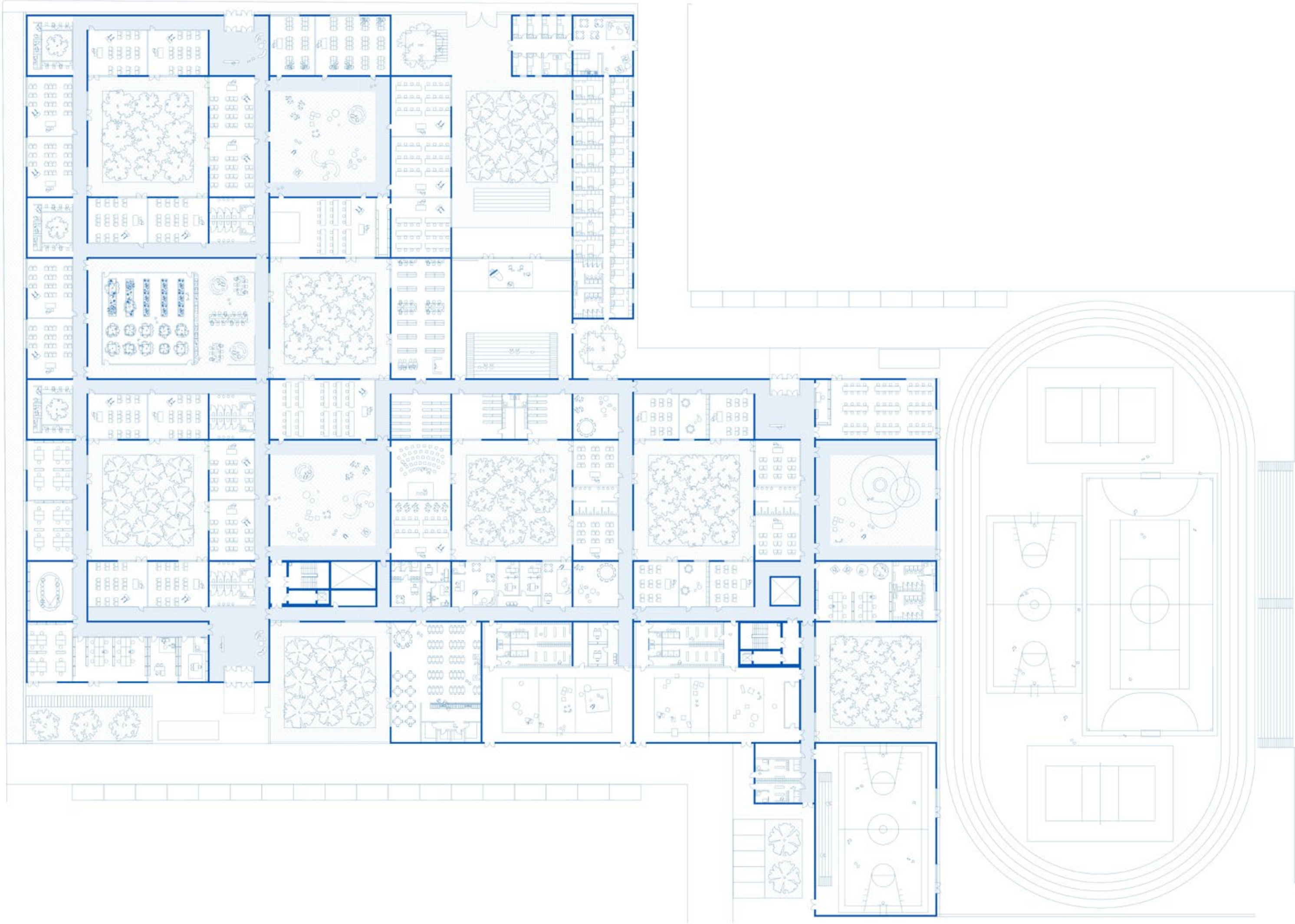


3 CONSISTENTLY SITE SPECIFIC



Here, the grid plant converges with the programmatic elements to fashion a multipurpose educational neighborhood replete with all essential facilities and amenities. Distances are carefully adressed and accesses are widespread with the veichle possibility for parking nearby each of them (35 units). Corridors are transformed into dynamic spaces for informal learning and social interaction, maximizing the utility of the space.

The modular layout aids in compartmentalizing the complex into five distinct sections to meet fire safety requirements , while the green roofs help achieve the greenery standards.



4 PLAN . LAYOUT A

2.2 DESIGN FOR DISASSEMBLY

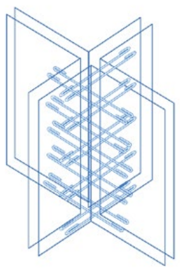
SUSTAINABILITY CORE

To facilitate the disassembly of building components at the end of their useful life, so that they can be reused, recycled or recovered, based on the principles of the circular economy.

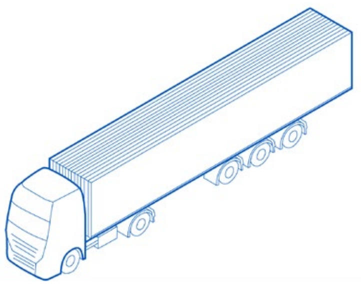
The principle of adaptability is at the forefront of the proposed design, which comprises of a flexible platform on the urban level and a modular customizable system at the product level, ensuring the flexibility and reconfigurability priority.

Concrete and timber serve as the primary materials due to their widespread availability and swift deployment potential across the country. Moreover, the implementation plan incorporates innovative strategies for repurposing rubble.

Design for disassembly is a design approach that aims to facilitate the disassembly of building components at the end of their useful life, so that they can be reused, recycled or recovered, based on the principles of the circular economy.



