

PRIMARY SCHOOL IN VLASTINA

PRAGUE 6
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FA CTU - FACULTY OF ARCHITECTURE CTU
ATELIER STEMPEL - BENES
SS 2024
DIPLOMA PROJECT

Master thesis

**Faculty of architecture
Czech Technical University in Prague**

SS 2023/2024

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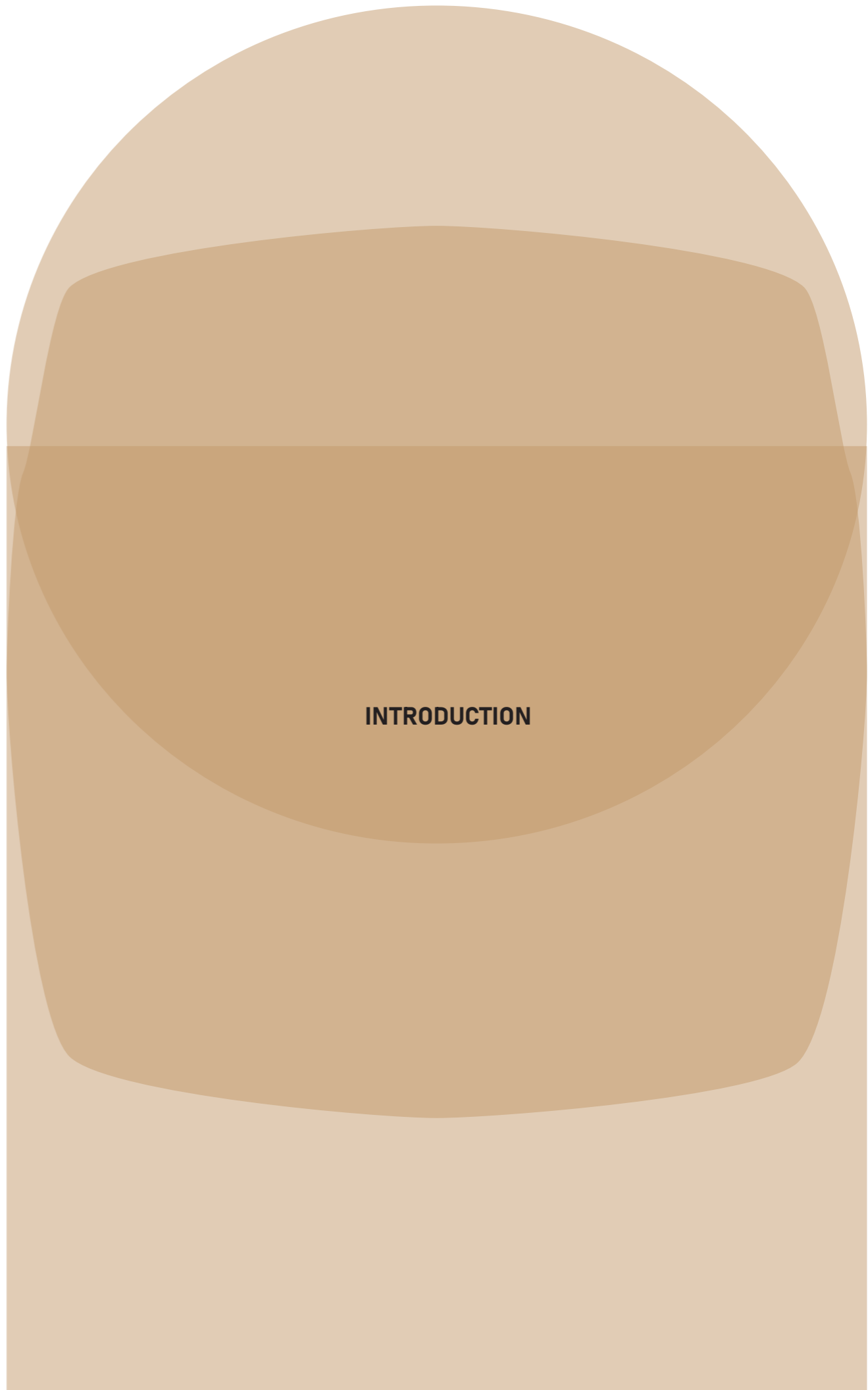
Ing. arch. TOMÁŠ KLANC

PROJECT BRIEF

The objective of this project is to undertake a comprehensive reconstruction of a Primary School that is located in Prague. The school is owned by the Municipality of Prague 6. The reconstruction involves a thorough analysis of the current state of the building, identifying its strengths and addressing any shortcomings. Given the rapidly evolving needs of a vital demographic group within the society, it is imperative to provide a solution that caters to the well-being of children and serves to the broader interests of the community.

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INTRODUCTION

Note: Primary education lays the foundation for a child's development. During these formative years, children acquire essential skills that set the stage for their future in life, work, and as engaged citizens. A high-quality education not only equips children and youth with knowledge and abilities but also protects their health, enhances their well-being, and helps break the cycle of poverty.

EDUCATION SYSTEM IN THE CZECH REPUBLIC

The foundation of the Czech educational system dates back to 1774, when mandatory attendance at school was introduced. However, the education system in the Czech Republic reaches even further in the past with Charles University, which stands as the oldest university in Central Europe.

Czech elementary education spans nine years, typically covering ages 6 to 15. While most children opt for state schools, there is a growing presence of recently established private and church schools. In contrast to the United States, Czech children have the flexibility to receive their elementary education from various schools, each offering diverse educational programs.

The prevalent choice for many children is the regular 9-year elementary school, divided into two stages. The primary stage, encompassing grades 1-5, focuses on foundational skills like reading, writing, and arithmetic. Subsequently, the lower secondary stage, spanning grades 6-9, introduces a broader curriculum, including subjects such as Czech language and literature, foreign language, mathematics, sciences, history, geography, civics, physical education, music, and art.

- In urban areas, both stages are typically integrated into one school, while certain villages may only offer the primary stage, requiring older children to commute to the nearest town. Grammar schools, attended from the sixth to thirteenth grade, provide a specialized route to universities.

- Additionally, children can choose to apply to 6 or 8-year gymnasiums (grammar schools) after their 5th or 7th year of elementary education. These schools are tailored to specific areas of study while still providing elementary education. Some students may opt for conservatories, such as an 8-year dance conservatory, while those with disabilities may attend special schools tailored to their needs.
- All these diverse schools ensure students receive a comprehensive elementary education, equipping them to pursue higher education at the secondary and university levels.

SITE DEVELOPMENT

When designing a school site development plays a crucial role in creating a safe, accessible, and welcoming environment for both students and staff. Here are some criteria I took in consideration.

1. Sidewalk Infrastructure: :
 - Provided well-maintained and spacious side-walks throughout the school grounds to facilitate smooth pedestrian movement. Consider incorporating green spaces and seating areas to enhance the overall environment.
2. Accessibility:
 - Implementation of universal design principles to ensure that all areas of the school are accessible to individuals with diverse abilities. This includes ramps, elevators, and tactile paving for visually impaired individuals.

3. Main Entry:
 - Visibility: Designed the main entry to be easily visible and identifiable. This helps visitors, including parents and new students, locate the entrance effort-lessly.
 - Landscaping: Used landscaping to enhance the aesthetics of the main entry while ensuring it does not obstruct visibility.

4. Outdoor Spaces:
 - Recreation Areas: Designed outdoor spaces for recreation and social activities. Include playgrounds, sports facilities, and green areas that contribute to the overall well-being of students.
 - Seating: Provide benches and seating areas strategically placed around the site for students and staff to rest or engage in outdoor learning activities. and contribute to a healthy environment.

5. Environmental Considerations:
 - Sustainability: Integrated-sustainable design features, such as green roofs, permeable surfaces, and energy-efficient lighting, to promote environmental responsibility.
 - Tree Canopy: Plan for the inclusion of trees and greenery to enhance the visual appeal of the school site.

SAFETY AND SECURITY

1. Single Point of Entry and Secure Vestibule:
 - All access points to the school facility or facilities should be consolidated into a single designated entry point.
 - Parking, drop-off/pick-up zones, pedestrian routes, and other site access locations should guide and direct all individuals entering the campus to this single entry point. This central point of access shall be designed as a secure vestibule, requiring all visitors to register at the school's reception area before gaining access to other parts of the facility.
 - This single entry approach applies uniformly across all school sites, encompassing both single and multi-building campuses.

2. Site Fencing:
 - The security of the site shall be ensured through the implementation of perimeter and/or interior fencing. Chain-link fencing is deemed suitable for "back-of-house" areas, while welded wire fence is preferred for more visible sections of the site.
 - Interior fencing, also known as "inter-building" fencing, may be strategically installed where school buildings act as barriers or walls. This involves constructing fencing between buildings to create a secure environment while allowing exterior circulation for school occupants between and among separate structures.

-The layout of site fencing must be meticulously coordinated with building egress requirements, the district's fire evacuation plan, and active shooter protocols. Egress gates within the security fence should be provided as mandated by codes, facilitating fire evacuation and granting access to various site features such as recreation areas, playgrounds, and parking facilities.

REFERENCES

Geneviève-de-Gaulle-Anthonioz School Group

Location

L'hay-Les-Roses, France

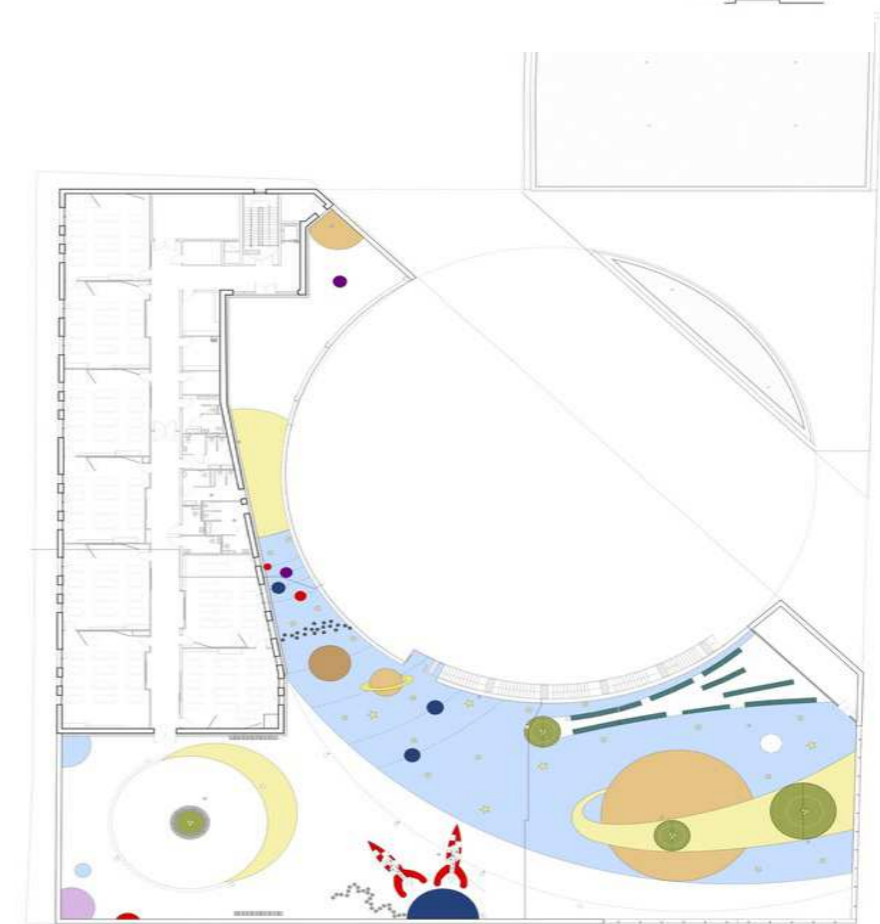
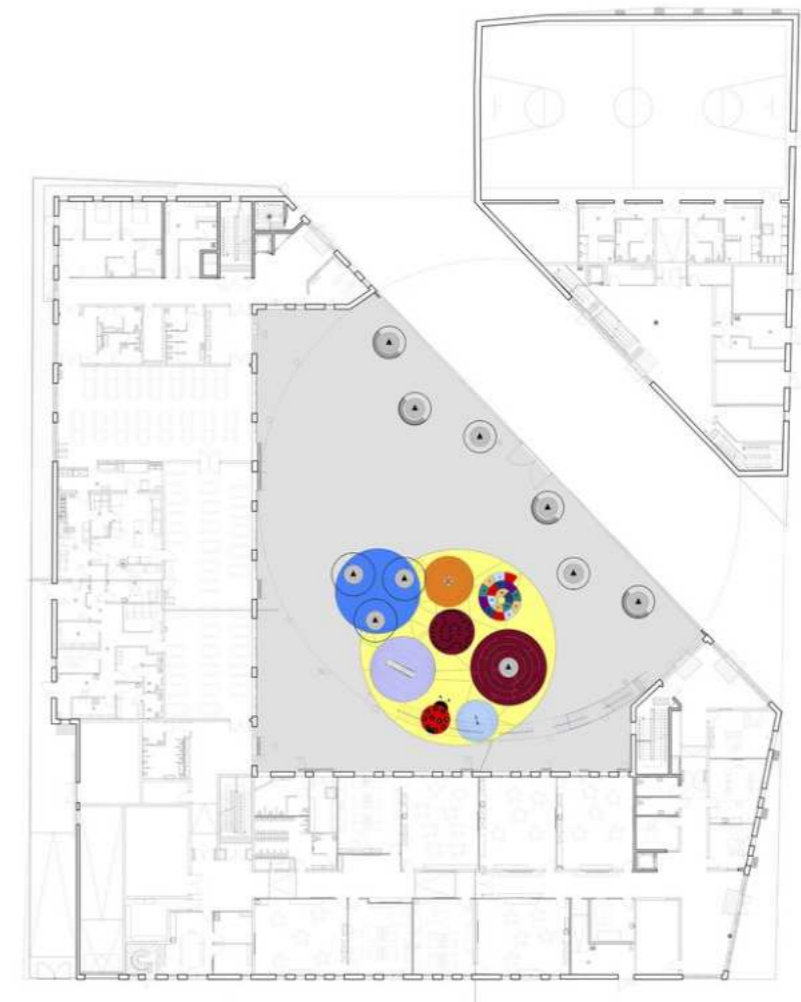
Architects

