

GARAGE CITY

MASTER THESIS
HS22

NOSTALGIA
ECOLOGY

LEONARD SCHMIDT

Departing from the publication „Das Bürgerhaus des Kanton Zürich“ from 1927, two ecological themes were detected. Firstly, several bourgeois houses were analysed in terms of their economy of plan and program. Since the amount of square meters occupied per person is constantly increasing, which evidently leads to a more intensive consumption of energy, the question was raised whether pre-industrial modes of dwelling could potentially address contemporary challenges.

The rural flare house type proved to provide an extreme economy within its domestic confines, as circulation space was reduced to a minimum and certain rooms served for different uses simultaneously. Its parlour, besides being the main ‚living room‘ also enabled its inhabitants to perform working tasks. Often equipped with a spinning wheel, it allowed dwellers to conduct ‚homework‘ for the cottage industry which provided them with a necessary additional income as farmland became increasingly scarce due to population growth. The flare house also shows an economy in terms of construction and urban layout; typically flare houses were extended again and again over the span of decades taking advantage of the pre-existing side walls. Therefore each additional house only needed three facades, resulting in house-chains of up to eight separate houses.

Secondly, a closer look was taken at another parlour. The Agentenhaus in Horgen from 1735 contains a living room that, similar to the flare house also allowed a multiplicity of activities to take place. In this case however, the multifunctionality is provided via a ‚performative wall‘. The parlour’s shell essentially enables the room to change according to different needs. For instance, an integrated wall-bed can be opened towards the room for purposes of communication and heat transfer. Further, several other utilities are integrated in the wall layer: next to specific winter-windows, whose outer glasses can be taken out in summer, the wall contains a safe, an oven and a sink. In this configuration, the parlour was a multi-functional gathering space for the entire household. Ecologically considered, multi-use rooms reduce the need for extra space and also benefit social ties in terms of sharing and being together.

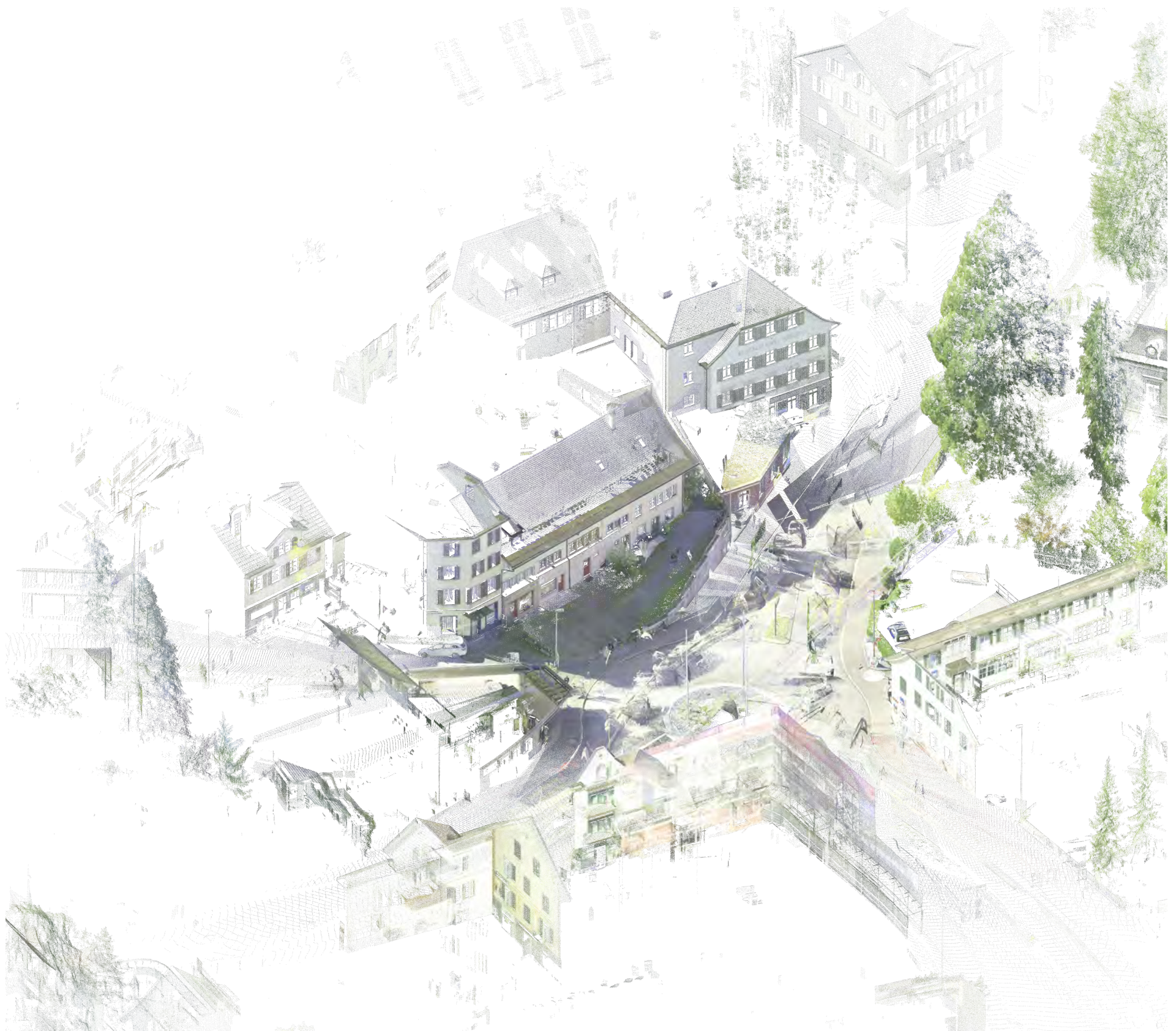
On the basis of this research, a project szenario was deve-

loped which focuses on the multi-use of spaces through performativity and flexibility of its architectural elements. Strongly based on the general notion that today’s architectural challenge in Switzerland must lie in the engagement with the existing building stock, a soon to be disused bus garage was identified as the locus for the project.

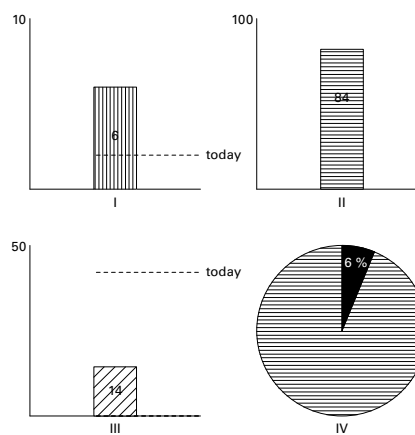
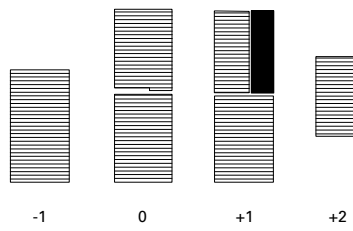
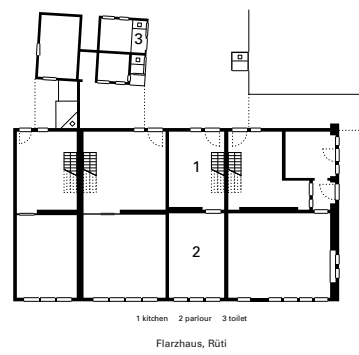
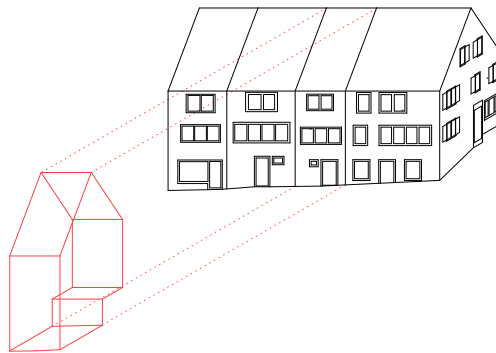
Originating from the idea of the ‚performative wall‘, the bus garage would provide the ideal testing ground to develop an architecture which performs at the intersection of building and furniture. Similar to the Zurich flare house type, the intervention proposes to align strips of structure aligned with the garage’s pre-existing sewage infrastructure. Since the garage’s roof is in need of repair and a housing program would require additional natural lighting, the filigrane load-bearing structure is covered with a light translucent membrane. This circumstance transforms the garage into a large ‚greenhouse‘ creating a micro-climate that lessens the need for insulation, water-proofing and generally allows for less complicated construction methods.

Most importantly however, the translucency of the membrane also provides the opportunity for growing food inside the hall. Since the garage has no basement on most of its area, the project proposes to deseal the surfaces that are not occupied by underground infrastructure and the interventions placed on top. A second layer of productive, agricultural strips is thus created in between the inhabited structures. Further several special surfaces cover floor areas where desealing is impossible due to further underground infrastructure or the two pairs of main pillars on which the entire roof sits. These surfaces include squares at entrances, gathering spaces centrally in the hall and a market in which the harvested food can be sold. Due to the micro-climatic condition of the garage, dwelling spaces can be extended beyond the interventions, which in turn minimize the occupied floor area per person. On a slightly elevated ground floor, a multipurpose room serves all daily activities except sleeping and washing which are condensed in the upper floors. Performative wall elements allow to open the groundfloor for ventilation and communication amongst the inhabitants. Garage City is therefore a performative ecosystem within Zurich’s larger urban fabric.