design for disassembly



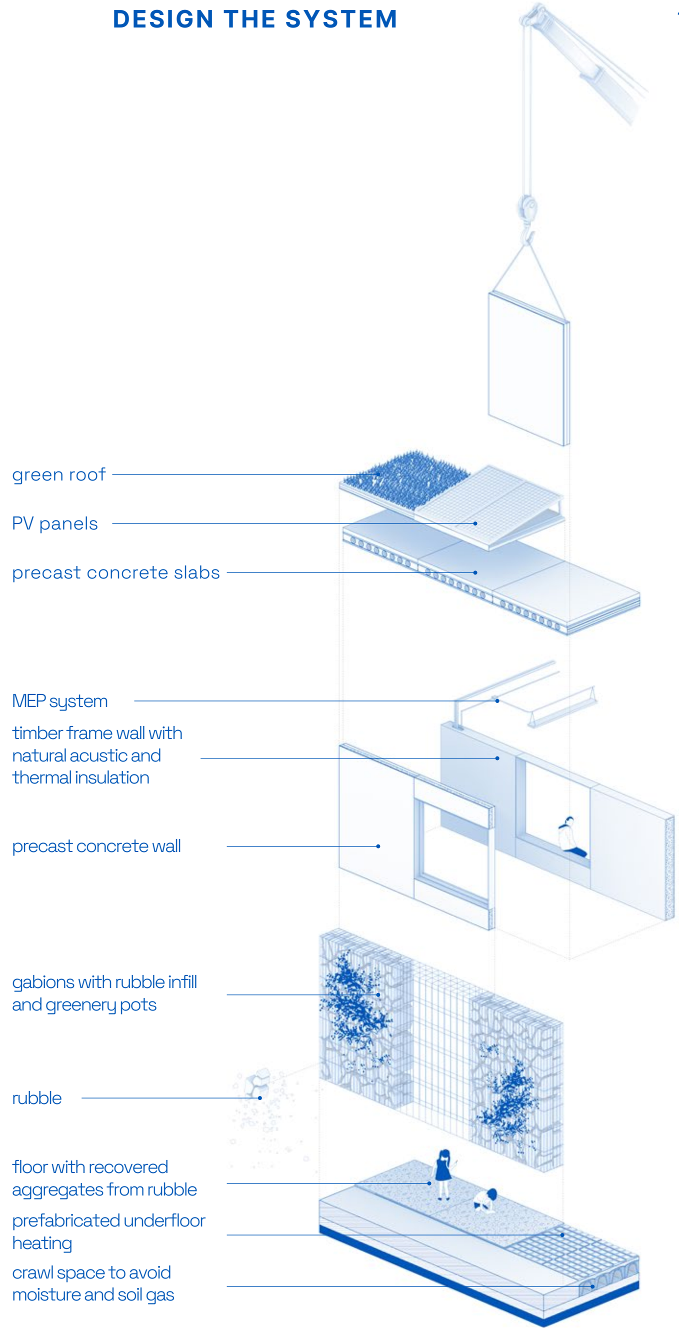
transportable

Leveraging the modular customizable system and innovative reuse strategies to minimize environmental impact and maximize resource efficiency. Through the thoughtful selection of materials and construction techniques, the project aims to create a resilient and environmentally responsible building that can evolve with the needs of its users and the surrounding community.

All the components are precisely made in the factory under a digitally controlled process to ensure fast assembly and disassembly by an electric crane on site.

It can expand, downscale, or vary in configurations to respond to different needs over time. When a school closes, the building can be fully dismantled, and all the components become construction materials again.

The partition walls are biobased and can be adapted to support all kind of activities.



2.3
LOW CARBON DESIGN
FOCUS ON MINIMIZING CO_2 EMISSIONS

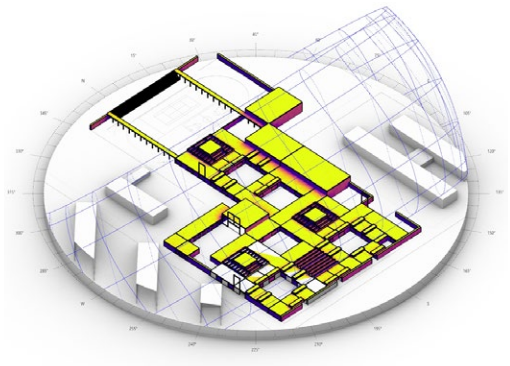
The project aims for a Carbon Zero School and Community Hub, integrating sustainable design and low-carbon technologies to ensure health, comfort, and minimal environmental impact.

The aim of the project is to create a Carbon Zero School and Community Hub, that reflects the relationship between urban development and the environment, not only by conserving and safeguarding its environmental features, but also by adopting a 'resilient' approach of avoiding, reducing and adjusting to climate change, that can ensure a high level of health, comfort and security for its students and citizens. The project follows the Do No Significant Harm (DNSH) rules and criteria for nZEB (Nearly Zero Energy Building) building design. In particular, the energy strategy tries to:

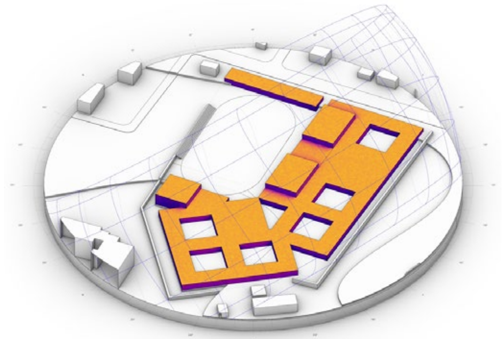
- minimise on-site carbon emissions associated with energy consumption by precluding the use of fossil fuels. In fact the proposed energy strategy uses 100% electric technologies such as heat pumps, with the intention of minimising carbon emissions and local air pollution.

- exploit the opportunities offered by the local environment, using solar energy. A system with high-efficiency heat recovery pumps is proposed to provide the thermal energy for heating, cooling and domestic hot water (DHW) production.

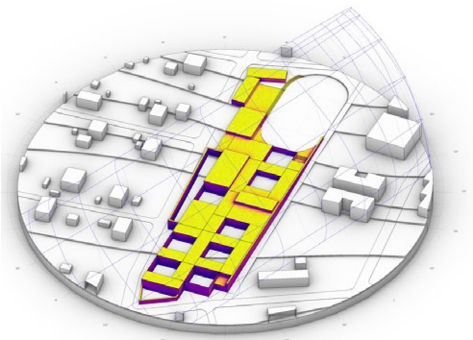
A dynamic simulation was done to estimate the project's energy needs. This activity was based on many assumptions and a simple model, but it helped to compare possible plant configurations. Using the input information and the hourly climate data of the three cities, a heat balance was done to calculate the heating, cooling and electrical needs, and to assess possible energy strategies.



