

**FUTURE SCHOOL
FOR UKRAINE**



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CONCEPT



The proposed project aims to establish a sustainable, flexible, and inclusive learning environment where students' diverse needs are met. In order to enhance student development, the design places a strong priority on high-quality education by incorporating contemporary teaching techniques and curriculum development into spatial solutions. Architectural environments can arouse in children a desire for exploration and inquiry to enhance continuous knowledge capacity building as a final goal. In this way, the building is designed a complex ecosystem that makes it possible for students to direct their education through self-driven collective experimentation. Avoiding homogenization and unified standards, the architecture of the school aims to become a multiverse where the layered complexity of the environment becomes readable and experiential. It operates as an assemblage of different climates, ecosystems, architectural traditions, and regulations. The project uses a full-day school concept in order to optimize learning opportunities and community involvement.

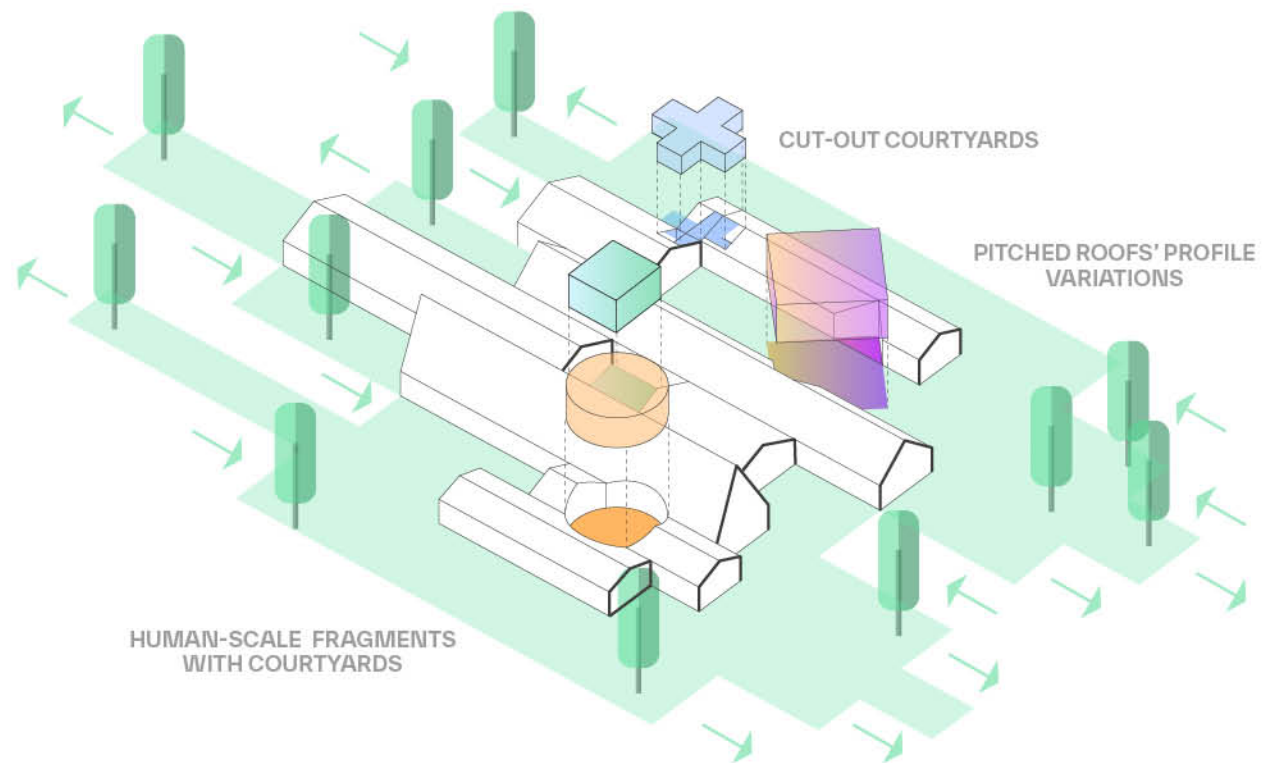
Dynamic architecture and technology are incorporated into the flexible and adaptive design, which upholds national regulation codes while improving the educational experience. Sustainable building techniques - such as eco-friendly materials, thoughtful landscaping, and a simple frame structure that is time-efficient to assemble - highlight the dedication to both local identity and environmental sustainability. Ensuring the protection of instructors and students through secure infrastructure and shelters is of utmost importance. Community integration and inclusiveness are facilitated through spaces dedicated to all community members with diverse needs in order to promote social and recreational harmony. Urban integration provides shared infrastructure that is easily accessible and encourages community ownership and engagement while also honouring cultural history. Transparent in its design, it reflects open, collaborative principles and establishing a clear framework for future school projects.



The design for the future school model in Ukraine is based on a scalable, replicable, and economically efficient construction model that enables easy and rapid assembly and implementation. This standardized design can be effortlessly adapted to different geographic regions, climates, plot shapes, and topographies, ensuring versatility and functionality across various contexts.

To provide comfort and maintain a human-scale design, the large institutional volume is divided into smaller, interconnected parts with various functional green spaces. The base profile of the structural frames is designed to accommodate different angles for the pitched roofs, allowing for steeper slopes in regions with heavy snow and gentler slopes with longer eaves in sunnier areas. Additionally, cantilevering elements create self-shading features, optimizing energy efficiency and comfort.

This somewhat linear and repetitive building pattern is strategically interrupted in key areas where common activities occur, effectively blurring the boundaries between indoor and outdoor spaces. These thoughtfully designed transitions foster a seamless integration of the school's educational, social, and recreational functions, enhancing the overall learning environment while respecting local environmental conditions and cultural contexts.

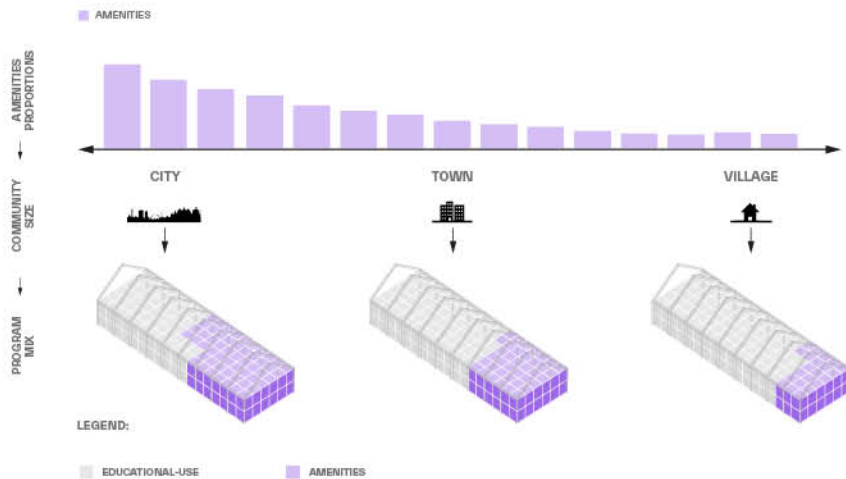


ADAPTABILITY

ADAPTABILITY

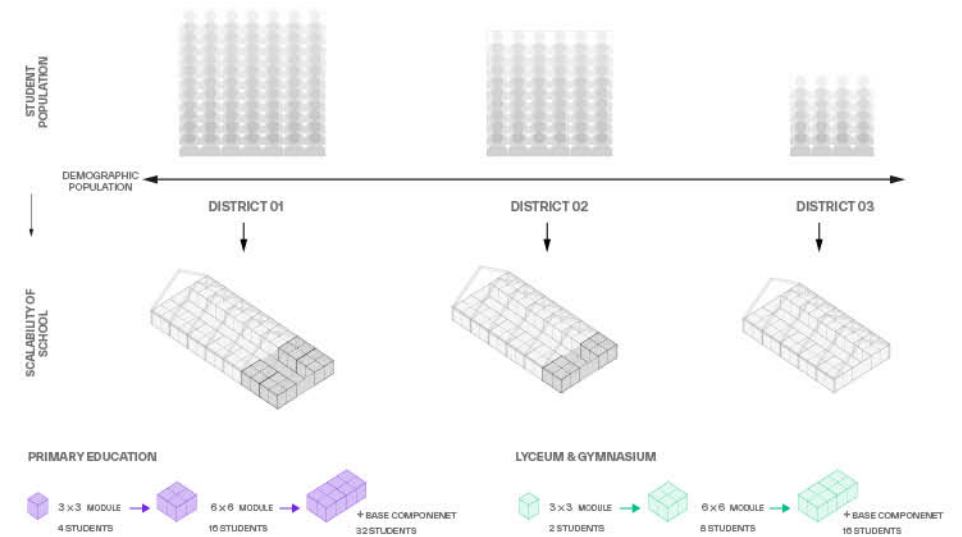
LOCATION

The design predicts two major factors for its future expansion and adaptability needs, which depend on its (1) density environment and (2) demographics. It will allow for easy expansion or re-purposing, a vibrant and dynamic modular system that can be adjusted to changing community needs and economic conditions.