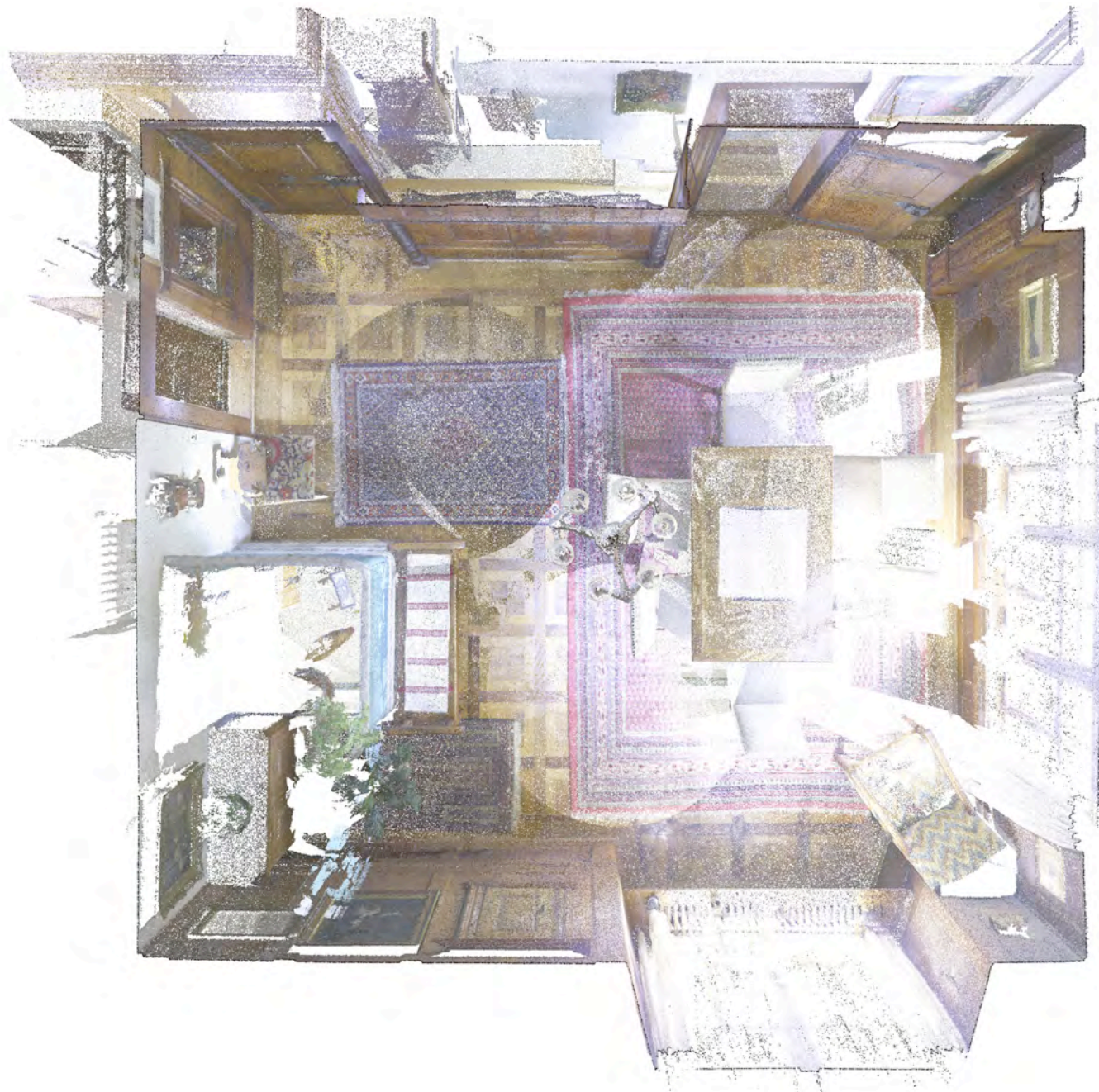
SYNOPSIS



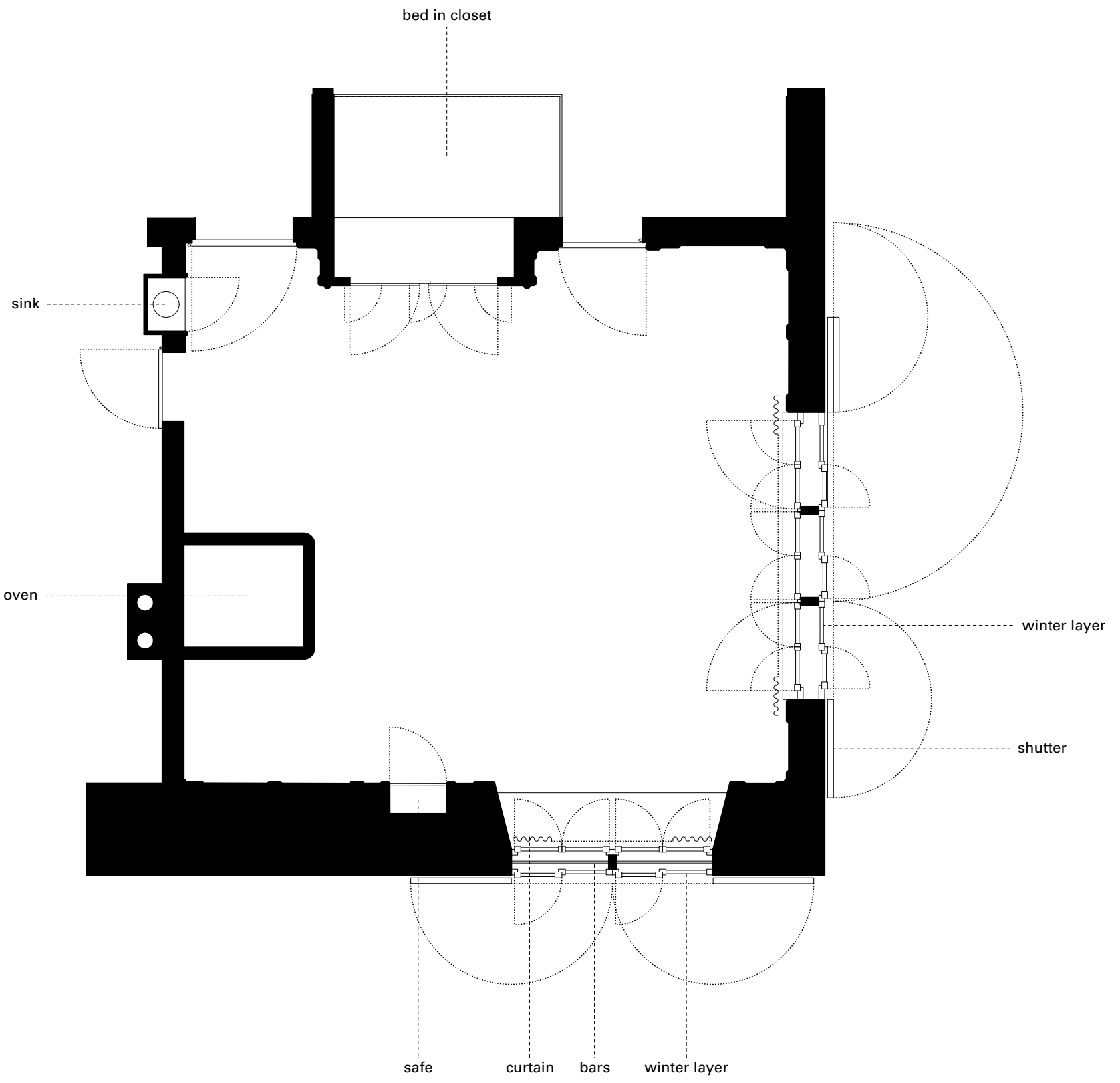
POINT CLOUD FLARZHAUS



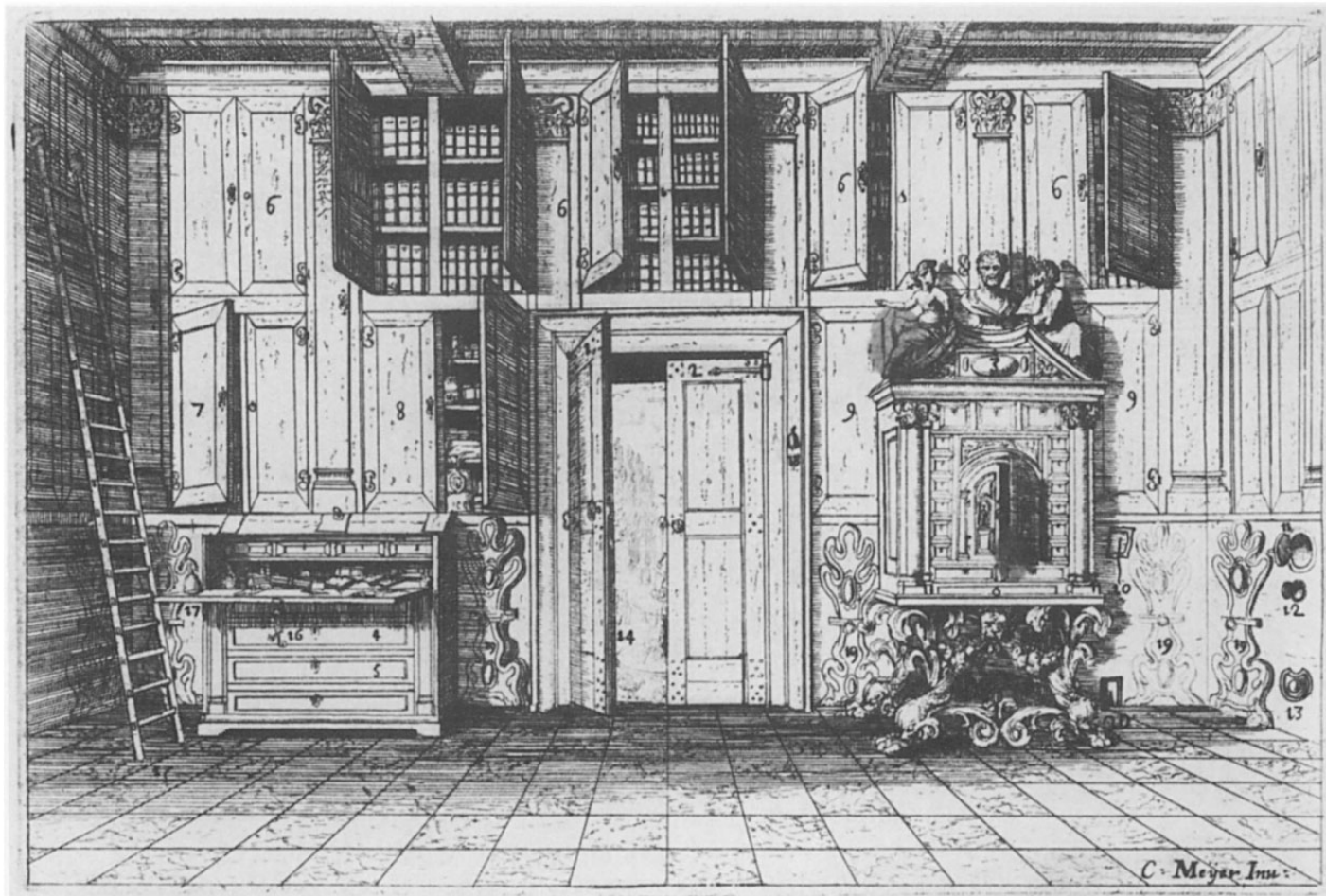
FLARZHAUS ECONOMY



POINT CLOUD PARLOUR AGENTENHAUS



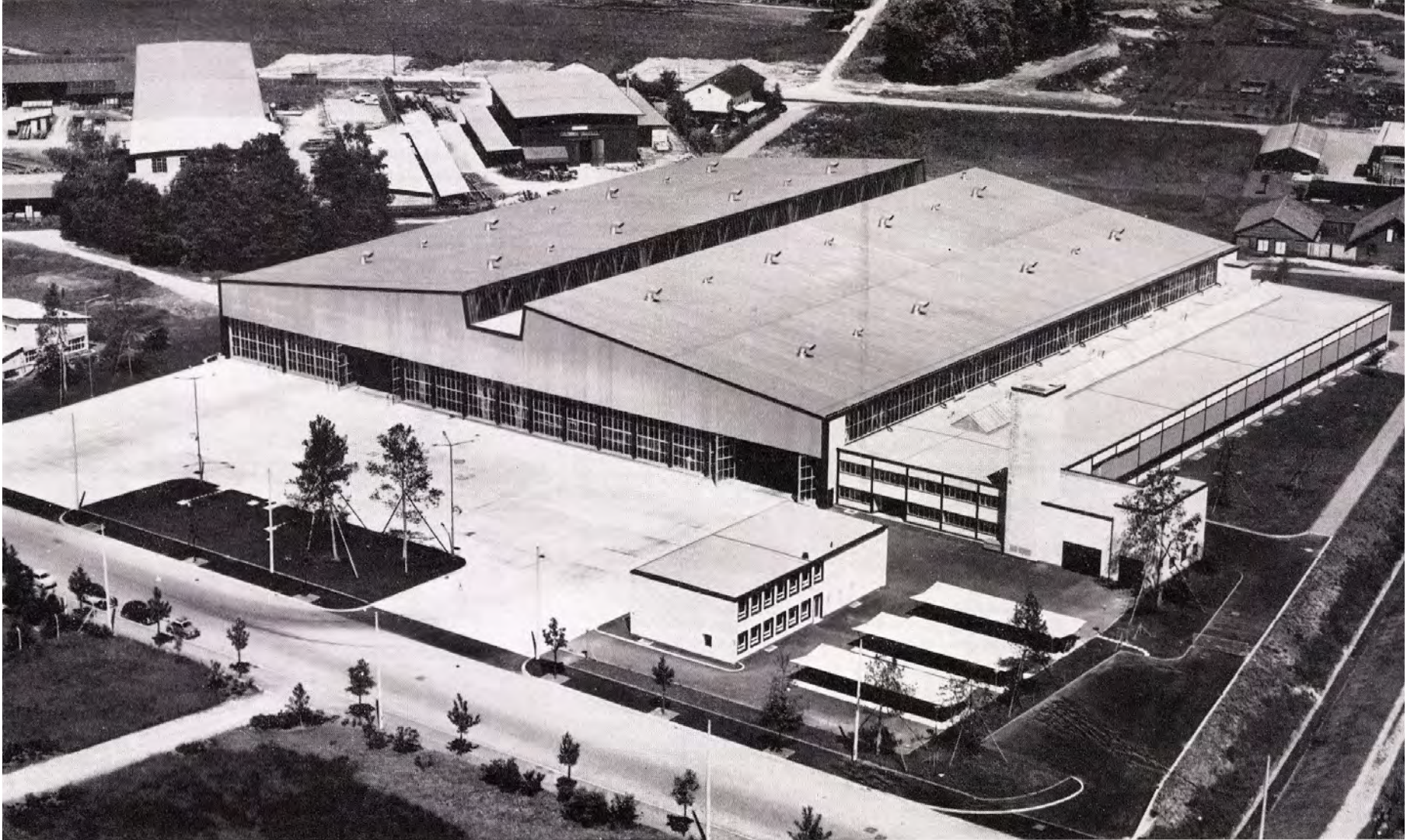
PERFORMATIVE WALL



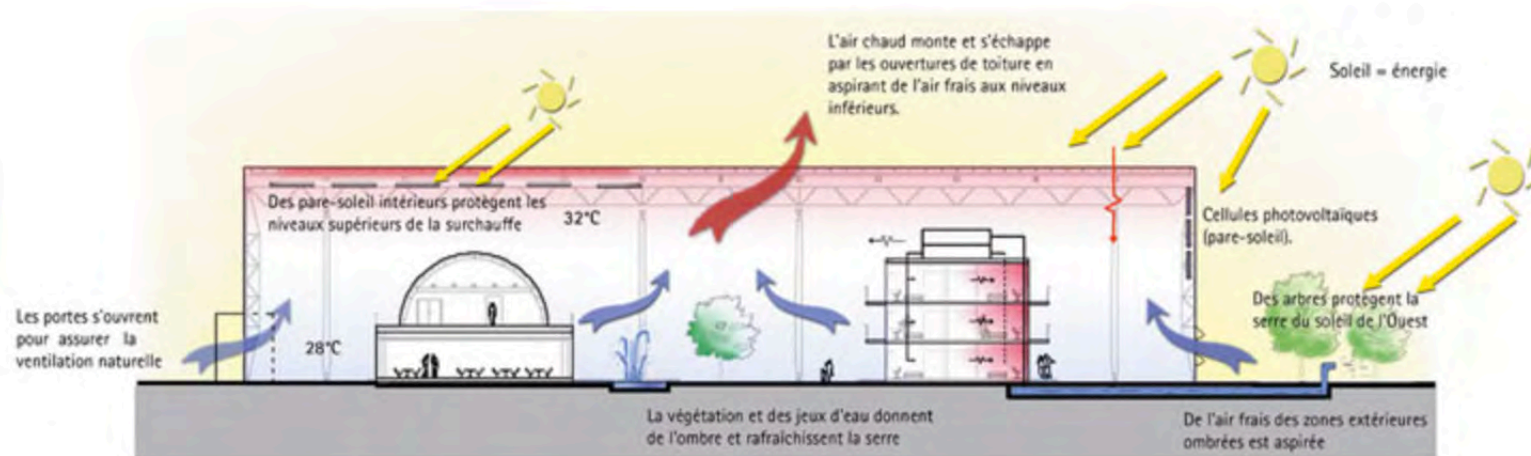
ONE-ROOM APARTMENT, CORNELIUS MEYER



