PROJECT DESCRIPTION
ARCHI DI LUCE, CASTAGNOLA

Herzog & de Meuron

Version June 2017

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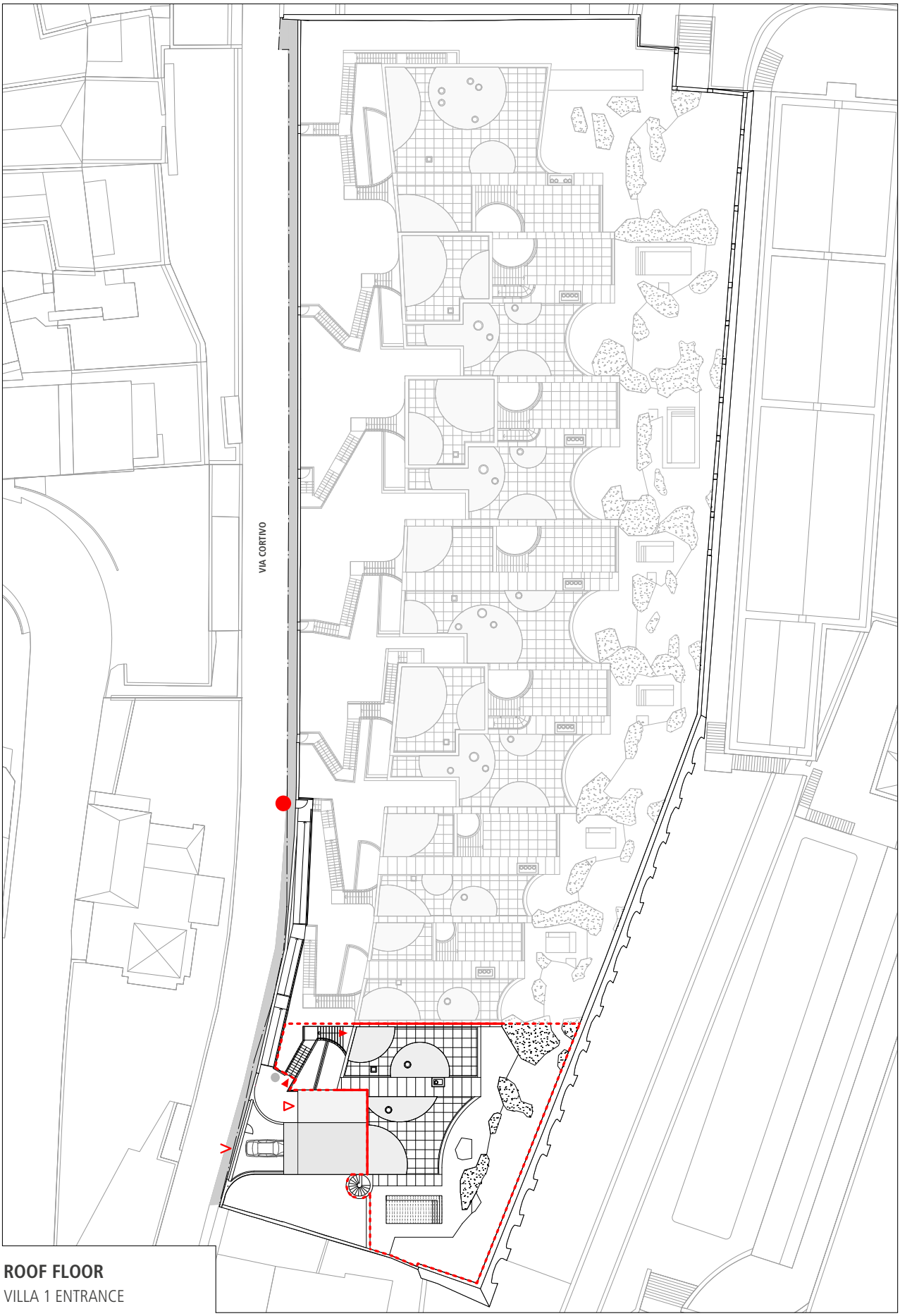
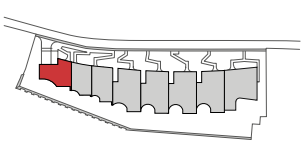
GENERAL CONTENTS

8 INDEPENDENT VILLAS



ROOF FLOOR
VILLA 1 ENTRANCE



COMMUNAL ENTRANCE VIA CORTIVO
COMMUNAL PEDESTRIAN ENTRANCE
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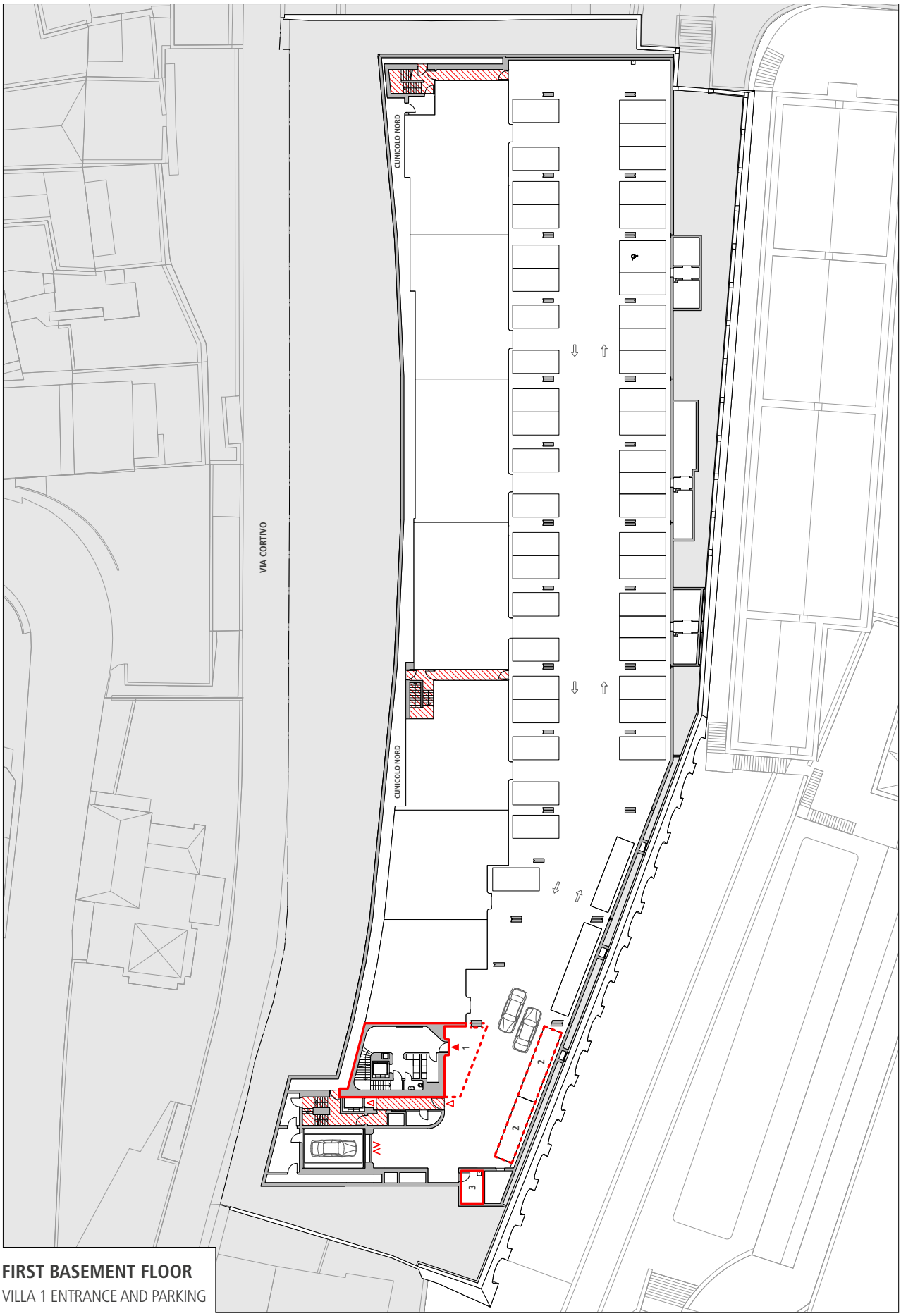
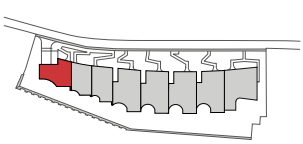
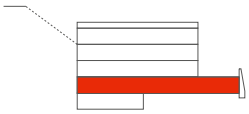
PRIVATE ENTRANCE