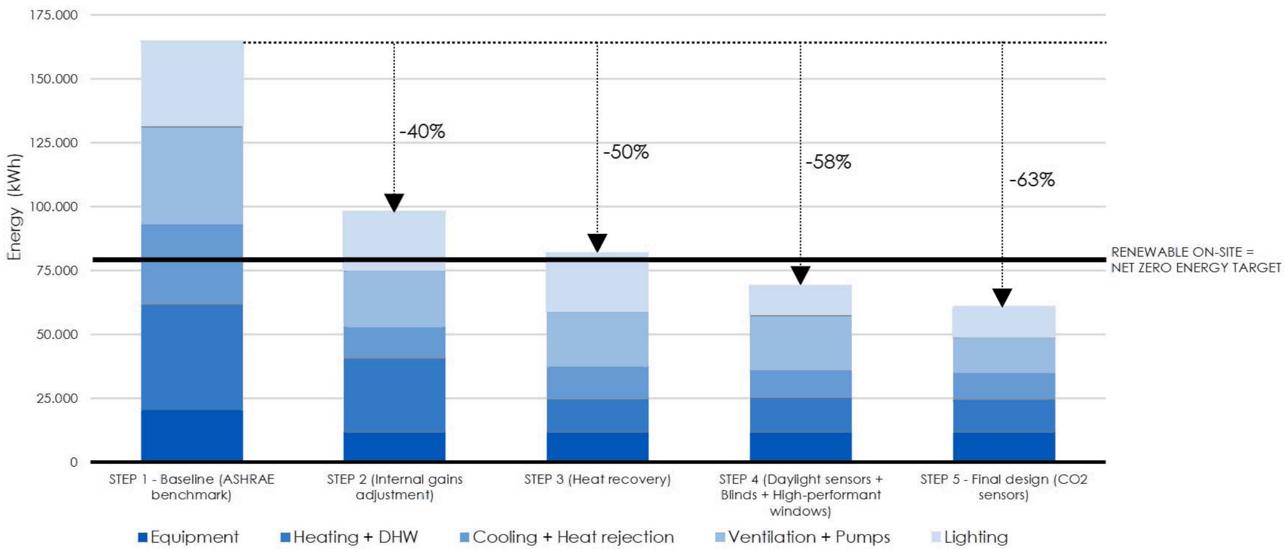
6 SITE A . EAST . DONETSK



7 SITE B . NORTH . KYIV



8 SITE C . SOUTH . ODESSA



5 ENERGY BREAKDOWN . NET ZERO ENERGY ROADMAP

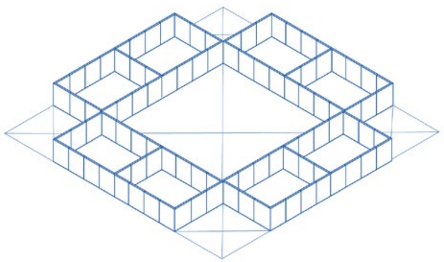
With the renewable energy sources like solar panels on the roof (-65 kWp), each school module aims to lower its consumption by around 65% compared to a reference building and reach energy class A, the best energy class.

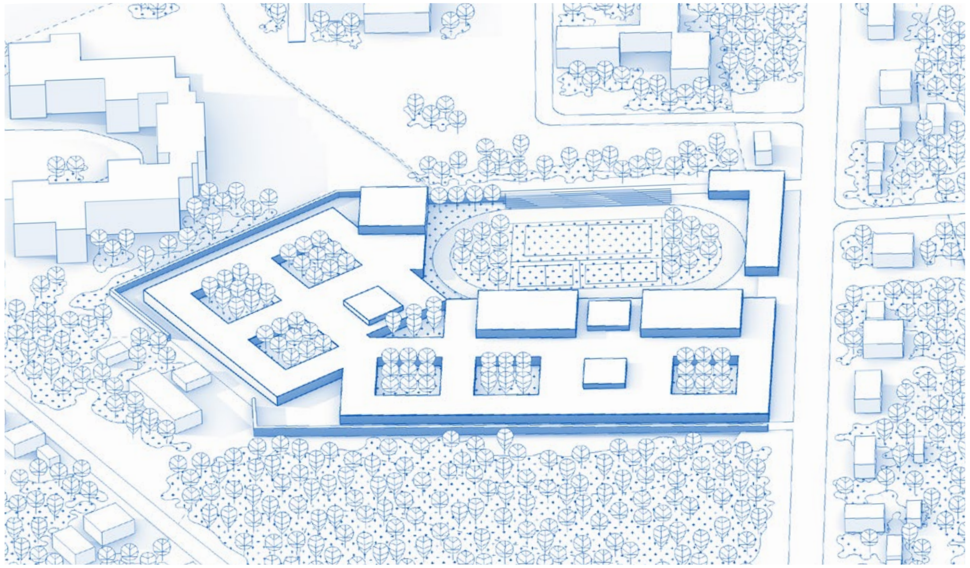
The project's goal is to have zero net carbon emissions, taking into account both the operation and the construction phases. To do this, it adopts low-carbon approaches that reduce the environmental footprint of the building materials and processes, such as pre-assembly and the use of reclaimed or low embodied energy materials. This way, the project will reach yearly energy independence and contribute to tackling climate change and protecting natural resources.

2.4
TAILORING SPACES
LAYOUT B AND C

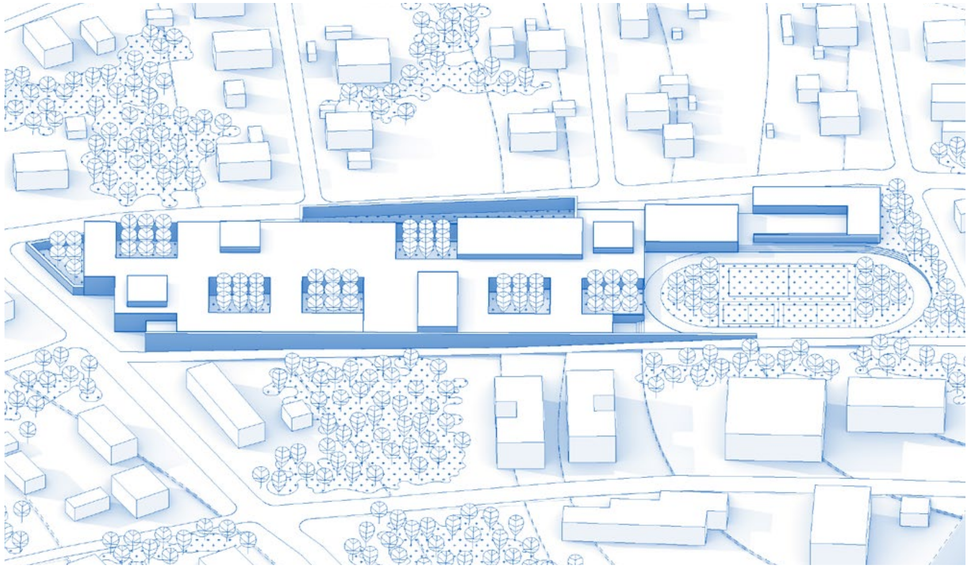
The NEW platform embodies seamless adaptability to diverse constraints, offering a versatile canvas for educational innovation. Modules within the platform can be effortlessly rotated to accommodate varying needs, as exemplified in layout B or superimposed, as showcased in layout C. This inherent flexibility ensures that the platform can effectively respond to evolving requirements and spatial dynamics.

Central to the platform's design philosophy is its articulation around void spaces, which serve as focal points for connectivity and natural illumination. This strategic layout allows for optimal access to natural light from multiple surfaces, enhancing the overall learning environment and promoting well-being.





10 ISOMETRIC VIEW . LAYOUT B



9 ISOMETRIC VIEW . LAYOUT C

11 PLAN . LAYOUT B

12 PLAN . LAYOUT C

2.5
FUNCTIONS OF THE COMPLEX
SPACES

SITE A		
Site surface area	m^2	22,800
Site intensity	%	47
Site density	%	40
Green portion	%	28

