ARCHITECTURE PORTFOLIO

Jaron Huysentruyt

° 8 april 1991, Roeselare, Belgium
Tel: +32 474 74 85 64
Mail: j.huysentruyt@gmail.com
www.jaronhuysentruyt.com

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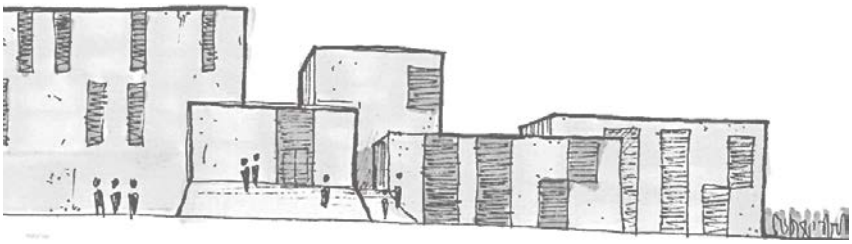
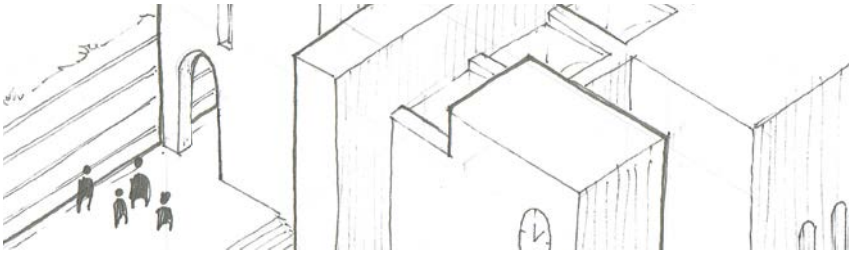
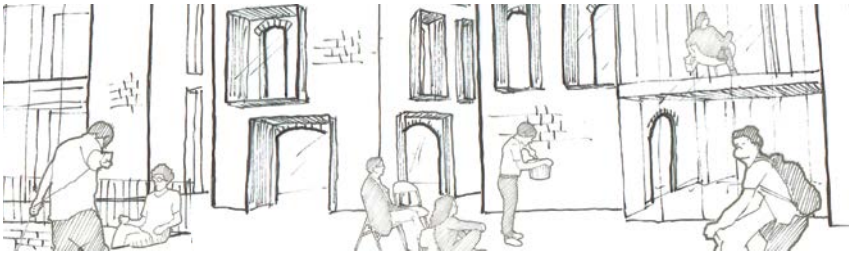
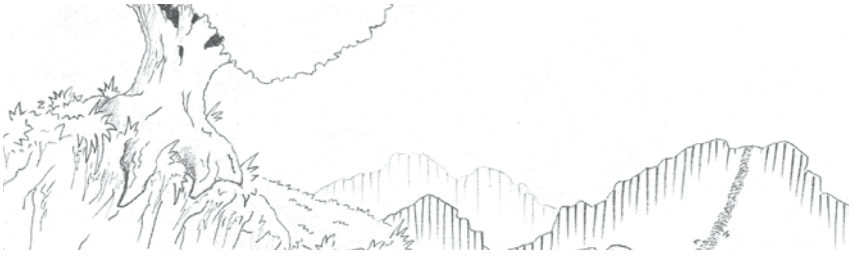








01|

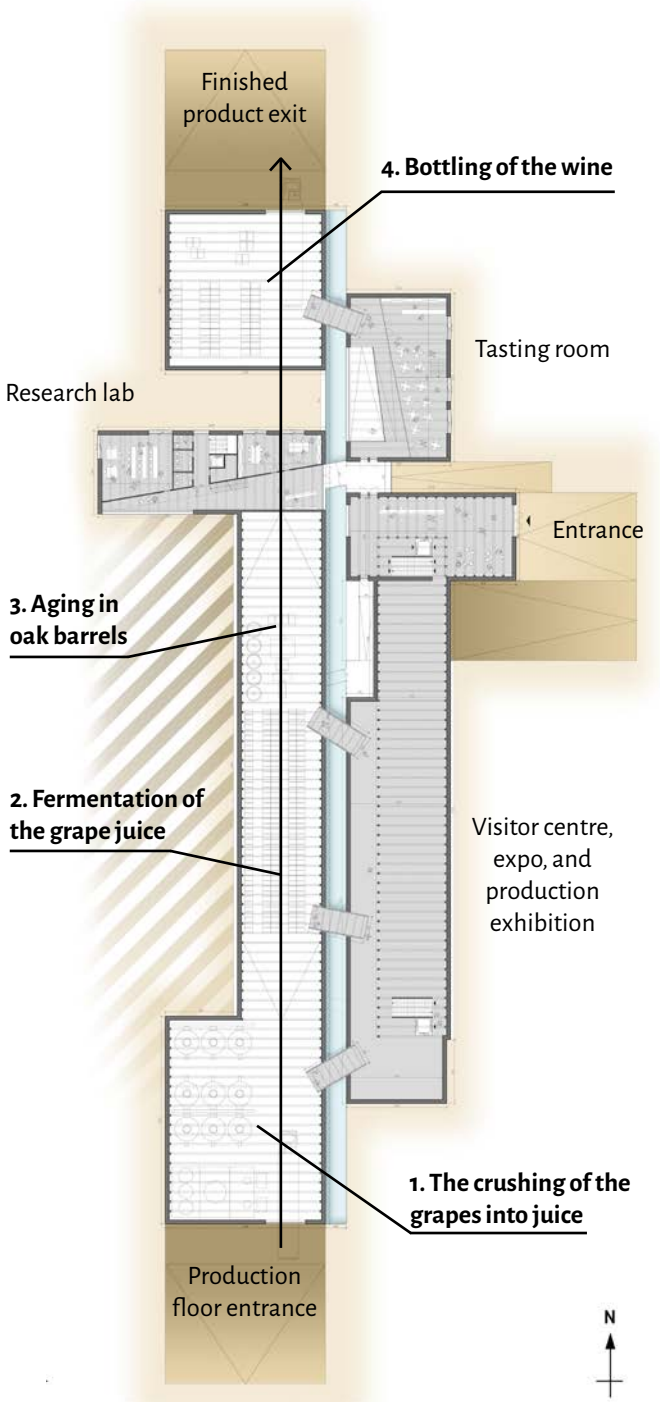
BODEGA EN CARINEÑA

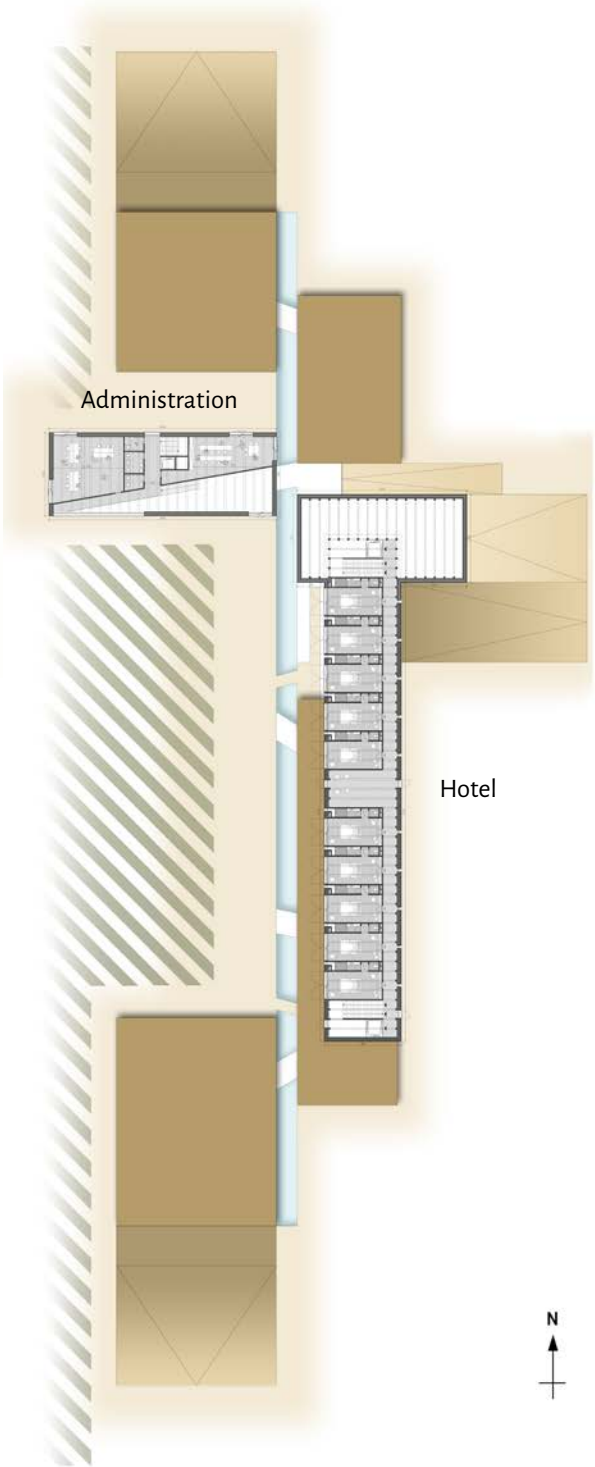
A new kind of winery.
Carineña, a small Spanish city in the heart of Aragon, has the oldest protected wine production region in Europe.
Here, a new kind of winery will combine the production process with tourists, visitors and wine enthousiasts.
The production process and the visitor accomodation have been combined into a single winery: the different functions intrude into eachother through bridges and light tunnels, while seperated by a crevasse of water, located in the center of the winery. This crevasse divides the winery into two main parts: the bodega and the visitors.