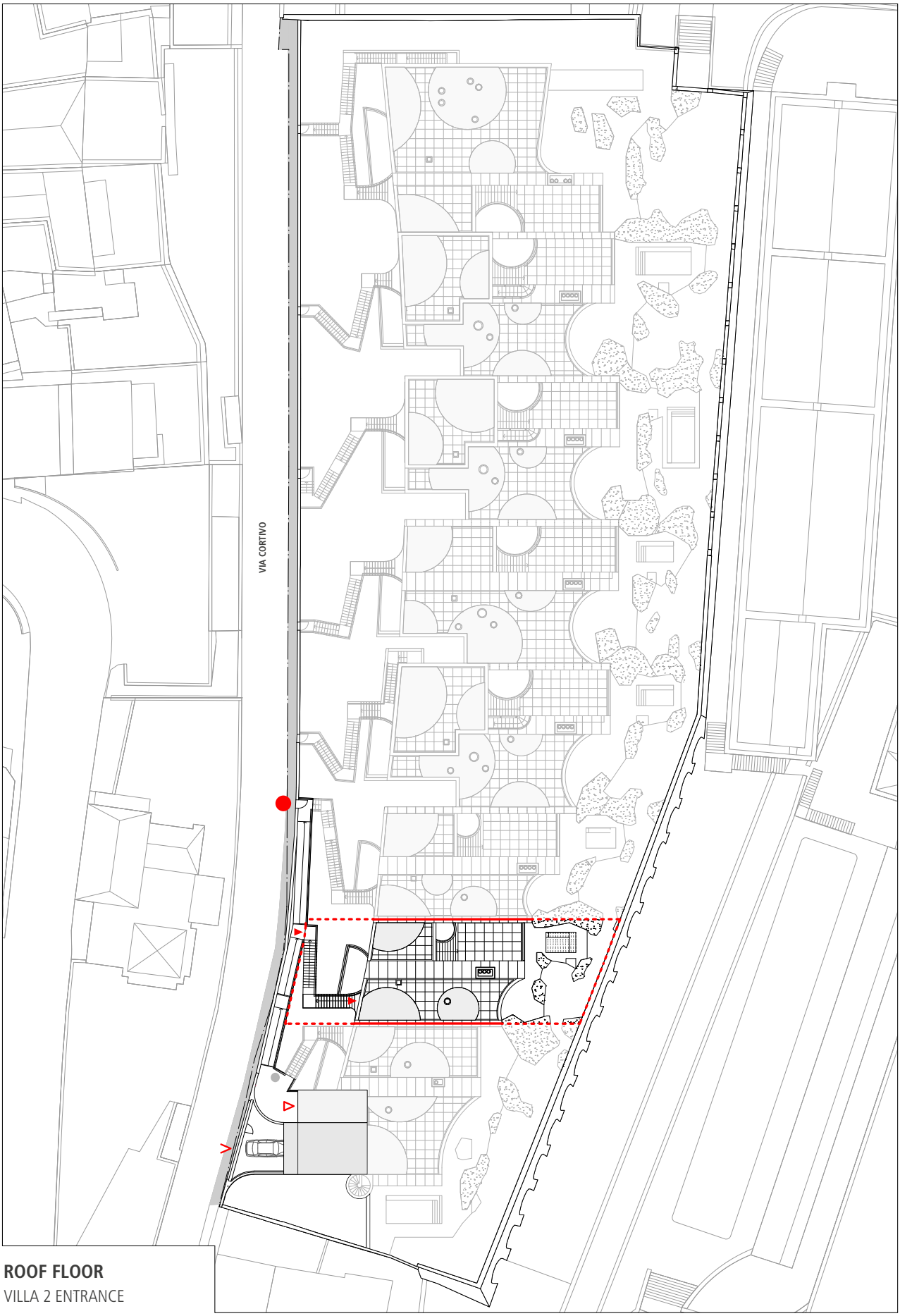
FIRST BASEMENT FLOOR
VILLA 1 ENTRANCE AND PARKING



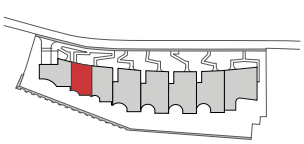


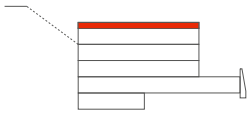
1 ALLOCATED ENTRANCE AREA
2 ALLOCATED PARKING LOT
3 ALLOCATED SWIMMING POOL TECHNICAL ROOM