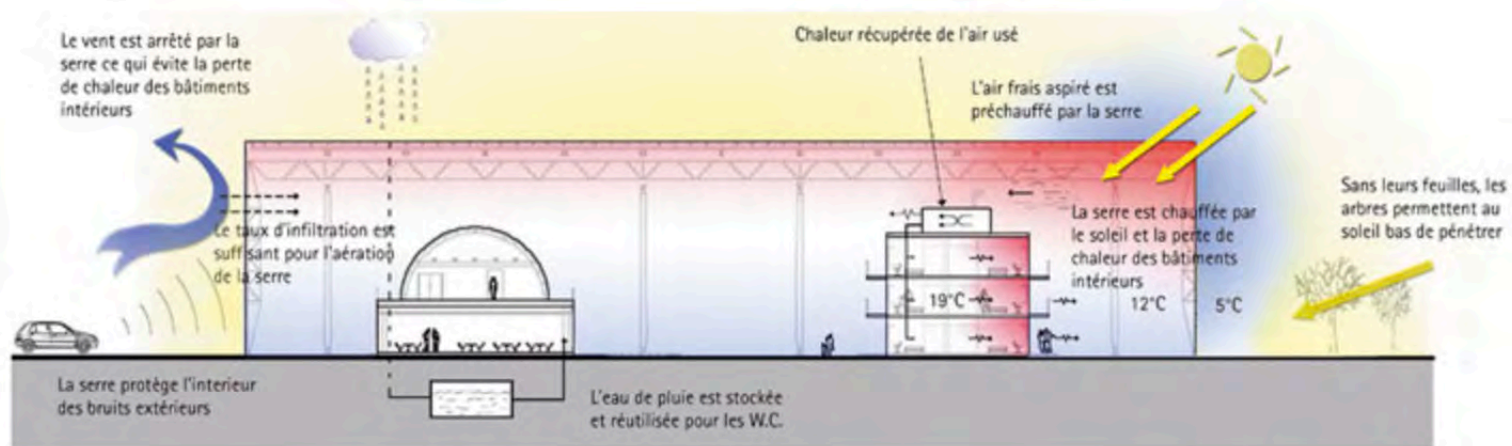
A-Z LIVING UNIT, ANDREA ZITTEL



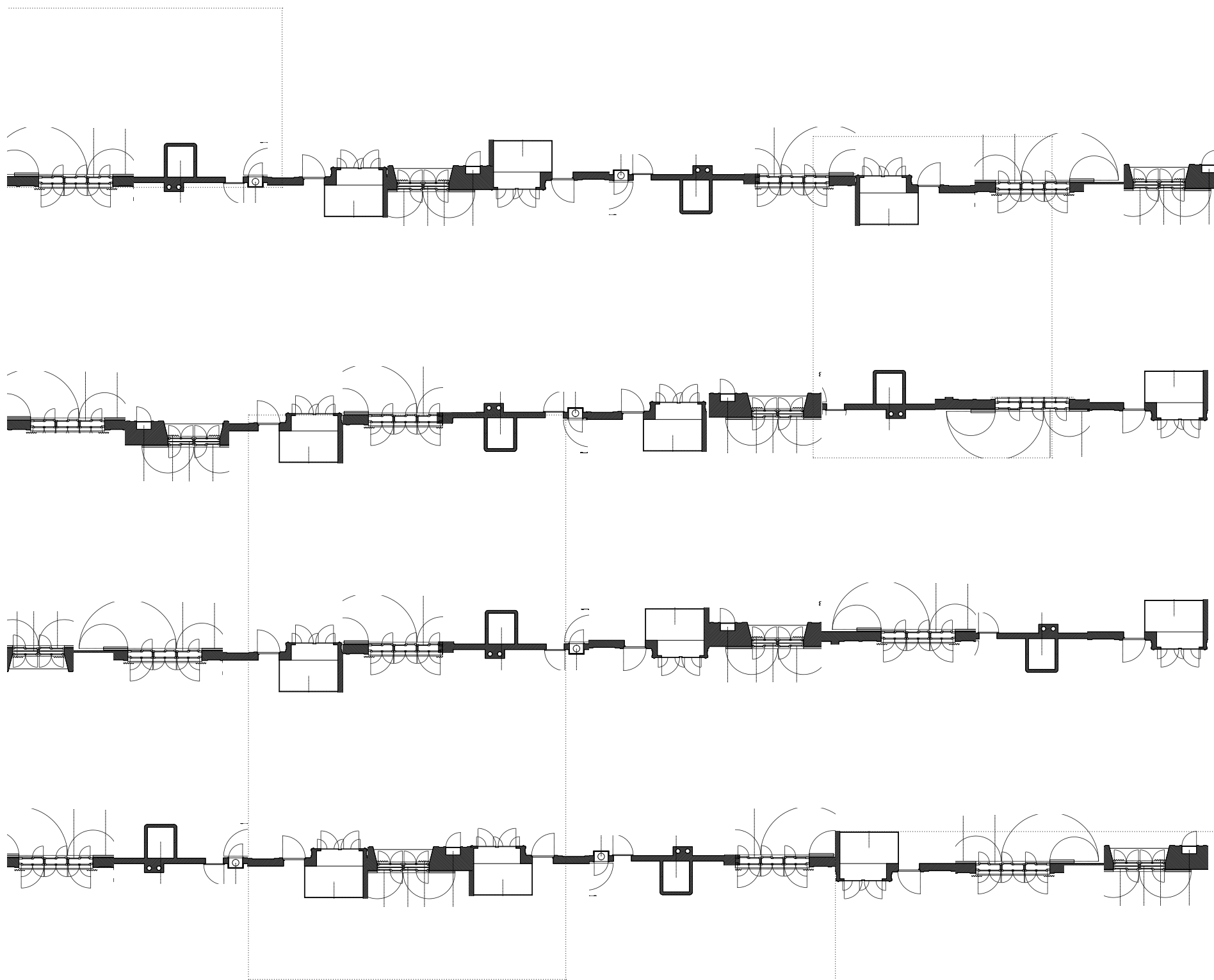
BUSGARAGE HAGENHOLZ



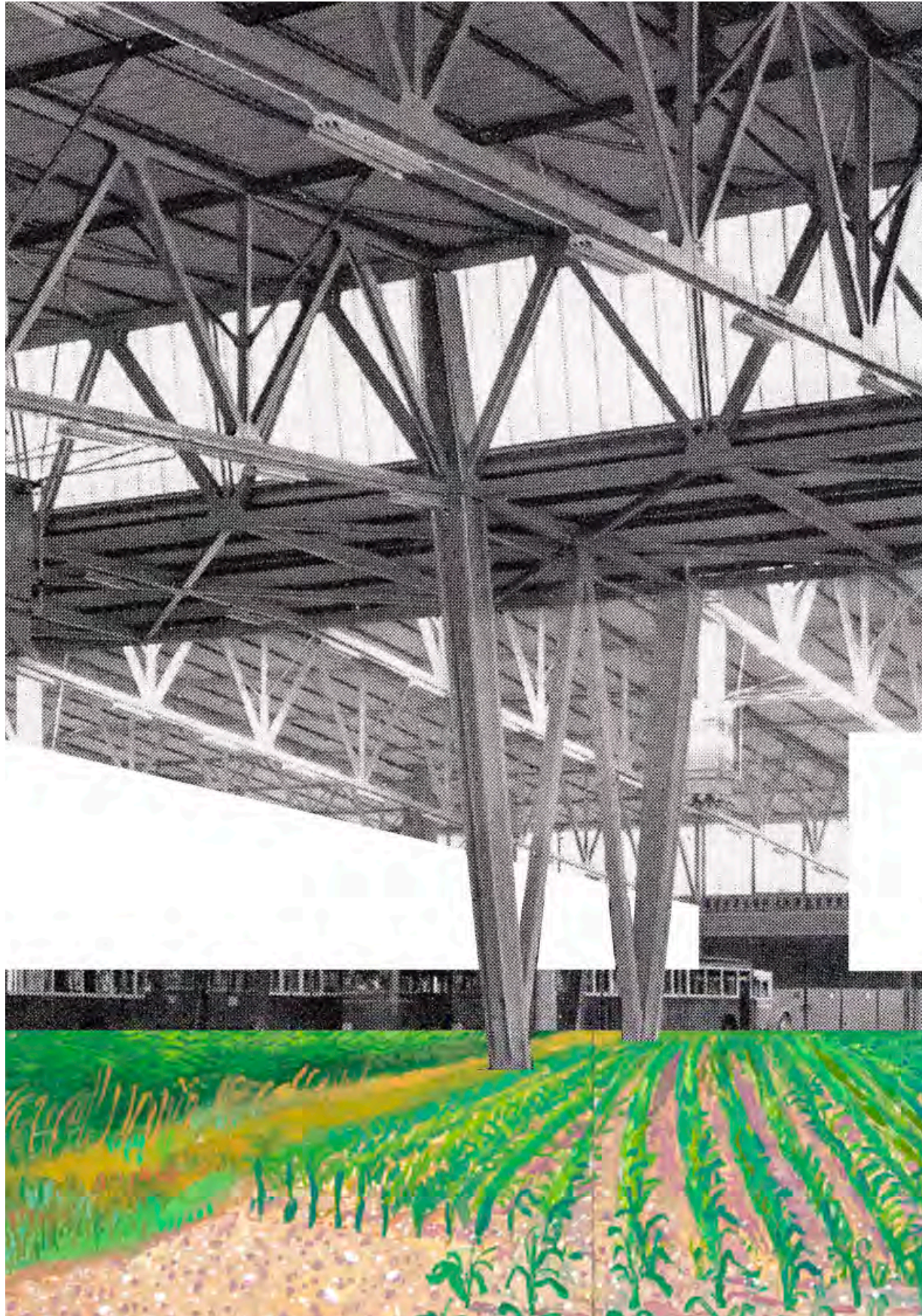
Journée d'été typique



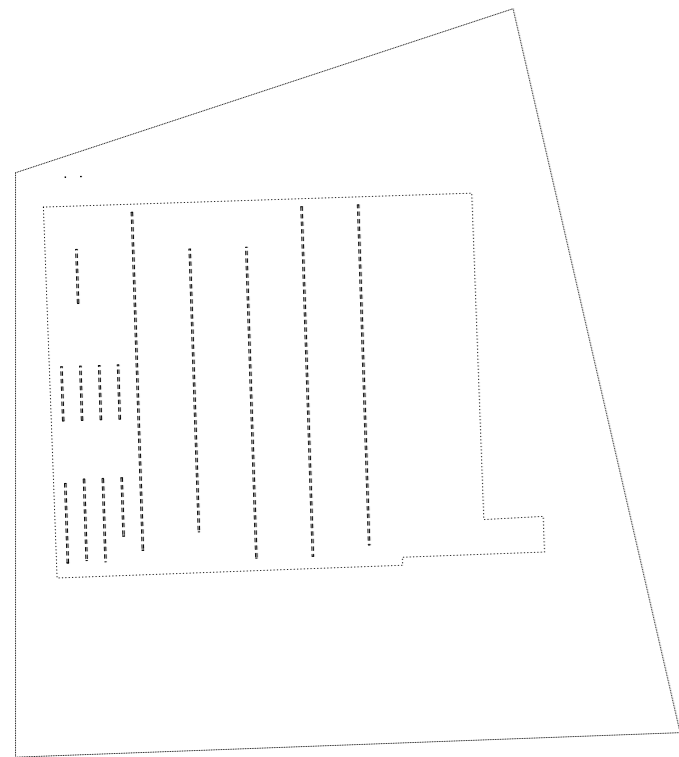
Journée d'hiver typique



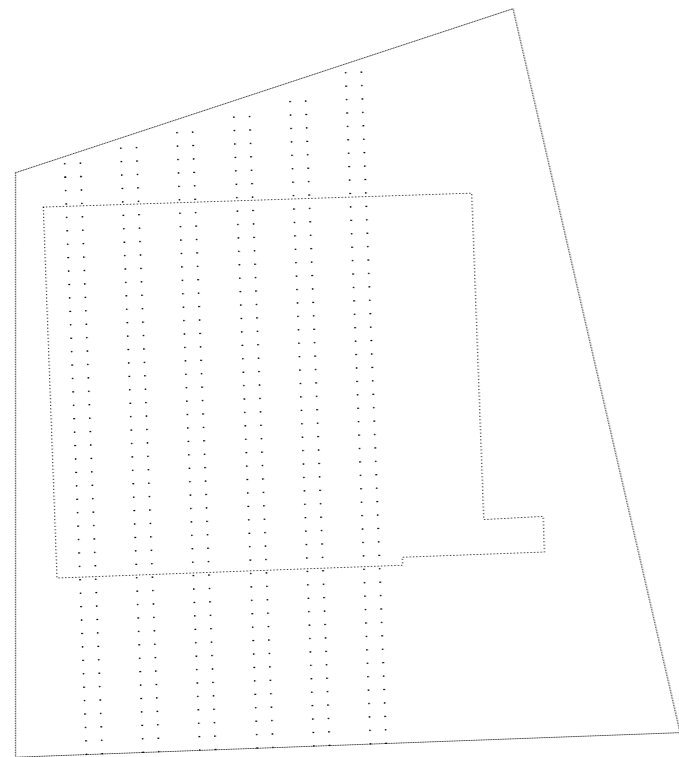
COLLAGE PERFORMATIVE WALLS



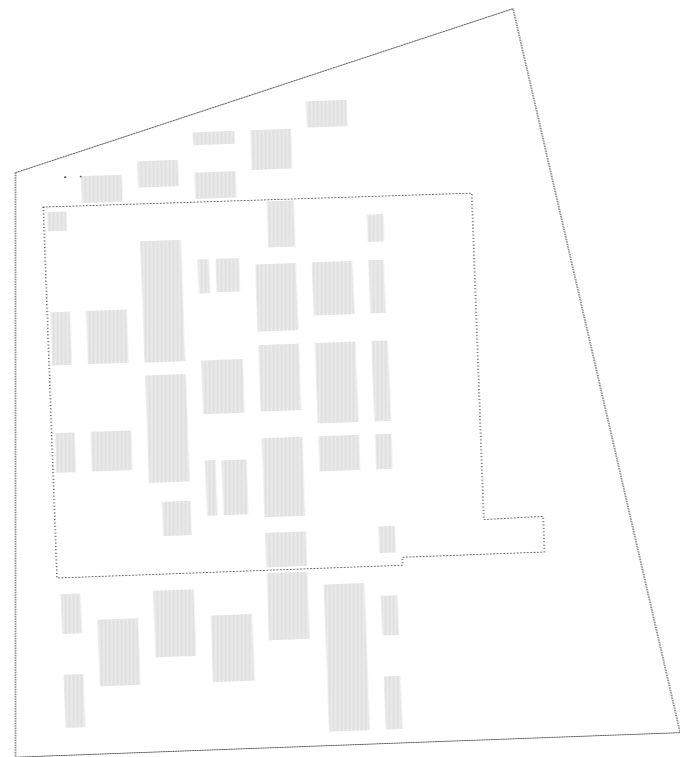