DENSITY-DEPENDENT MODULARITY

Tailoring the types of amenities to suit the specific context of the school's location and meeting the unique needs and preferences of each community



DEMOGRAPHIC-DEPENDENT MODULARITY

Scalability of the school according to the space requirements defined by the number of students within each specific district or location

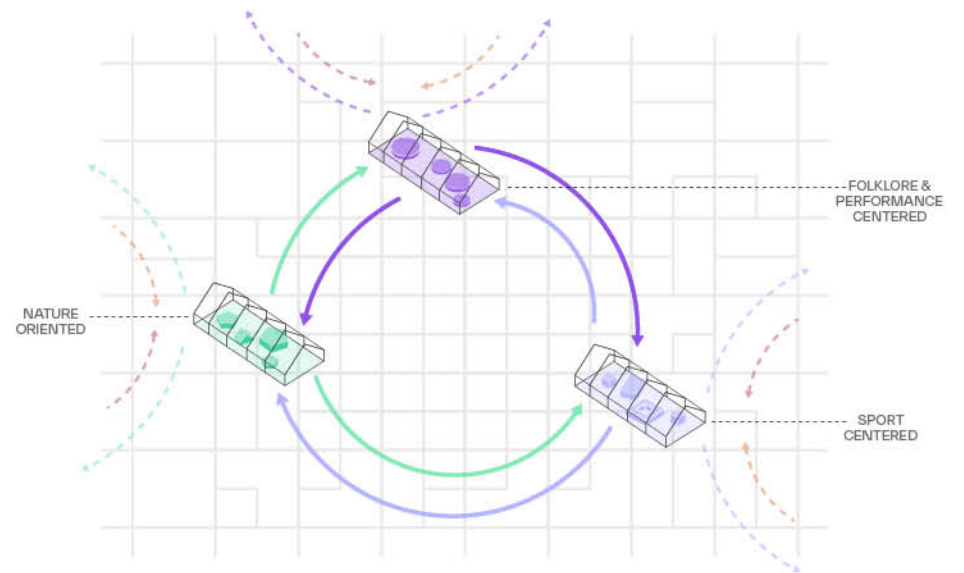
ADAPTABILITY PROGRAM

The design proposes a catalogue of amenities reflecting the community's evolving needs, ensuring spaces that are inclusive, accessible, and capable of serving different demographic groups and activities



EXPANDED AMENITIES

Enhancing the learning experience and catering to varied interests and needs of students and its community by expanding the amenities of the school

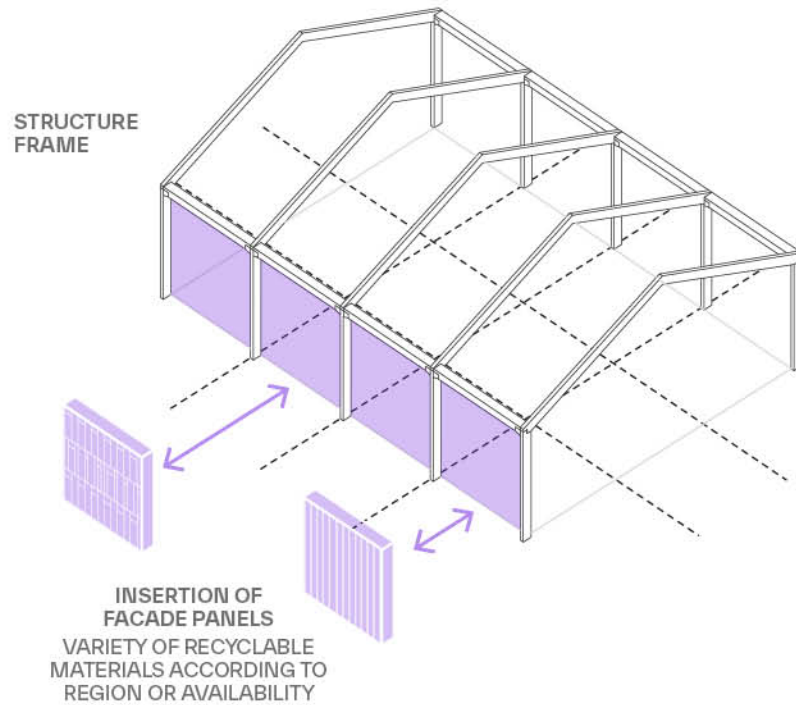


SHARED AMENITIES

Specialised amenities such as a large multi-purpose hall can be shared between neighbouring schools. This provides students with access to a wide variety of high-quality spaces. Additionally, clustering them allows the school to create its own identity and character

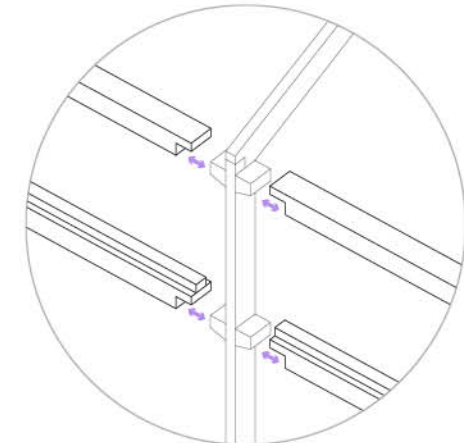
ADAPTABILITY STRUCTURE

The project involves designing spaces that can change their function over time without significant structural alterations. The open floor plan and simple structural frame allow for quick assembly and easy modification.

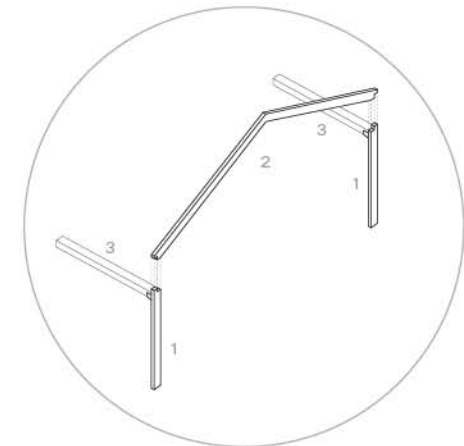


STRUCTURAL MODULARITY

Establishing a simple and clean module frame with a precast concrete structure into which recycled materials are then inserted allows for adjustments and expansions



PRECAST CONCRETE STRUCTURE ASSEMBLAGE



CONCRETE FRAME ELEMENTS

ADAPTABILITY

HYPOTHETICAL SITES A,B AND C



SITE A



SITE B



SITE C



SITE A



SITE B



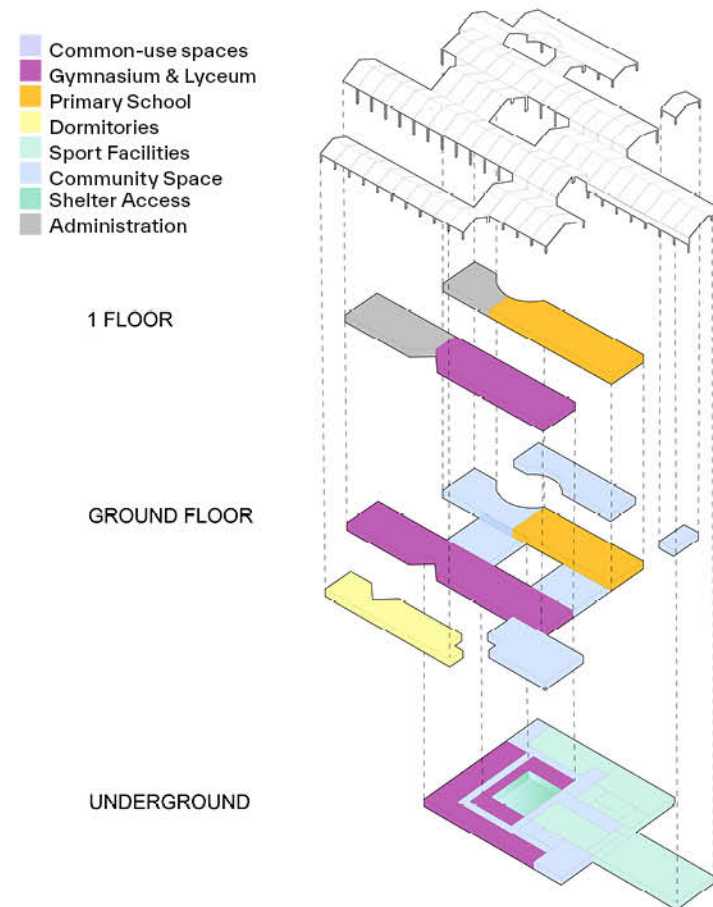
SITE C

PROJECT - SITE A

The following pages delve into the details of the hypothetical location A, showcasing the spatial configuration and providing comprehensive plans of all levels along with the site plan. These pages illustrate the applied principles of adaptability and the functional solutions implemented throughout the design.

The school design features various courtyards and green spaces, each with distinct functions directly connected to different areas of the school building. These outdoor spaces extend the indoor functionalities, serving as social interaction spots and educational environments that cater to diverse user groups of the school and community. They are thoughtfully designed with varying levels of privacy to accommodate different needs.

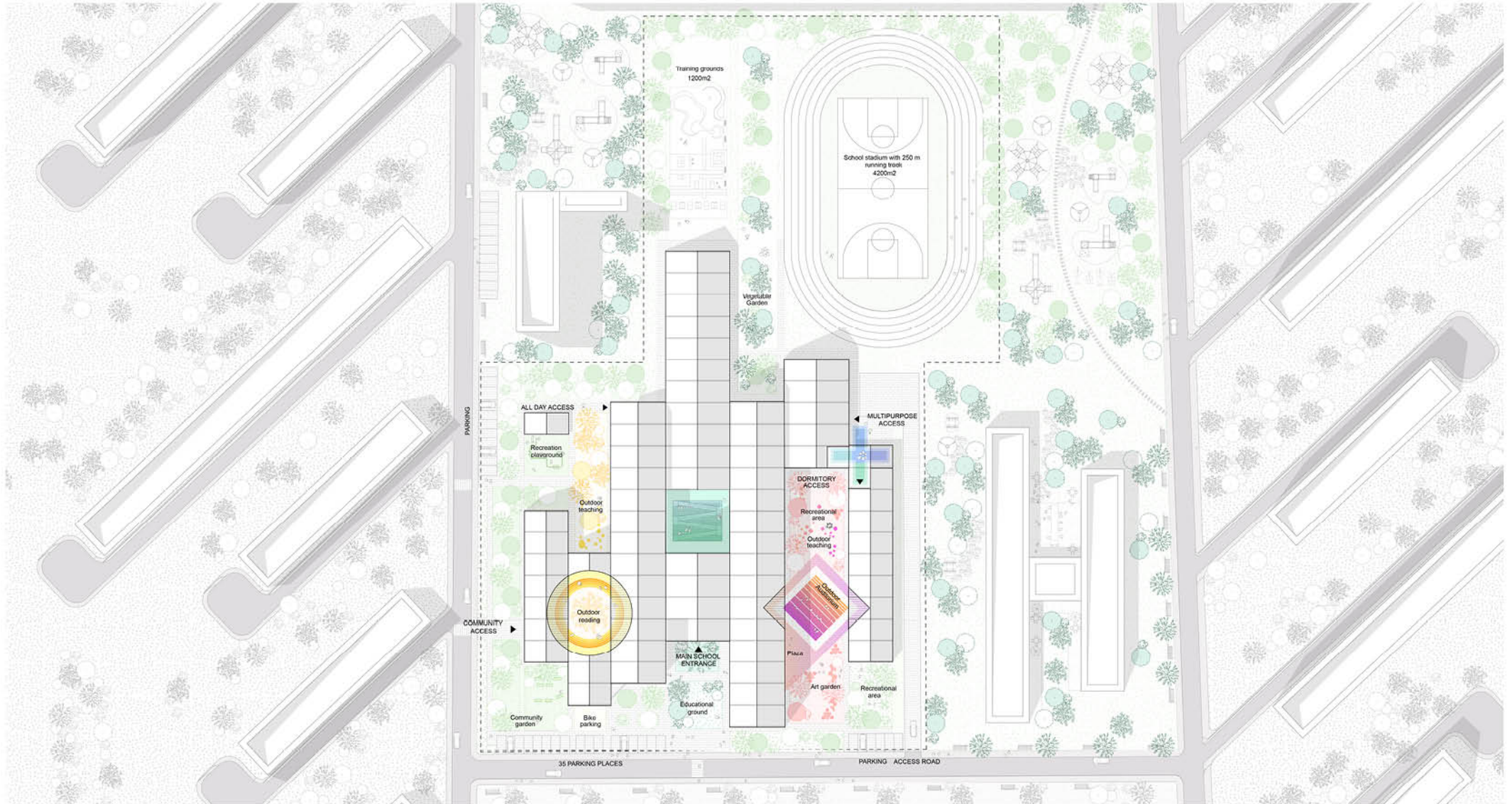
The central lobby, strategically placed at the heart of the school, acts as the hub that connects all spaces. This design choice simplifies wayfinding and ensures easy access to protective shelters and all common areas. As a central space, the lobby fosters student gatherings and interactions, embodying the essence of community and connectivity within the school.