PRIVATE ENTRANCE
COMMUNAL PEDESTRIAN ENTRANCE
COMMUNAL ENTRANCE (CAR LIFT)
EMERGENCY EXITS



ROOF FLOOR
VILLA 2 ENTRANCE





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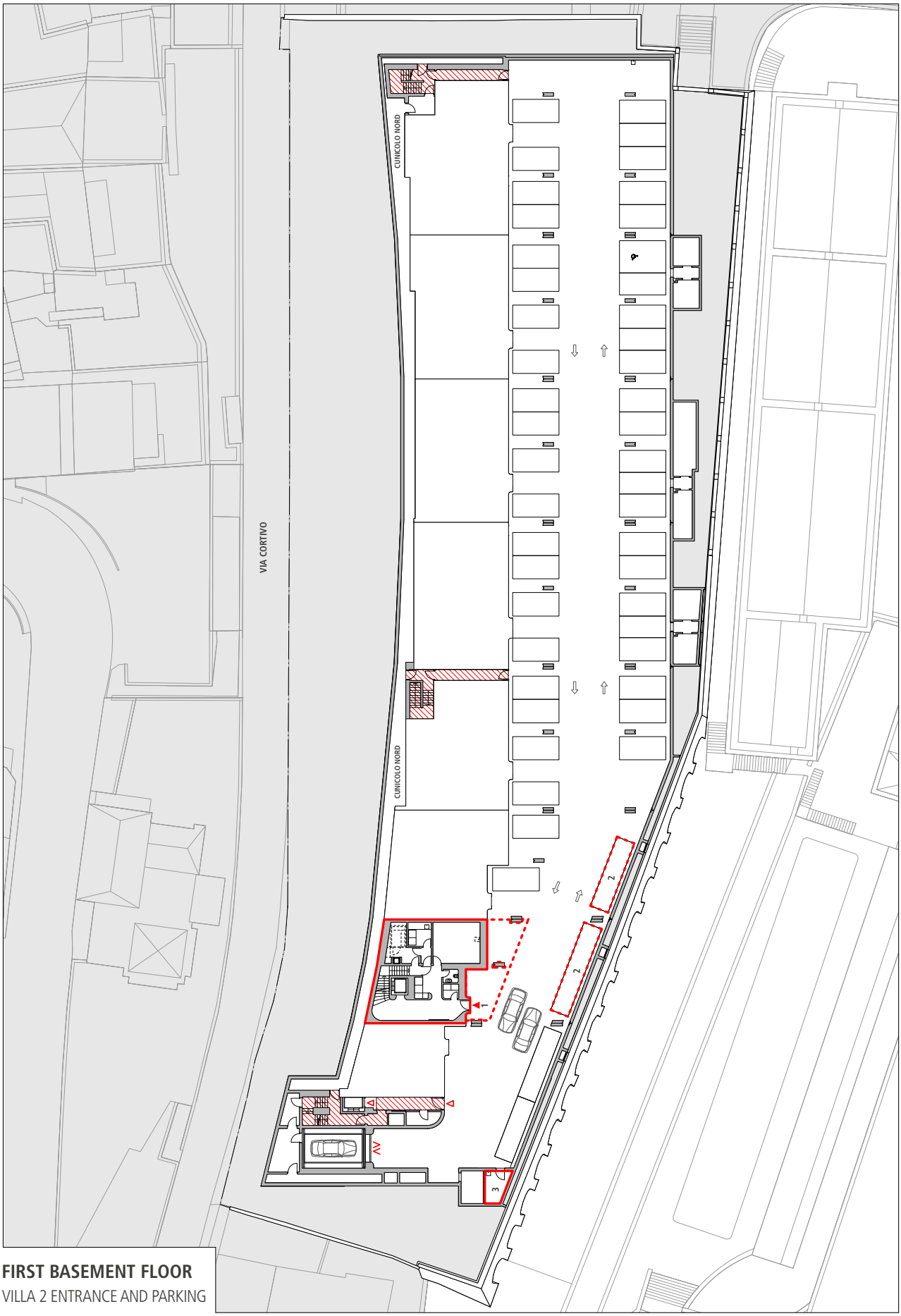
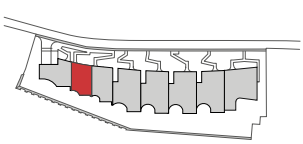
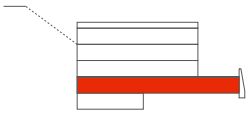


FIRST BASEMENT FLOOR
VILLA 2 ENTRANCE AND PARKING





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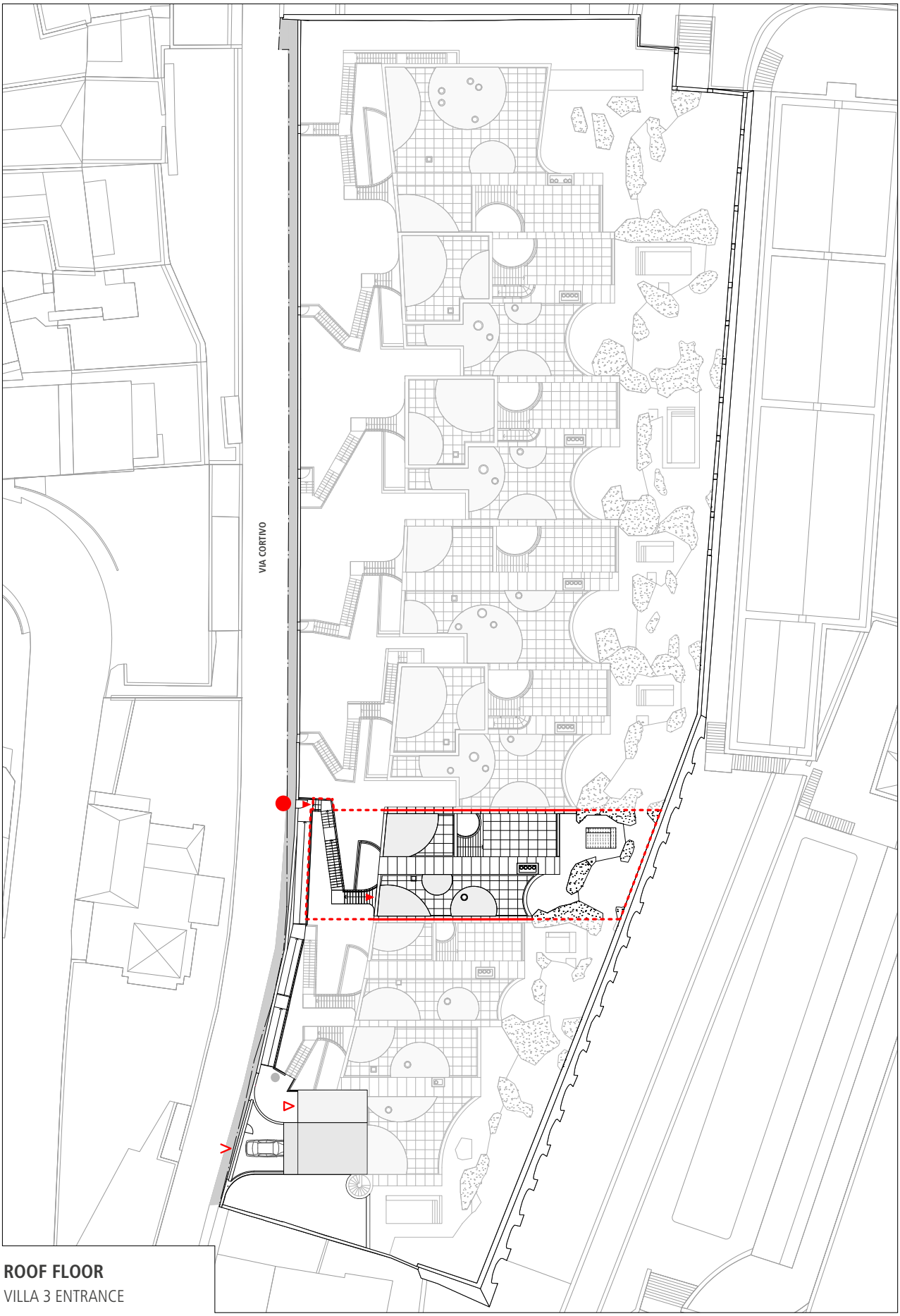