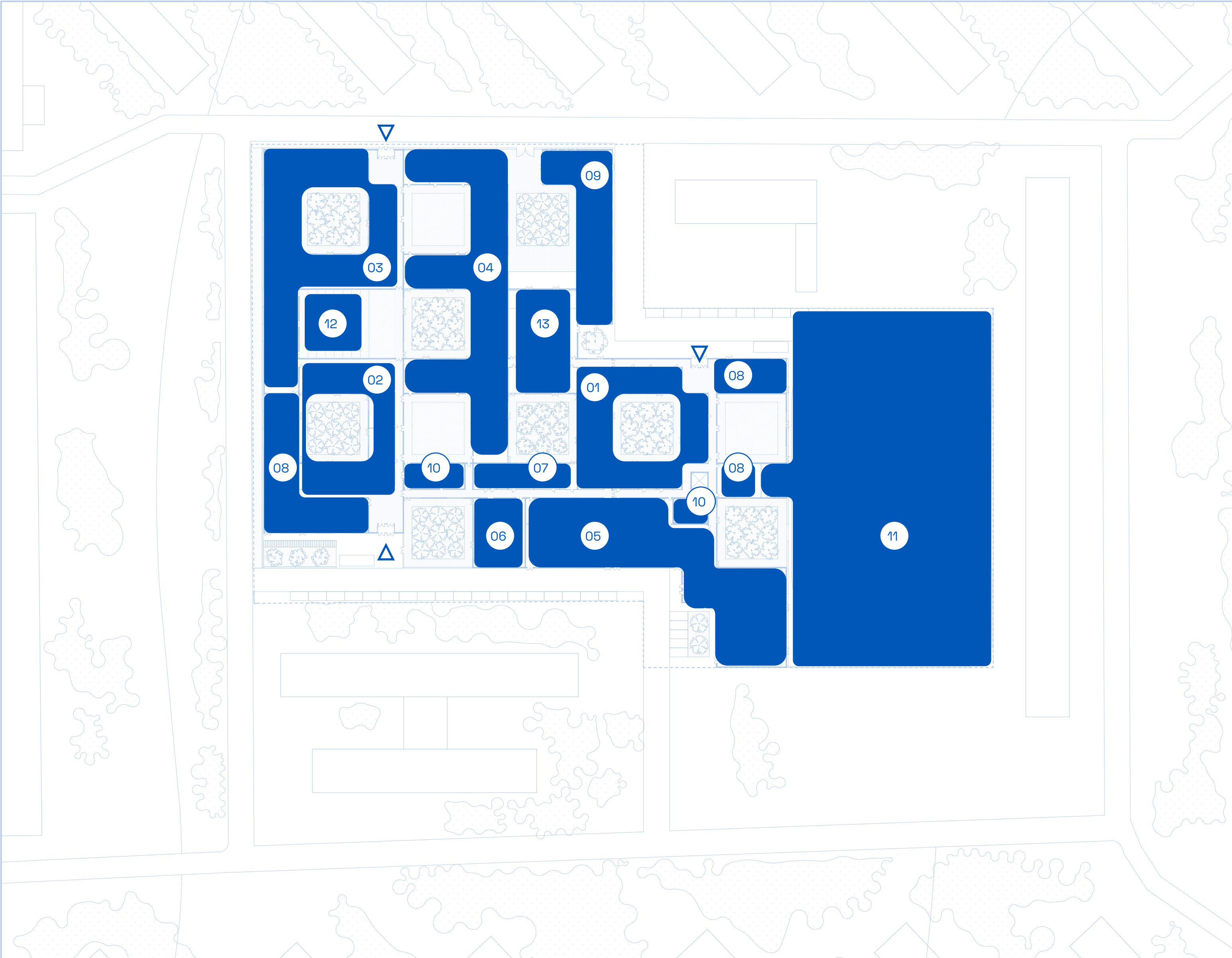
GENERAL DATA		
Total area	m^2	10,480
Usable area	m^2	8,920
Volume	m^3	40,360
Dual-use shelter area	m^2	240
Number of floors	n°	2
Max height	m	6,5

ACCOMMODATIONS. DORMITORY		
Total area	m^2	520
Usable area	m^2	430
Volume	m^3	1,820
Number of floors	n°	1
Max height	m	3,5

GYMNASIUM, LYCEUM, SHARED EDUCATION, COMMUNITY SPACES		
Total area	m^2	7,380
Usable area	m^2	6,340
Volume	m^3	29,520
Number of floors	n°	1
Max height	m	6,5

PRIMARY EDUCATION		
Total area	m^2	930
Usable area	m^2	740
Volume	m^3	3,250
Number of floors	n°	1
Max height	m	3,5

DUAL-USE SHELTER		
Total area	m^2	1,650
Usable area	m^2	1,410
Volume	m^3	5,770
Number of floors	n°	1
Dual-use floor area	m^2	240



01 / Primary education
02 / Gymnasium
03 / Lyceum
04 / Shared services for lyceum and gymnasium
05 / Physical education and sport
06 / Catering
07 / Medicine and preventive healtcare
08 / Office, service and ancillary facilities
09 / Accomodations
10 / Civil protection
11 / Physical education and sport outdoor
12 / Greenhouse
13 / Theatre
▽ Main access

13 FUNCTIONS

2.6
FLOWS OF DIFFERENT INTERESTS
USERS

Every user category has a designated access point with nearby parking facilities, ensuring seamless accessibility for all.

Every user category has a designated access point with nearby parking facilities, ensuring seamless accessibility for all. The users are segmented into three primary categories: pupils, workers, and the local community. Within the pupil's category, further divisions are made for primary, gymnasium, and lyceum students, each with their own specific access points tailored to their needs.

All access points are designed to accommodate both cars and buses, allowing for easy drop-off and pick-up. Moreover, these routes are strategically planned to serve as emergency access routes for firefighters if needed. Special provisions are made for certain facilities, such as the theatre, gymnasium, and canteen, with access points suitable for vehicle loading and unloading of large materials or equipment.

14 **USER'S FLOWS**

3 DESIGN THE VOID

Building functions around a public void defining transparency and continuity for a simultaneous perception of different spatial locations.

The design of void in an educational complex is a key element in creating an environment that promotes learning, well-being and social interaction.

Taking up the principles of modularity and incrementality, the design is developed from a modular grid that aspires to define and design the void on a par with the built environment. Voids are not mere interstices between buildings but become spaces designed with functional and meaningful value.

Courtyards, gardens and recreation areas are configured as the intermediate places of student and community sharing and exchange, true spatial aggregators, and the fulcrum around which the built space of the building is completed.

The transparent design allows for harmonious integration with the surrounding space, fostering a connection with the elements of light, air and surrounding vegetation, crucial elements for a healthy school environment.

The modular dialectic of full-empty spaces allows flexibility in building distribution, enabling future expansion or modification without compromising the harmony of the whole.

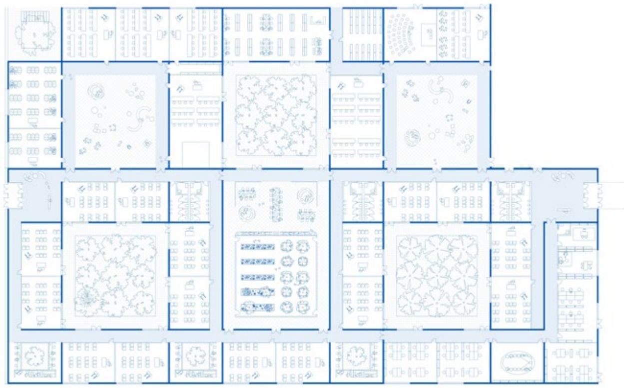
The NEW system becomes the key to rethink the city as an entity at the territorial scale, capable of growing with it and accommodating its future uses and needs.

3.1
DESIGN TRANSPARENCY AND CONTINUITY
COURTYARDS FOR COMMUNITY

Outdoor courtyards blend indoor and outdoor seamlessly with transparent walls

Outdoor areas for recreation and teaching spaces are conceived as courtyards between classrooms and other common spaces and serve as the center of gravitation around which solids float and bond.

The void is characterized as the extension of the indoor teaching space with the help of large transparent surfaces and through a flexible design that allows activities to take place in continuity between inside and outside.