SITE A

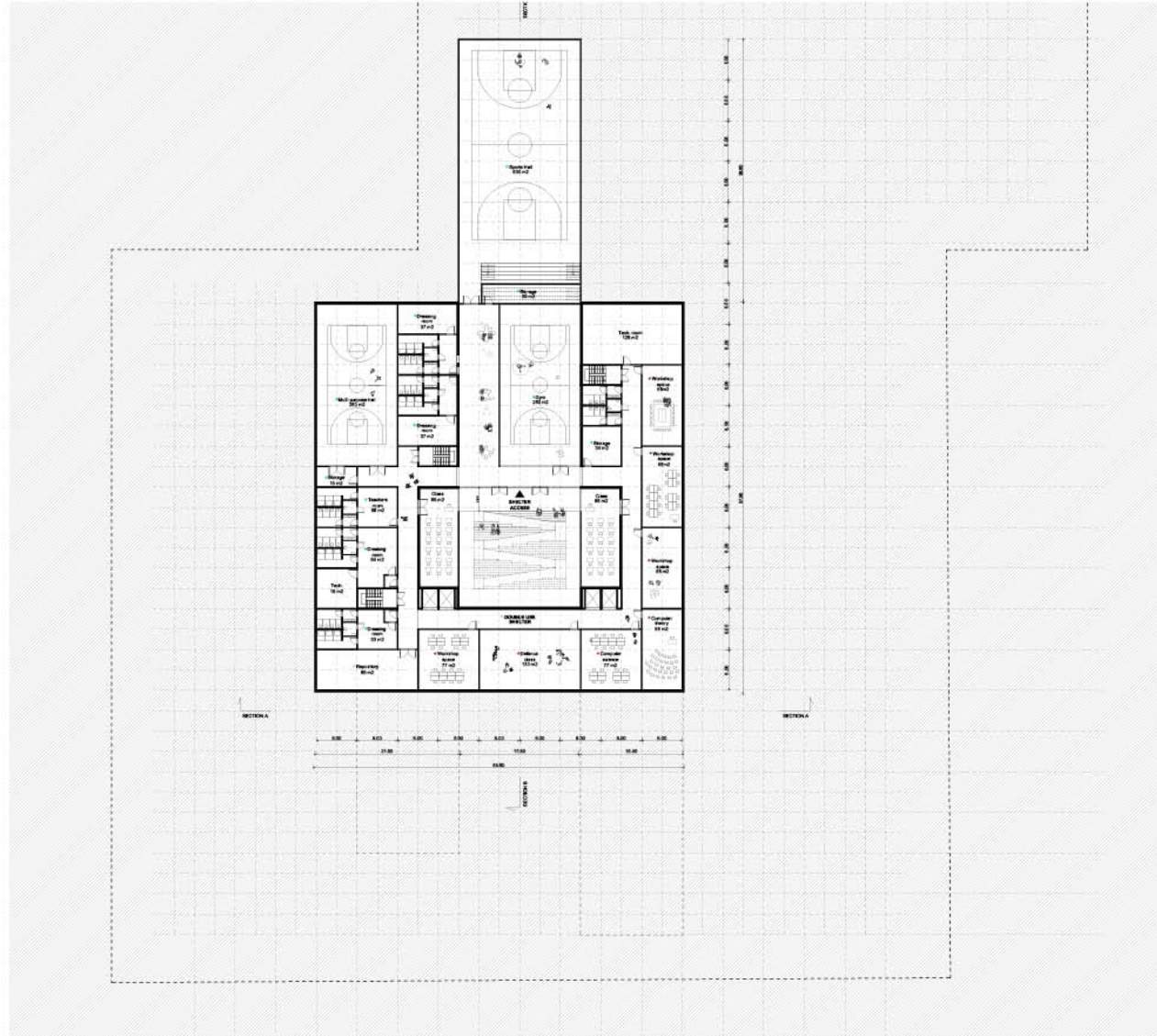
SITE PLAN





SITE A

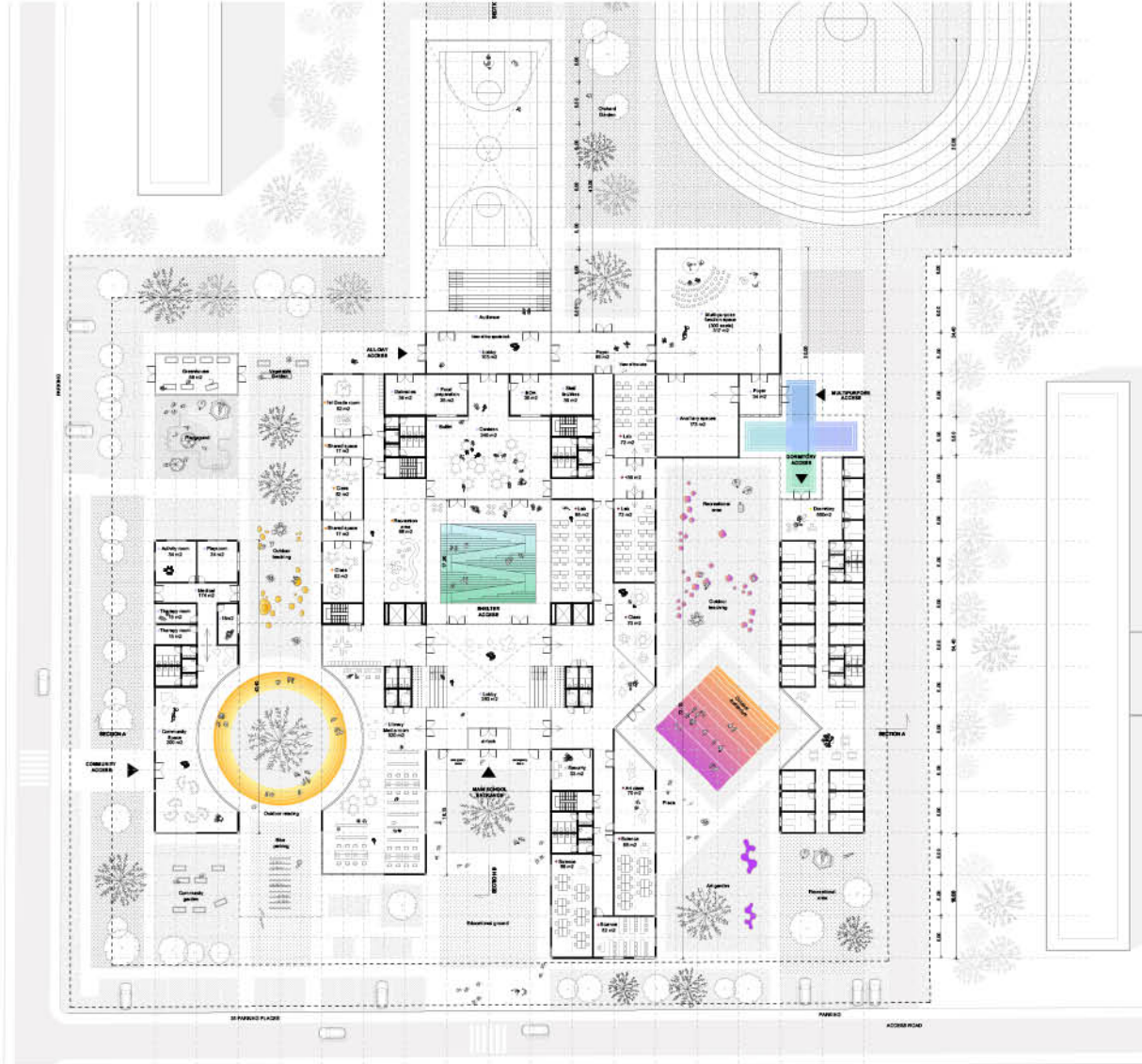
UNDEGROUND PLAN | SHELTER PLAN





SITE A

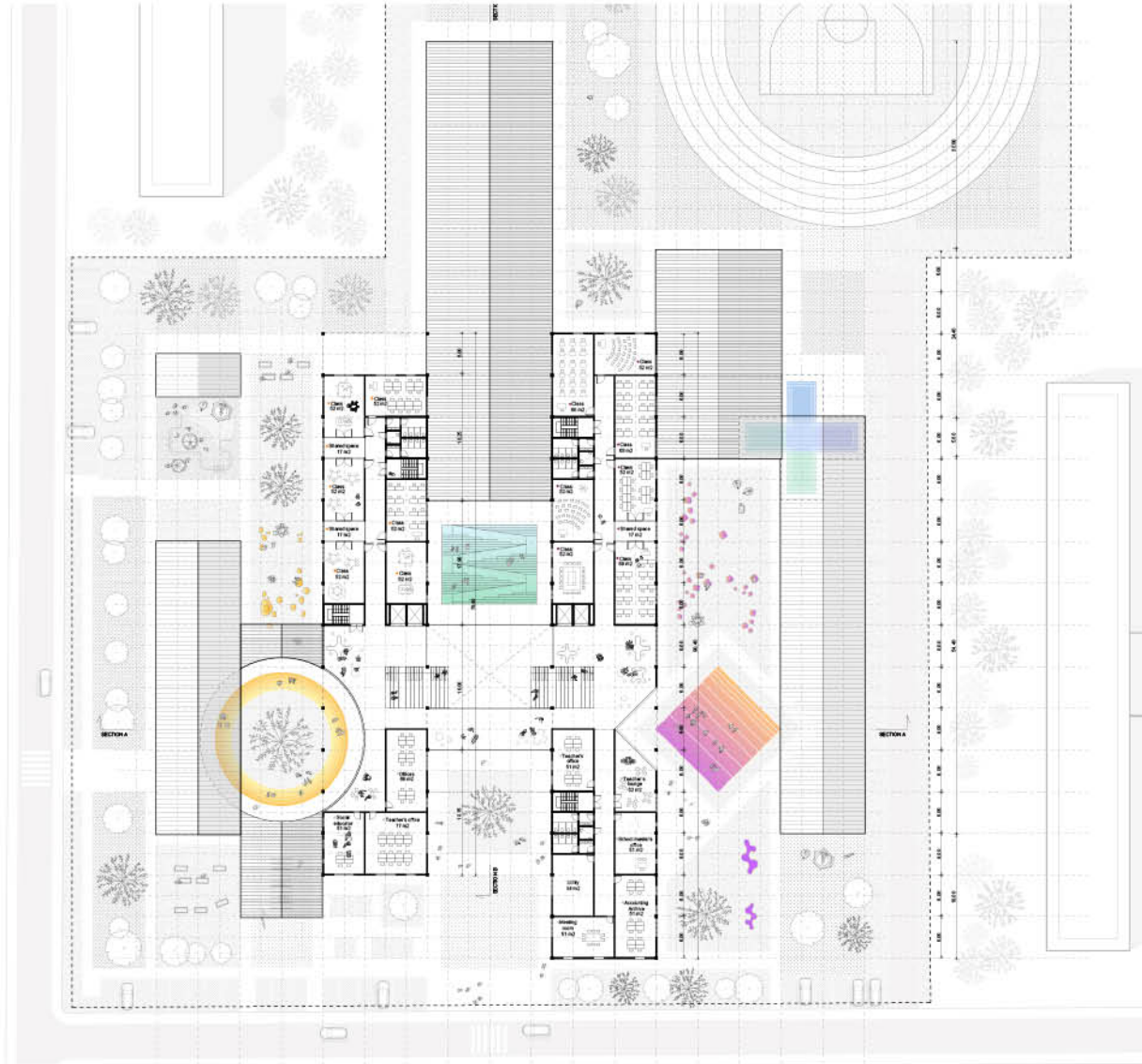
GROUND FLOOR PLAN





SITE A

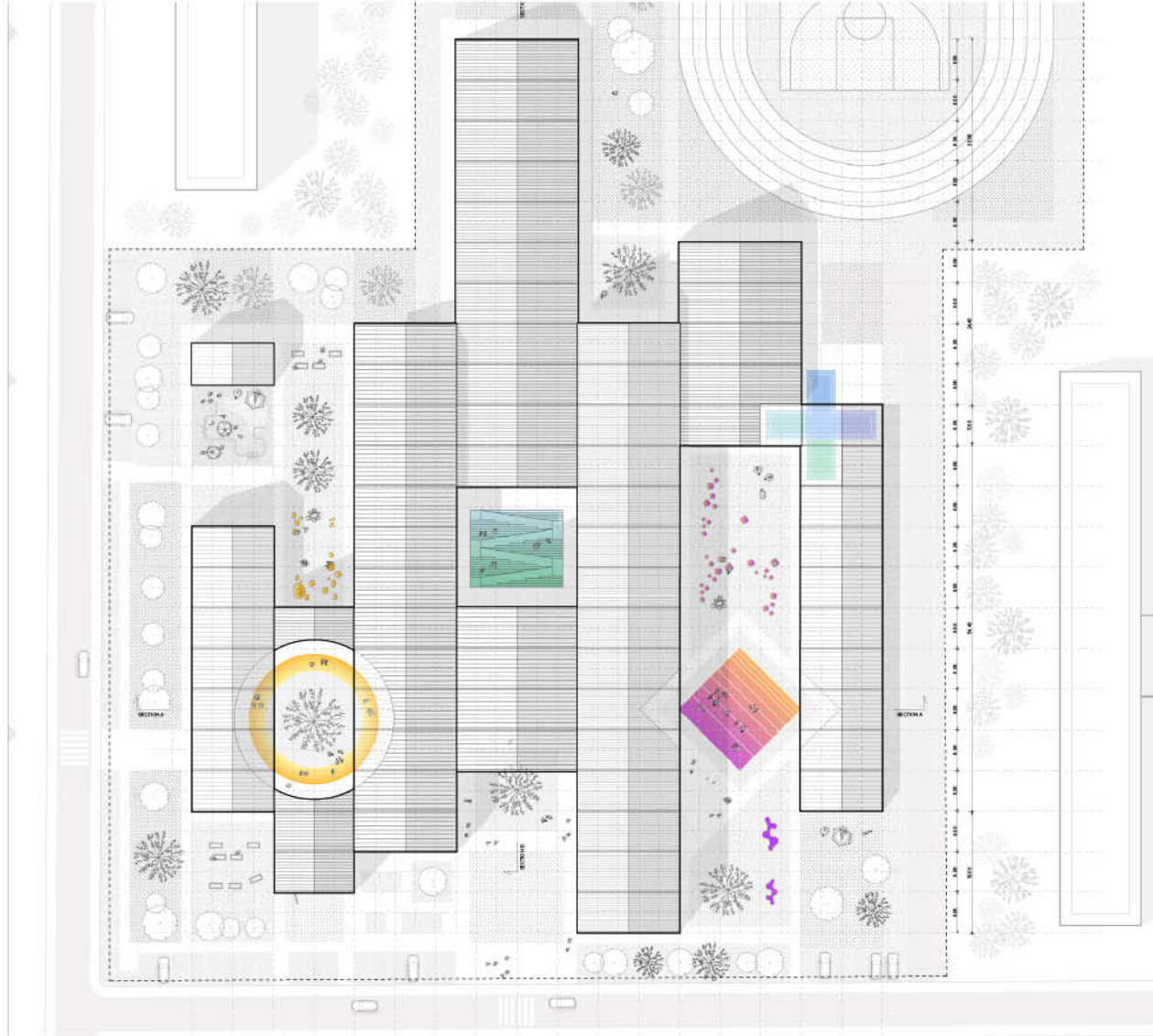
FIRST FLOOR PLAN





SITE A