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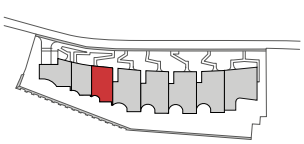
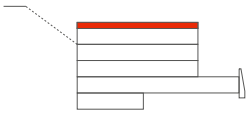
VILLA 3 ENTRANCE





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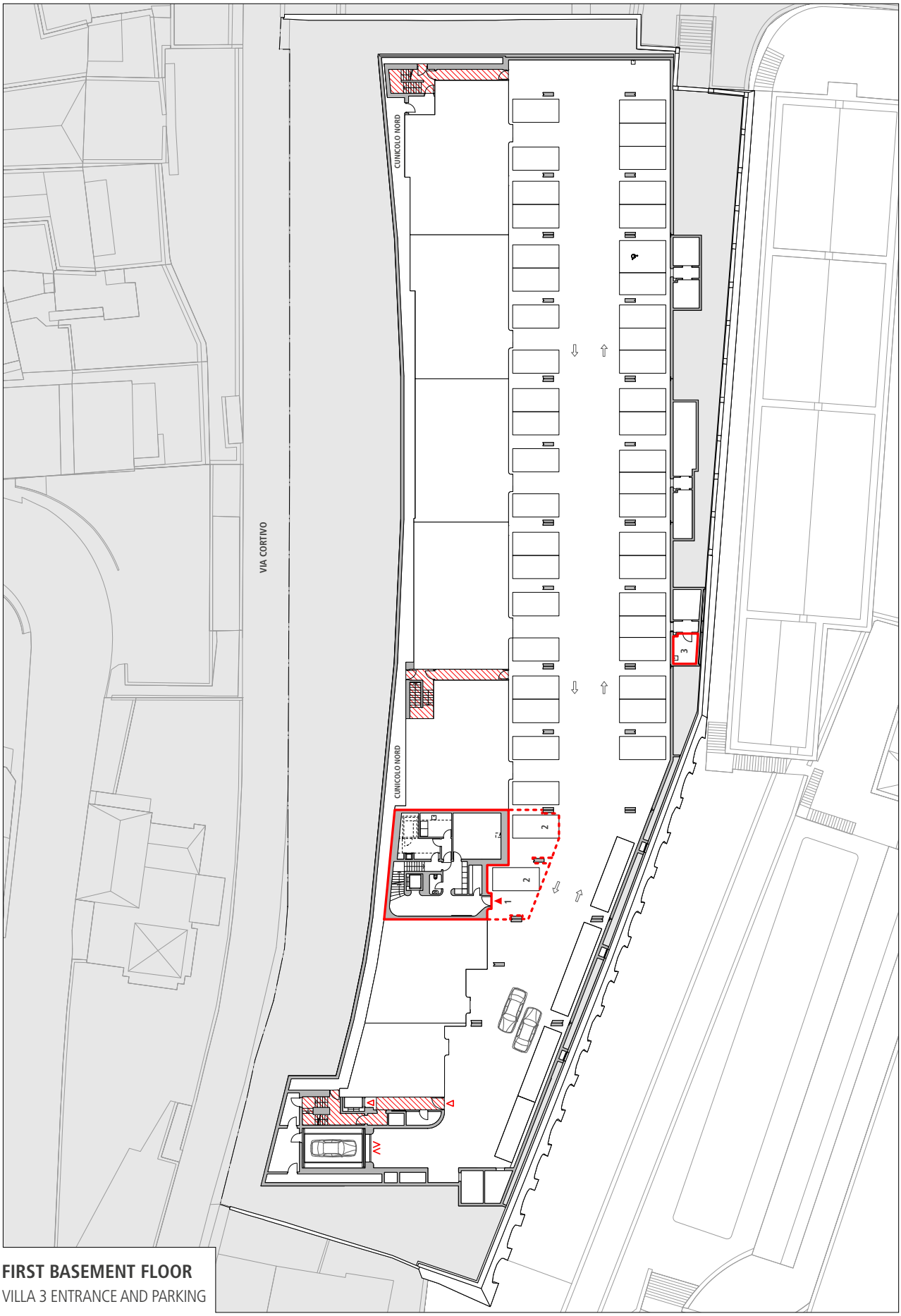

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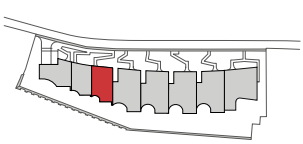
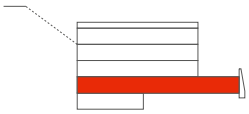
VILLA 3 ENTRANCE AND PARKING