15 PLAN . GYMNASIUM + LYCEUM

16 CLASSROOM AREA

3.2 ARCHITECTURE OF NATURAL LIGHT

ENHANCING LEARNING

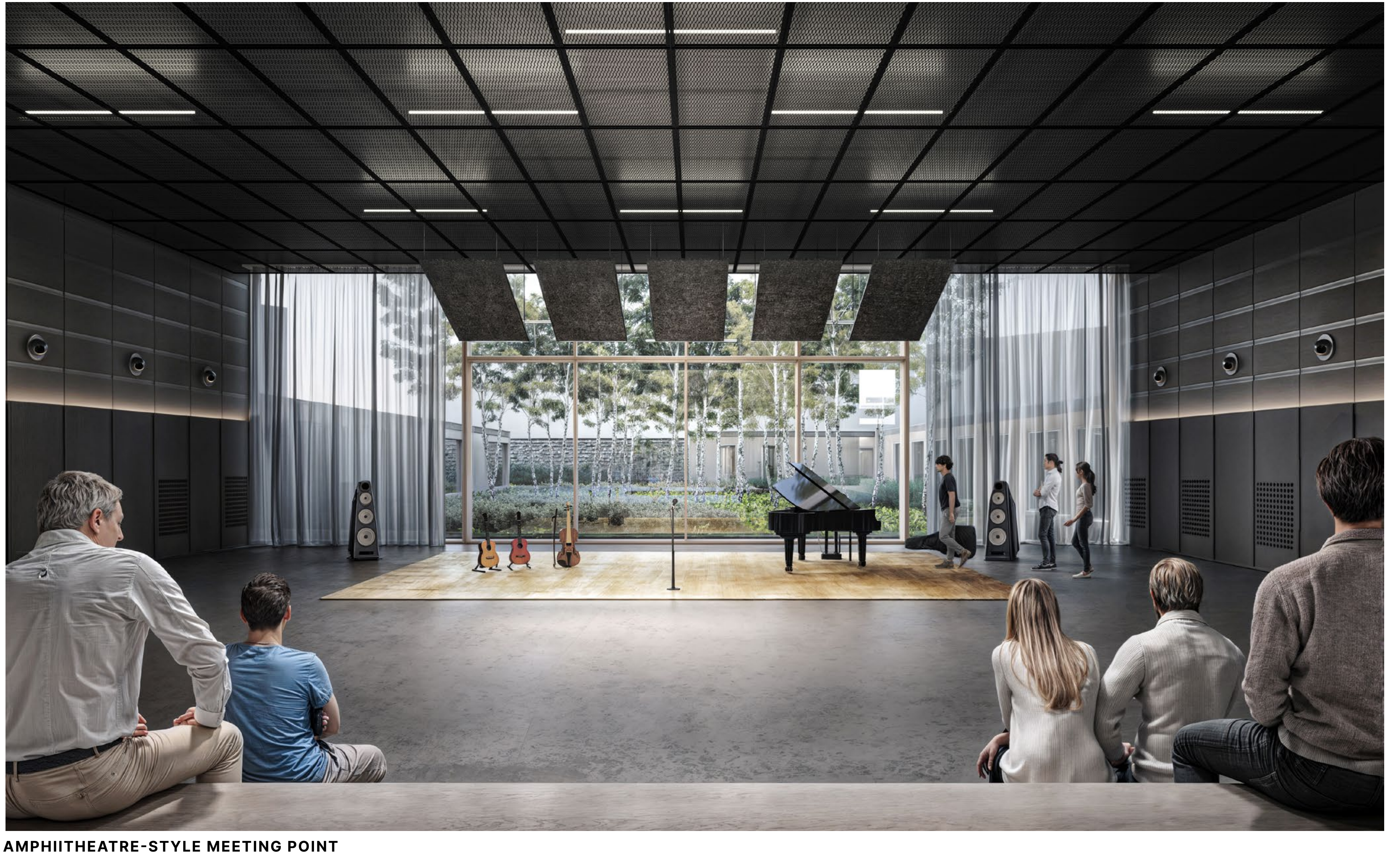
How do we design spaces to be healthier and more supportive of great learning outcomes?

Using natural light as a source of inspiration, this project is an example of innovative educational design. We've carefully performed dynamic simulations to optimize the building's envelope to let in sunlight, ensuring every student can feel connected to the outdoors. The data is impressive: classrooms have a balanced brightness, with over 80% of spaces getting enough daylight.

Natural light has a significant impact on learners. Students exposed to high-intensity daylight showed a remarkable 40% increase in oral reading fluency. Moreover, light affects health; poorly lit spaces may impair vision, but natural light supports both mental and physical health, improving attention, focus, and cognitive ability. It also synchronizes the body's internal clock, enhancing overall well-being.

Our design not only brightens; it changes. It improves student outcomes, especially in literacy, and creates a healthier, more cognitively stimulating learning environment. The use of a DALI lighting system, along with light sensors, adjusts artificial lighting to the rise and fall of daylight, while also matching the natural changes in color temperature that regulate our daily rhythms.

This is not just a building; it's a comprehensive light-focused ecosystem that combines visual, biological, and emotional benefits, enabling each student to excel.

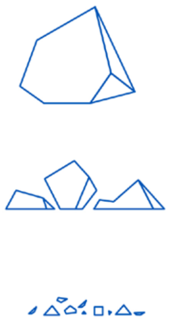


17 AMPHIITHEATRE-STYLE MEETING POINT

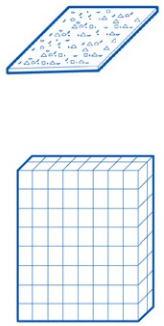
3.3
DESIGN THE LAND
BALANCING HUMANE AND NATURE

Preserving the existing vegetation and shielding the inner spaces against street noise and pollution with the recycling and reusing buildings rubble.

The implementation plan encompasses diverse strategies for repurposing scraps, including landscape infill and the creation of iconic exterior facades. Particularly noteworthy is the utilization of finishing products crafted from a specially formulated mixture of recovered aggregates, entirely composed of recycled minerals. This approach aligns closely with a production philosophy deeply rooted in innovation and sustainability, prioritizing resource efficiency and environmental responsibility across every stage of the project lifecycle.



rubble selection and reuse



recycled minerals

18 SPORTIVE AREA

4 DESIGN THE STRUCTURE

Modularity reduces logistics costs, reduce risks for workers on field, save resources and reduce production of site waste.

The implementation plan encompasses diverse strategies for repurposing scraps, including landscape infill and the creation of iconic exterior facades. This approach aligns closely with a production philosophy deeply rooted in innovation and sustainability, prioritizing resource efficiency and environmental responsibility across every stage of the project lifecycle.

The load-bearing wall structure has been chosen for the following benefits:

• Well fitting and easily adaptable to the architectural and functiona layouts.

• Big flexibility of the structural general arrangement and expandability, simply adding, in future, some similar elements and/or modules.

• Possibility, with few operations, of dismantle or disassembly the erected structure.

• High Quality of the resulting system, since all the components are produced in factories (with maximum level of quality control, by means of a quality plan from manufacturing until installation) and simply assembled on field.

• Reducing in costs of logistics, reducing risks for workers on field, save resources (and use of local ones), reducing production of site waste.