011

The production of wine involves four major steps:
1. The crushing of the grapes into juice,
2. Fermentation of the grape juice,
3. Aging in oak barrels,
4. Bottling of the wine.
The production process follows the layout from south to north, with the most important steps (fermentation and aging) taking place underground, allowing for complete control of temperature and humidity, resulting in optimal taste.

Visitor centre and hotel:
While the water "canyon" seperates the factory and the visitors, the visitors can follow the entire production process through intruding skyboxes into the winery itself.
The hotel nestles above the visitor centre and allows for expansive views above the vineyard and the surrounding landscape, while the winery hides underneath the vineyard.





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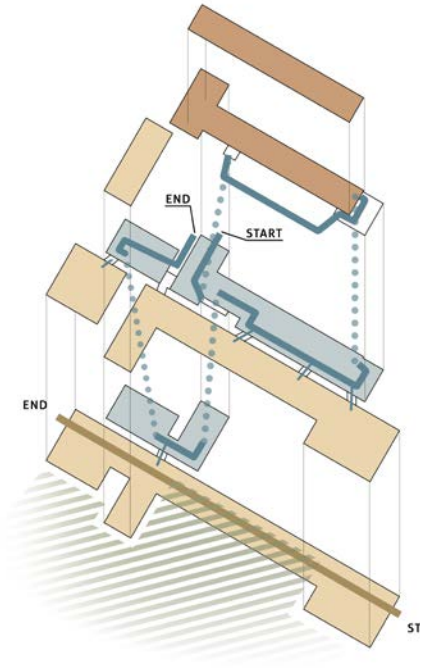
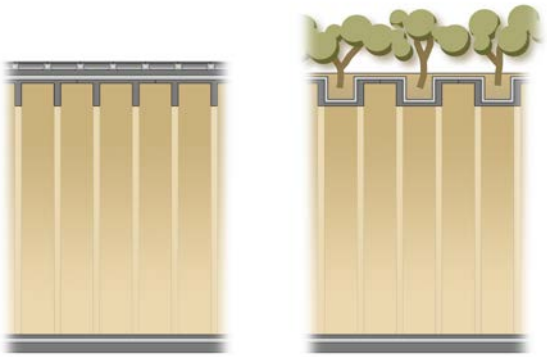
Visitors' tour:
Visitors follow a tour throughout the vineyard and expo, with views into the winery and production process, ending with a wine tasting in the tasting room. The hotel offers wide views of the vineyard and the landscape.

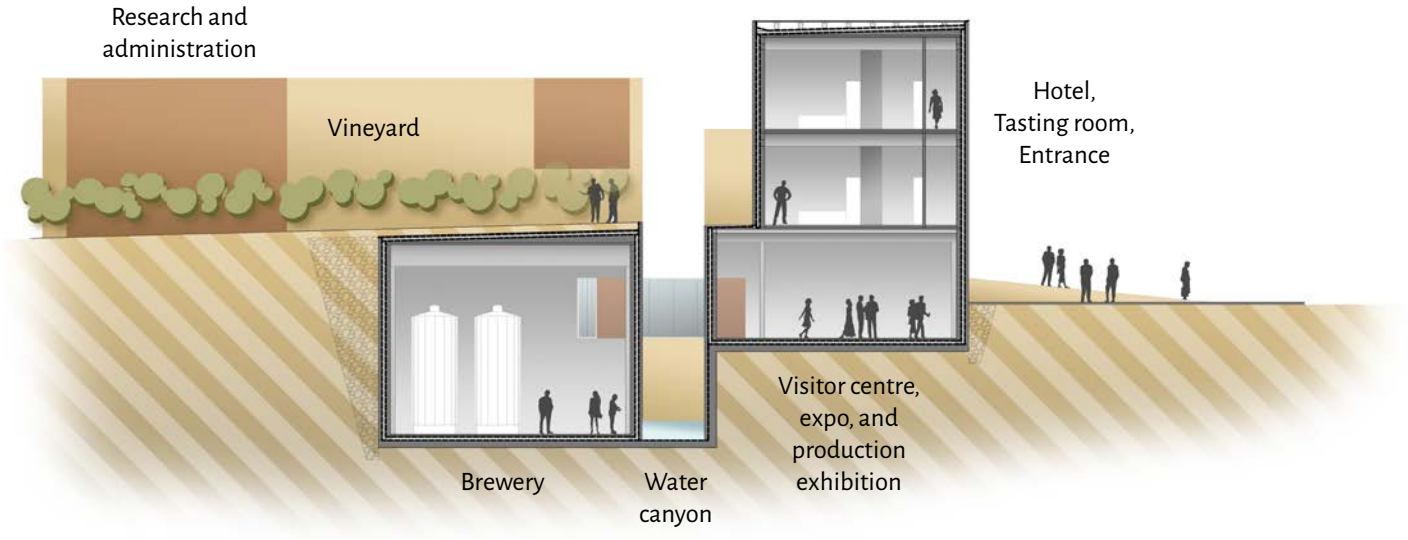


Construction:
The building is constructed from pre-made concrete elements, with the local limestone rocks as aggregate. Washing the concrete before the outer layer is cured reveals these rocks and pebbles, making it seem as if the building grew from the local soil. Corten steel for openings and sun screens complements the rough visual.

Roof construction:
The ceiling elements are different types of TT-beams, allowing for both a flat surface and a repetition of high-low, and any combination thereof. This creates both a vineyard plantation and a unique hotel room with a recessed bathroom.



Climate control:
The underground fermentation and aging portion, together with the long water "canyon" allows for optimal temperature control and water storage, without the need for active cooling.



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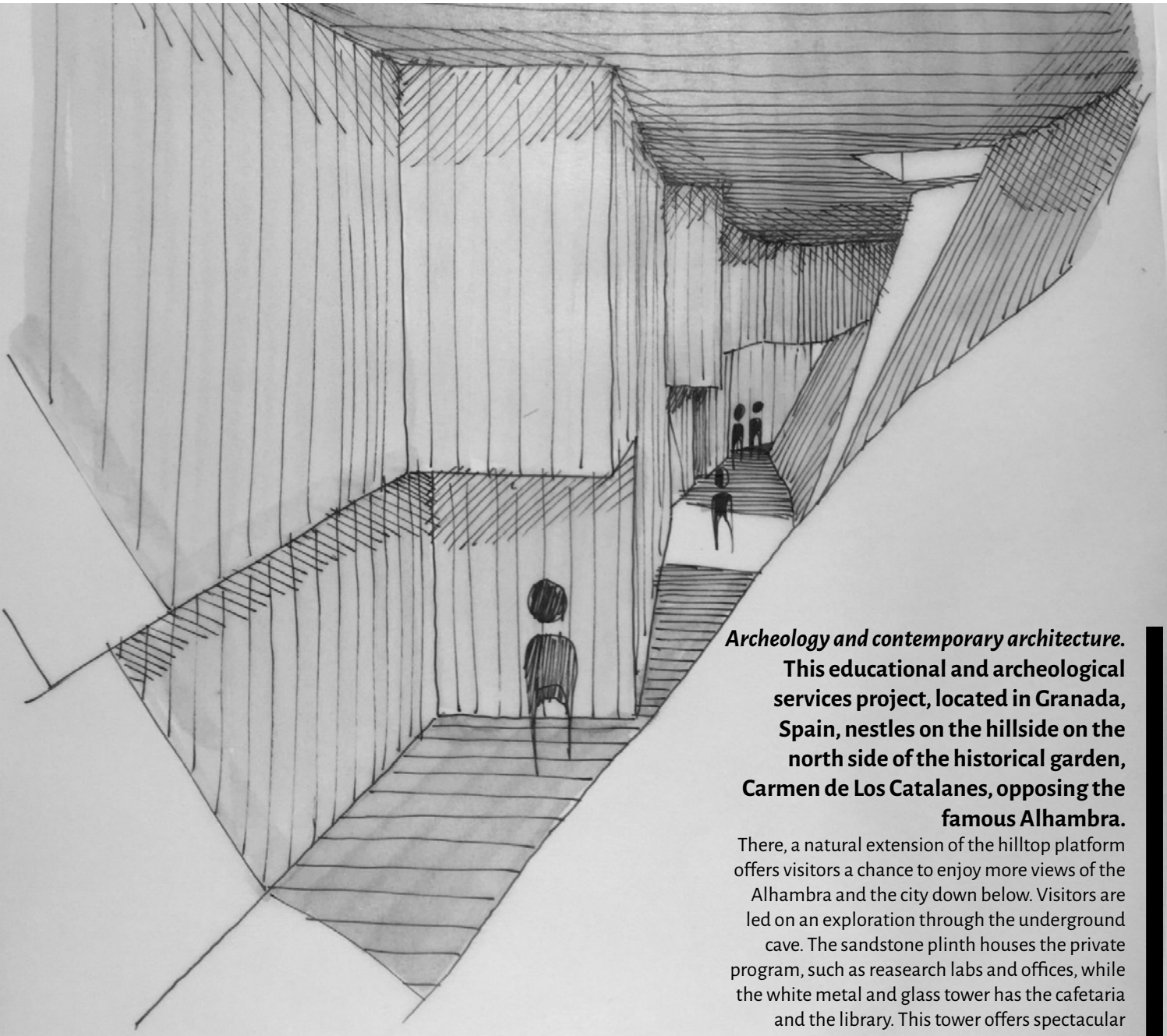
CARMEN DE LOS CATALANES