Atelier Aconcept

Year

2023

The new Geneviève-de-Gaulle-Anthonioz school complex is an urban landmark and a landmark building with a sober, contemporary architectural style, providing the municipality of L'Haÿ-les-Roses with a dynamic gateway to the town. It has a program comprising ten nursery classes, fifteen elementary classes, a dojo, and a gymnasium, with a total floor area of 4,700 m².



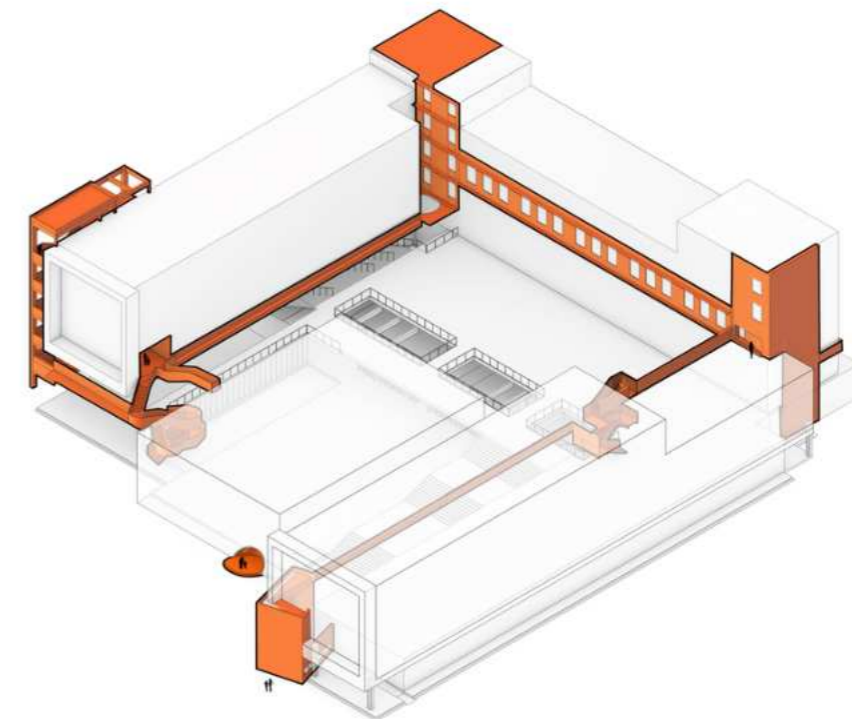
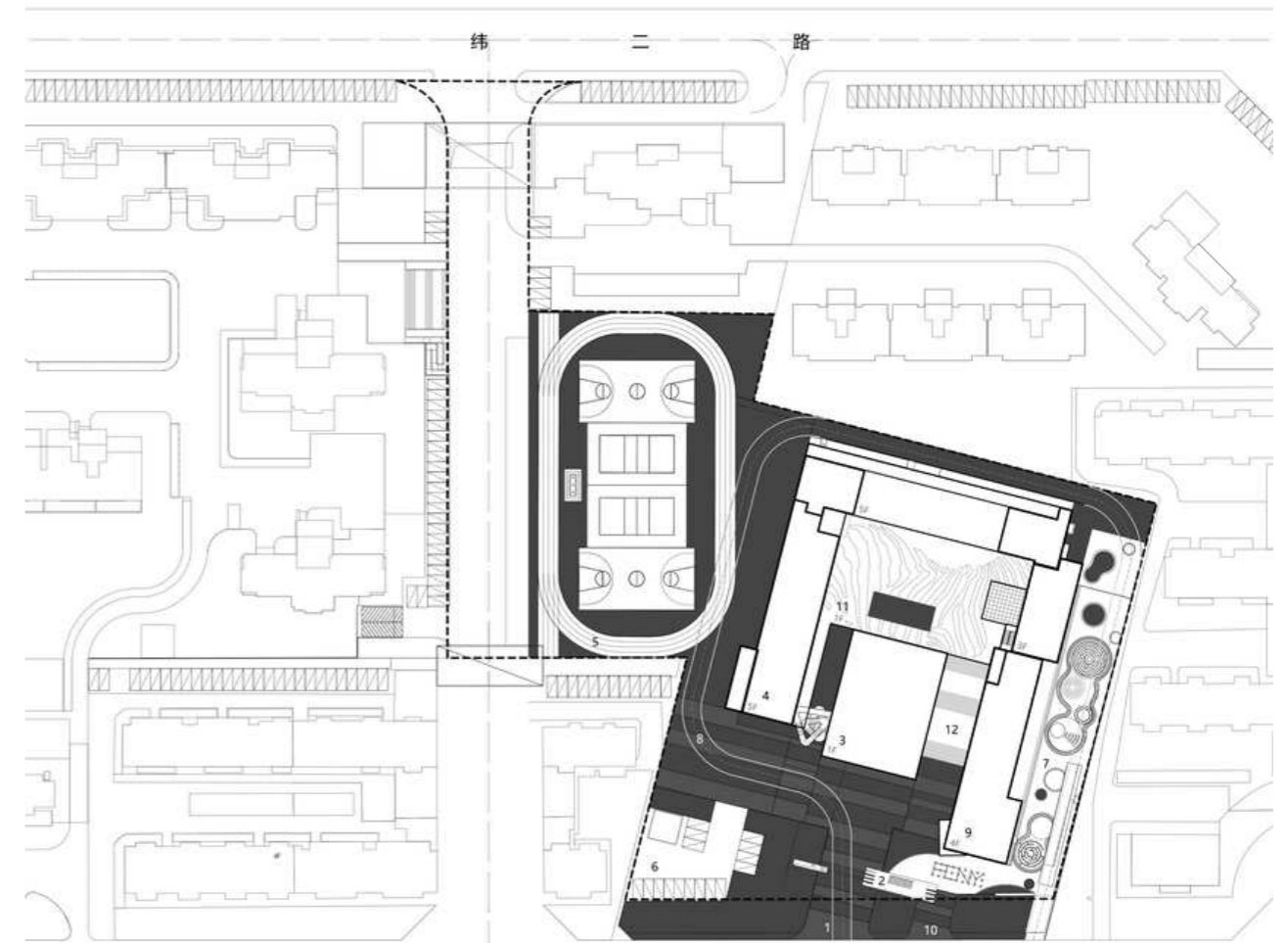
Pony School

Location
Xinyang, China

Architects
L&M Design Lab

Year
2023

As a microcosm of the intense residential development that is commonly occurring in county units, this school in Xinyang Huangchuan County, Henan Province, is surrounded by high-rise residential neighborhoods on an extremely compact site.