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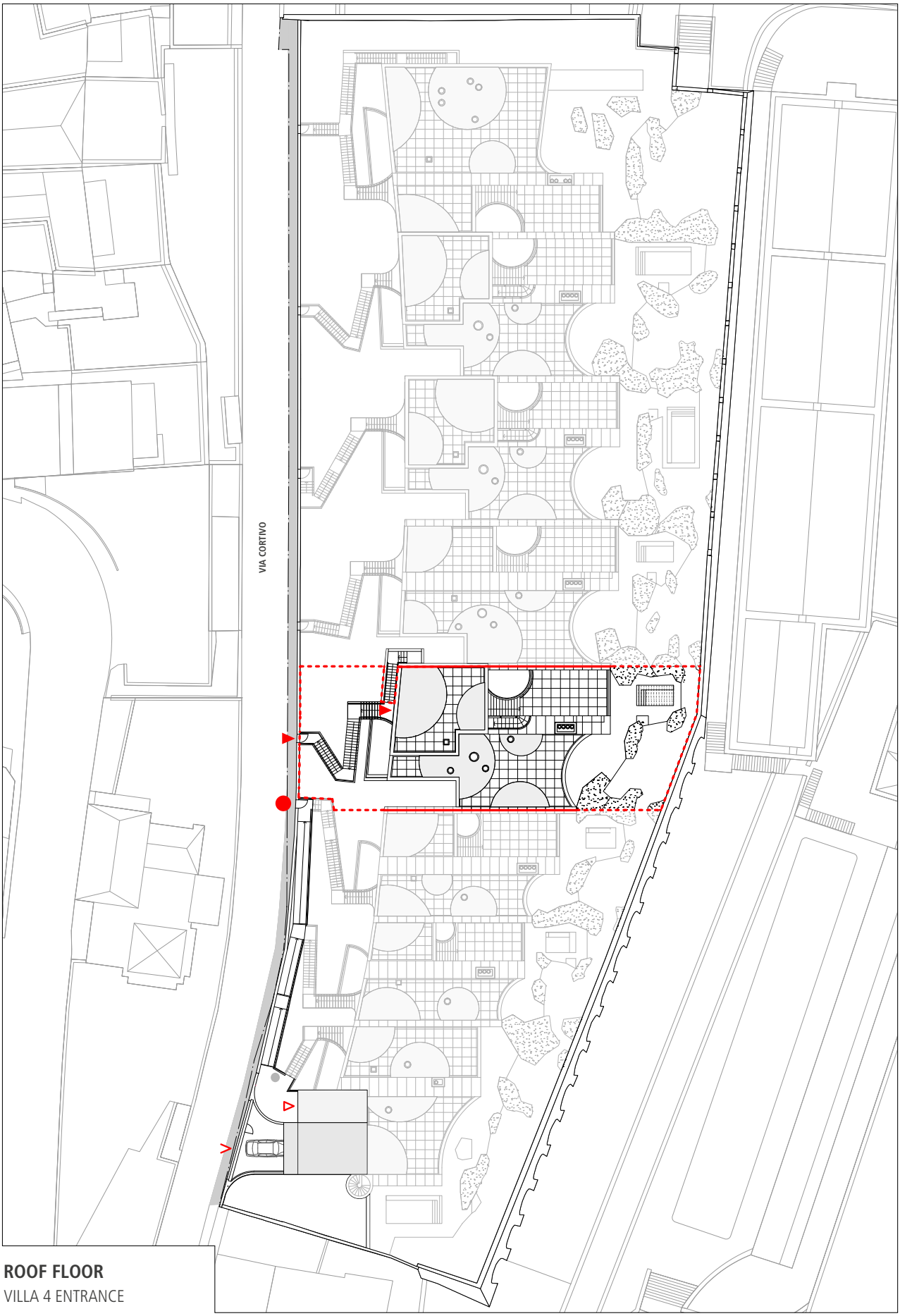
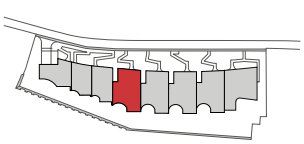
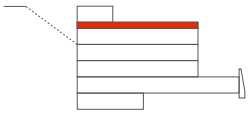


ROOF FLOOR
VILLA 4 ENTRANCE





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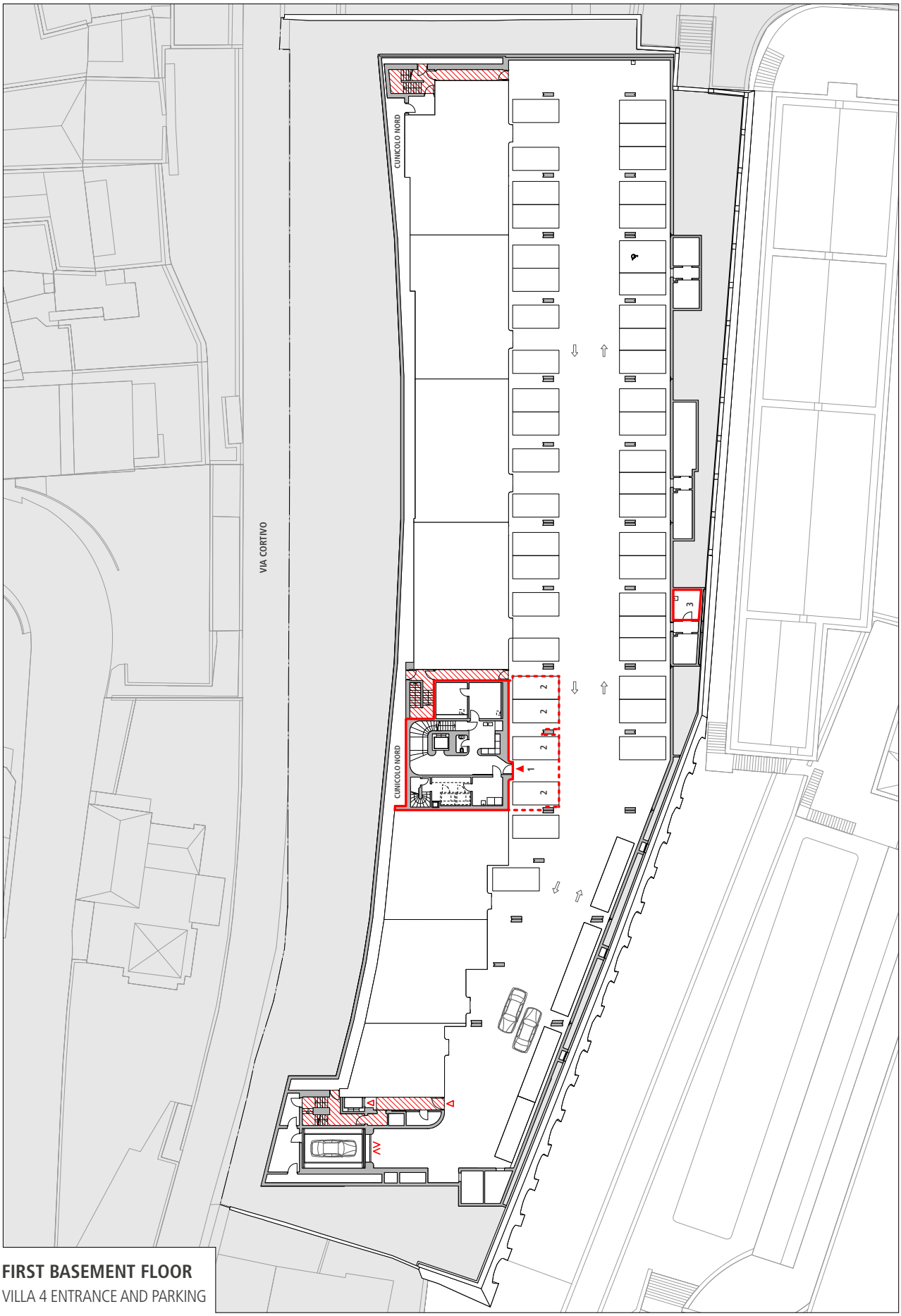
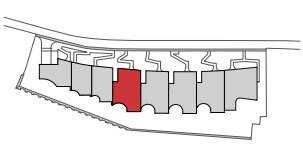
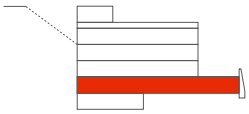