COLLAGE GARAGE INTERIOR



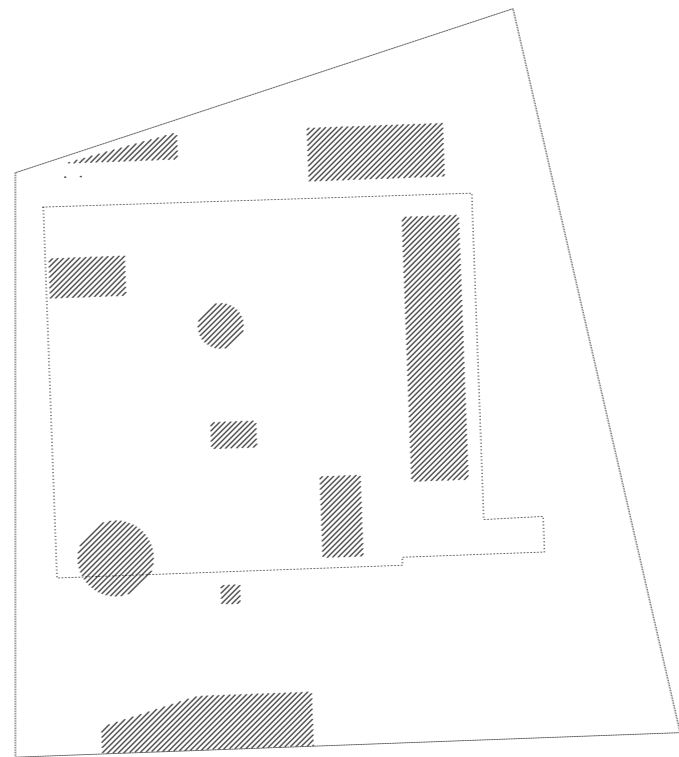
EXISTING INFRASTRUCTURE



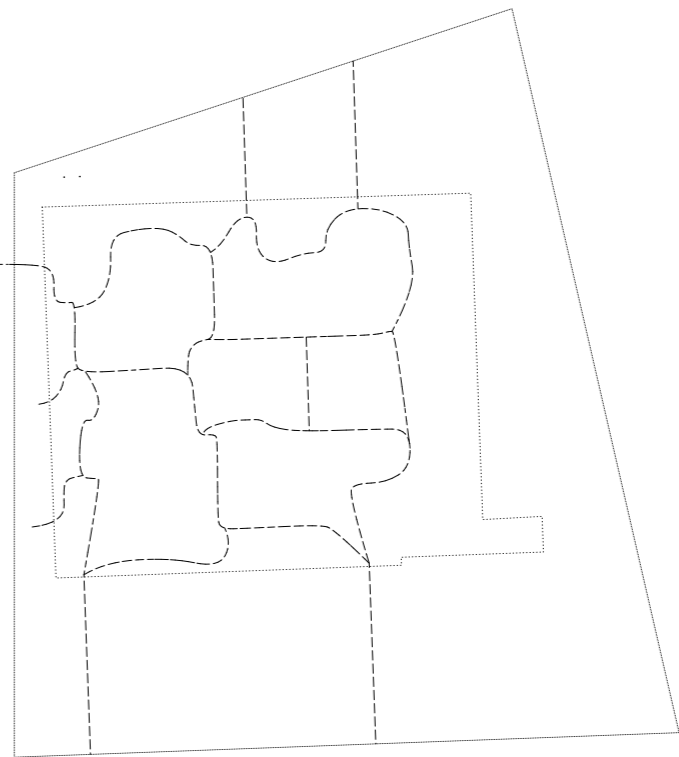
INTERVENTION STRIPES



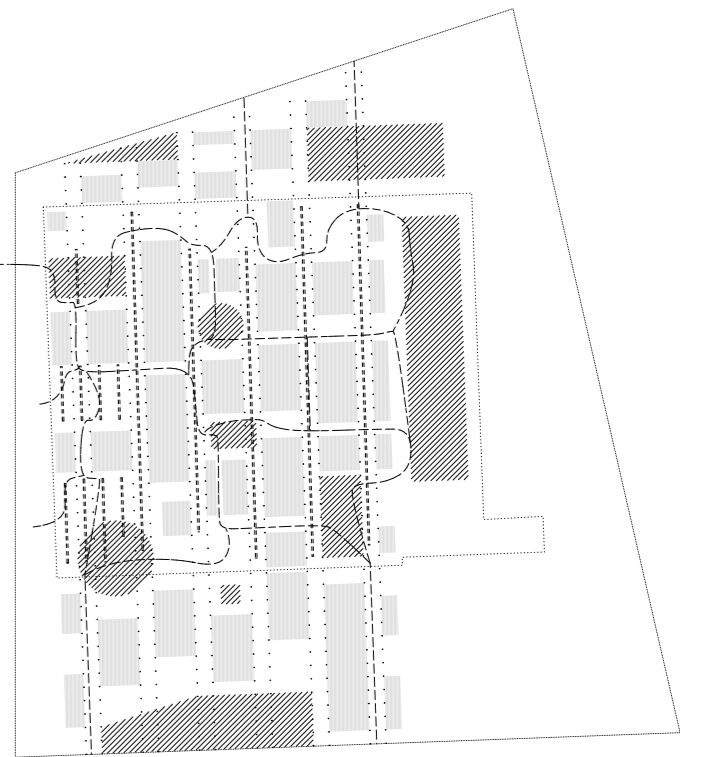
DESEALED SURFACE



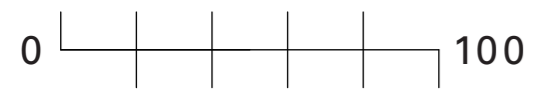
SPECIAL SURFACES



HORIZONTAL CIRCULATION



OVERLAY



LAYERS OF INTERVENTION