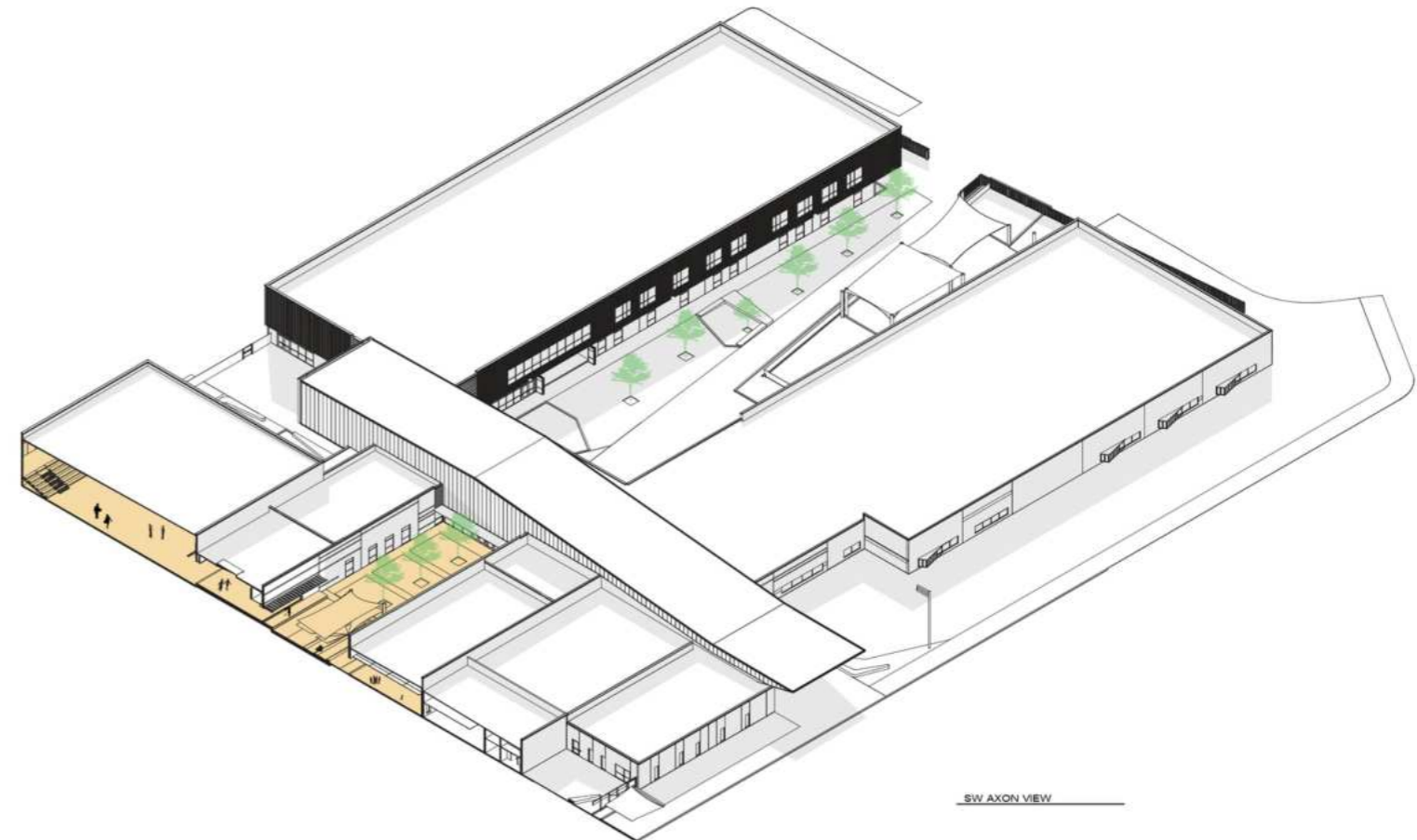
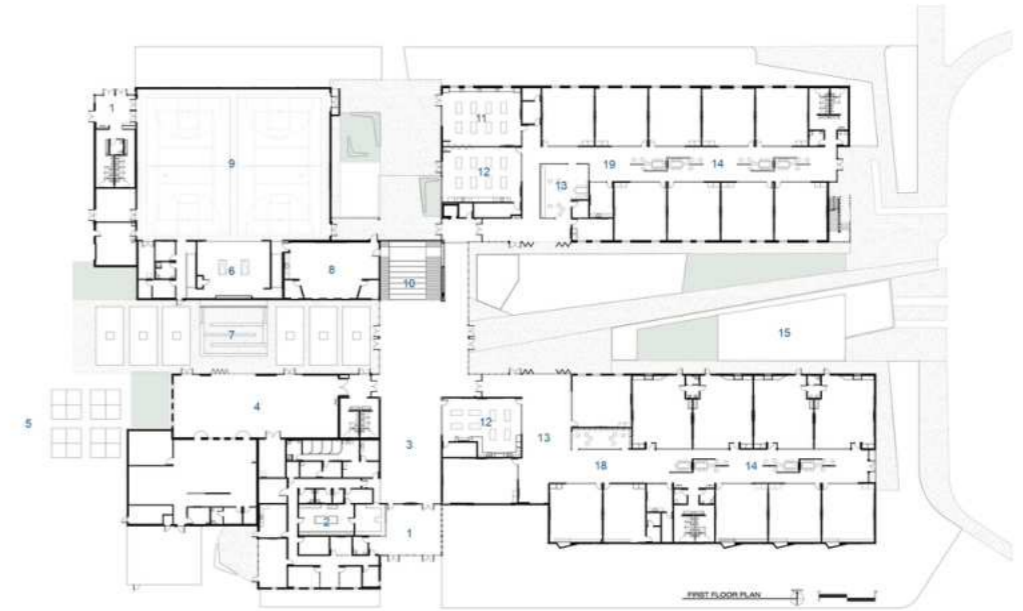
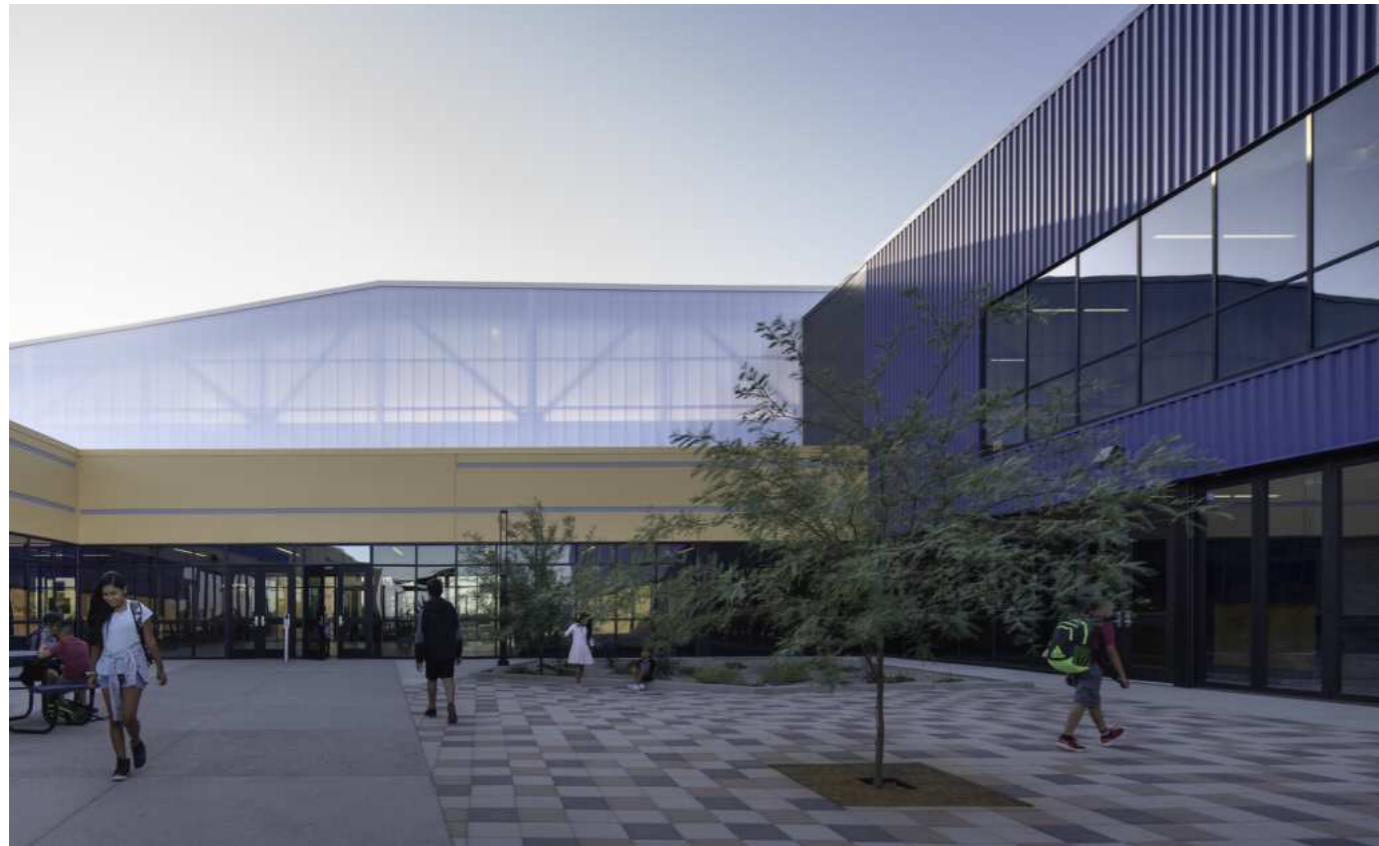