• High seismic resistance due to continuous walls (in both transverse directions) and rigid nodes (more than 0.3 ag/g of PGA is reachable).

4.1 MODULAR PREFABRICATED CONCRETE PANELS

ASSEMBLY AND DISASSEMBLY

”Design for production and assembly”, with the aim of reducing work on site to a minimum to that which is strictly necessary and maximizing work in the factory.

• Big spans allowed without intermediate supports, up to 12m and even more.

• High speed in installation, if compared with standard (ordinary) technologies (i.e. cast in situ reinforced concrete). In high rise buildings 1 floor per week is a standard scheduling. The reduction of time in the erection of structure is about 50% (+40/50% increase in construction speed).

• Reduction of unexpected events on field, since all the process is managed under a digital BIM approach end methodology (deep detailing in advance and strong coordination between various disciplines); this is a guarantee of fixed construction costs.

• Easy installation (with wide diffuse and standard cranes), high durability, integrated thermal insulation and predispositions for plants.

• Technology and materials available in country, where some factories of such type are located and operative.

Structures of such type are very reliable and characterized by high level of robustness (lots of resisting elements, both for vertical – gravity – and horizontal actions), with guarantee of progressive and commensurate-to-action collapse (hence good in case of military actions). Furthermore, they simplify the field operations, with less need of scaffolding in structure assembling phases. Components are rather typical and well tested by long time.

Going through technical details:

• Outer and (some) inner walls (load bearing ones) are made by "multi-layer" reinforced concrete panels, placed side by side to create continuous walls. Internal layer is in heavy strength reinforced concrete; external (outer) layer is in glassfiber-reinforced concrete (GRC) which is a strong, flexible, durable, and rather light material; between them there's an appropriate heat-insulation layer.

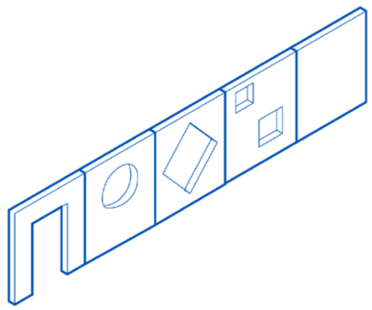
• Slabs are made of hollow core panels, completed with a cast in situ topping. As per walls elements, even slabs elements are placed side by side in a continuous plane.

• Joints between walls and slabs could be "wet-type" or "dry-type"; first ones are made with reinforcement and concrete pouring, while second ones are made by pins, bolts, ties, and so on, without any wet material addition.

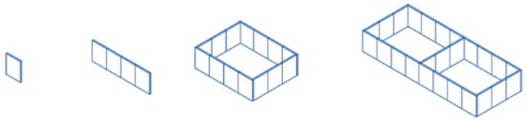
• Prefabricated stairs, prefabricated balconies, ducts and shafts integrate the suggested system.

• Only foundations and shelter are built by means of cast in situ reinforced concrete structures. Shelter, in particular, is an underground r.c. box (or shell) with very thick walls and slabs: lower slab, perimetral walls, roof (see drawings for details).

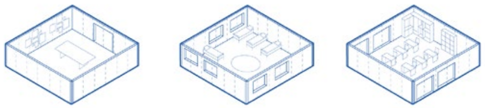
• All the prefabricated elements (vertical panels and slab panels) are in general prepared with channels for electricity and plumbing plants, laid directly in factory (embedded elements).



modular prefab concrete panel



combinable



reconfigurable and flexible

5 DESIGN THE SERVICE

Emphasis is placed on the quality of both indoor and outdoor environments for students. The design's porosity, permeability to natural light, and views of vegetation, along with excellent indoor acoustic and thermal comfort, create healthy and effective learning environments.

The design employs adaptive regenerative strategies that are versatile and applicable to any site within the hypo-thetical locations proposed in the competition brief. By prioritizing future-oriented building solutions and tech-nologies that adhere to principles of sustainability, energy efficiency, and eco-friendliness, the project aims for climate neutrality and low operating costs. Integral to the design are passive solar optimization, prefabrication, and rainwater harvesting, which maximize energy efficiency and resource utilization while supporting the shift to a "full-day school" model.

Designed to be sustainable from both climate and energy perspectives, the building integrates passive solutions and innovative technologies. A significant portion of renewable energy is provided by PV panels on the roofs, sup-plemented by on-site energy storage with batteries. Natural light sensors and heat recovery systems, along with rainwater management and the creation of green roofs and outdoor areas, contribute to reducing the building's energy demand and mitigating the Urban Heat Island effect (UHI) while promoting biodiversity.

The modular, prefabricated circular design of the building allows for easy disassembly, reuse, and adaptability, thereby minimizing waste. Special attention is given to using construction scrap as material for new construction, further addressing the minimization of construction waste. Additionally, the design shields inner spaces from street noise and pollution, avoids creating local microclimate issues, and promotes silent pockets connected with the surrounding natural environment.
By preserving existing vegetation, the project enhances the microclimate and contributes to the local identity of the site, reinforcing its sustainable design strategy.

5.1
FROM PERFORMANCE TO PEOPLE

HEALTH AND WELLBEING

The holistic approach of the project embraces true values of Sustainability: environment, resource management and people.

Buildings today not only strive to meet aggressive sustainability targets with regard to resource efficiency and energy reduction, but they also seek to promote wellbeing of their occupants, which is linked to productivity and engagement.

Through a careful bioclimatic study, the building provides optimal comfort for the occupants, ensuring the best health conditions with special attention to efficiency. To improve air quality, a ventilation system with energy recovery will be used, which has two main benefits: low consumption and very high efficiency. The controlled mechanical ventilation system will ensure a constant air renewal, ensuring the well-being of students.

Energy strategy: High efficiency heat pumps with air condensation will produce the hot and cold fluids. The plants will be on the ground floor and close to the spaces they serve, to make construction easier and to allow quick management and maintenance. They will also have appropriate acoustic protection to limit the noise they create. The fluids will mainly travel underground within a ring loop, to provide enough redundancy and flexibility and to lower installation costs. All the separate blocks will link to the underground backbone with a disconnecting point from the distribution manifold of each block.

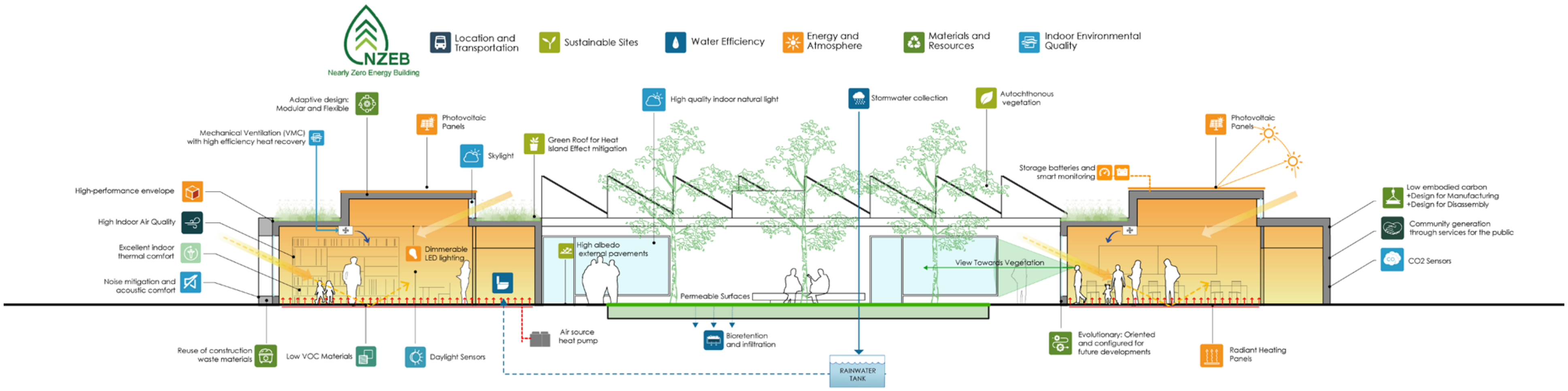
Classroom environment: The primary and secondary school classrooms will use underfloor radiant panels as a heating system; this type of equipment provides optimal thermal comfort by maintaining even temperatures and avoids the spread of germs because of its hygienic nature; furthermore, it allows maximum efficiency because of low-temperature operation.