0 37.5

GROUND PLAN



ENVELOPE

ETFE ROOF MEMBRANE

VENTILATION OPENINGS

EXISTING GLASS BLOCK FACADE

EXISTING FLAT ROOF

EXISTING TOP LIGHT

FORMER HEATING PLANT

REPLACED FACADE

EXISTING GATES

EXISTING STRUCTURE

MAIN LOAD-BEARING STRUCTURE

LOAD-BEARING STRUCTURE ANNEX

SOLID STRUCTURE OFFICE WING

BUILDING INTERVENTION

INHABITED VOLUME

ELEVATED PERGOLA

PERGOLA

COMMUNAL KITCHEN

GARDEN PAVILION

SURFACE TREATMENT

PLAYGROUND

LIGHT FORESTATION

INDOOR GARDENING

CENTRAL SQUARE

MARKET

WATER COLLECTION SURFACE

ENTRYSQUARE

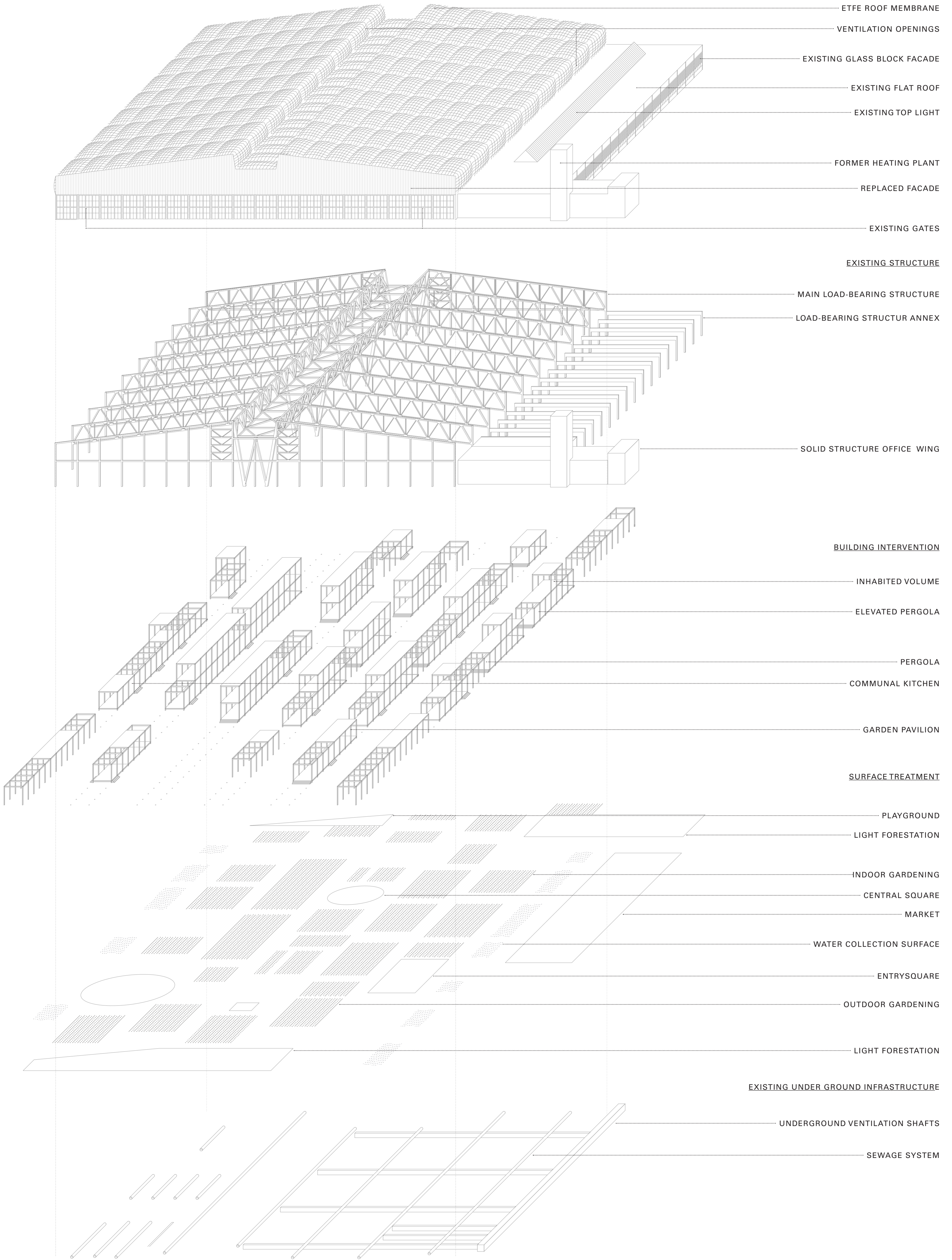
OUTDOOR GARDENING

LIGHT FORESTATION

EXISTING UNDER GROUND INFRASTRUCTURE

UNDERGROUND VENTILATION SHAFTS

SEWAGE SYSTEM

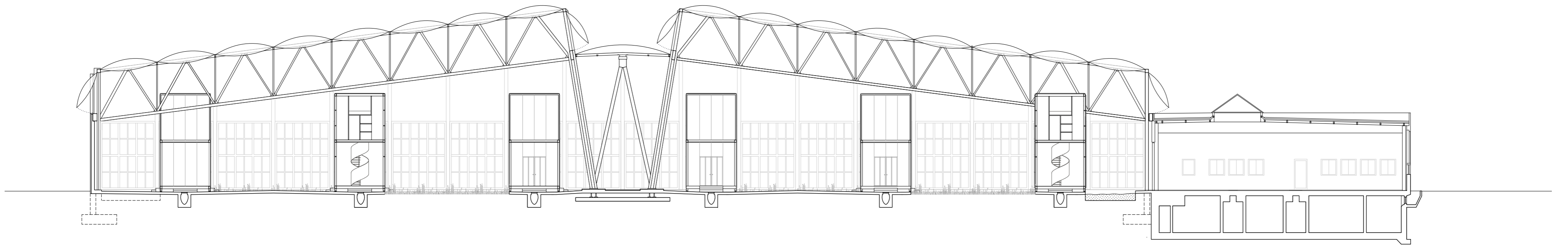