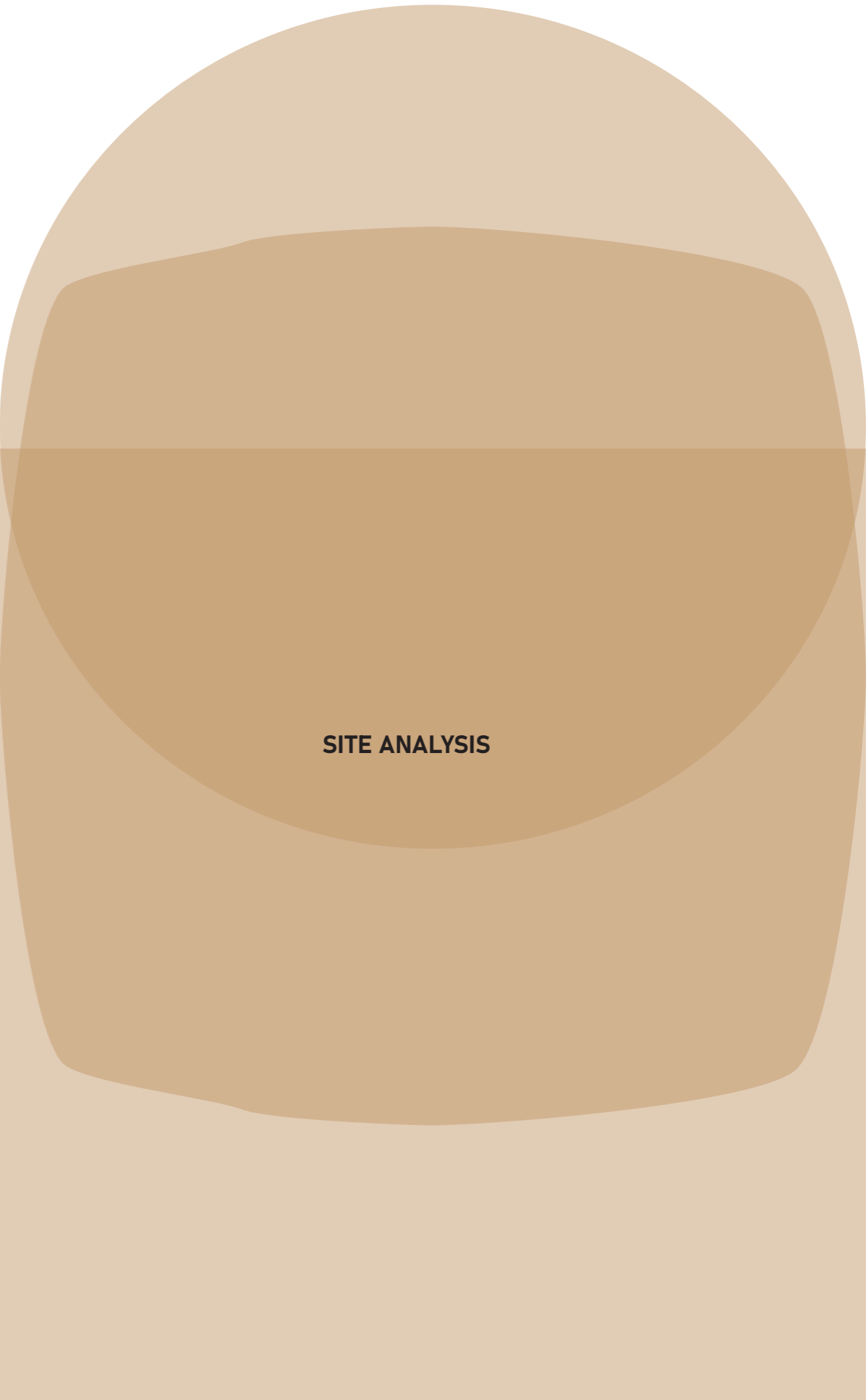
John S. McCain III Elementary School

Location
Buckeye, United States

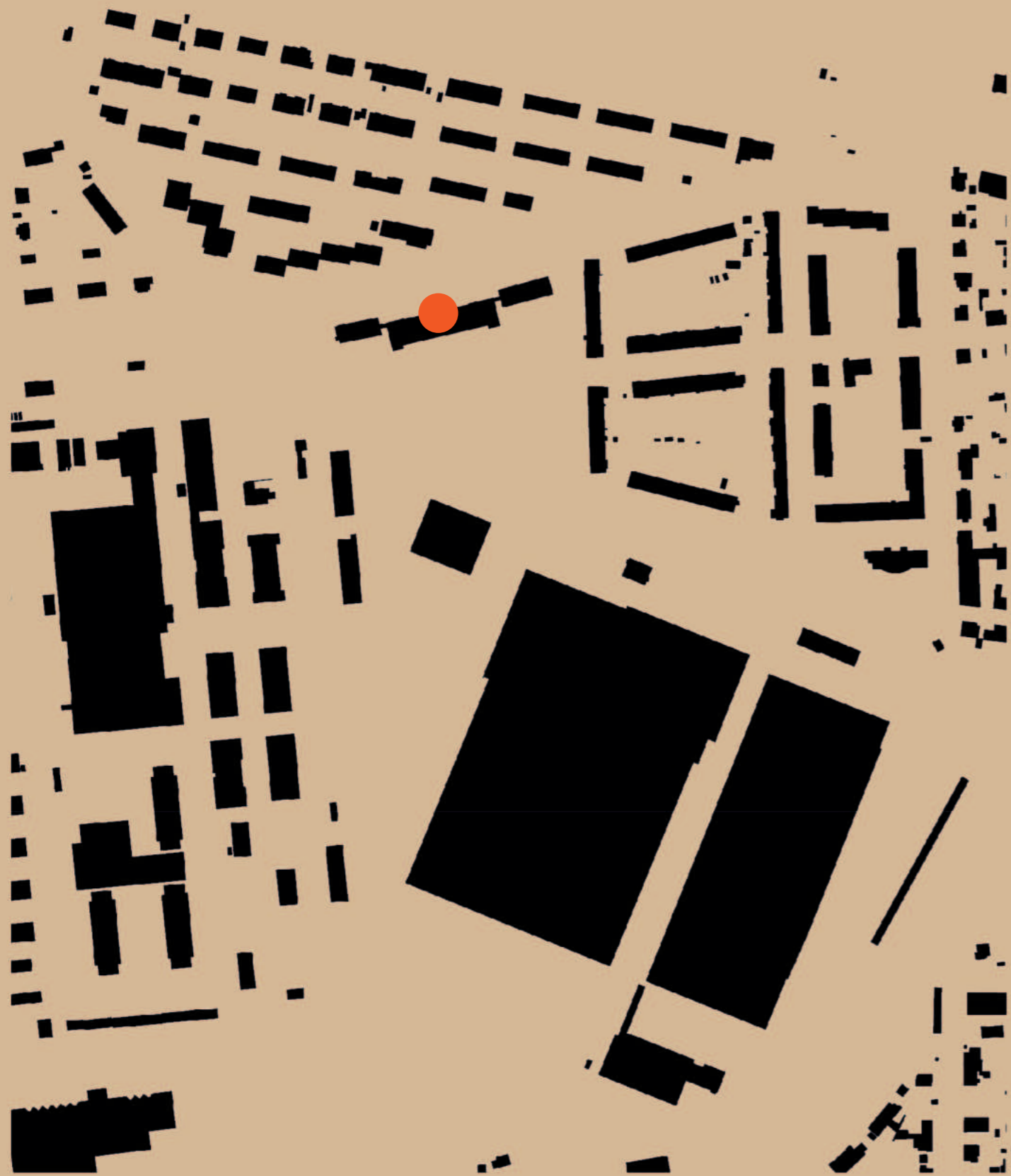
Architects
Orcutt Winslow

Year
2021





SITE ANALYSIS



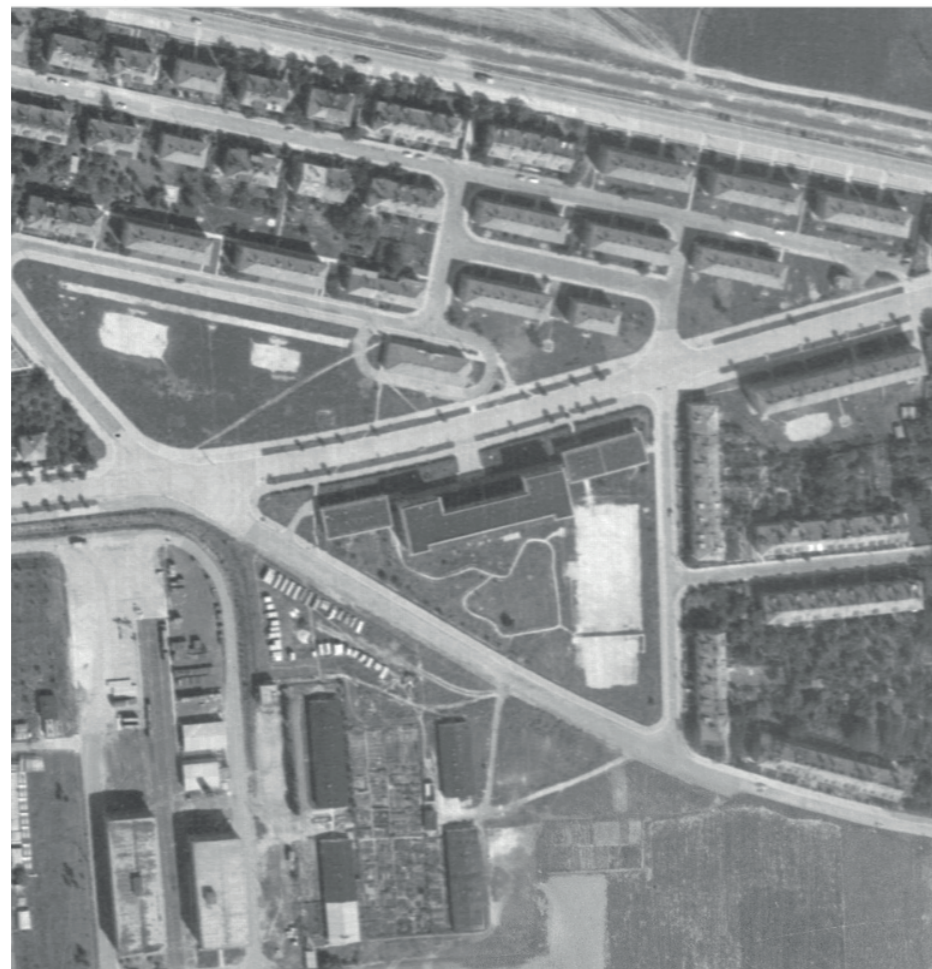
LOCATION

This project is situated in the Municipality of Prague 6, a truly exceptional location that enhances the school's environment. Nestled amidst the charming landscape of Libus, it perfectly meets the expectations of an ideal educational setting for children.

Characteristic about the location is the triangular plot, bordered by Vlastina, U Silnice, and Hostounská streets, which offer a unique and accessible positioning for the school.

Spanning on approximately 1.2 hectares, this location offers ample space for the school's diverse needs. The extensive grounds provide room for outdoor activities, playgrounds, and green spaces that foster a holistic educational environment and also leaves space to add additional functions. This generous expanse ensures that students have a conducive setting for both learning and recreational activities, making it an ideal location for the school.

1953



1966

HISTORICAL CONTEXT

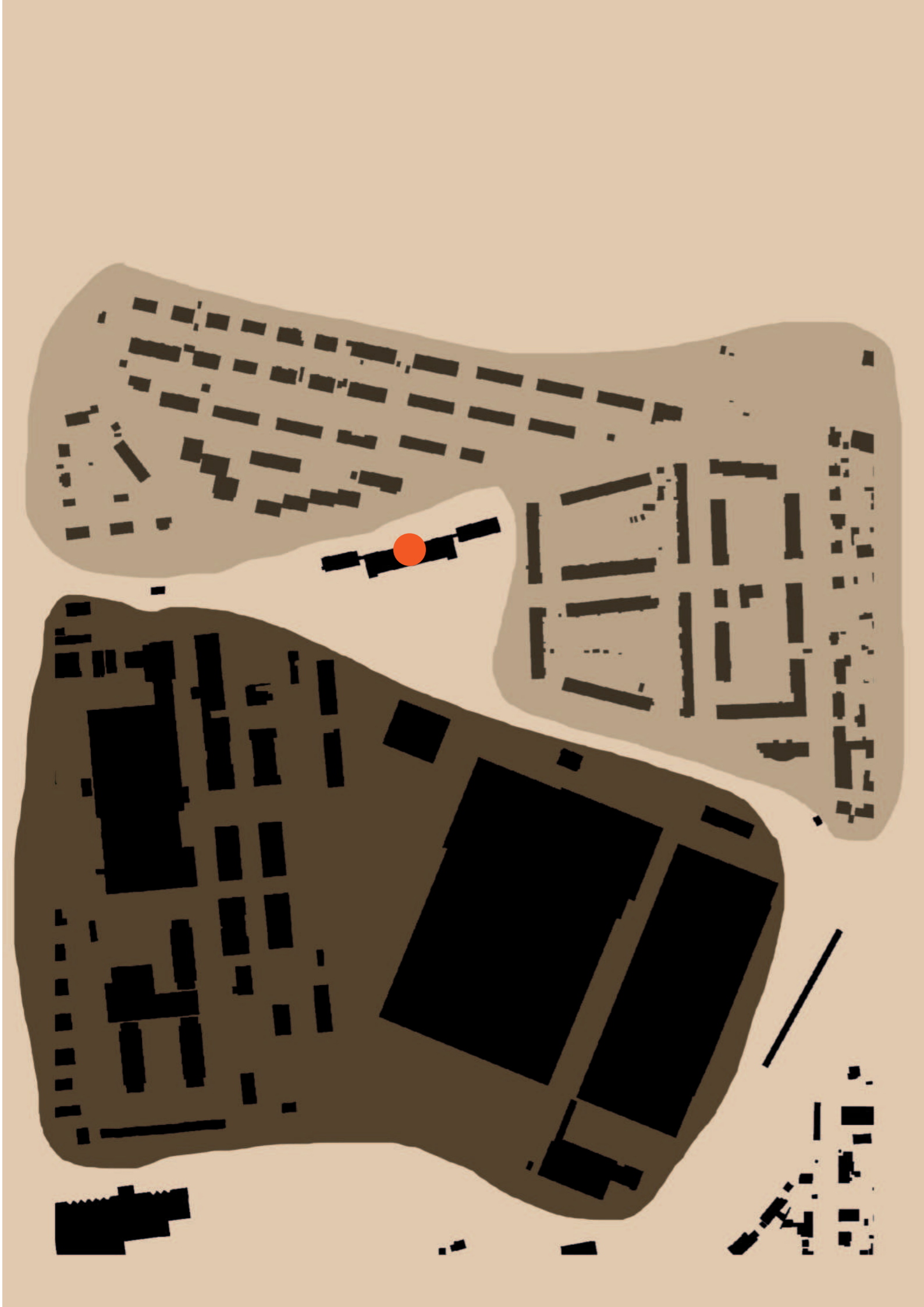
The building of the school was constructed in 1960's, in a residential area that was in development at that time, with the Municipality of Prague 6 as owner.

Before the 1960s, the situation in Prague regarding the population and school infrastructure was quite different. The post-World War II period saw a gradual recovery and stabilization in population numbers, but there wasn't the same level of demographic pressure on educational facilities as experienced during the 1960s baby boom.

In the immediate post-war years and into the 1950s, many European cities, including Prague, were focused on rebuilding and restoring normalcy. The birth rate was relatively stable, and the existing schools were generally sufficient to meet the needs of the population. However, as the economy and living conditions improved, the birth rate started to rise, eventually leading to the population surge of the 1960s.

This earlier period was characterized by efforts to reconstruct and improve existing educational facilities rather than a pressing need to build new ones. However, the boom of the 1960s marked a turning point, compelling the government and city planners to invest significantly in expanding the educational infrastructure to meet the needs of a rapidly growing young population.

Through the years, the building was rented by the Municipality to a school of private ownership.



LAND USE

The building is located in the center of a residential area, which purely benefits the community in several ways. Having a school within a residential neighborhood enhances accessibility for students, allowing them to walk or bike to school safely. This proximity fosters a stronger sense of community as families engage more closely with the school and each other.

Additionally, schools in residential areas often become community hubs,

providing a space for local events, recreational activities, and gatherings that strengthen neighborhood bonds. The presence of a school can also increase property values in the area, making it an attractive location for families looking to settle in a vibrant, family-friendly environment. Overall, the integration of the school within a residential setting supports both educational and communal well-being.



PHOTO ARCHIVE





DESIGN ANALYSIS

DESIGN BRIEF

As mentioned before, the objective of this project is to undertake a reconstruction of the Primary School that is located in Prague 6, with ownership of the Municipality of Prague 6.

The original plot of the school included two separate structures serving as a canteen and a gym. In the course of the reconstruction, these structures were completely demolished and replaced with entirely new buildings.

Regarding the main building, my aim was to preserve as much of the original structure as possible. I retained the majority of the existing wall separations and added an additional floor to meet the school's growing needs. The facade was updated with a new color, but the window openings remain largely unchanged throughout the building.

I also included green roofs on the structures, while the main building's roof also contains solar panels.

SCHOOL PROGRAM

School capacity: 270 students

CLASSROOMS

- 9 classrooms for individual classes for 30 children from 1st to 9th grade.
- 6 language classrooms for 1/2 of the children.
- 2 PC classrooms for 1/2 of the children.

SPECIALIZED CLASSROOMS

- Physics classroom;
- Chemistry with a small laboratory
- Music room + equipment storage
- Workshop for working with metal
- Workshop for working with wood
- Art studio and ceramic workshop

KEEPING AFTER SCHOOL:

- 3/4 rooms.

CAFETERIA:

- cafeteria for a sufficient number of children
- Buffet
- Kitchen for cooking

GYM

- Gym, tool storage and showers.

THEATRE HALL

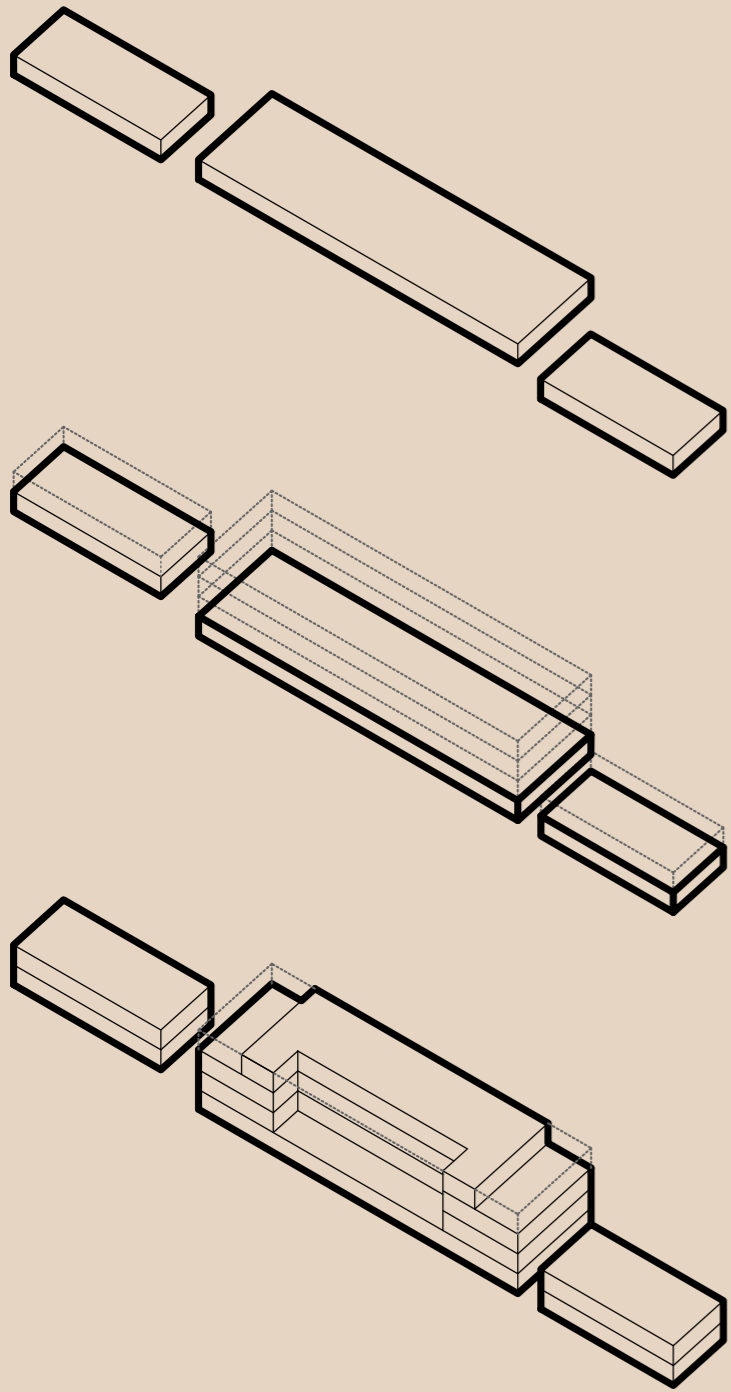
TEACHERS AND ADMINISTRATION

- Common big room for teachers
- offices for management, consulting, administration, accountant, representative and etc.
- Contact with parents
- Doctor