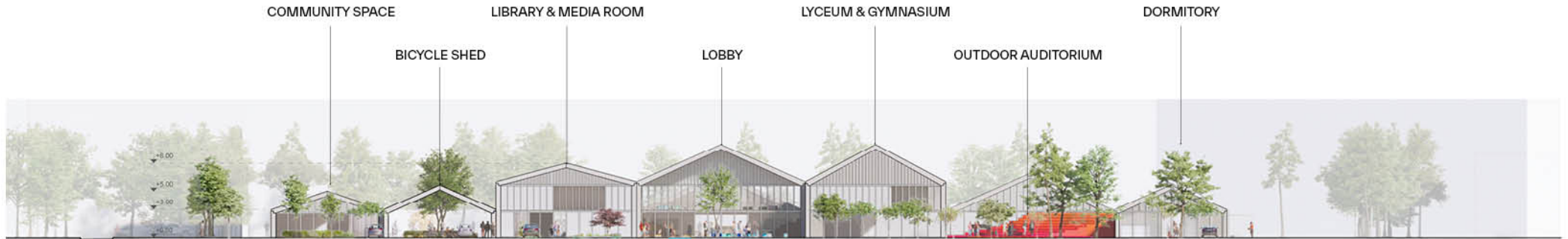
ROOF PLAN



SITE A

ELEVATIONS

ELEVATION 01 - SOUTH



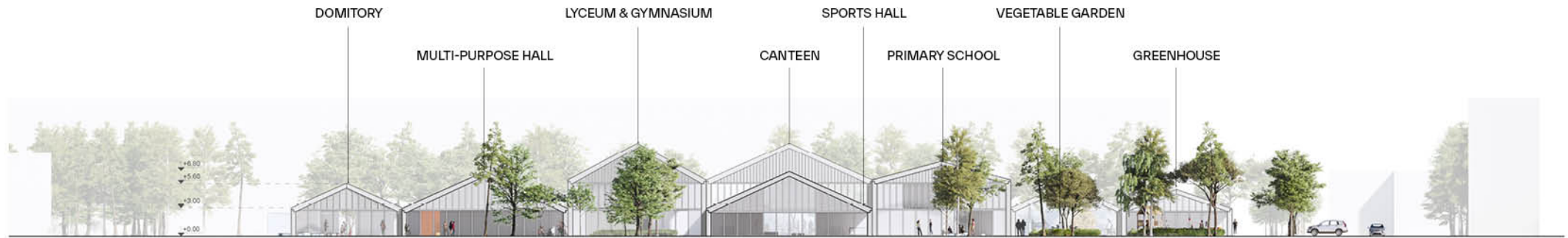
ELEVATION 02 - WEST



SITE A

ELEVATIONS

ELEVATION 03 - NORTH



ELEVATION 04 - EAST

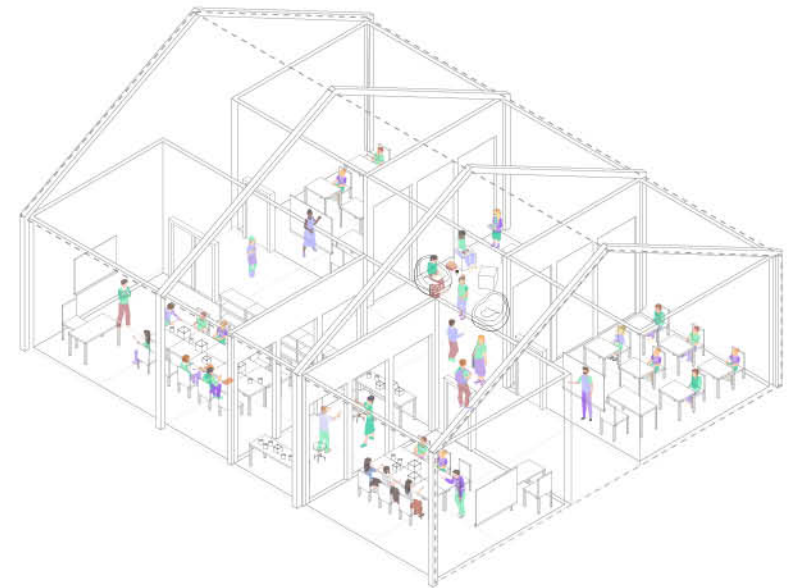
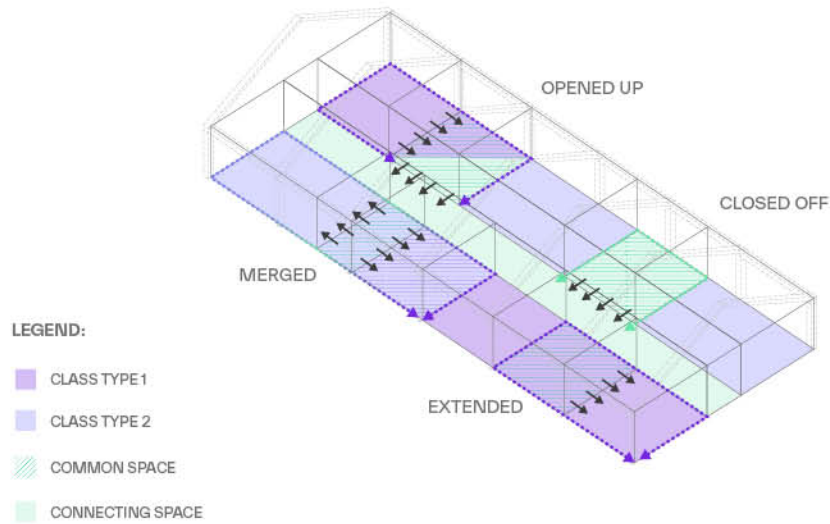