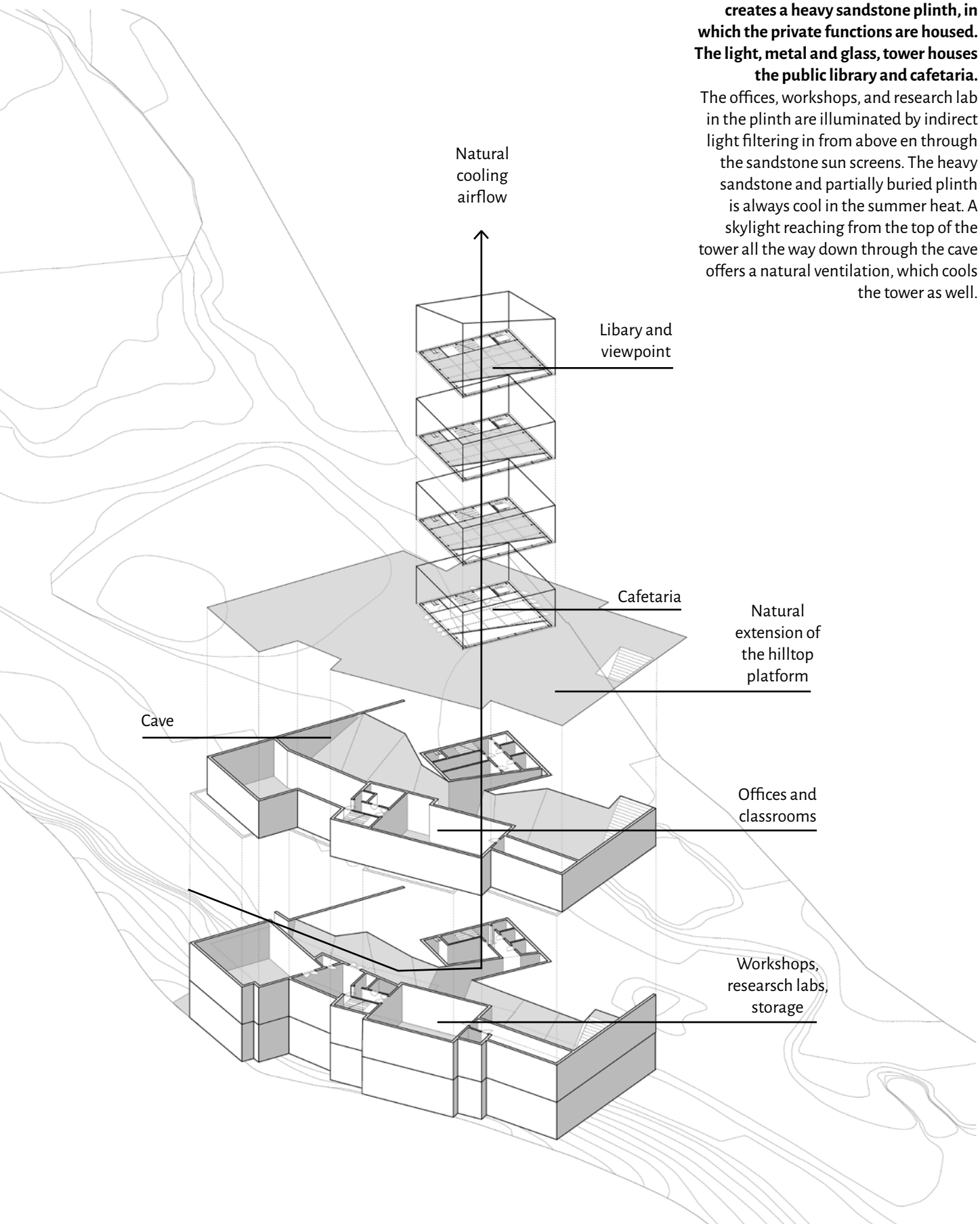


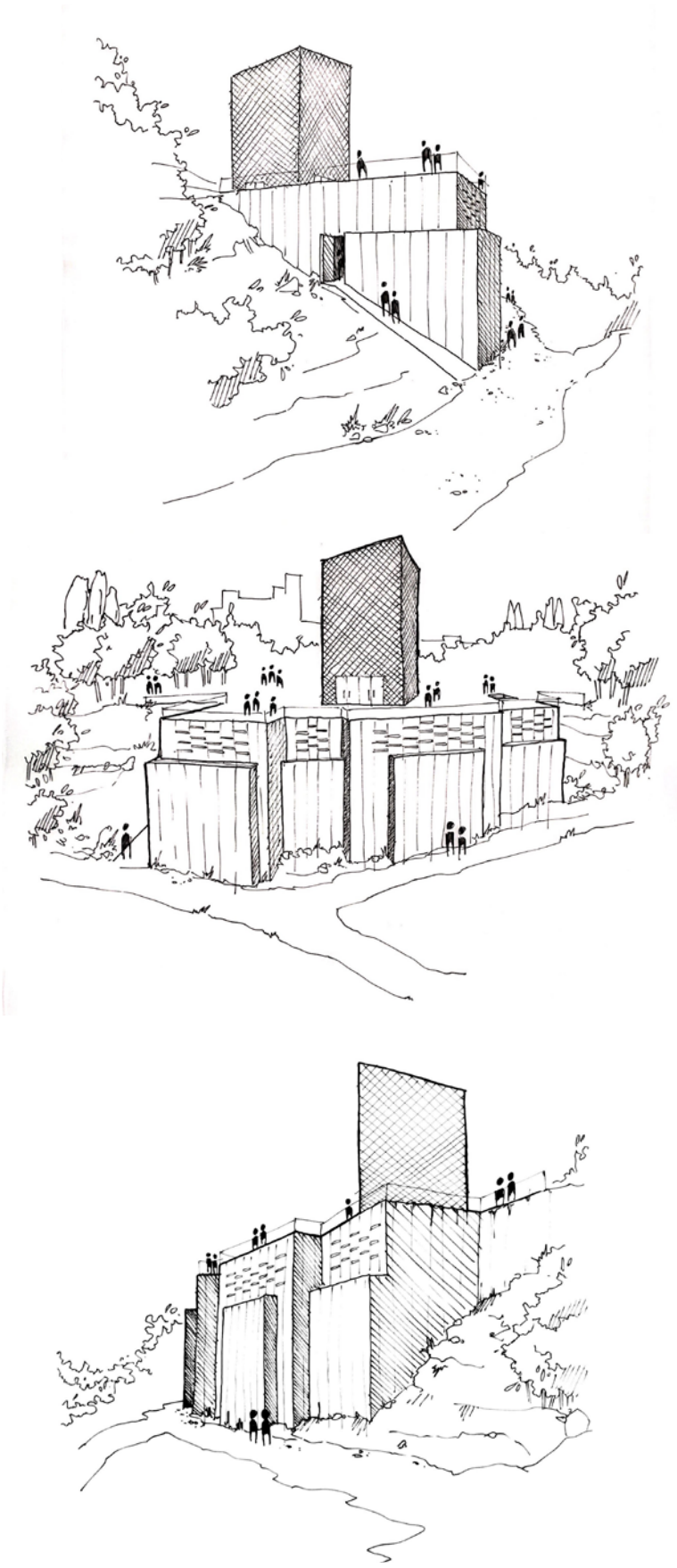
Archeology and contemporary architecture.
This educational and archeological services project, located in Granada, Spain, nestles on the hillside on the north side of the historical garden, Carmen de Los Catalanes, opposing the famous Alhambra.