CLOTHING ROOMS



VOLUME ANALYSIS



VOLUME ANALYSIS

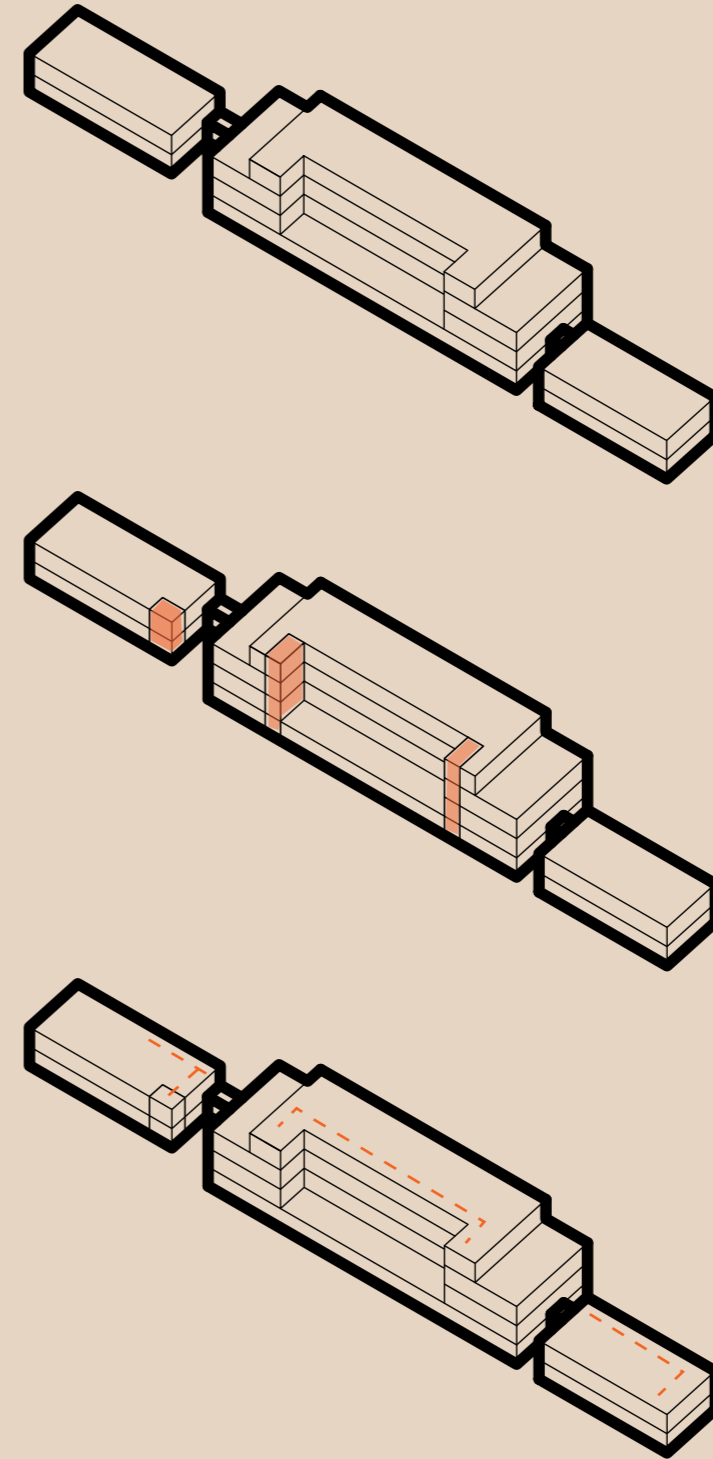
Initial placement of volumes.

HEIGHT DISPOSITION

Each volume has its own height. The new volumes rise up to 2 floors, while the main building has an addition of one floor above the existing ones.

SUBSTRACTION

Substraction of some parts of the volumes to define the building.



INTERSECT

Creating connections between the gym and canteen.

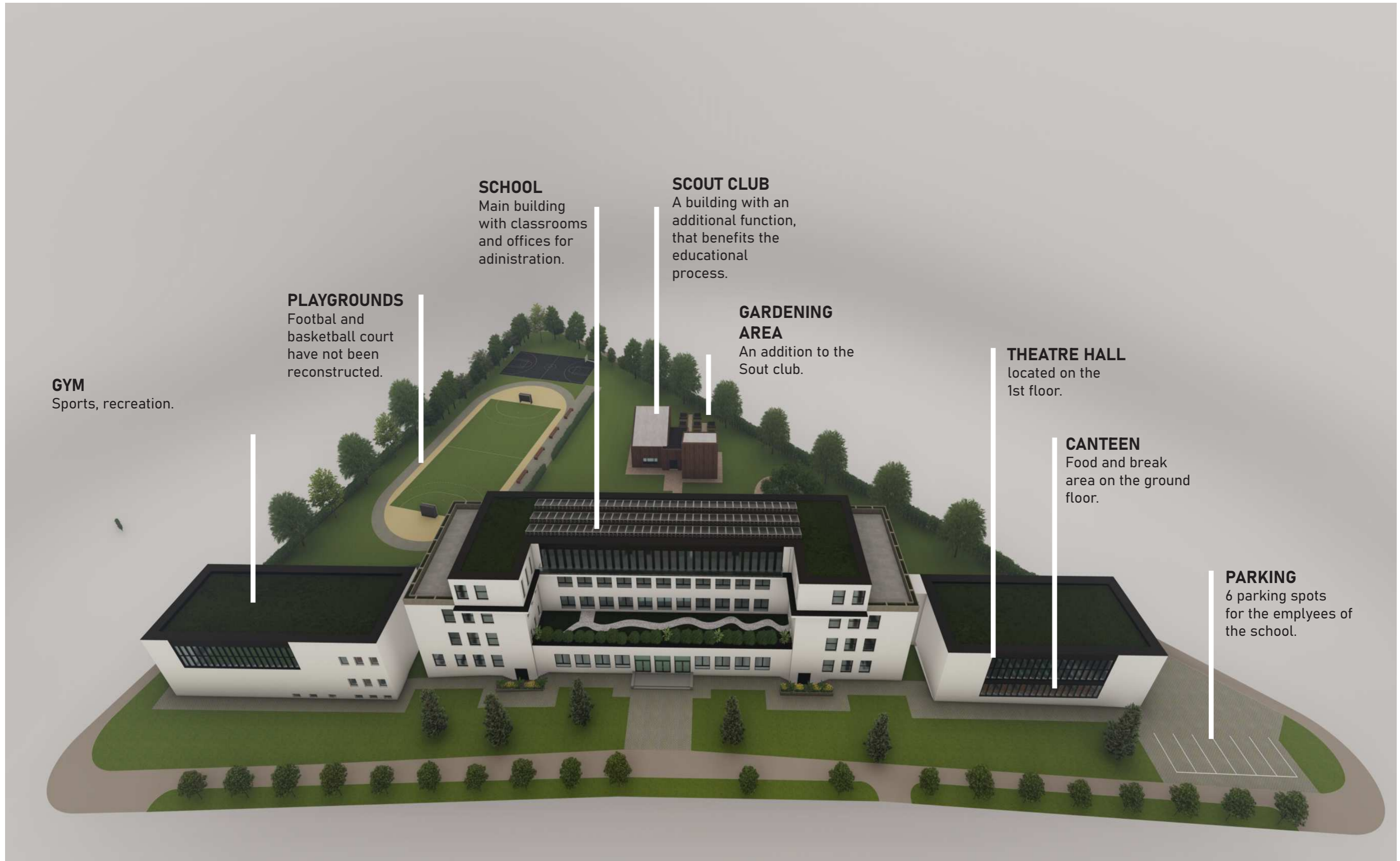
VERTICAL COMMUNICATION

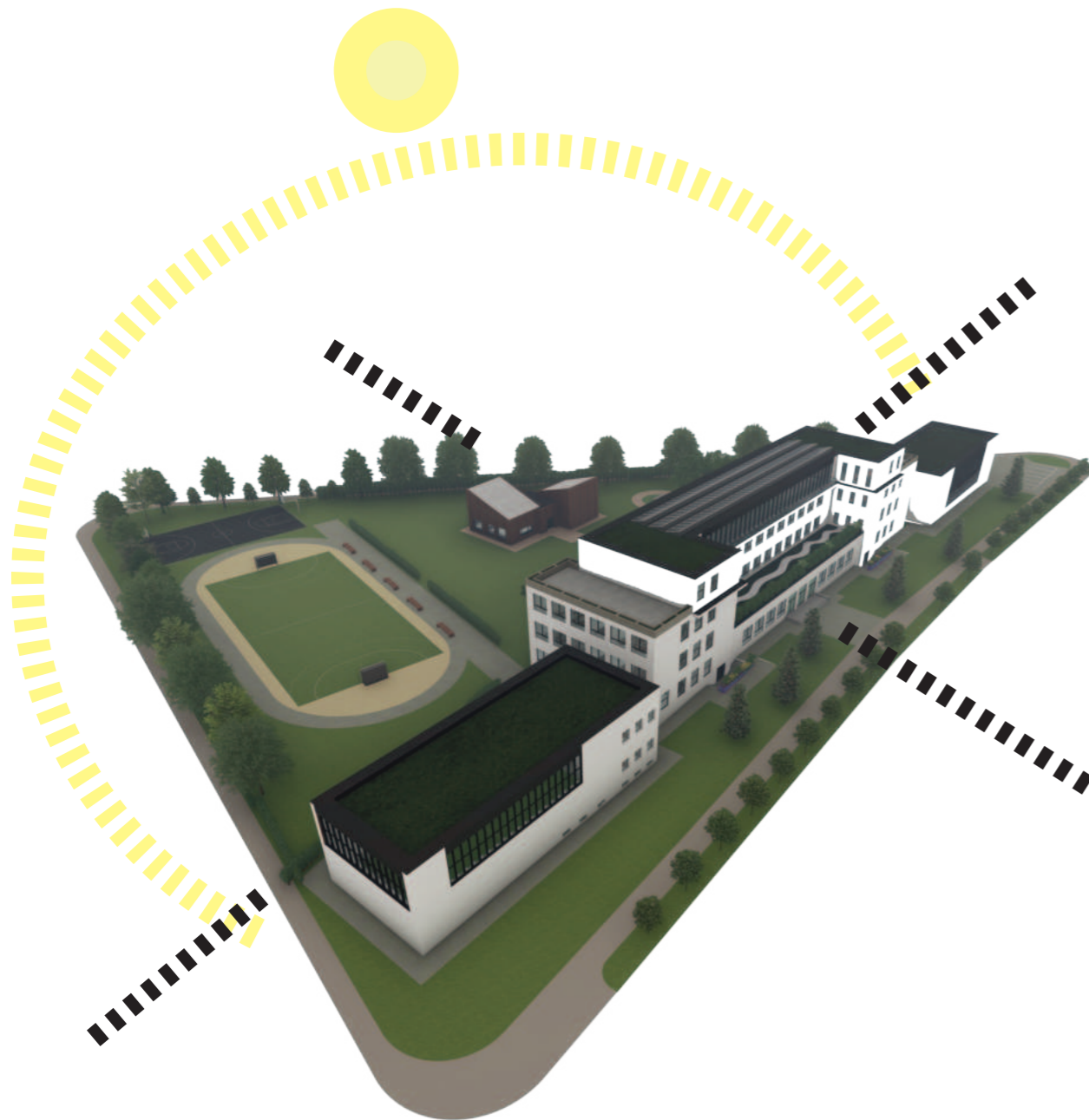
Vertical communication throughout the volumes

MOVEMENT

Lines of movement throughout the volumes.