FIRST BASEMENT FLOOR
VILLA 4 ENTRANCE AND PARKING





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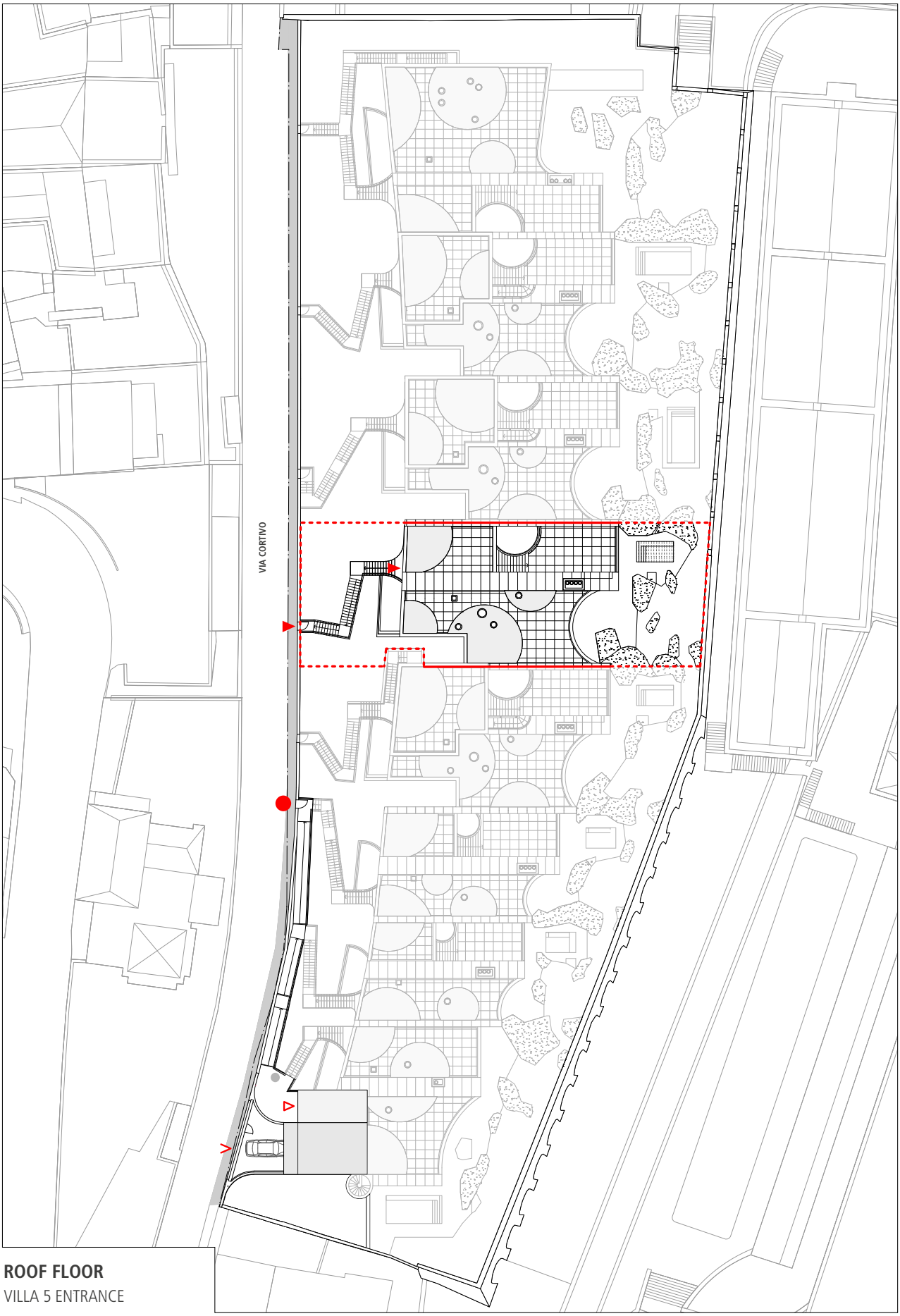

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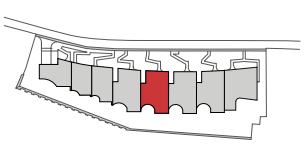
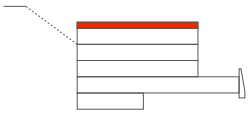
VILLA 5 ENTRANCE





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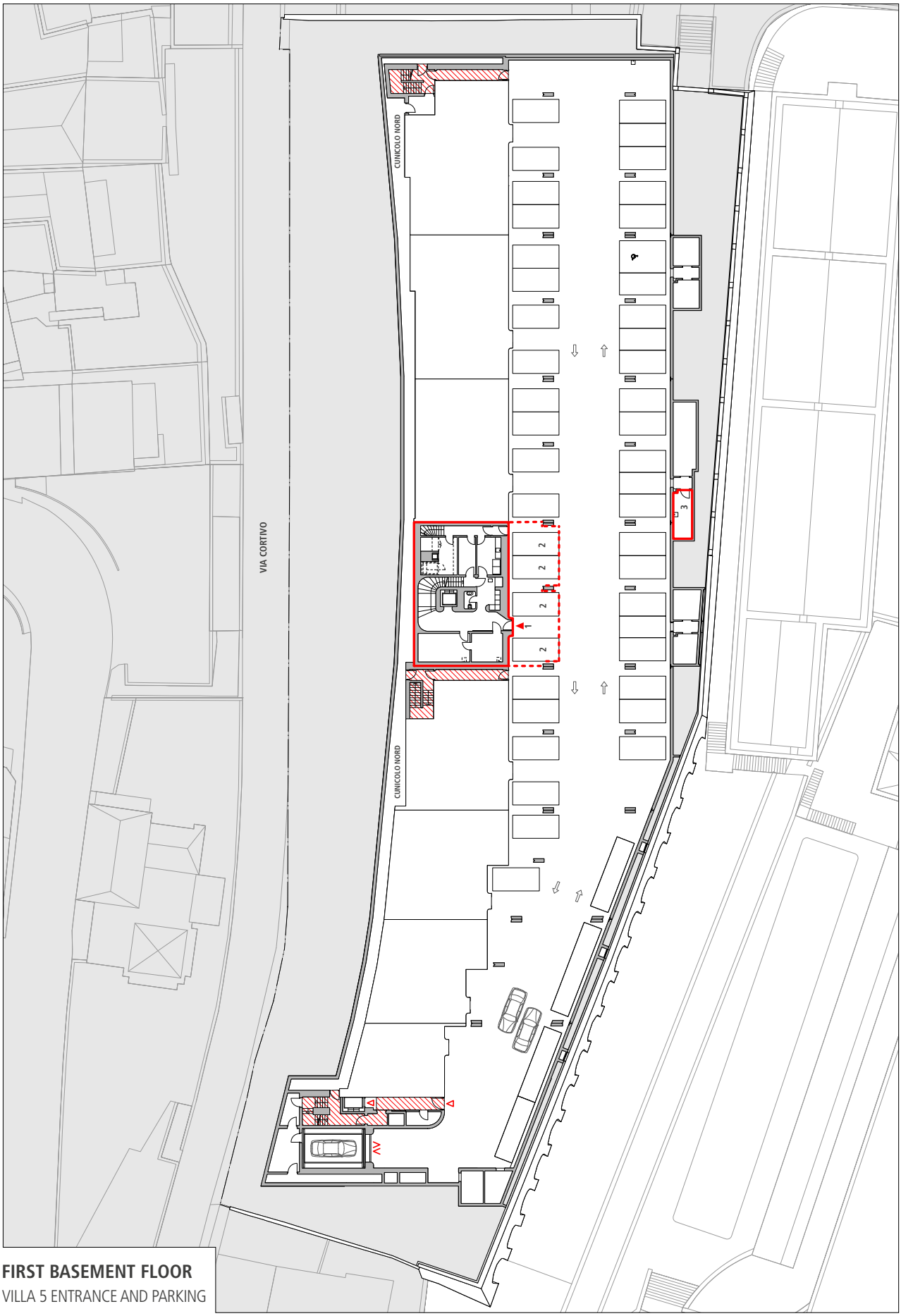