There, a natural extension of the hilltop platform offers visitors a chance to enjoy more views of the Alhambra and the city down below. Visitors are led on an exploration through the underground cave. The sandstone plinth houses the private program, such as reasearch labs and offices, while the white metal and glass tower has the cafetaria and the library. This tower offers spectacular views on the historical garden and surrounding monuments, and also acts as skylight for the cave below and as a cooling chimney, leading fresh air from the cave to the tower.

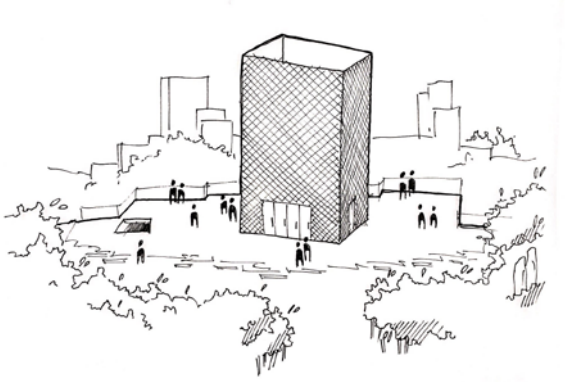
02|

The natural extension of the hilltop creates a heavy sandstone plinth, in which the private functions are housed. The light, metal and glass, tower houses the public library and cafetaria. The offices, workshops, and research lab in the plinth are illuminated by indirect light filtering in from above en through the sandstone sun screens. The heavy sandstone and partially buried plinth is always cool in the summer heat. A skylight reaching from the top of the tower all the way down through the cave offers a natural ventilation, which cools the tower as well.

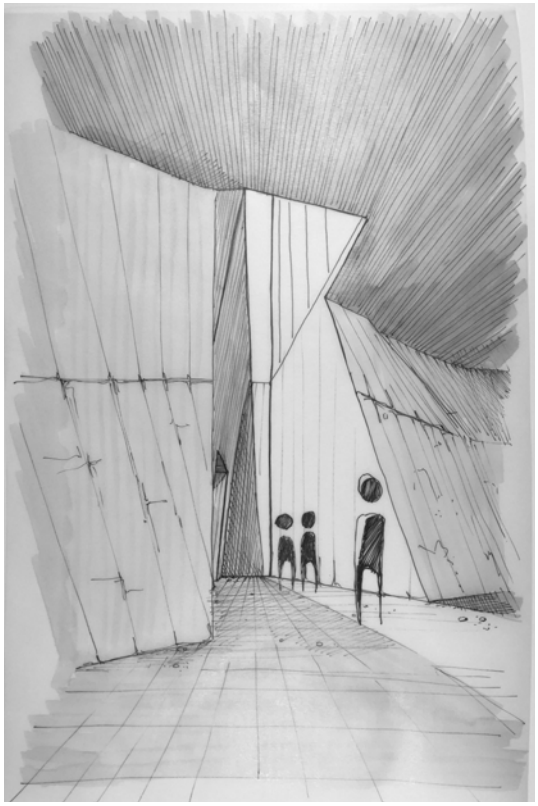




New tower in the landscape:
While the sandstone plinth is disguised as a natural progression of the hill, the white metal tower is a clear reference point in the neighbourhood. It offers amazing views of the old city of Granada below, while it sits in between 3 historical towers; the monuments of the Alhambra, the nearby Torre Bermejas, and the Fundacción.



The new tower on the plinth, with the Alhambra in the background.



Cave and skylight:
The skylight that brings light into the cave simultaneously brings cool air from the cave into the tower.

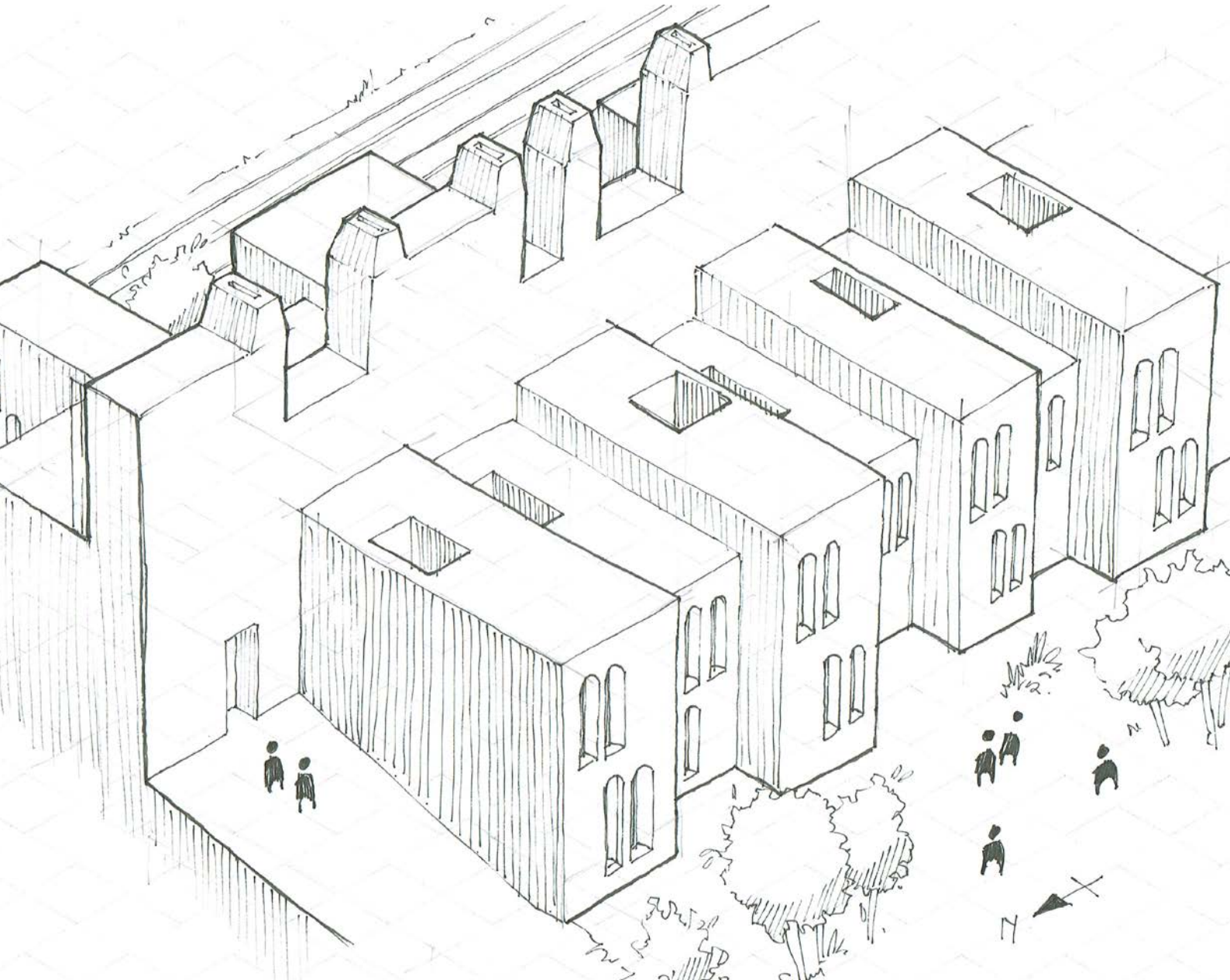
031

HOLLEBEKE

A sustainable housing project.

This project quadruples the number of inhabitants in the small Flemish town of Hollebeke.

Using the waste heat from the multiple industrial processes using the chicory plant, these buildings enjoy comfortable temperatures all year. The solid brick construction uses all the positive properties of brick, including the great thermal capacity.