DISPOSITION OF FUNCTIONS





SYN ANALYSIS

Prague enjoys a moderate continental climate, characterized by hot summers and cold winters. On average, Prague experiences about 1,600 to 1,800 hours of sunshine per year, which translates to roughly 150 to 170 sunny days annually. This amount of sunlight makes it a viable location for solar energy projects, including the installation of solar panels on schools.

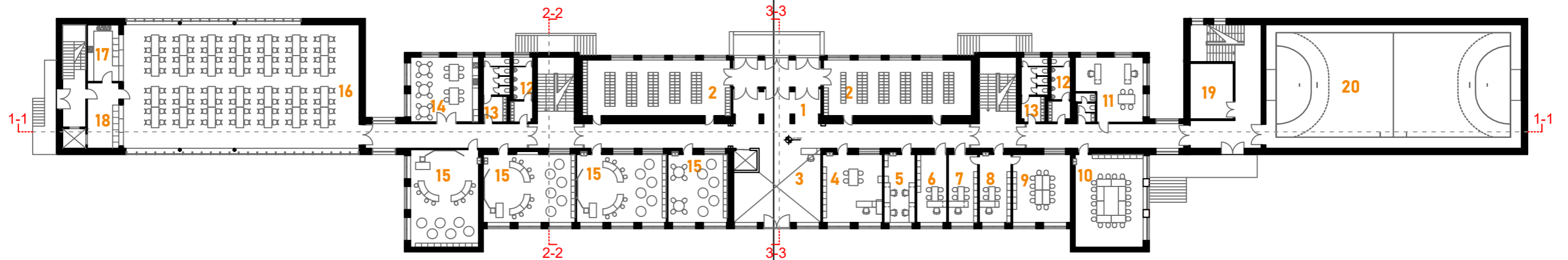
Therefore the placement of the building throughout the plot is excellent for including solar panels in the design and it also benefits the school in terms of:

Cost Savings: Schools can significantly reduce their electricity expenses by generating their own power, freeing up funds for other educational needs.

Environmental Impact: By generating clean, renewable energy, schools can lower their carbon footprint and contribute to the fight against climate change.

FLOOR PLANS

GROUND FLOOR
Level 0,000



LEGEND

- 1 Main entrance
- 2 Cloathing rooms
- 3 Common area with reception
- 4 Room for meeting with parents
- 5 Finance Office

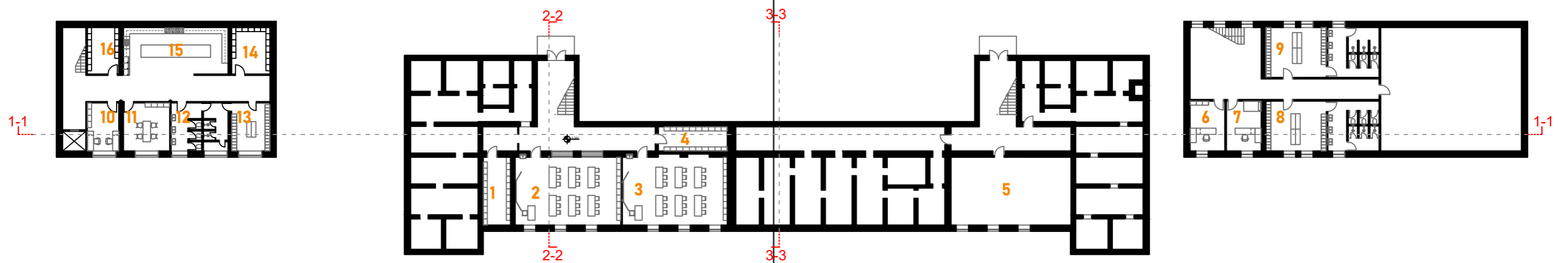
- 6 Vice Director's Office
- 7 Secretary of Director
- 8 Director's Office
- 9 Meeting room
- 10 Main Teacher Office

- 11 Pedagogical Service
- 12 Toilet for Boys
- 13 Toilet for Girls
- 14 Buffet
- 15 Keeping after school classrooms

- 16 Canteen
- 17 Clean/Dirty Dishes Kitchen
- 18 Food serving area
- 19 Storage room
- 20 Gym



UNDERGROND FLOOR
Level -3,300



LEGEND

- 1 Storage for workshop
- 2 Workshop for working with metal
- 3 Workshop for working with wood
- 4 Storage for workshop
- 5 Music rehearsal room

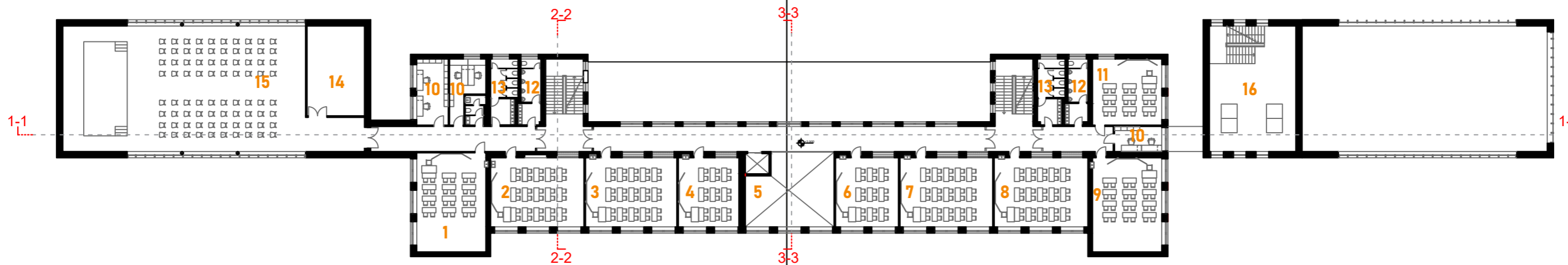
- 6 Sports teacher cabinet
- 7 Dotor's Office
- 8 Changing room for girls with toilets and showers
- 9 Changing room for boys with toilets and showers
- 10 Office

- 11 Employes of canteen rest room
- 12 Toilet and showers
- 13 Changing rooms
- 14 Storage of dry food
- 15 Main kitchen

- 16 Storage



1ST FLOOR PLAN
Level 3,900



LEGEND

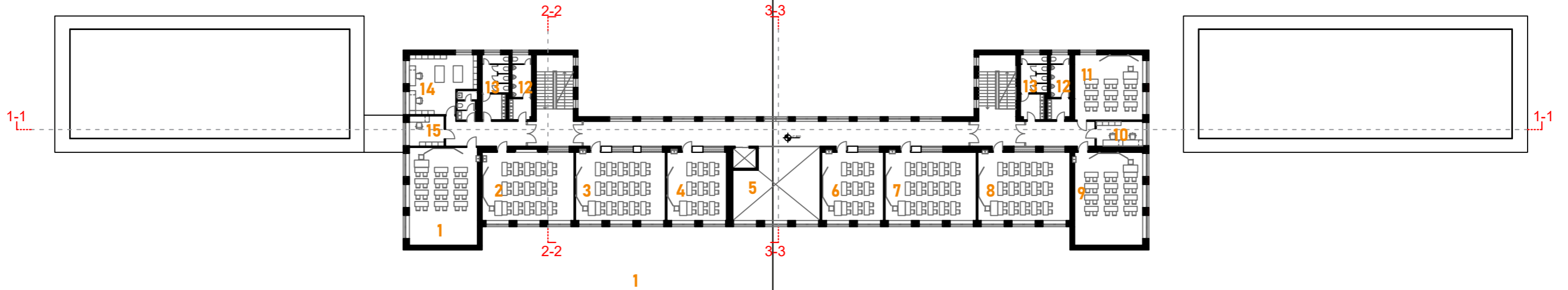
- 1 1st grade classroom
- 2 2nd grade classroom
- 3 3rd grade classroom
- 4 Language classroom 1/6
- 5 Void

- 6 Language classroom 2/6
- 7 4th grade classroom
- 8 5th grade classroom
- 9 Language classroom 3/6
- 10 Teacher Cabinet

- 11 Language classroom 4/6
- 12 Toilet for Boys
- 13 Toilet for Girls
- 14 Theatre hall storage room
- 15 Theatre Hall
- 16 Ping pong room



2nd FLOOR PLAN
Level 7,800



LEGEND

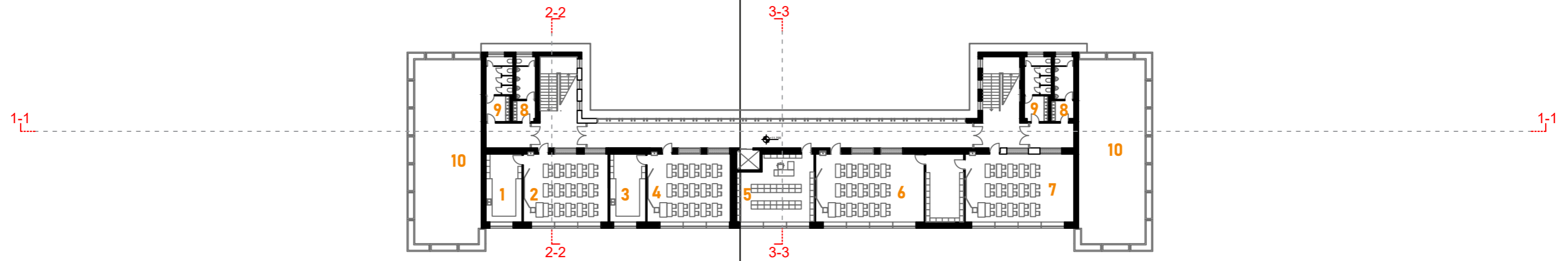
- 1 Ceramic workshop
- 2 6th grade classroom
- 3 7th grade classroom
- 4 Language classroom 5/6
- 5 Void

- 6 Language classroom 6/6
- 7 8th grade classroom
- 8 9th grade classroom
- 9 PC classroom 1/2
- 10 Teacher's Cabinet

- 11 PC classroom 2/2
- 12 Toilet for Boys
- 13 Toilet for Girls
- 14 Ceramic workshop storage
- 15 Teacher's cabinet

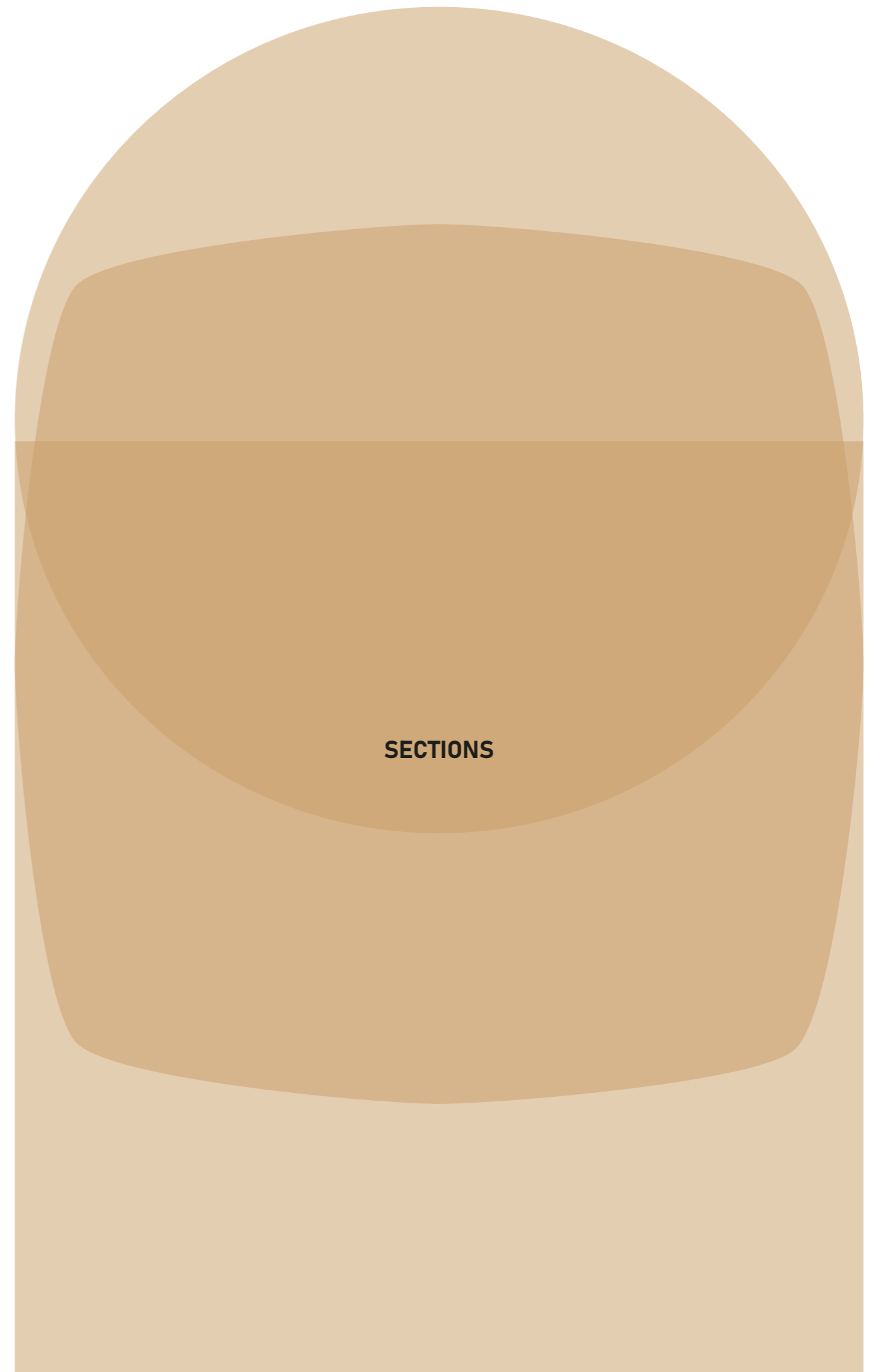


3rd FLOOR PLAN
Level 11,700



LEGEND

- | | |
|------------------------|--------------------|
| 1 Physics Laboratory | 6 Music Classroom |
| 2 Physics Classroom | 7 Art Classroom |
| 3 Chemistry Laboratory | 8 Toilet for Boys |
| 4 Chemistry classroom | 9 Toilet for Girls |
| 5 Library | 10 Terrace |