To save time in construction, a kind of radiant panel with less thickness and for ”dry” installation was also chosen. The rooms will have cross-flow heat recuperators with hydronic batteries for ventilation and freshness; the installation of the hot and chilled water batteries will prevent, in the first case, the introduction of external air with low temperature into the room, while in the second case it will ensure the cooling of the rooms for the period when the spaces will be used during the summer season. To reduce the number of devices each forced ventilation device will serve two classrooms.

Offices environment: The offices will be air-conditioned with a mixed primary air and fan coil system. Mechanical ventilation will be provided by an air handling unit (AHU) with cross-flow heat recovery and hydronic hot and cold coils, and with ducted air distribution for each individual room.

Domestic hot water: The production of domestic hot water will take place in the vicinity of the toilet blocks and will be produced with an air source heat pump with a storage tank suitable for the users served. The drinking water for domestic hot water production will undergo softening and sanitisation treatment to prevent the proliferation of legionella bacteria.

Electrical systems: It is planned to construct a MV-LV room for the distribution of power and the supply of equipment in the field. For operational continuity, it is planned to install a genset capable of maintaining the operation of the spaces; it is specified that only the space heating equipment will be kept active.



19 BIOCLIMATIC SECTION

5.2 SUSTAINABILITY PRINCIPLES AND SOLUTIONS

OUTDOOR COMFORT

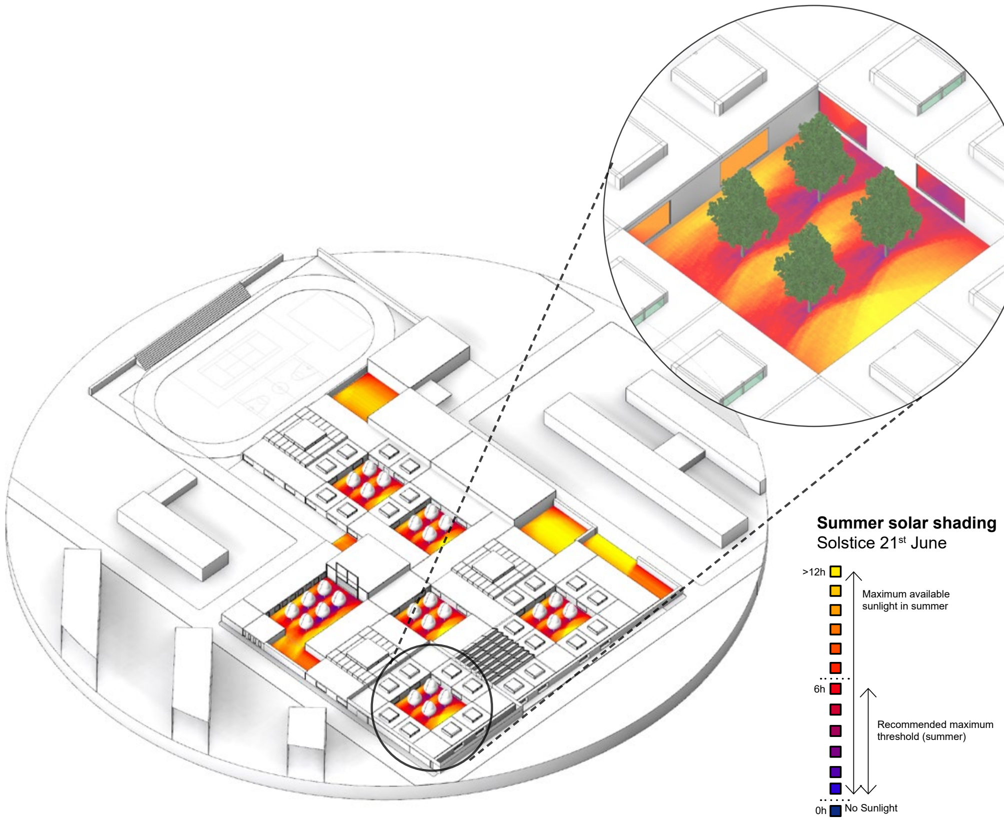
Access to sufficient sunlight is crucial for both physical health and overall well-being.

From enhancing visual comfort to potentially benefiting psychological and neurological health, exposure to natural light has measurable physiological advantages. Occupants who enjoy access to sunlight often report positive experiences.

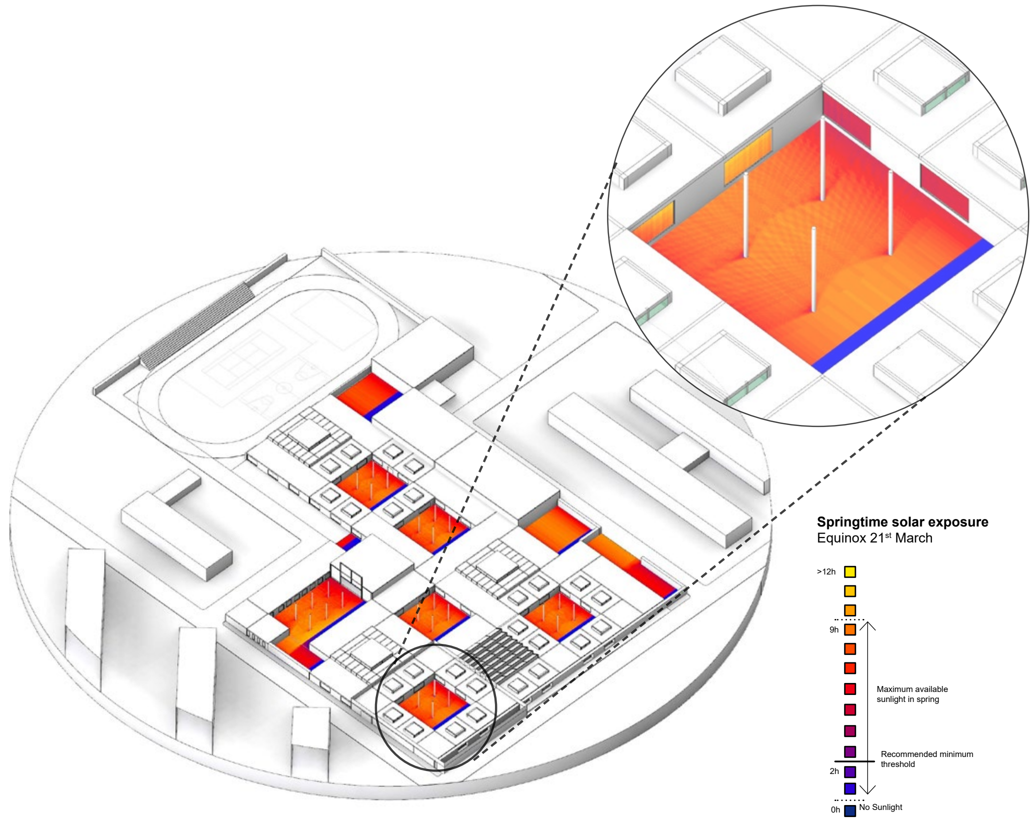
Effective planning for daylight and sunlight potential goes beyond providing natural illumination inside buildings; it also extends to outdoor areas. For students occupying a school, these outdoor spaces significantly impact their well-being. Solar exposure simulations analyze the direct sunlight hours received by school courtyards over a 24-hour period. The results reveal that during mid seasons, the courtyards receive abundant direct sunlight across their entire surface. This allows many students to benefit from solar radiation and enjoy the warmth provided by the sun's rays.