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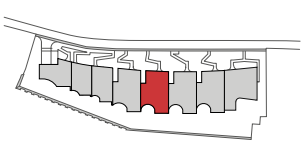
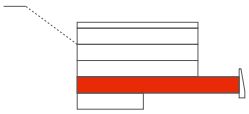
VILLA 5 ENTRANCE AND PARKING





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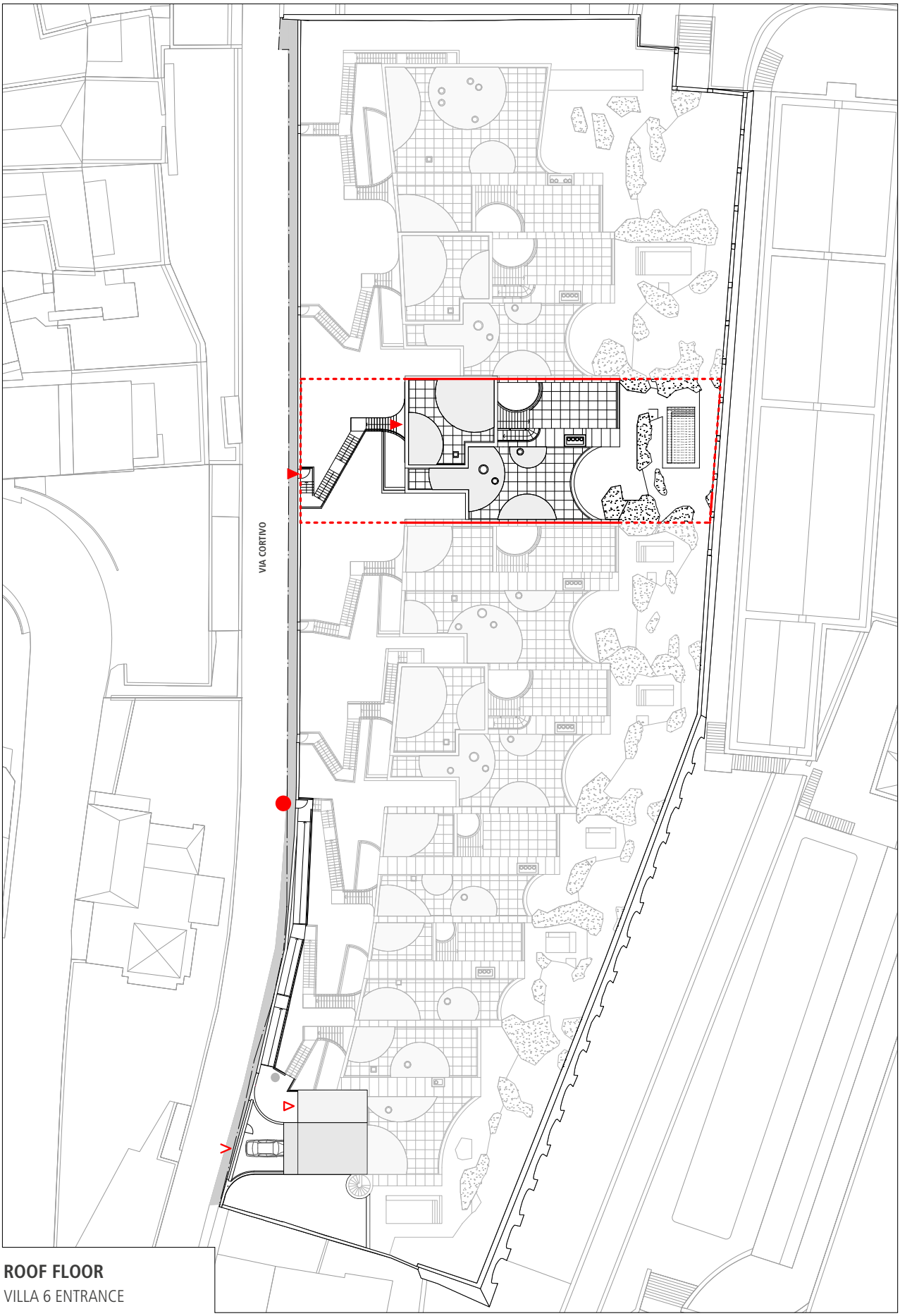

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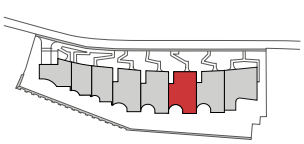
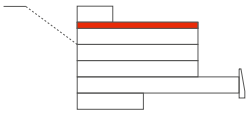
VILLA 6 ENTRANCE