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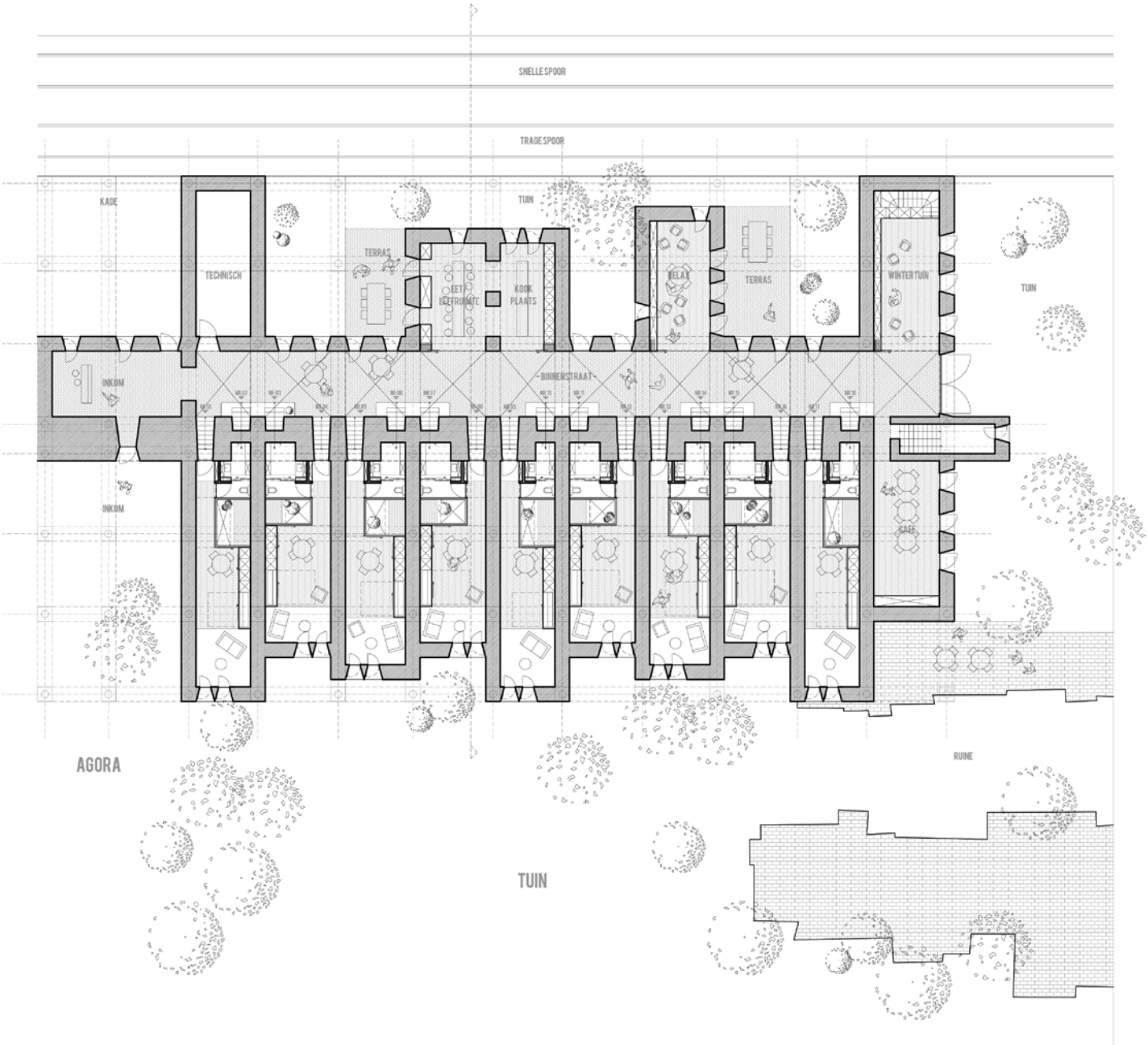
Hollebeke is situated next to train tracks, but the station has been discontinued since 1982. With a new development, stretching along the train tracks, this small town becomes a vivid, evolving living environment again, including a new train stop and station.
Using the traditional agricultural practices with chicory, this development enjoys all the positive effects the chicory industry has to offer. Located along the train tracks are the three main processes of chicory: the drying, the roasting and the processing of leftovers to animal feed.
The residual heat of these processes is transported through a thick brick wall, parallel to the train tracks, heating the different buildings and houses. In the summer these processes are halted, because then the chicory is growing on the fields. Then these brick walls serve as heat sinks for the summer heat, maintaining a comfortable temperature inside.

Using the great thermal capacity of brick, these buildings are built according to the limits of this material.
The walls are 80 cm thick, allowing the brick wall to maintain the necessary insulation standards as regular walls. The brick is exposed everywhere, allowing the bricks to control humidity and temperature. The openings are small and the rooms are covered in brick vaults.
A big skylight in every house allows for a maximum of daylight in the house's main living room, while the other more private rooms are lighted with more subtle indirect light through the narrow windows.