FUNCTIONAL SOLUTIONS



FUNCTIONAL SOLUTIONS

SYNERGY OF SPACES



ADJUSTABLE LEARNING AND LEISURE SPACES

Creating transformable, multi-functional classroom spaces, adapting to diverse activities and needs. These adaptable environments offer flexibility, enabling them to be opened up, closed off, or merged as needed

Design scenario in which two classrooms are merged together with the common space for a workshop event, while another common space is closed-off and used as a leisure space and rest area

THEMES:

ARTS AND CULTURE

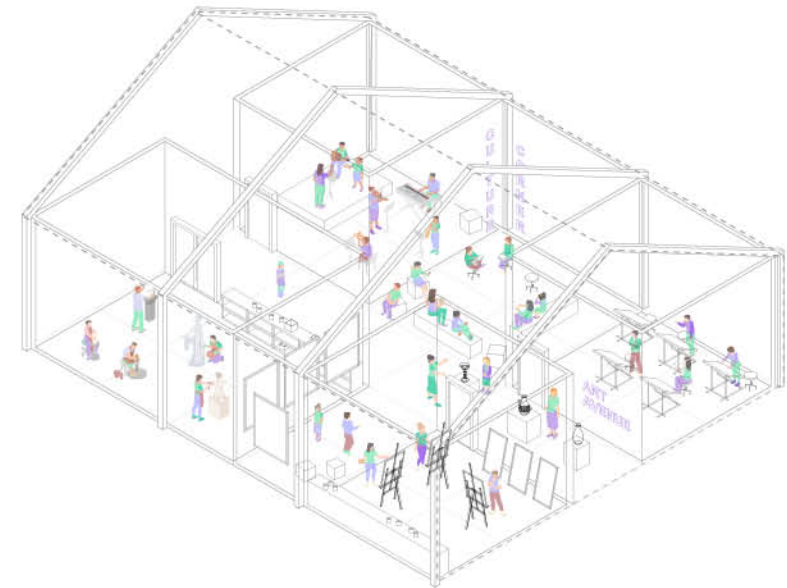
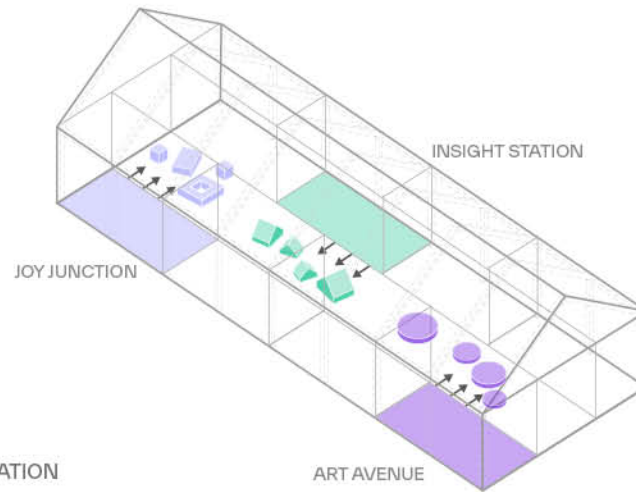
- Drawing/Sculpture/Painting
- Theatre/Music Rehearsal

SPORTS AND LEISURE

- Play and Learn
- Gym
- Dining Hall

KNOWLEDGE AND INNOVATION

- Classrooms
- Labs
- Workshops



THEMATIC INFORMAL LEARNING SPACES

Integrating the educational spaces, such as Arts and Culture, Sports and Leisure, Knowledge and Innovation, with the connecting and communal spaces, through informal learning spaces

Design scenario in which art classes are expanded into the common space with functions such as art avenue containing a temporary exhibition of student works and the culture corner hosting a poetry reading gathering

FUNCTIONAL SOLUTIONS

SYNERGY OF SPACES



EDUCATIONAL CORRIDOR

INFORMAL LEARNING



EDUCATIONAL CORRIDOR

INFORMAL LEARNING



THEMATIC CORRIDORS

INFORMAL LEARNING



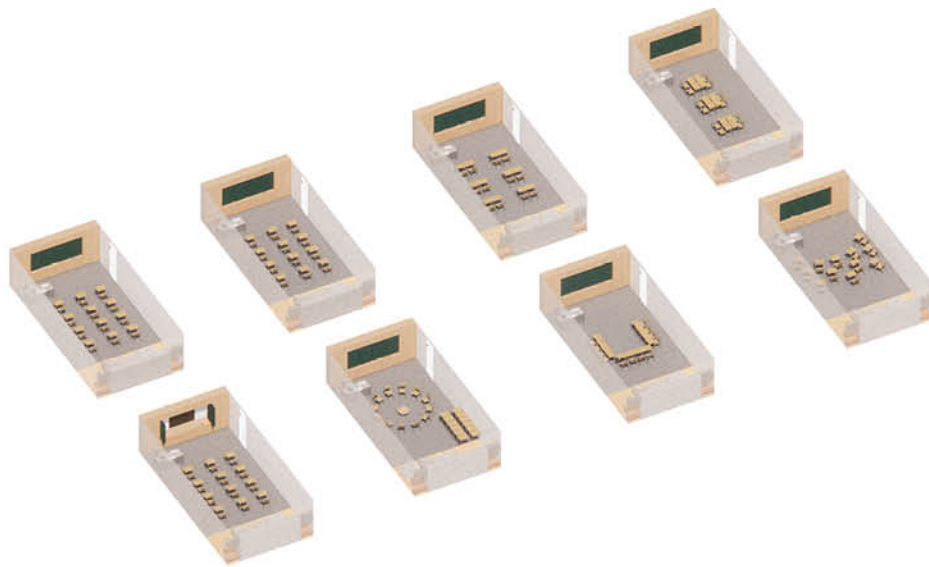
COMMON SPACE

INFORMAL LEARNING

FUNCTIONAL SOLUTIONS

SYNERGY OF SPACES

Ensuring modern principles of education by focusing on flexibility, collaboration, and the integration of learning environments. These principles have been translated to spaces that can adapt to various teaching methods and learning styles



CLASSROOMS

EMPHASISING ON MODERN PRINCIPLES OF EDUCATION BY PROVIDING A VARIETY OF LAYOUTS



EDUCATIONAL SPACE

INDOOR AND OUTDOOR EXPANSION WHICH SUPPORT VARIOUS TEACHING METHODS



SPORTS AREAS

VARIETY OF SCALES



LIBRARY & CANTEEN

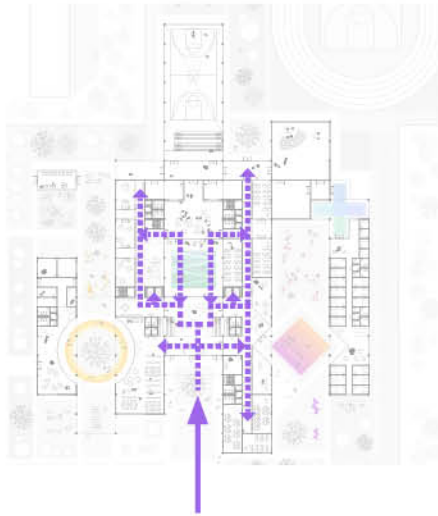


AUDITORIUM STAIRS & BUFFET AREA

FUNCTIONAL SOLUTIONS

FLOWS

Ensuring compatibility between different users flows that can accommodate a variety of activities and user groups without causing disruption or conflict by implementing a clear zoning strategy to separate different functions while maintaining the overall connectivity



MAIN SCHOOL ACCESS

The main entrance of the school complex serves as the primary access point for all users, with a focused and secure pathway dedicated to primary school students. This dedicated pathway leads to a separate outdoor area, ensuring a safe and age-appropriate environment. Primary students also have controlled access to shared facilities such as the dining hall, assembly hall, and gymnasium, minimizing interactions with older students.



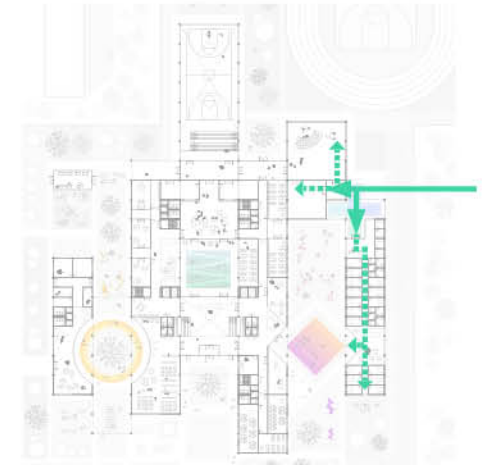
COMMUNITY ACCESS

Community access is thoughtfully integrated with a designated entrance to a multifunctional community centre. This centre is designed to be flexible and can be subdivided to accommodate specific community needs. Community members also have direct access to the health clinic, which offers continuous therapy and rehabilitation services for children with special needs. Furthermore, the design ensures convenient community access to the library and an outdoor reading area, enhancing the facility's usability and social infrastructure.