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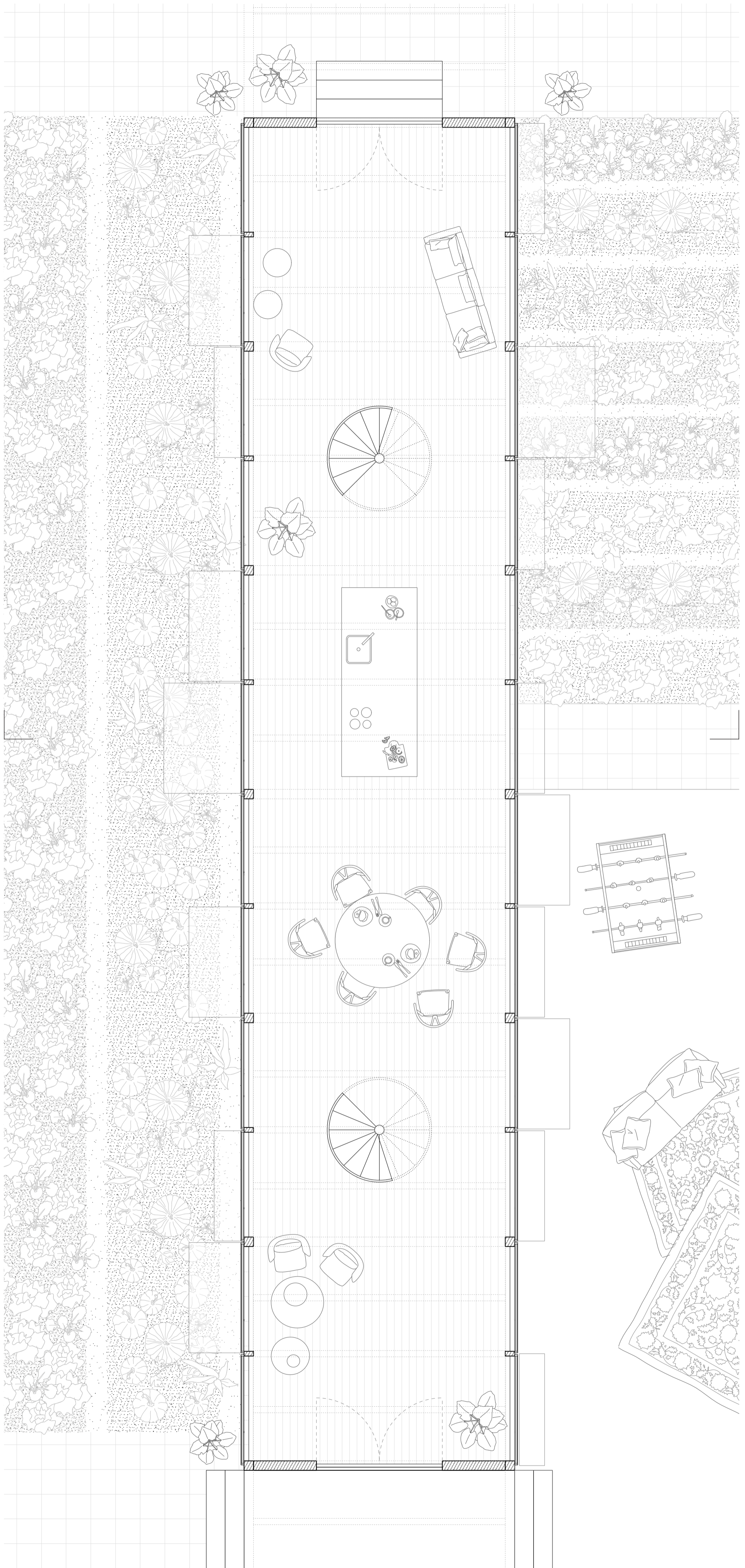
PLAN GROUND FLOOR





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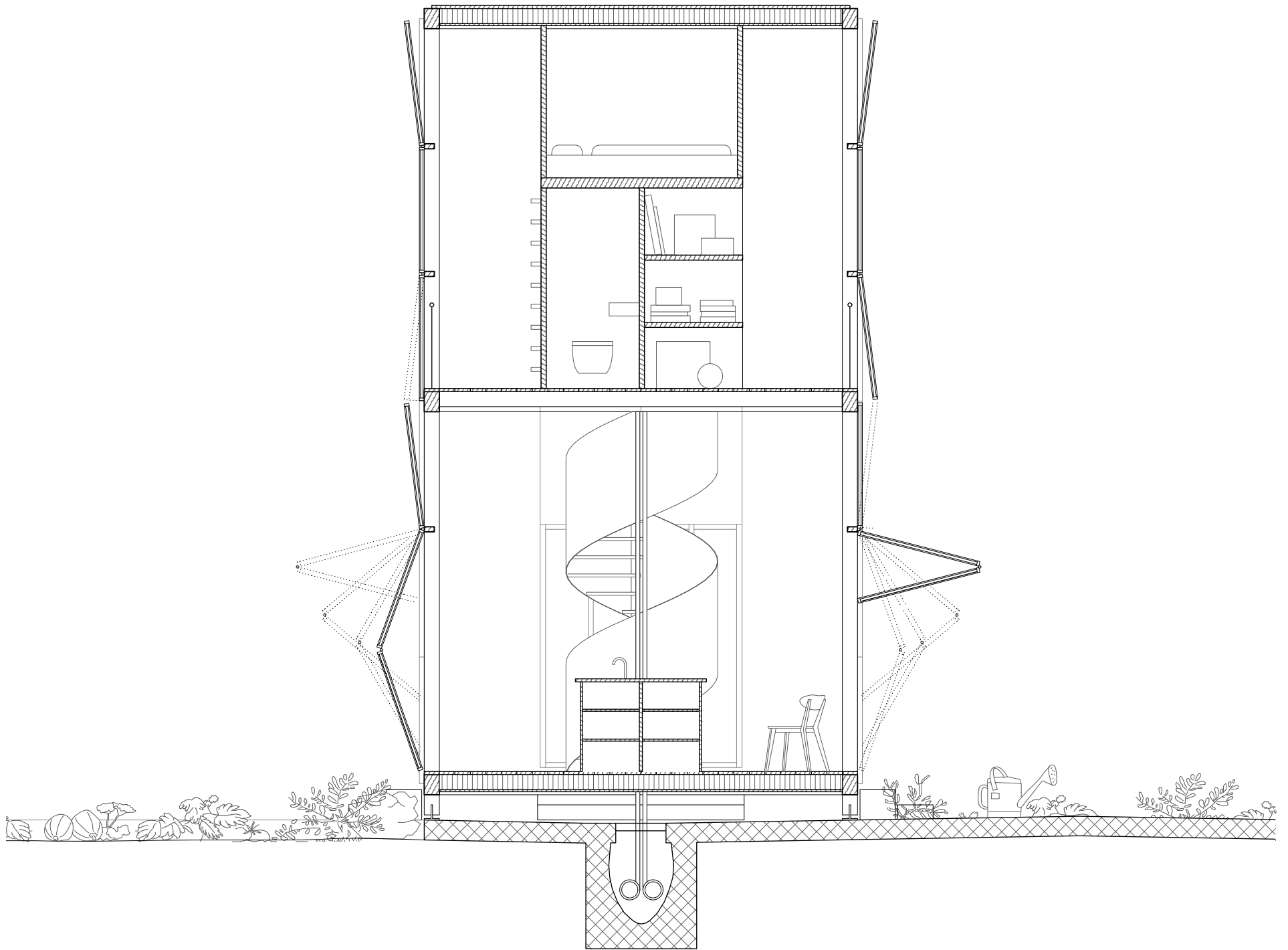
SECTION



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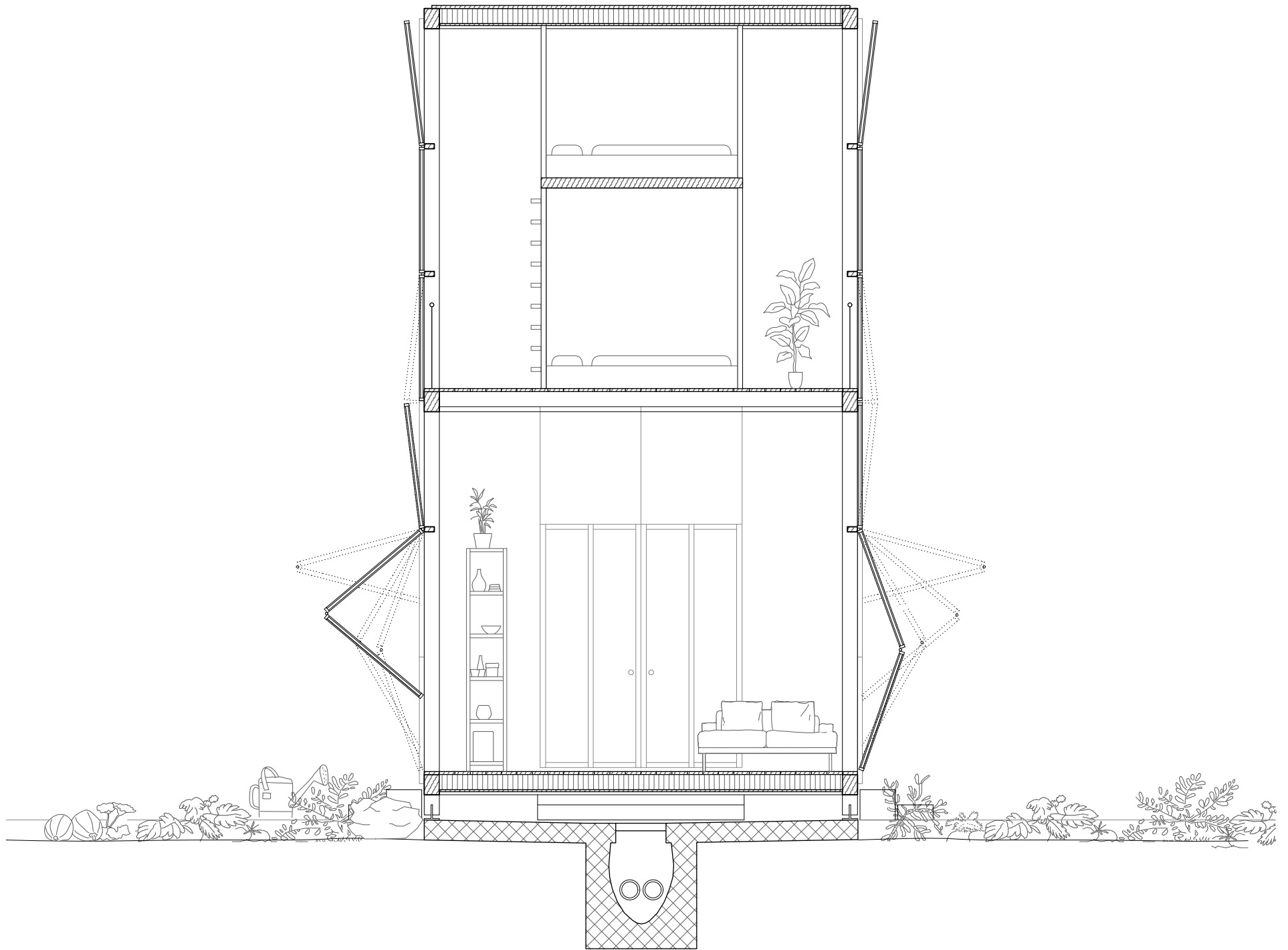
GROUND LEVEL INTERVENTION