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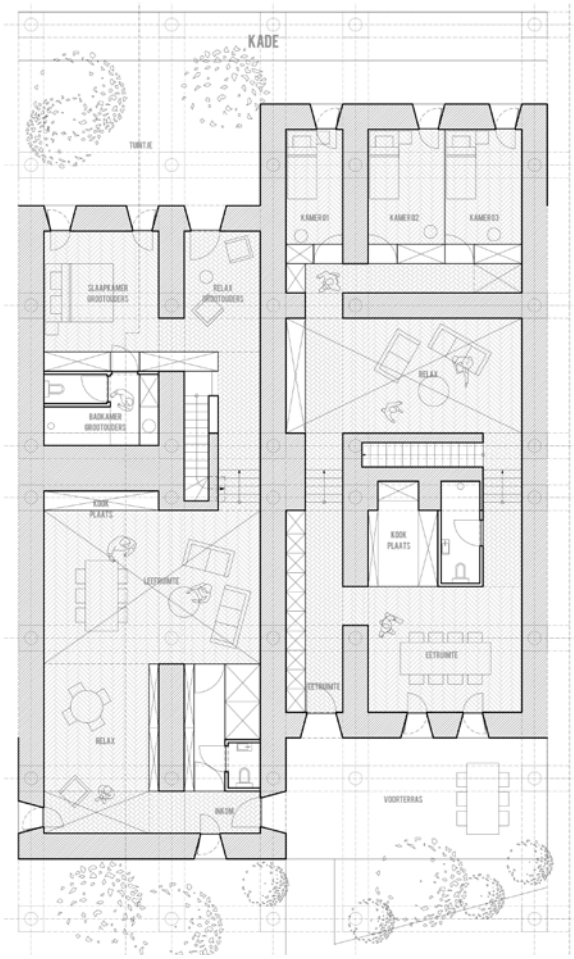
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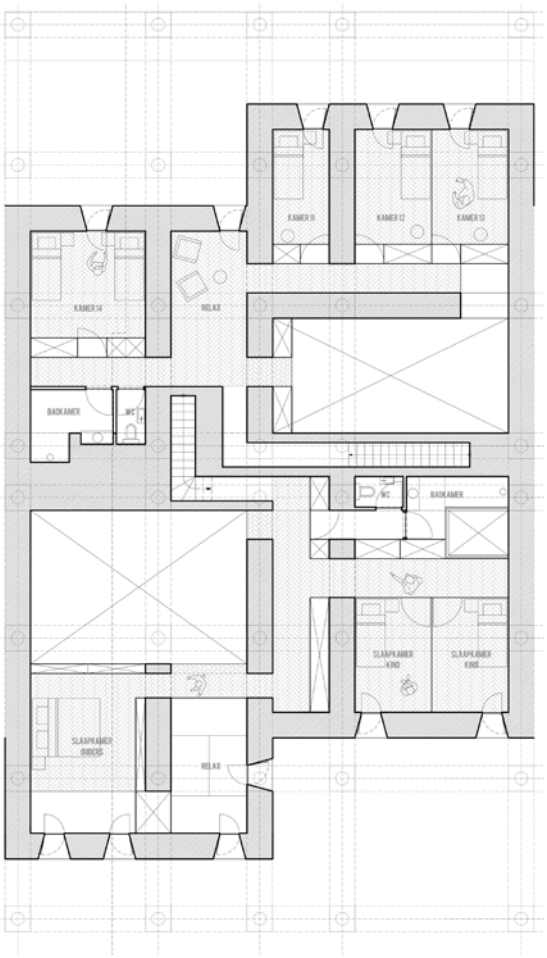
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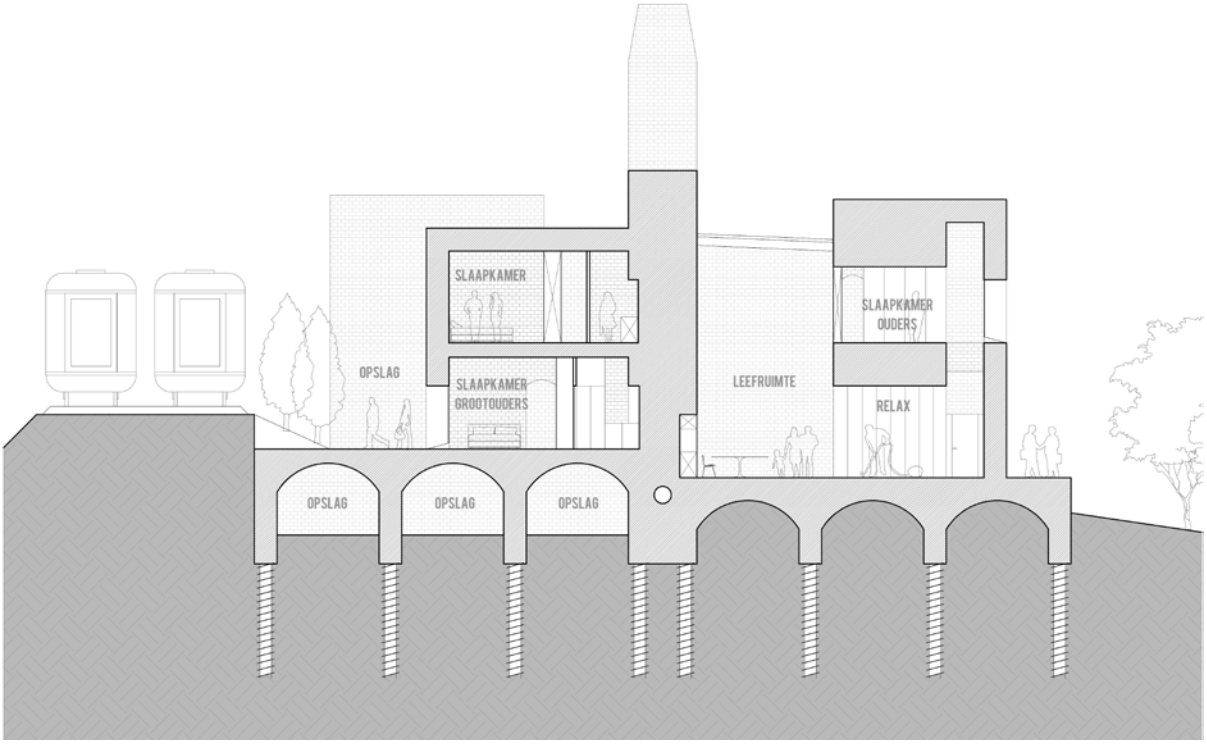
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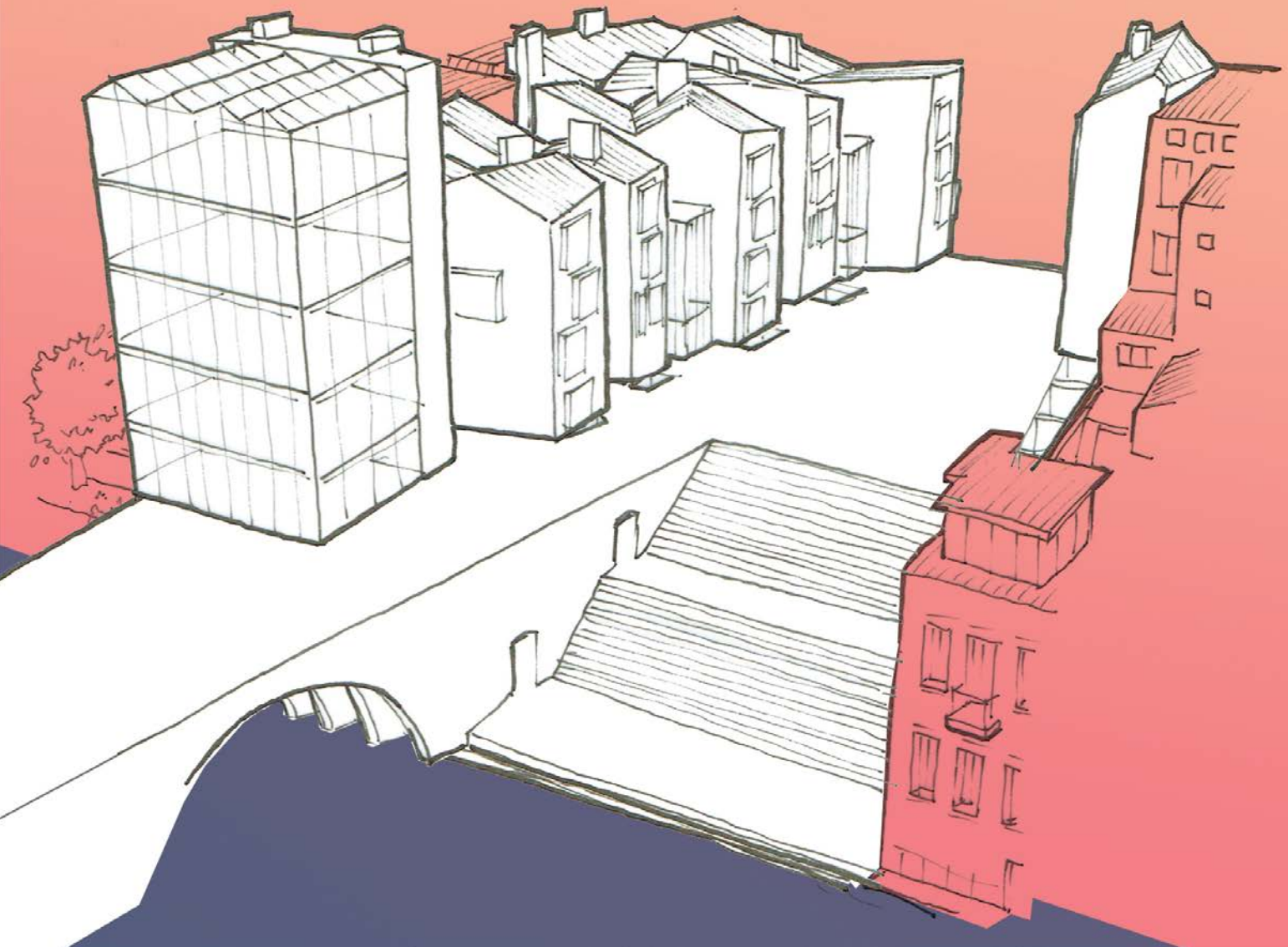
04|

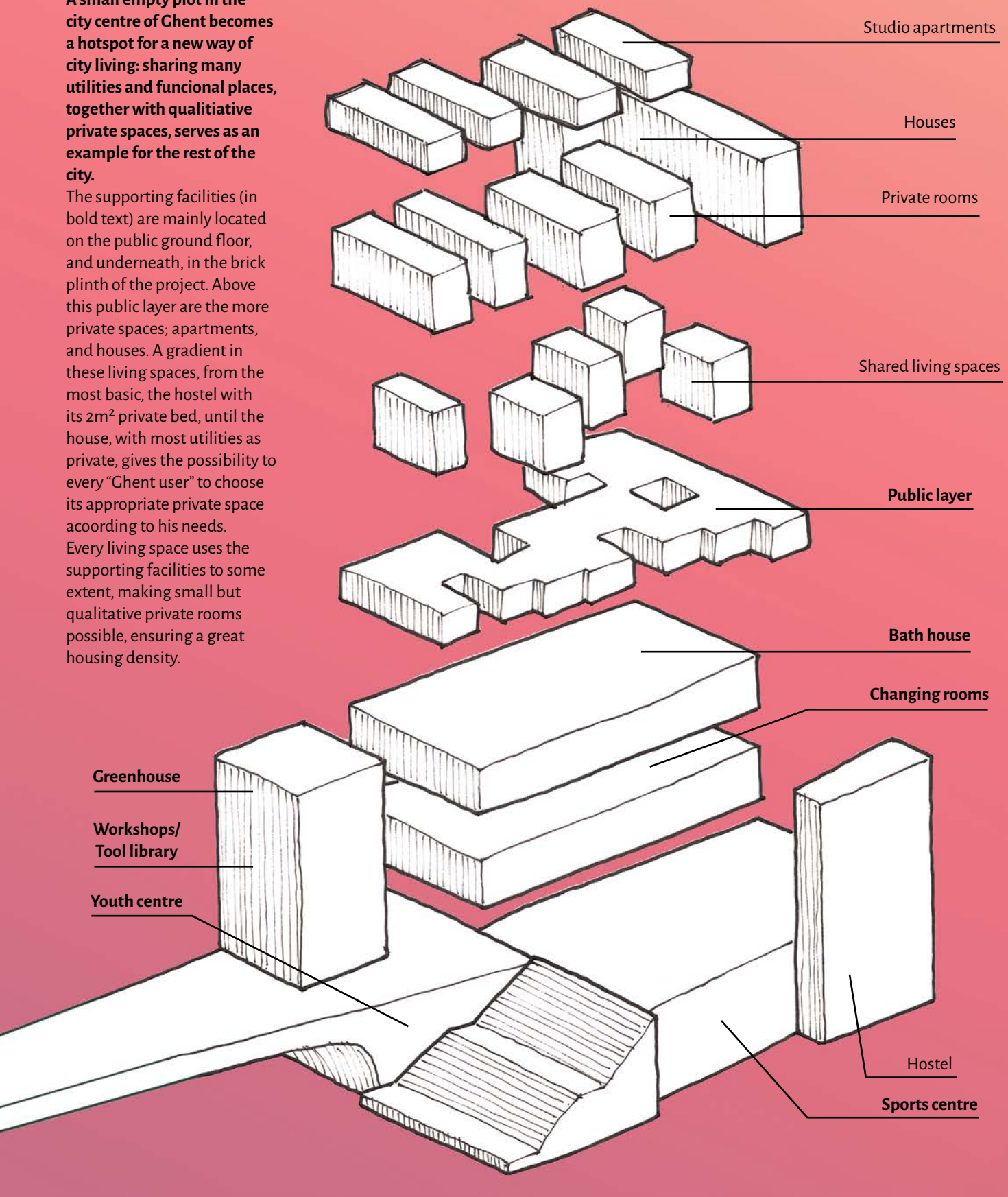
GENTENAAR 2.0

The new "Ghentian 2.0".
An urban project that combines 5 new ways of temporal living, with 5 public functions that serve the citizens.
A large public space, a bath house, a sports center, a community center, public workshops and a library for tools and useful objects serve the inhabitants of these temporal living spaces and the neighbourhood surrounding them. Together they form an example of new urban living, a new durable city.