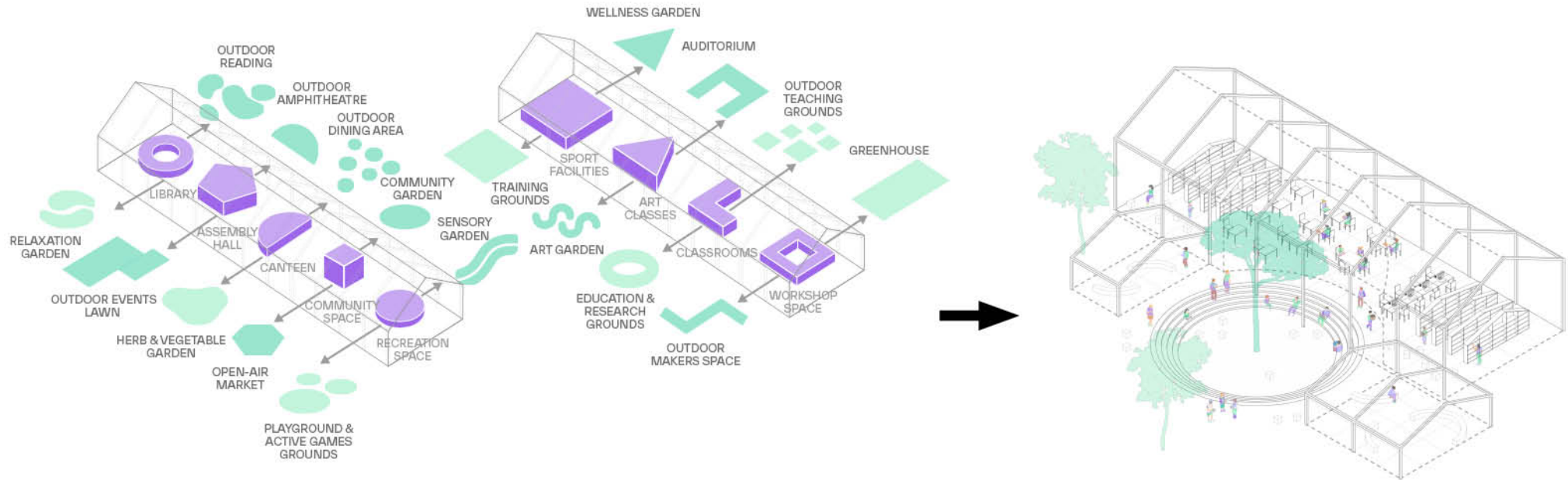
ALL-DAY SCHOOL ACCESS

Students have all-day access to key facilities, including the dining hall, multifunctional hall, sports facilities, and outdoor activity areas. The design facilitates efficient circulation and operational functionality, including convenient access to service areas for food preparation, loading, and unloading needs.



MULTI-PURPOSE ACCESS

The multifunctional hall is equipped with designated access point to accommodate various events and activities, serving diverse user groups. Ancillary spaces adjacent to the hall are also accessed for efficient loading, unloading, and back-of-house operations. Additionally, a separate, discreet entrance to the dormitory ensures privacy for residents while maintaining connectivity to other essential facilities on the school campus.

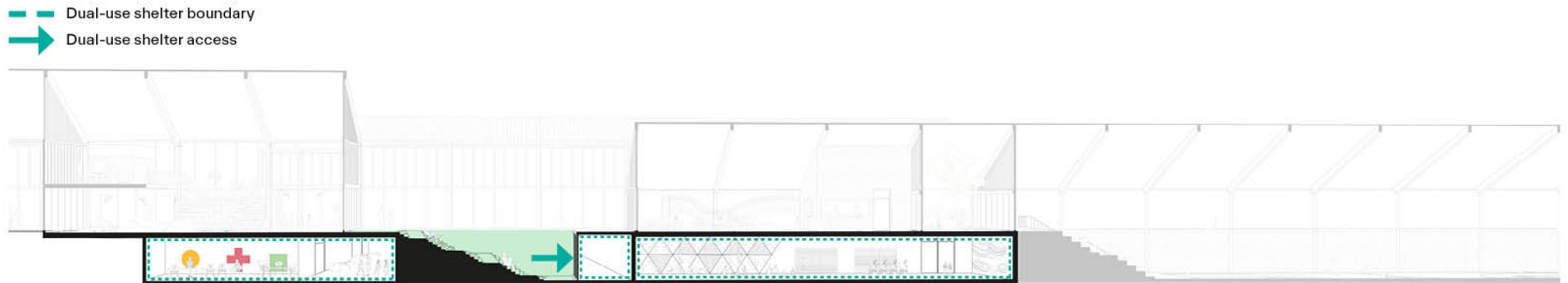


PROGRAM EXPANDING OUTDOOR

Continuity of indoor programs to outdoor spaces to promote connectivity and facilitate shared spaces ,utilize community access and enhance social infrastructure

Design Scenario where the library expanding to an outdoor reading area that can be shared with the community and allow for a variety of uses

DUAL - USE SHELTER

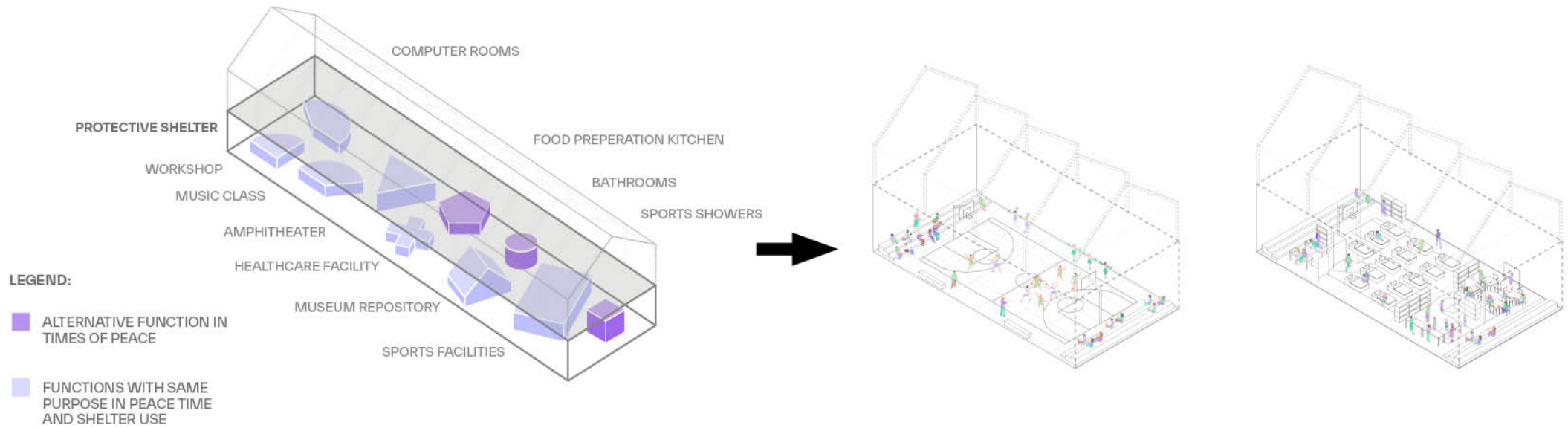


With the cost associated with excavation and retaining structure for the shelter spaces, it was crucial for the design trajectory to maximize the potential of this area in order to make it part of the daily school life. In this sense, the plan was to identify which functions could take advantage of this underground location, while being the most efficient for a scenario where shelter function would be needed.

The placement of the sports areas, large and open, represent optimal spaces for this scenario, easy to subdivide or to keep open to better overview the kids. The washrooms with toilets and showers also represent a great infrastructure in case of need for longer sheltering periods.

SECURITY

DUAL- USE SPACES

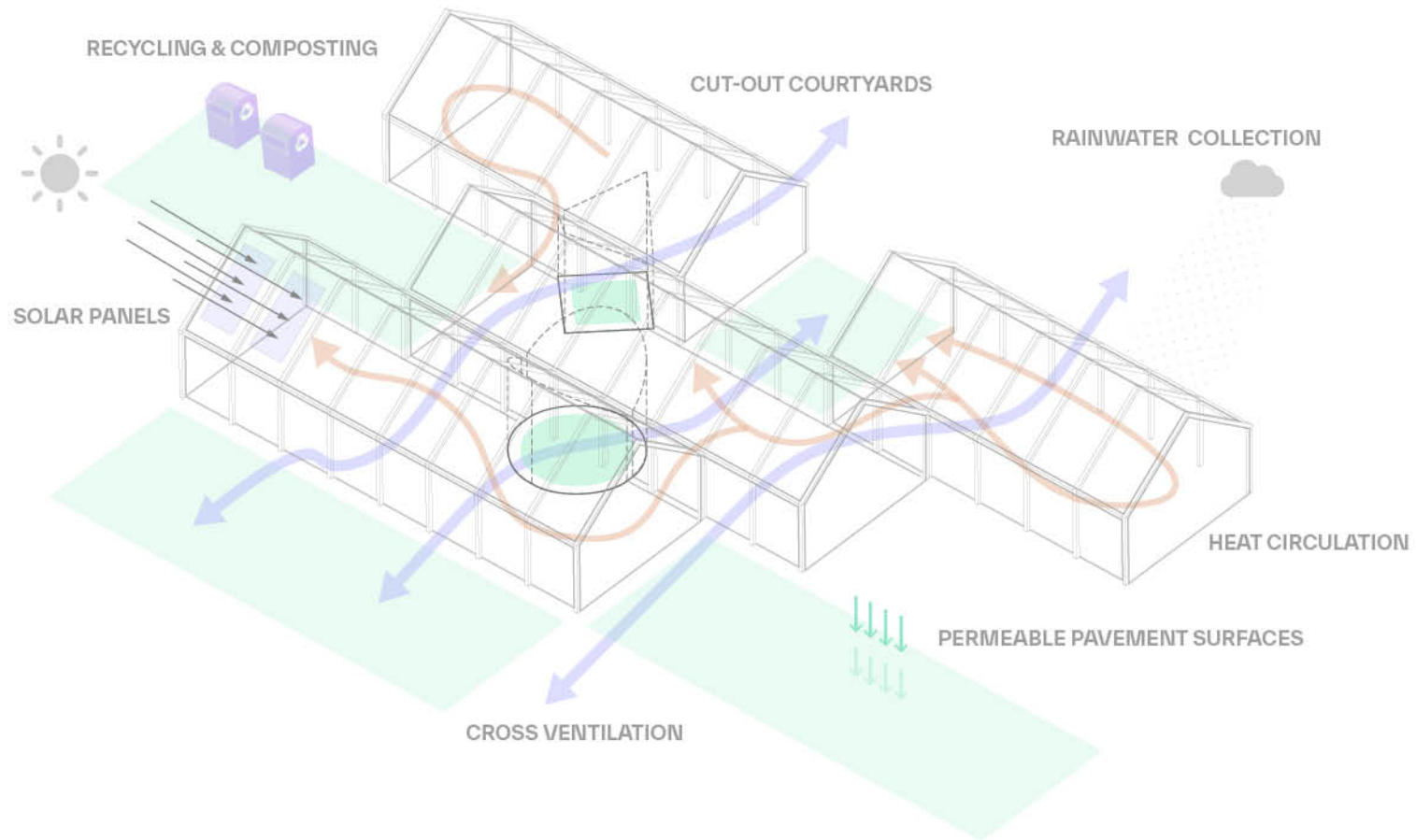


DUAL - USE SPACES

Designing shelter spaces for dual use without compromising quality, optimizing functionality and resource utilization

Design Scenario in which the sports hall can be used as a shelter during emergency. The showers and rest-rooms can serve both situations.