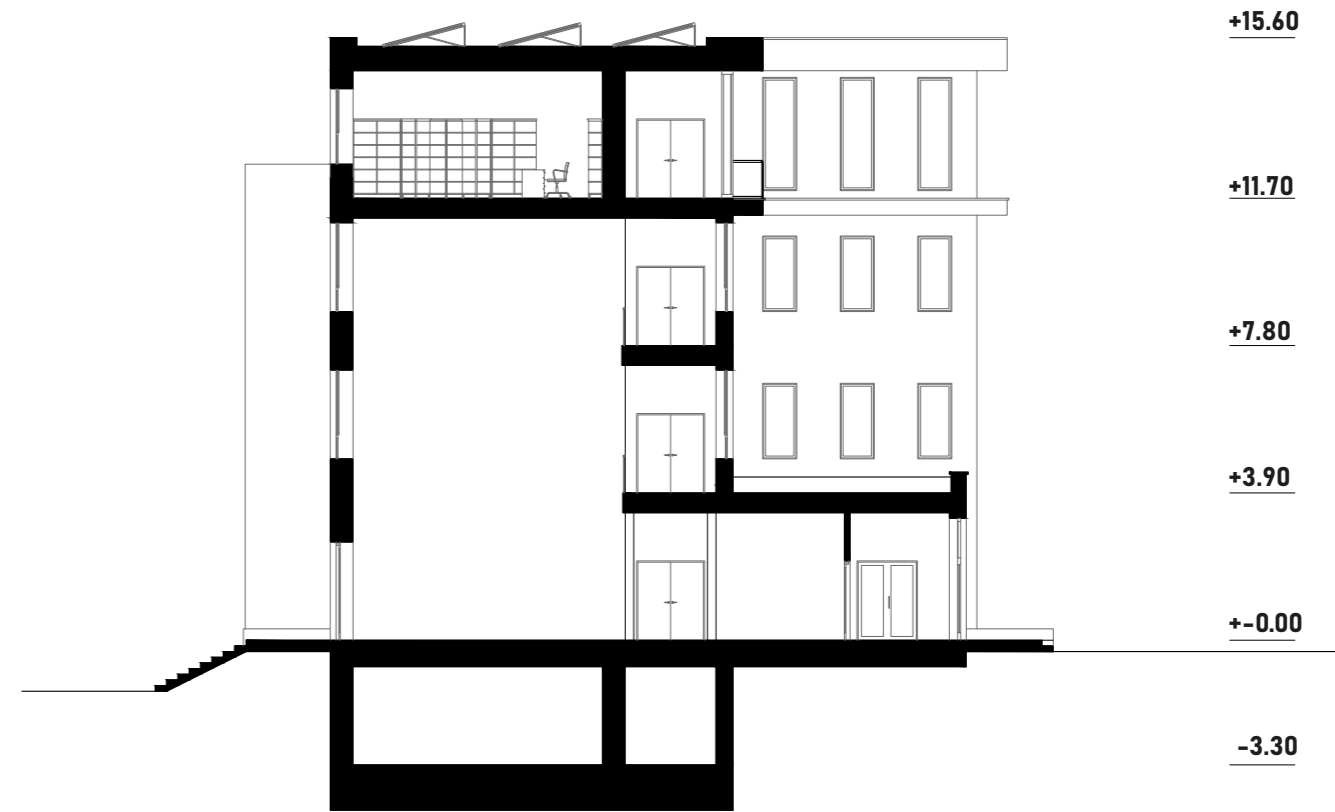
SECTION 1-1
Scale 1:400



SECTION2-2
Scale 1:200



SECTION3-3
Scale 1:200





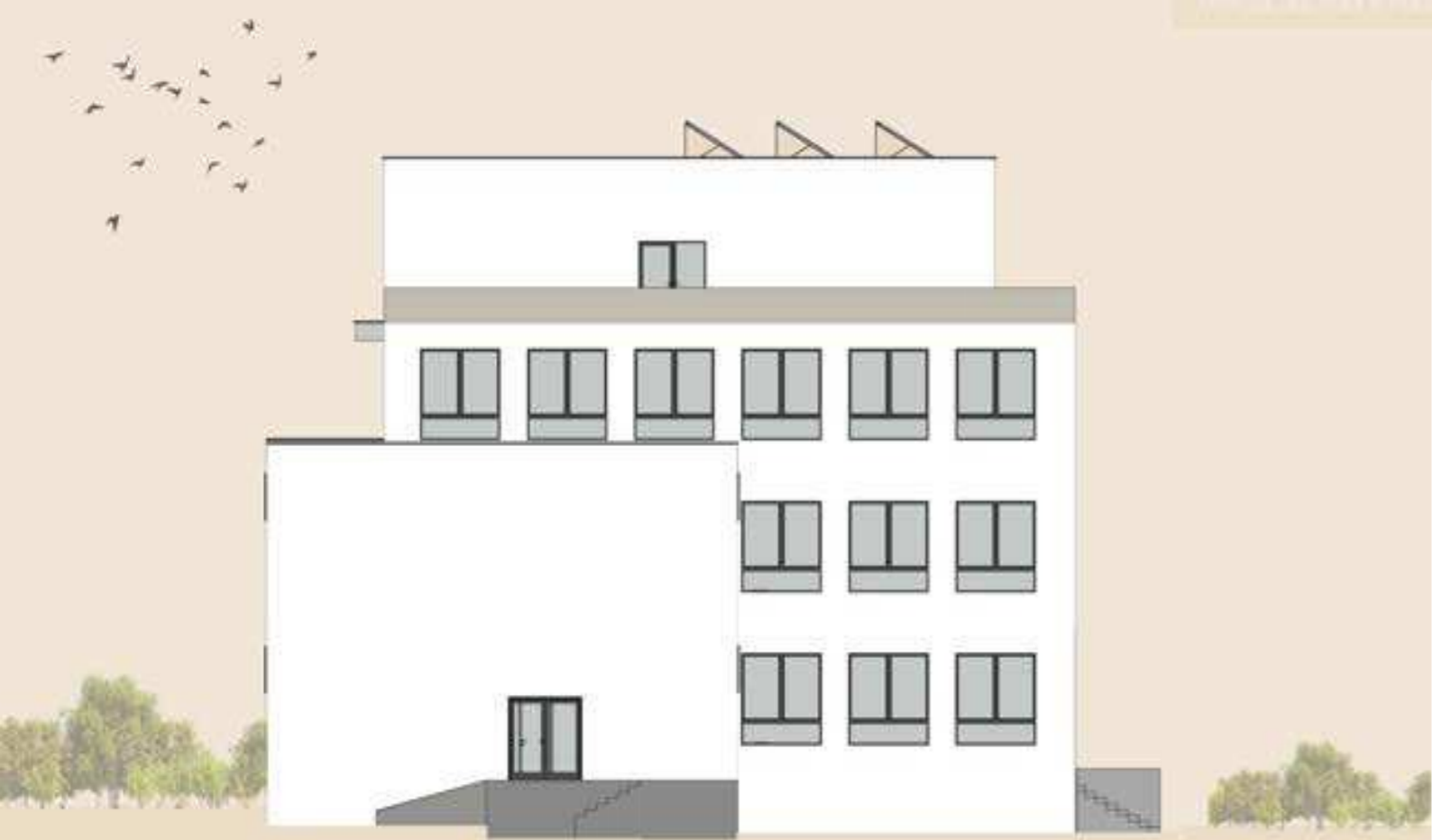
ELEVATIONS

NORTH ELEVATION
Scale 1:400

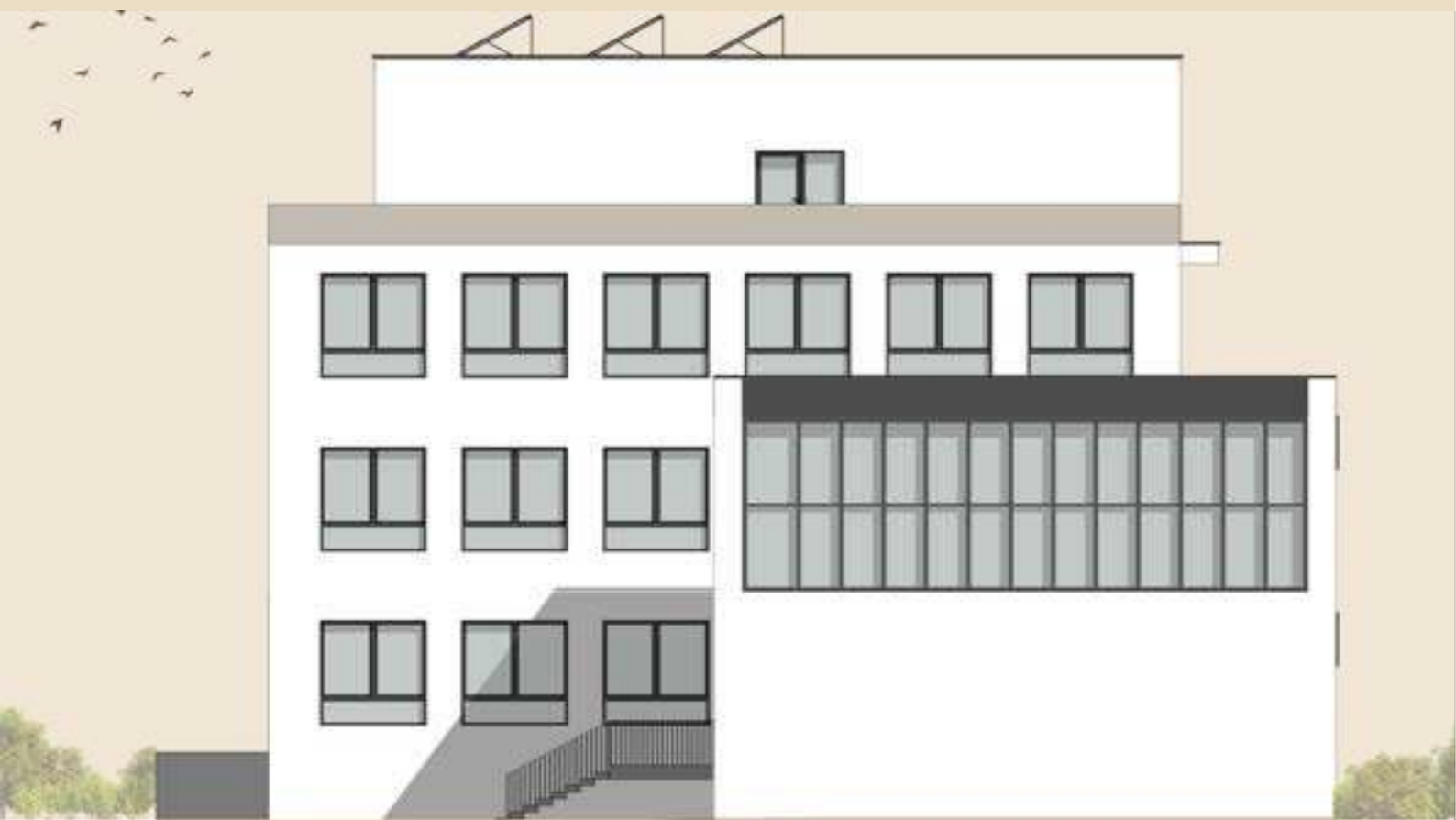


SOUTH ELEVATION
Scale 1:400

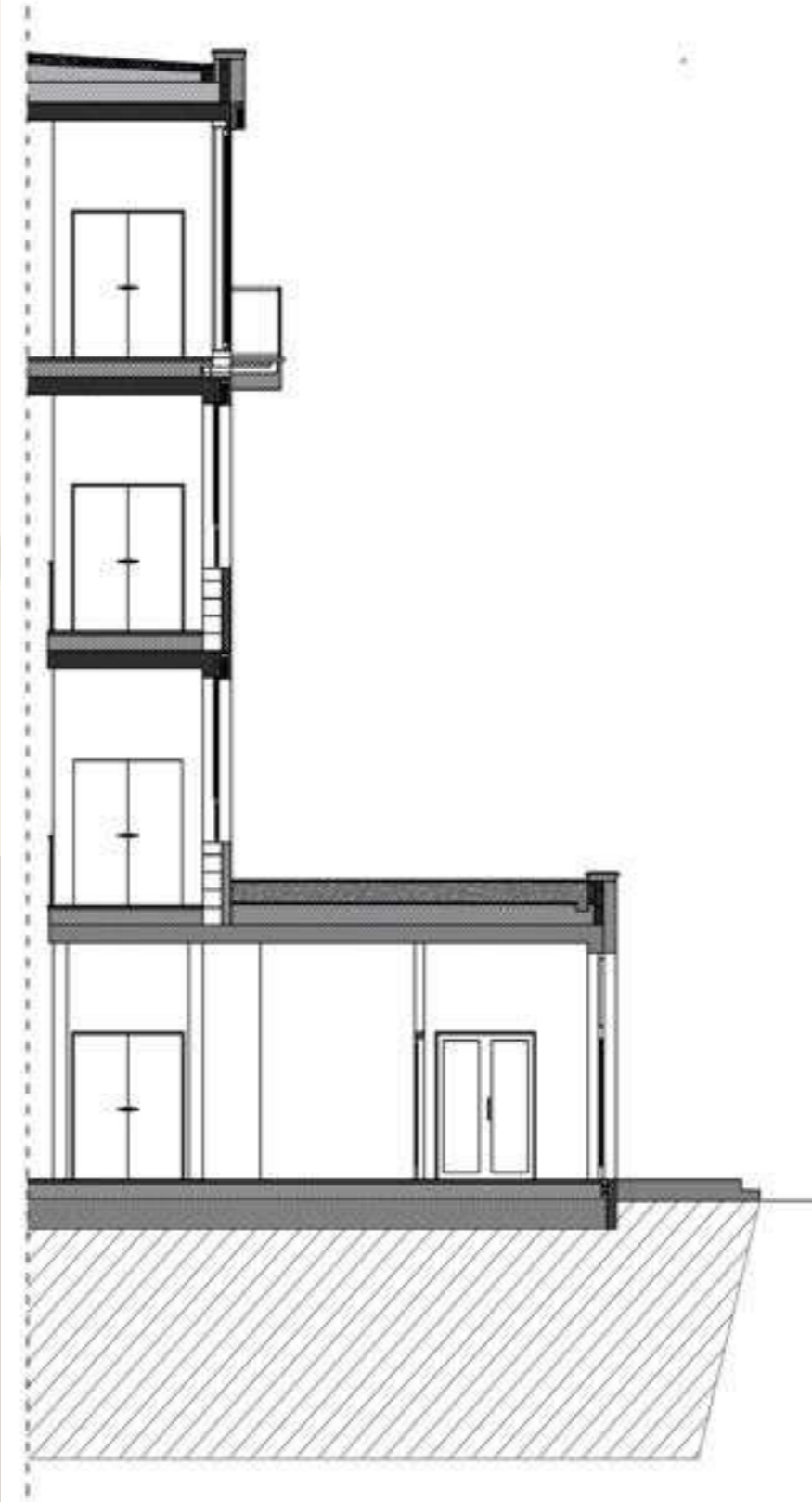




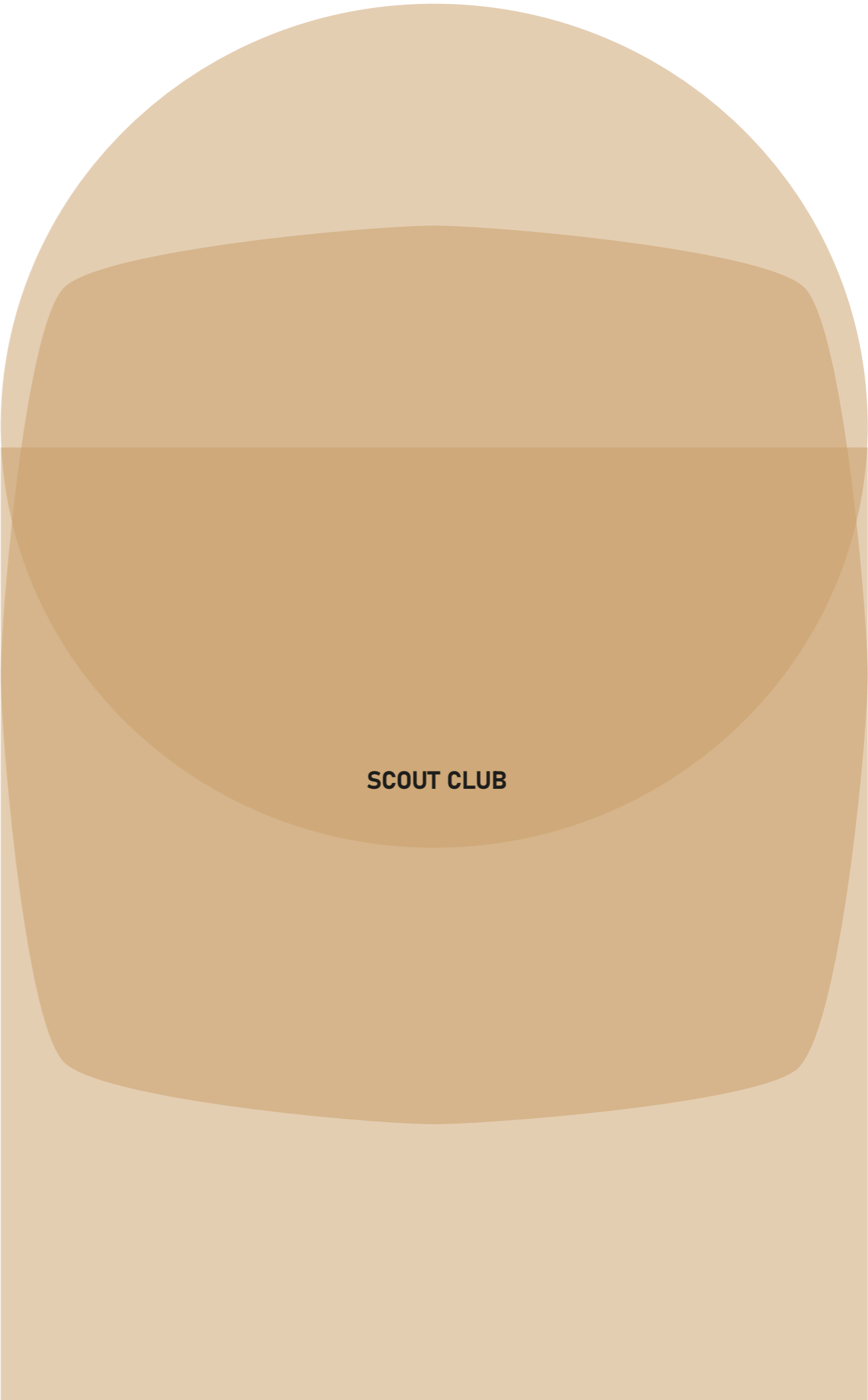
WEST ELEVATION
Scale 1:200



EAST ELEVATION
Scale 1:200



DETAIL OF FACADE
Scale 1:100



SCOUT CLUB



SCOUT CLUB

The Saout Club is a newly constructed small structure, situated in the back yard of the school.

The idea was to create a space, visually different from the original structure, that will 'break' the functionalism and bring color.

It consists of only two separate areas for multi-activity such as to educate, to entertain, to learn how to garden and take care of the plants and etc.

It has a very symbolic wooden facade, with simple window openings, which brings a note of enthusiasm to the back yard of the school.

EAST ELEVATION
Scale 1:100

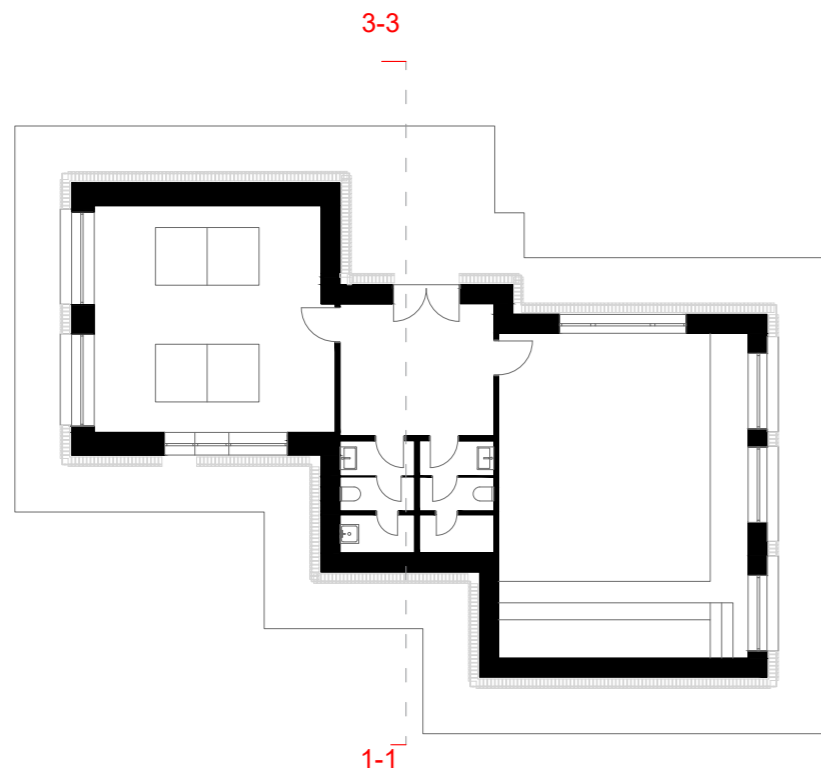


SOUTH ELEVATION
Scale 1:100



Scale 1:100

FLOOR PLAN
Level -1,300





Czech Technical University in Prague, Faculty of Architecture

DIPLOMA PROJECT APPLICATION FORM

Name and Surname: Jovana Dodovska

Date of Birth: 16.09.2000

Academic Year / Semester: 2nd year of Master's studies / 10th semester

Department Number / Name: Studio Stempel - Beneš

Diploma Work / Diploma Project Supervisor: J. Stempel, O. Beneš, T. Kianz