041

A small empty plot in the city centre of Ghent becomes a hotspot for a new way of city living: sharing many utilities and funcional places, together with qualitiative private spaces, serves as an example for the rest of the city.
The supporting facilities (in bold text) are mainly located on the public ground floor, and underneath, in the brick plinth of the project. Above this public layer are the more private spaces; apartments, and houses. A gradient in these living spaces, from the most basic, the hostel with its 2m² private bed, until the house, with most utilities as private, gives the possibility to every "Ghent user" to choose its appropriate private space acoording to his needs.
Every living space uses the supporting facilities to some extent, making small but qualitative private rooms possible, ensuring a great housing density.



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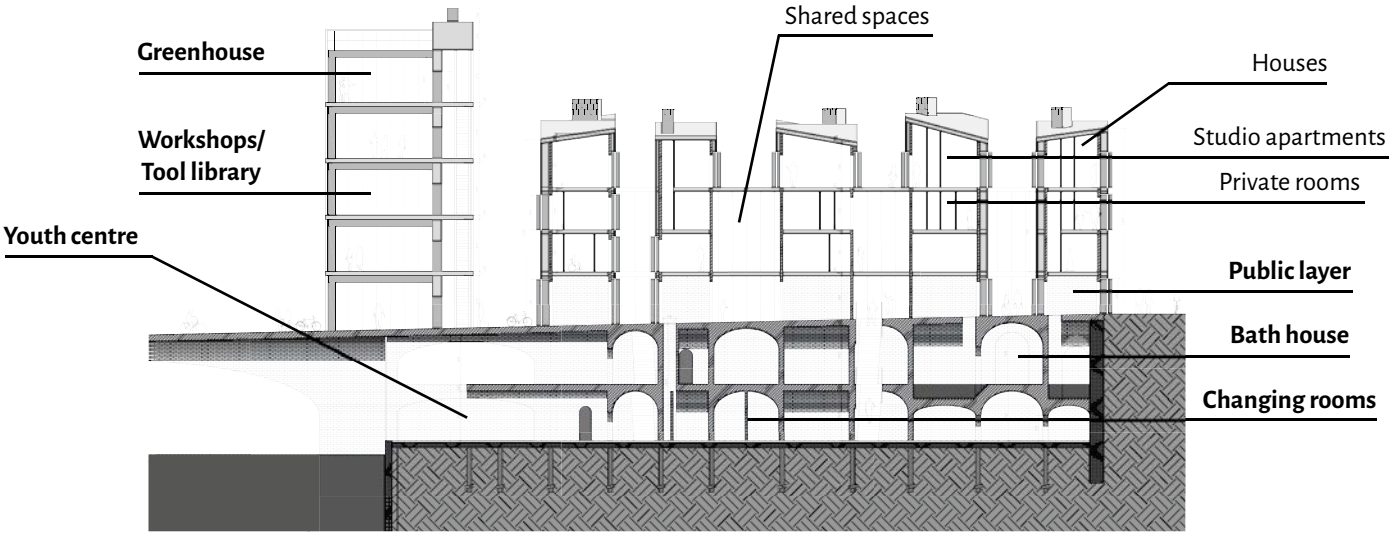
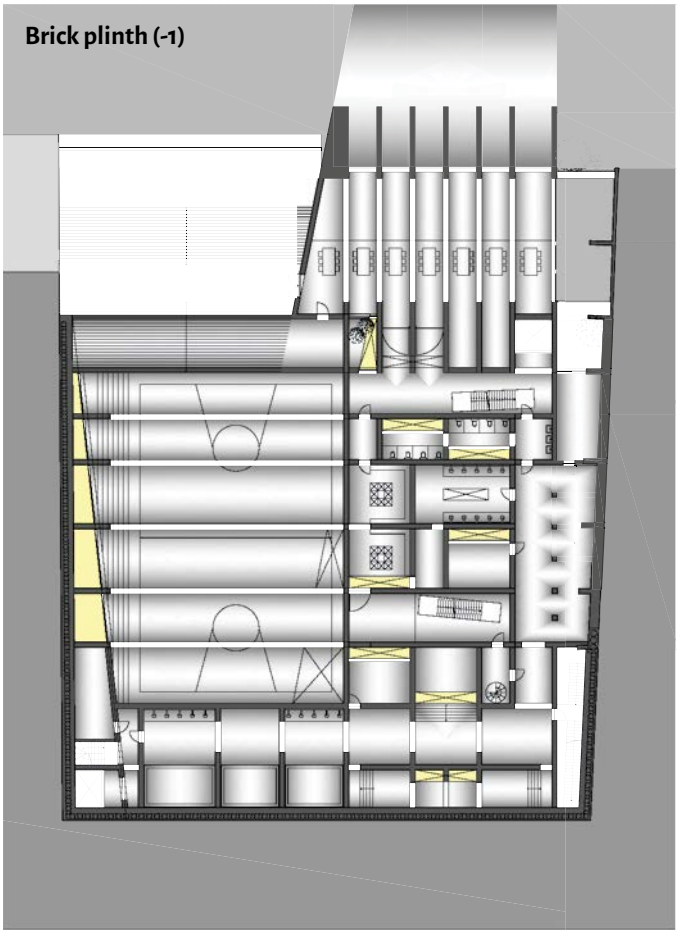


On the elevation above, the constructive principles are visible. The bottom 2 floors, with public functions, comprise the plinth. This solid brick plinth utilizes the same properties of brick as the "Hollebeke" project; immense thermal capacity and excellent humidity and temperature control. This brick also calls for the appropriate construction; thick walls and brick vaults.
Above the public street level (the street is visible on the right) construction is somewhat different; brick towers are built for strength and the same properties of thermal capacity and humidity control, as well as acoustic insulation. Around these towers an extra "skin" is responsible for the other necessary properties; thermal insulation and protection from rain and wind. the space between these 2 walls is used for running utilities, extra closet space, and extra room space in front of the big windows, offering a frame of the view inside. These towers hold the private rooms, apartments and houses. In between these you have the shared living spaces, with lots of glass for maximum daylight, and enjoying the second-hand heat of the brick towers around it. In summer these double walls offer a cool airflow, from below, up to the chimney, that cools the entire structure.