SUSTAINABILITY



SUSTAINABILITY

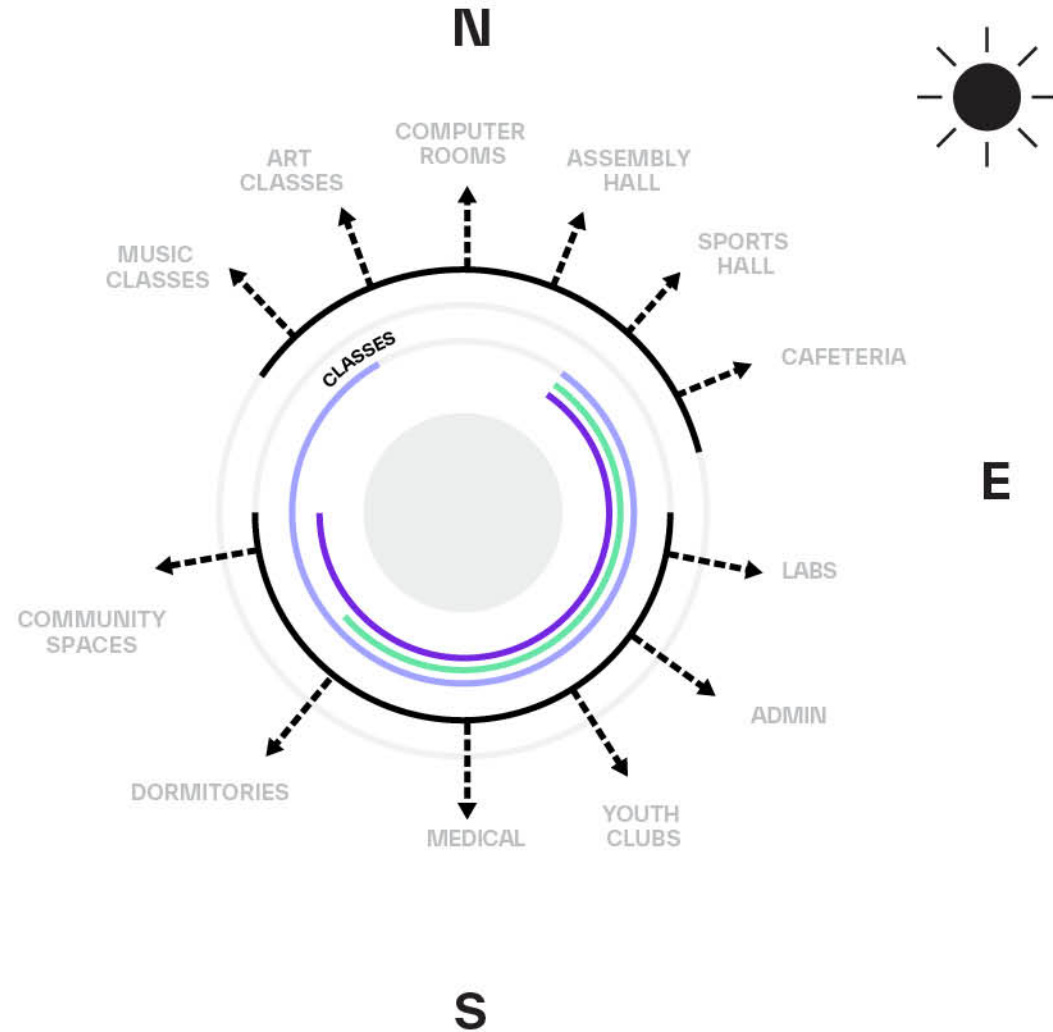
ORIENTATION AND SUNLIGHT

Identifying natural lighting requirements of programs and adjusting orientations and arrangements according to sunlight needs



CLASS BY CMILATIC AREA:

- AREAS I & V
- AREAS II & IIIB & IV
- AREAS IIIA



SUSTAINABILITY

ENERGY SAVING AND RESOURCES

The project integrates several energy-saving and resource-efficient measures. Cut-out courtyards and cross ventilation enhance natural airflow, reducing the need for air conditioning. A rainwater collection system and permeable surfaces in landscaping efficiently manage water resources. Heat circulation techniques and solar panels on

the roofs minimize energy consumption. Additionally, recycling and composting are facilitated by the on-site greenhouse, promoting sustainability and reducing waste. These measures collectively ensure an environmentally responsible and resource-efficient design

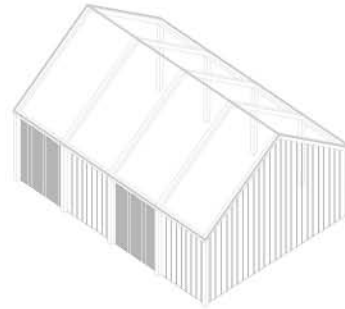


SUSTAINABILITY

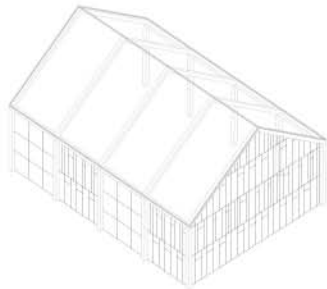
COST EFFECTIVENESS

This project presents a cost-effective and economically feasible solution, primarily due to its modular system design. Utilizing a base provided by a reputable Ukrainian supplier ensures quality and cost efficiency. The simplicity of implementation is enhanced by the system's adaptability, allowing the infill to incorporate locally sourced regional materials.

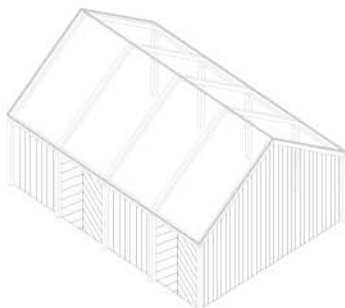
This approach not only reduces transportation costs but also supports local economies, making the project both financially sound and adaptable to diverse environmental contexts



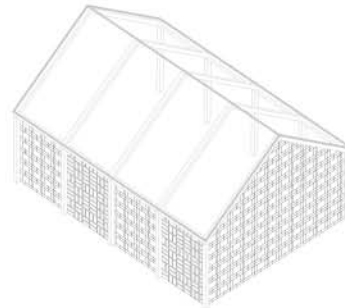
METAL



CONCRETE



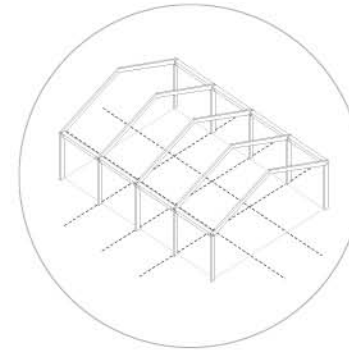
WOOD



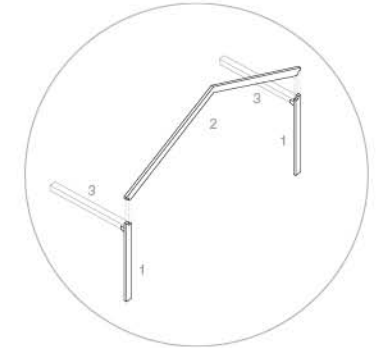
BRICK

MATERIALITY SOLUTION

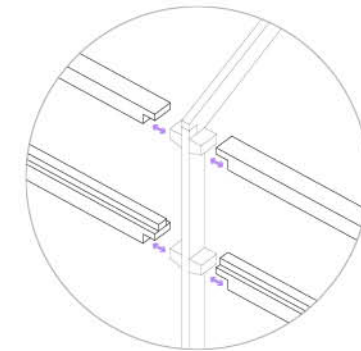
Through vernacular elements for example regional material selection, varied roof typologies, and diverse openings, reflecting local identity, heritage, promoting sustainability and enhancing local economy



CLEAR STRUCTURE FRAME



SIMPLE FRAME ELEMENTS



EASY ASSEMBLY

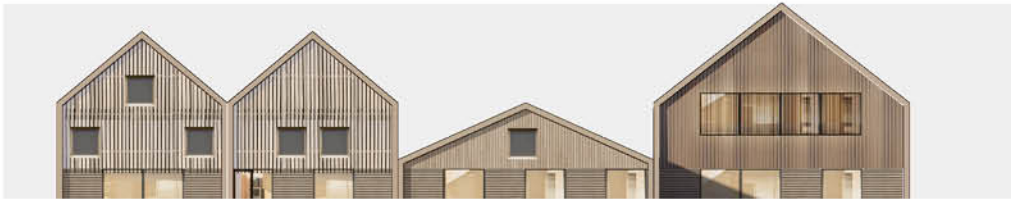
STRUCTURAL SOLUTION

Establishing a simple and clean module frame with recycled materials and prefabricated components allowing for disassembly and reuse