Conversely, during hot summer months, the tree canopies provide ample shade, ensuring comfortable use of outdoor areas for numerous students.

This strongly supports the transition to a 'full-day school' model by prolonging the amount of hours that can be spent comfortably outdoors throughout the year. This means that extracurricular and after school learning activities can be conducted outdoors, strongly improving the health and wellbeing of students, as well as their learning capabilities and connection with the environment.



20 SUMMER SUN SHADING ANALYSIS



21 SPRING SUN EXPOSURE ANALYSIS

6 NEW AND BEYOND

The vision for the NEW platform, an adaptable modular system for a multipurpose school neighborhood.

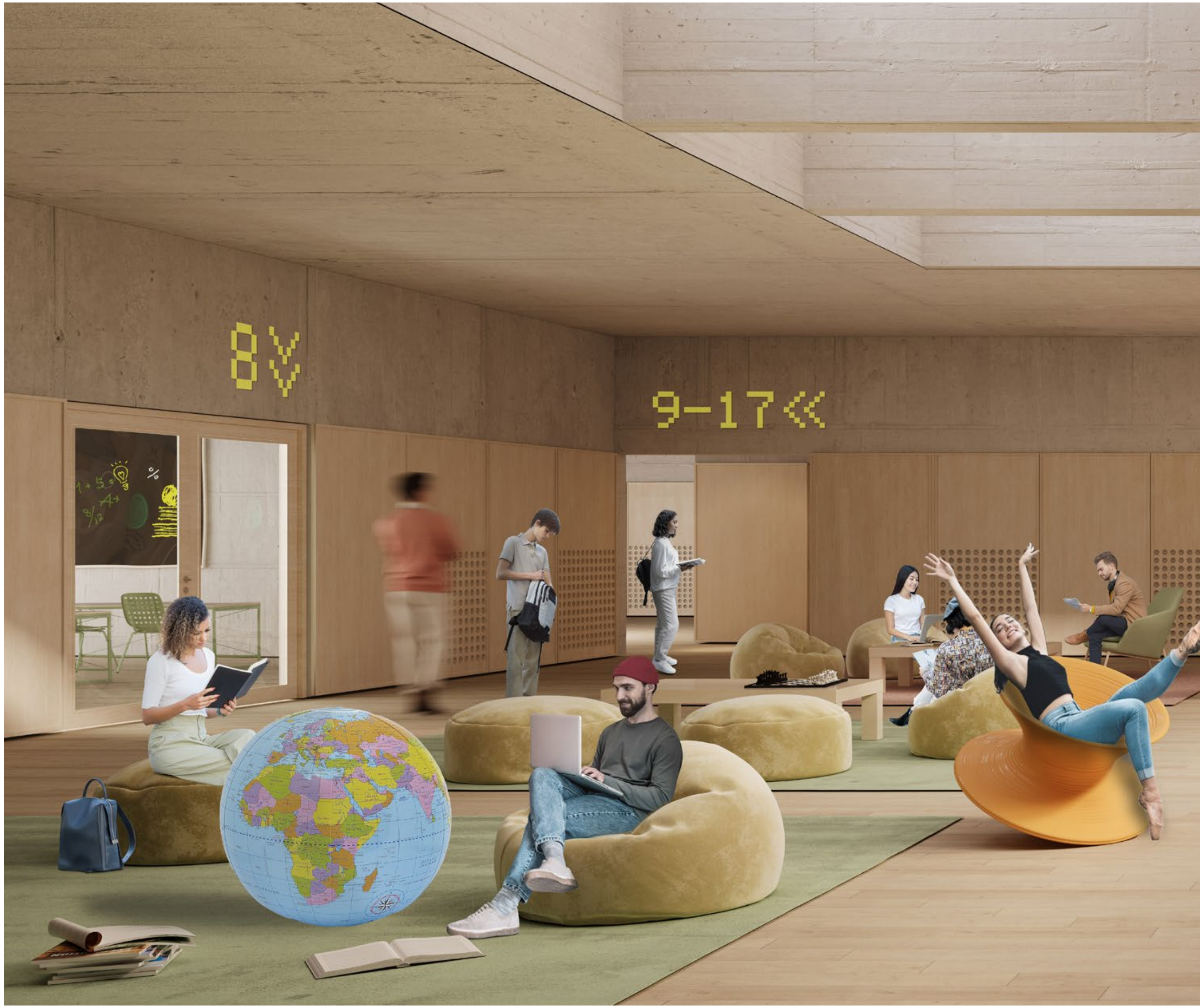
In the pursuit of creating a sustainable and adaptable built environment NEW envisions a modular system that transcends conventional limitations, offering boundless possibilities and expansive potential for a multipurpose educational neighbourhood. At its core, this design philosophy embodies the principles of regeneration and resilience, aiming not only to minimize environmental impact but also to actively contribute to the revitalization and growth of the surrounding community.

With a focus on adaptability and versatility, the modular system evolves with the ever-changing needs and aspirations of its inhabitants. Each component is meticulously crafted to seamlessly integrate with the existing infrastructure while allowing for effortless reconfiguration and expansion over time. This inherent flexibility empowers stakeholders to reimagine and reshape their educational environment, fostering a dynamic ecosystem of learning, innovation, and collaboration. As a catalyst for positive change Neighborhood for Educational Wonder offers a beacon of hope for future generations striving to create thriving, resilient communities.

Neighborhood for Educational Wonder is fostering openness, adaptability, and innovation to create a multipurpose educational neighbourhood and from there go beyond.

6.1
DESIGN TO REGROW
FUTURE PROOFING

Minimizing the environmental impact with the potential to regenerate and adapt over time. Prioritizing resilience, flexibility, and longevity in the face of evolving environmental and societal challenges.



22 LEISURE AREA


» 1–7
PLAY

NEW NEIGHBORHOOD FOR EDUCATIONAL WONDER

adaptability | community | sustainability