Diploma Work / Diploma Project Theme - title in English language:

Stempel Primary School in Vlastina

Signature of the Diploma Work / Diploma Project Supervisor:

The Student's Declaration:

I declare that I have fulfilled all the diploma work / diploma project initiation requirements stipulated by the "Study Plan" and "Study Rules" at the Faculty of Architecture, CTU in Prague.

In Prague on 19.02.2024

Signature of the Student

[Signature]



Czech Technical University in Prague, Faculty of Architecture

ASSIGNMENT of the Diploma project

Master degree

Date of Birth: 16.09.2000

Academic Year / Semester: 2nd year of Master studies / 10th Semester

Department Number / Name: studio stempel - Beneš

Diploma Project Leader: J. Stempel, O. Beneš, T. Kianz

Diploma Project Theme:

See the Application Form for DP

Assignment of the Diploma Project:

1/description of the project assignment and the expected solution objective

2/description of the final result, outputs and elaboration scales

3/list of further agreed-upon parts of the project (model)

To this list further attachments can be added according if necessary.

1. reconstruction and redesign of an existing Primary school in Vlastina, Prague 6.

2. floor plans, elevations, details, situation, visualisation

3. model, posters, portfolios.

Date and Signature of the Student:

Date and Signature of the Diploma Project Leader:

Date and Signature of the Dean of FA CTU:

[Signature]
[Signature]
[Signature]