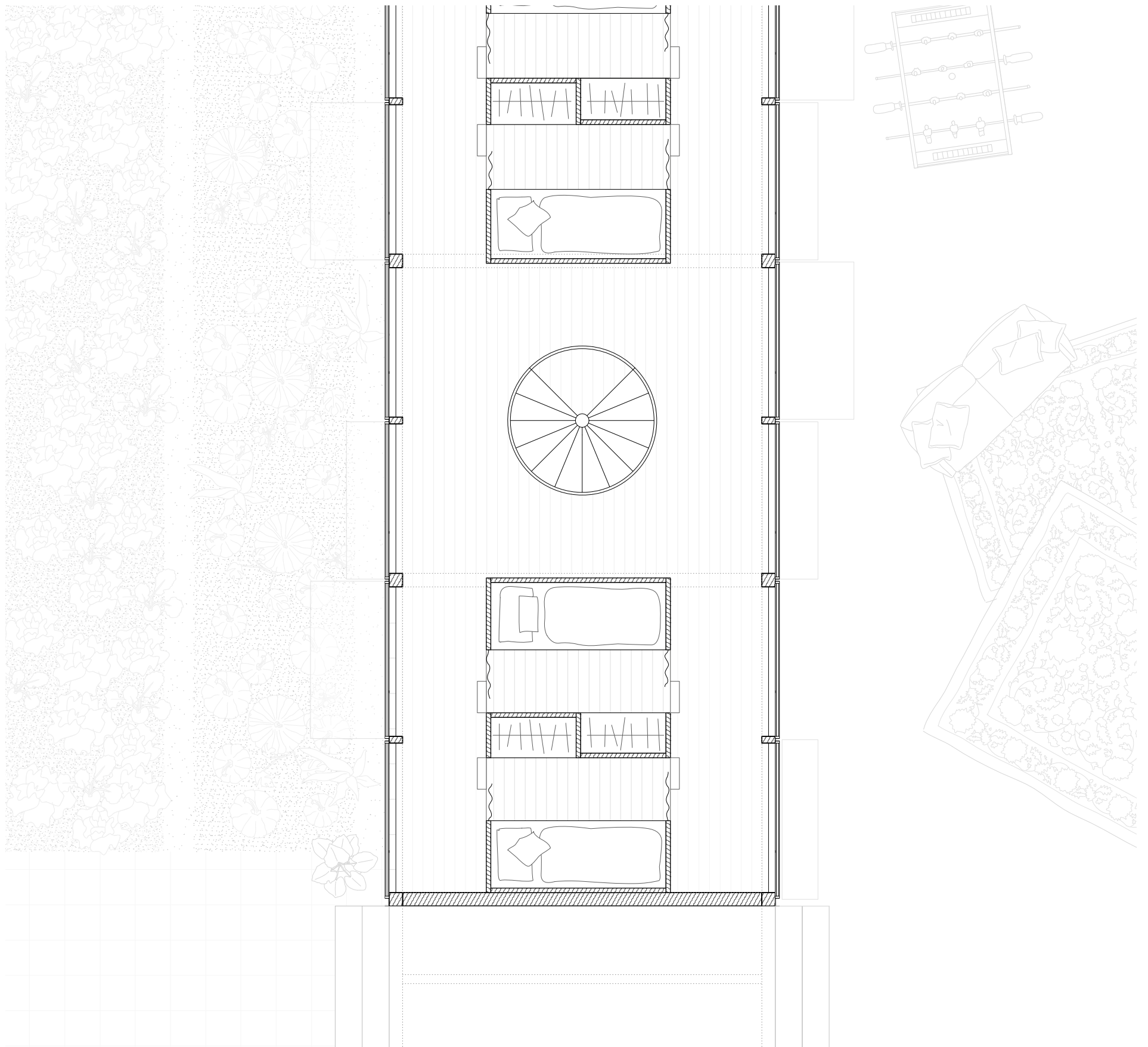
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SECTION INTERVENTION



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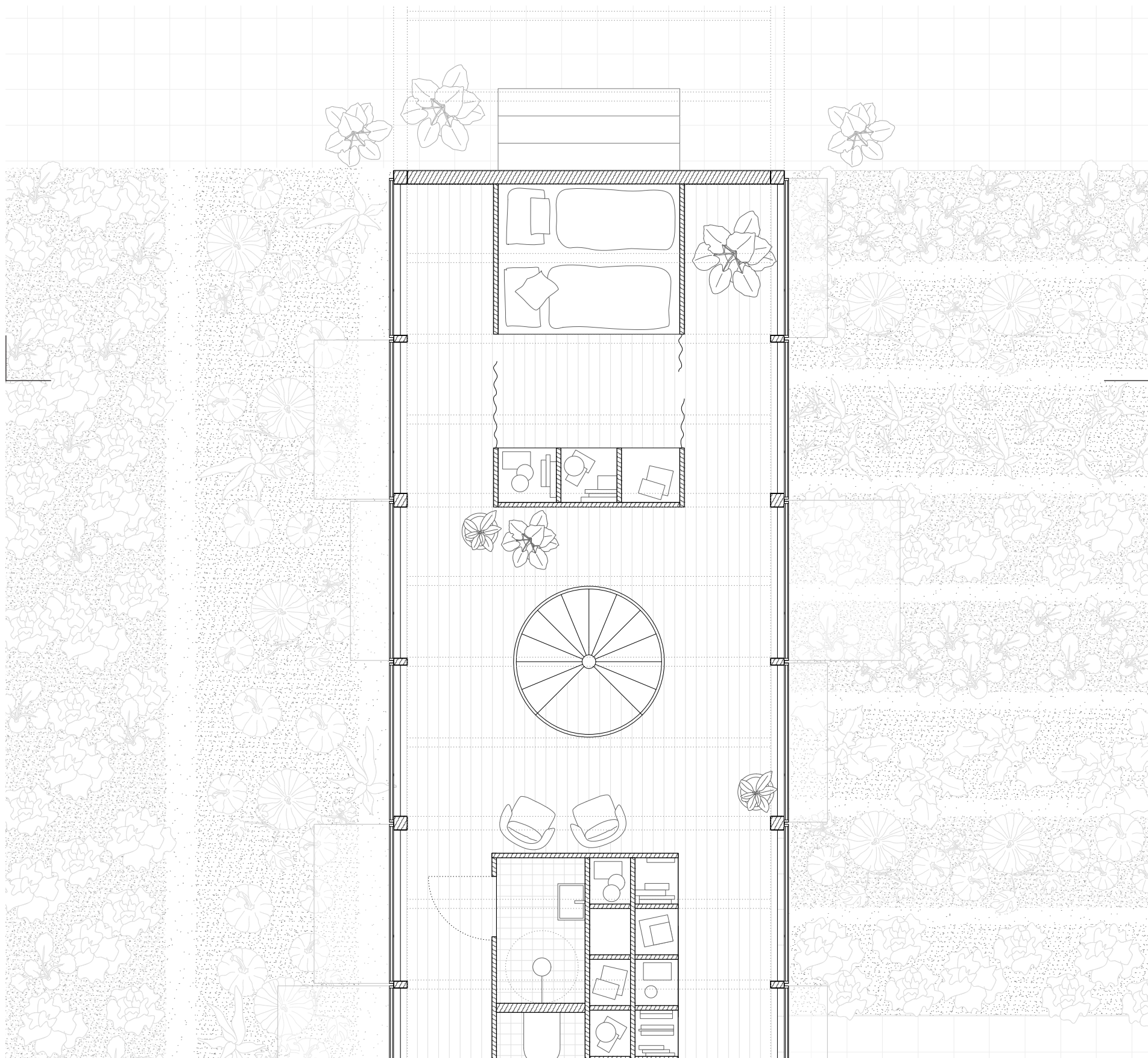
SECTION INTERVENTION



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THIRD LEVEL INTERVENTION





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SECOND LEVEL INTERVENTION