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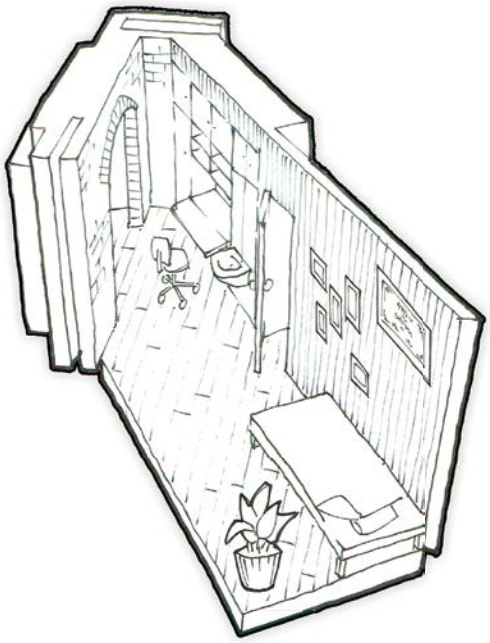
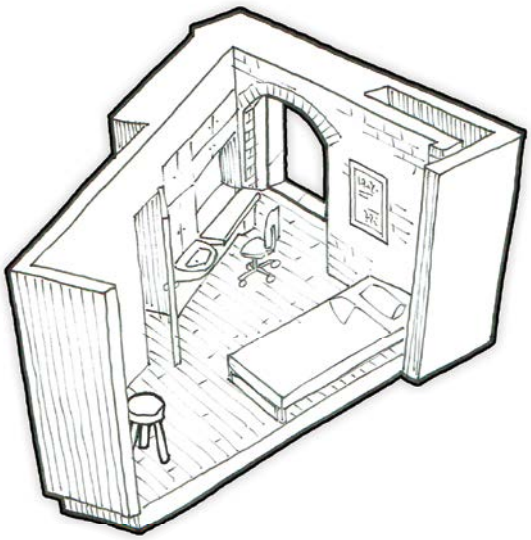
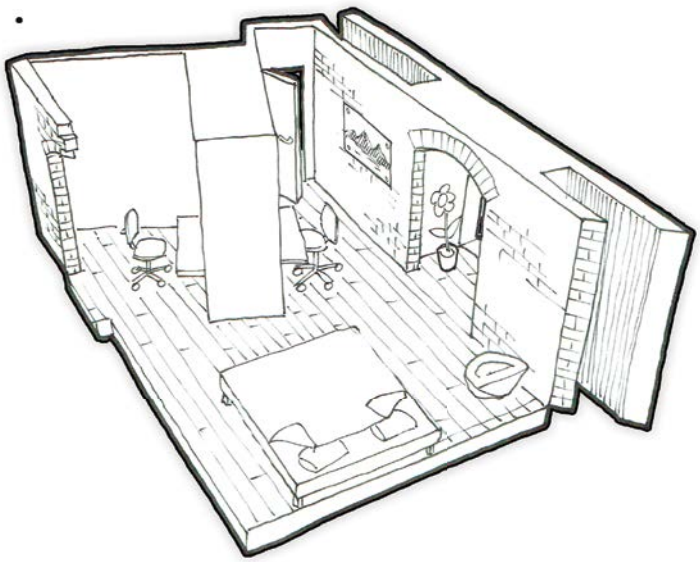
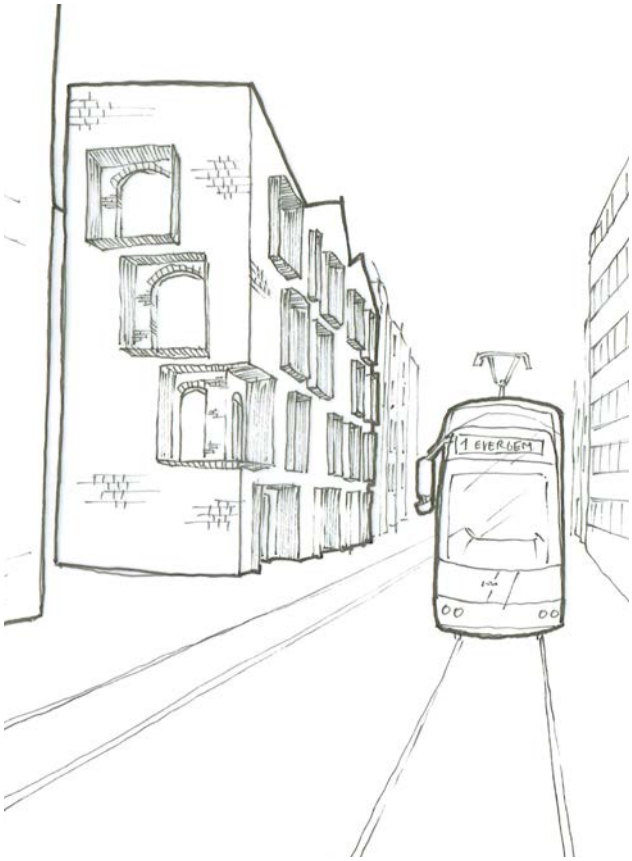






Every private room has a unique layout:
Slightly rotating the interior divisions in the towers creates diverse private spaces. These dividers are prefabricated wooden forms that include the stairs, doorways, desks, closets, washing basin, electricity, utilities... Encorporating everything inside these forms gives ultimate freedom in dividing the interior spaces. This way it is possible to leave the brick walls completely bare, fully utilising the positive properties, such as humidity and temperature control.
These prefabricted forms allow to change the building in a non-destructive way, ensuring a durable and sustainable building for the changing city.
Some examples on the left showcase these private rooms, with the brick tower wall and framed window, the double layered outer skin, the wooden form that houses all facilities, and the unique shape of each room.

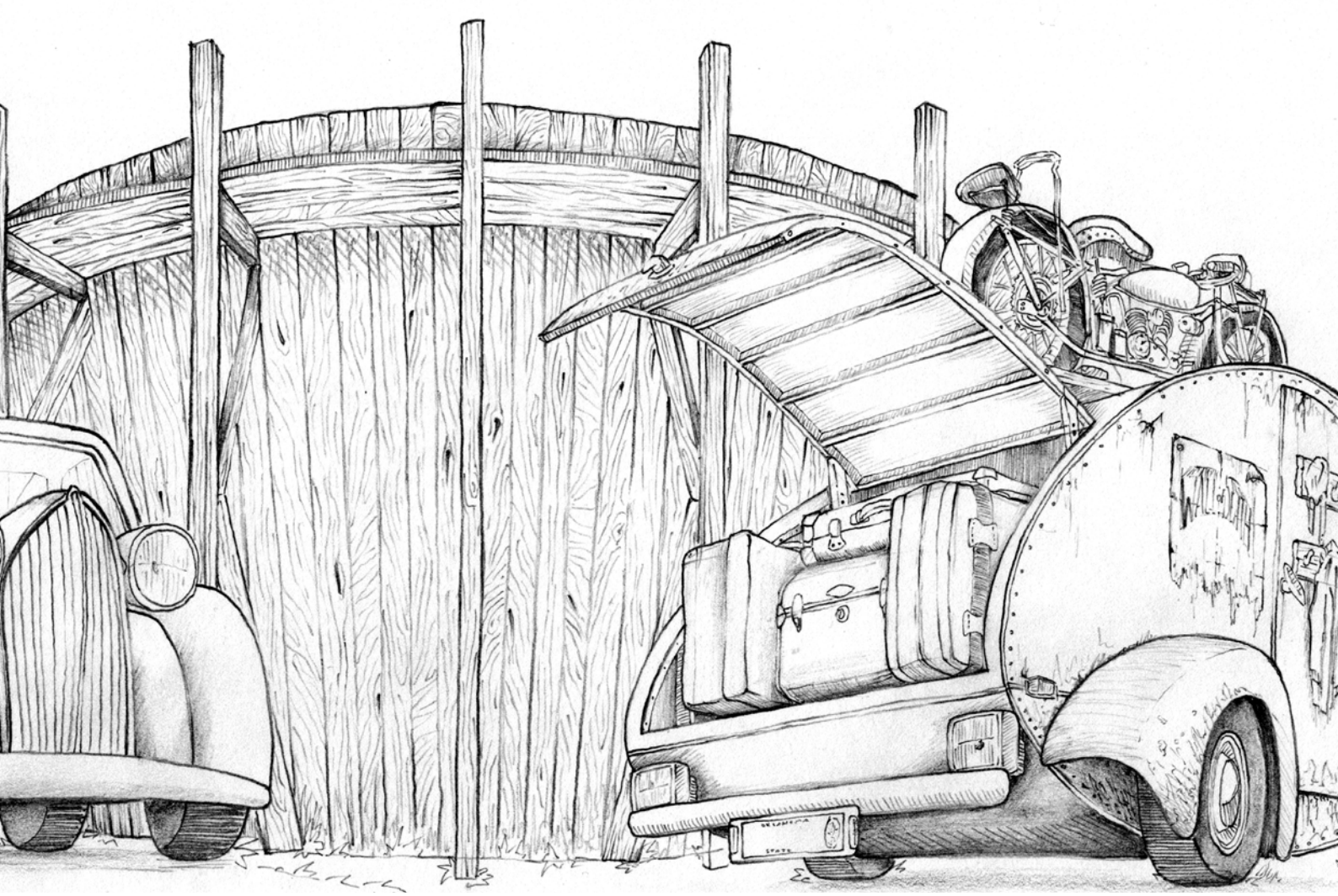


Framing the private space:
The dark metal frames, piercing through the outer layer, allow a view of the brick structure hiding behind the outside skin, while simulteously offering a glimpse inside each private room, giving the inhabitant an opportunity to showcase his or her own personal life in this frame.

05|

OTHER WORKS

A passion for spatial design and drawing.
Next to all things architecture, I enjoy general drawing and design immensely, especially when it includes any form of spatial design or "worldbuilding".
In my previous higher education, I enjoyed a great and diverse education on game design. Of course I adored the courses where spatial and 3D design was involved, fueling my desire to persue the dream of becoming an architect. Here you will find a brief selection of my favorite personal works.



05

This is a scene that represent a confined story, built in a small world with the video game development studio “Unreal Engine”. I enjoy this type of design because it lets me design a world, its contents and its stories.

051

Using Autodesk 3DS Max, I love to create anything that comes to mind. Be it objects, buildings or environments, even anything architectural, 3D design lets you create with the finest detail.

05|

Of course, architectural drawings are the most enjoyable to create. Many times I have preferred this analog and delicate rendering technique above others, such as pure 3D design and rendering or Photoshop renderings.