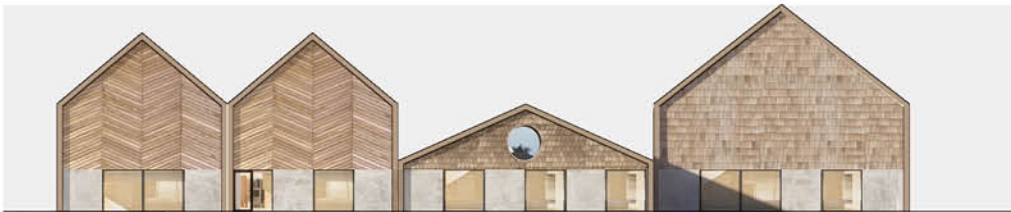
SUSTAINABILITY

COST EFFECTIVENESS / MATERIALITY TRAJECTORY

WOOD TYPOLOGY OPTION A



WOOD TYPOLOGY OPTION B



WOOD TYPOLOGY OPTION C



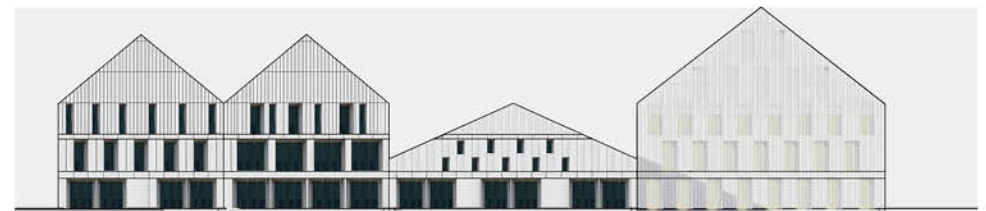
BRICK TYPOLOGY



METAL TYPOLOGY OPTION A



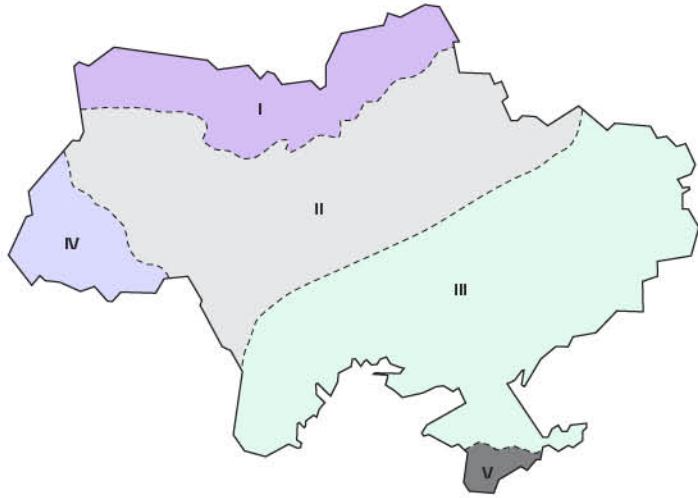
METAL TYPOLOGY OPTION B



SUSTAINABILITY

INTEGRATION TO NATURE AND ENVIRONMENT

Incorporating abundant and diverse green spaces with low maintenance requirements by utilizing local vegetation and species, resulting in biodiversity rehabilitation and protection



ECOLOGICAL TYPOLOGIES

REGION

VEGETATION SPECIES

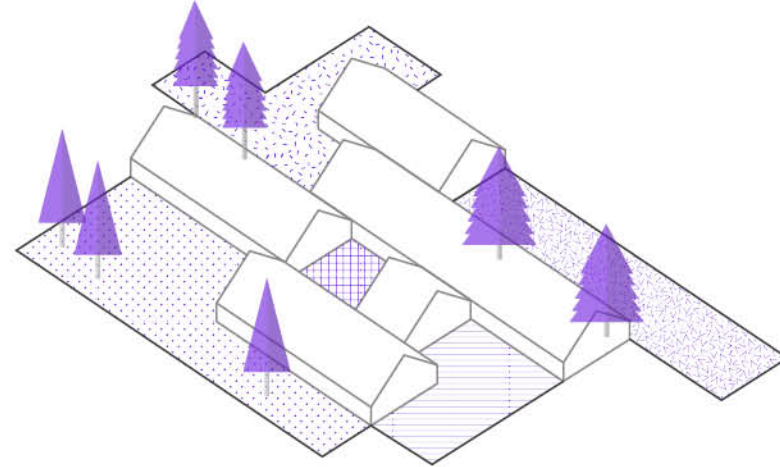
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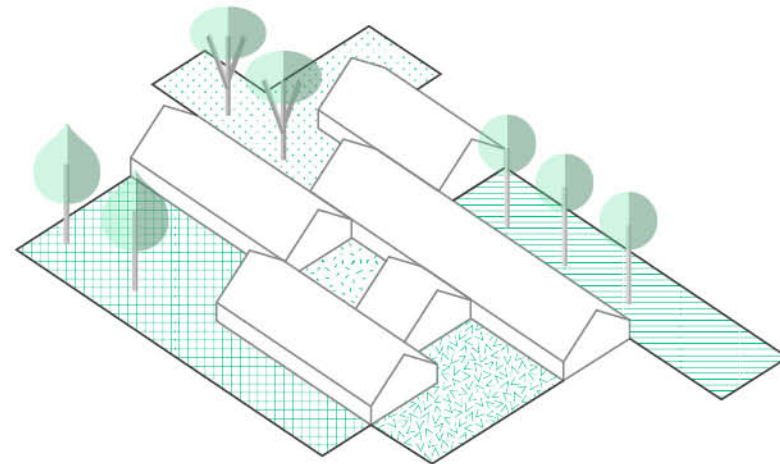
III



SCHOOL IN REGION I

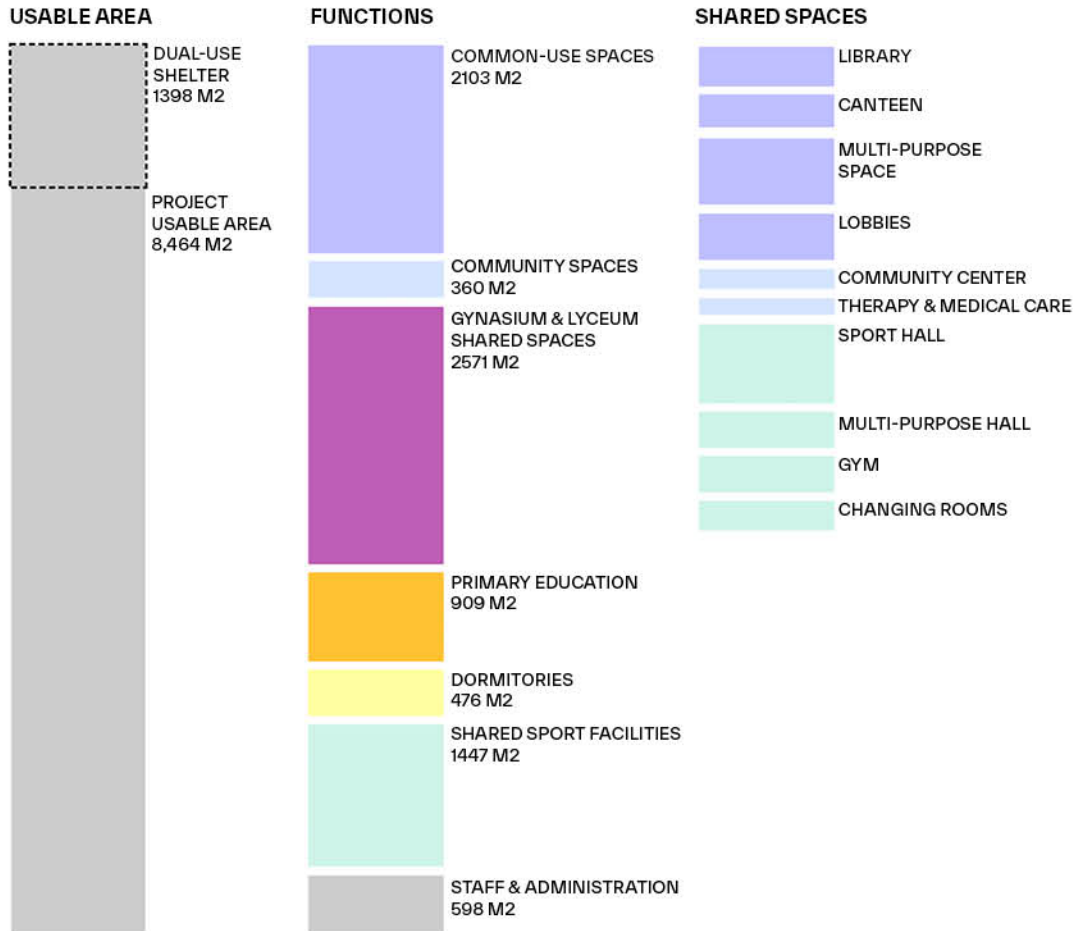


SCHOOL IN REGION III



AREA CALCULATION

Site (in hypothetical situation A)		
Site surface area	sq.m.	22,800
Site development intensity	%	46
Site development density	%	24
Green portion of the site	%	43
General data of the building(s) / parts of the building(s)		
Total floor area	sq.m.	10,425
Usable floor area	sq.m.	8,464
Dual-use area in the civil protection structure	sq.m.	1,398
Volume	cubic m.	31275
Number of floors	pcs.	3
Building height	m	6



Primary education		
Total floor area	sq.m.	1096
Usable floor area	sq.m.	909
Volume of the building / part of the building	cubic meters	3288
Number of floors	pcs.	2
Height of the building / part of the building	m	6
Gymnasium & Lyceum, shared education		
Total floor area	sq.m.	5398
Usable floor area	sq.m.	4622
Volume of the building / part of the building	cubic meters	16194
Number of floors	pcs.	3
Height of the building / part of the building	m	6
Community spaces, therapy spaces		
Total floor area	sq.m.	429
Usable floor area	sq.m.	360
Volume of the building / part of the building	cubic meters	1287
Number of floors	pcs.	1
Height of the building / part of the building	m	3
Accommodations / Dormitory		
Total floor area	sq.m.	591
Usable floor area	sq.m.	473
Volume of the building / part of the building	cubic meters	1773
Number of floors	pcs.	1
Height of the building / part of the building	m	3
Civil protection / Dual Use		
Total floor area	sq.m.	2001
Usable floor area	sq.m.	1565
Volume of the building / part of the building	cubic meters	6003
Number of floors	pcs.	1
Dual-use floor area	m	1,398
Height of the building / part of the building	m	3
Staff and administrative spaces		
Total floor area	sq.m.	756
Usable floor area	sq.m.	598
Volume of the building / part of the building	cubic meters	2268
Number of floors	pcs.	1
Height of the building / part of the building	m	3
Shared sport facilities		
Total floor area	sq.m.	2155
Usable floor area	sq.m.	1447
Volume of the building / part of the building	cubic meters	6465
Number of floors	pcs.	1
Height of the building / part of the building	m	3