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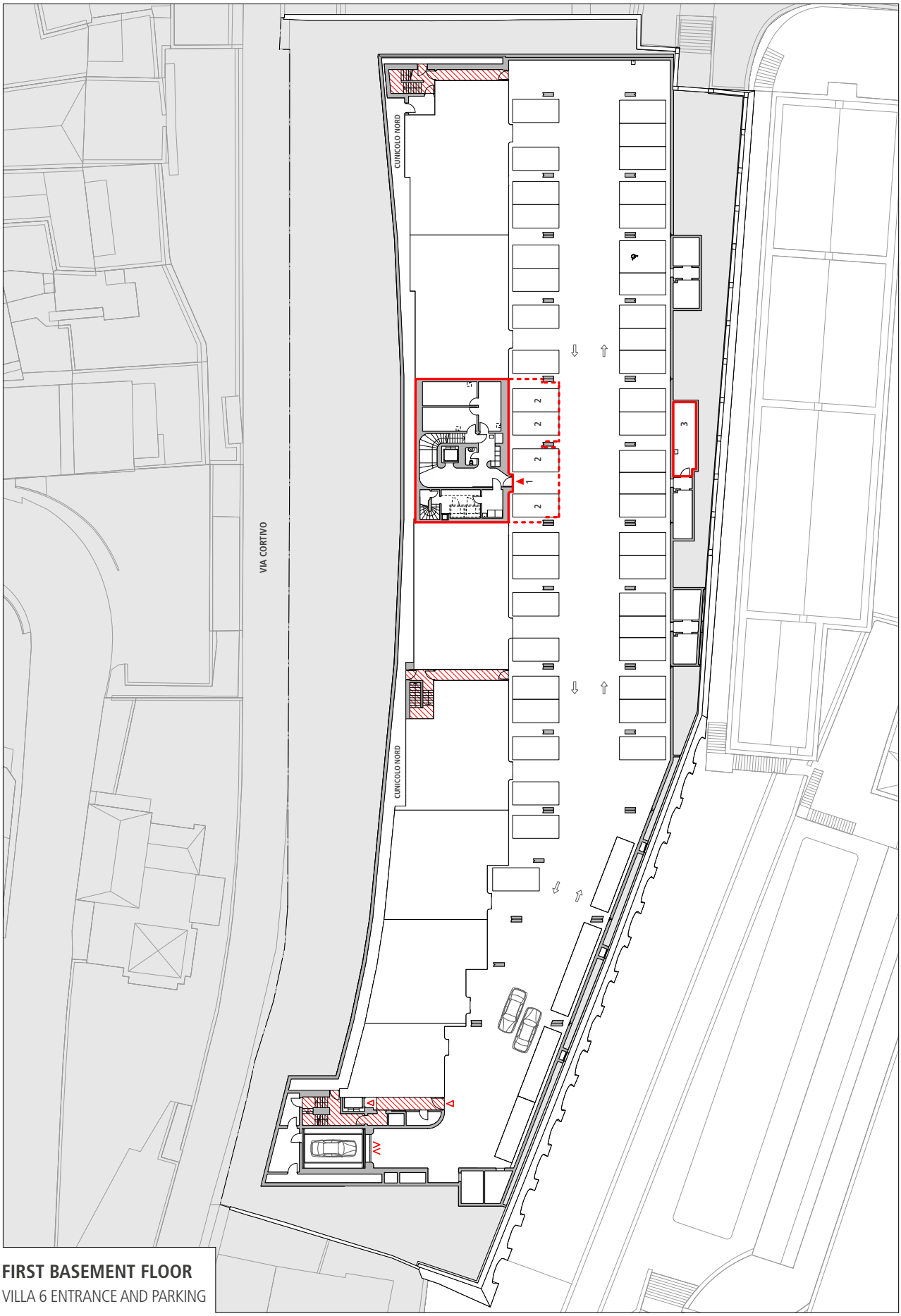

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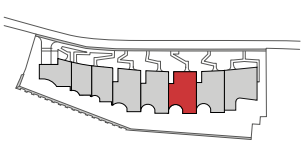
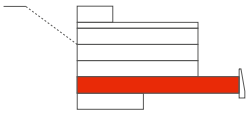
VILLA 6 ENTRANCE AND PARKING





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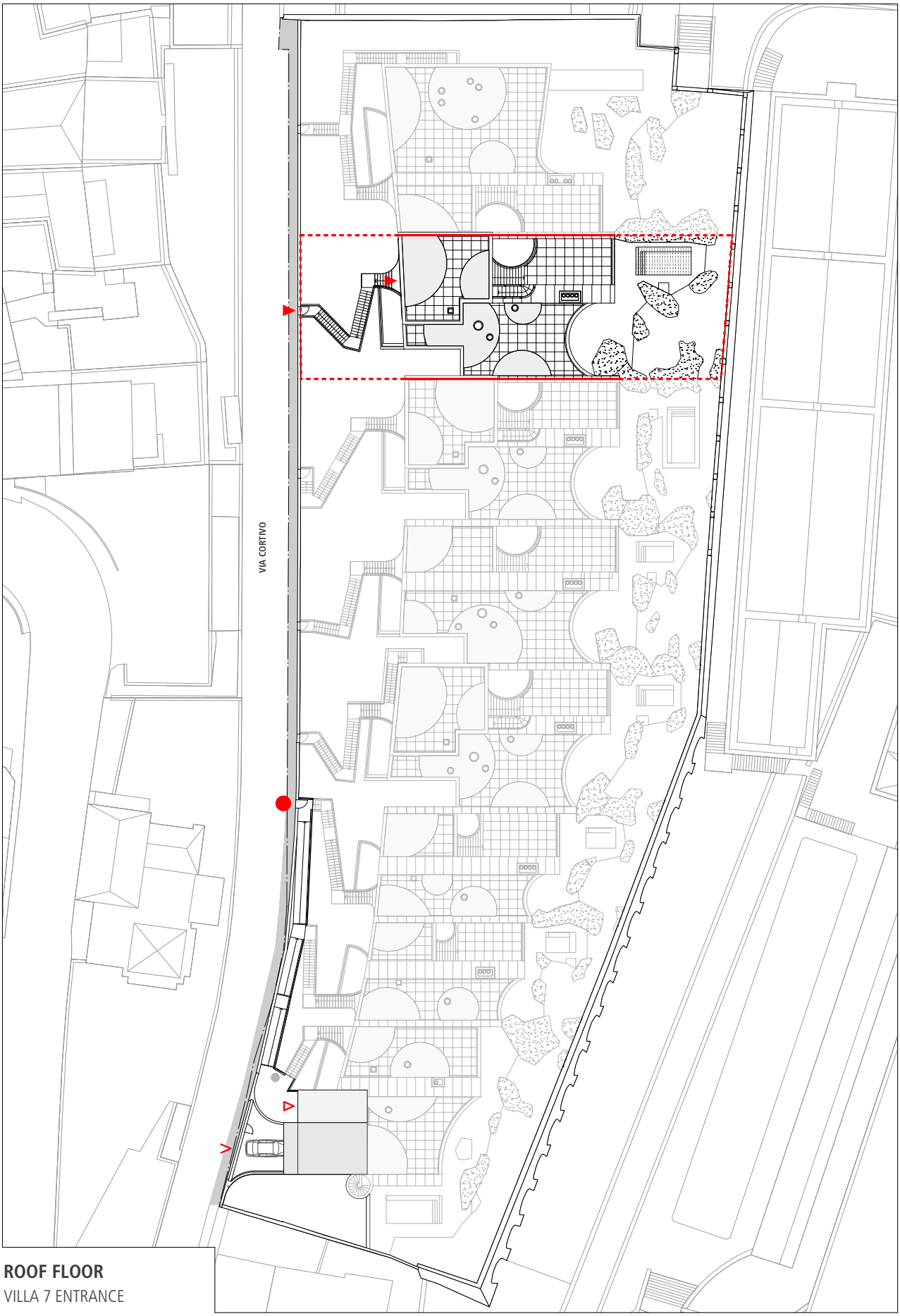
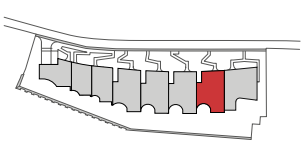
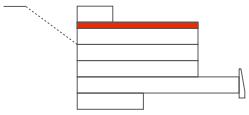


ROOF FLOOR
VILLA 7 ENTRANCE





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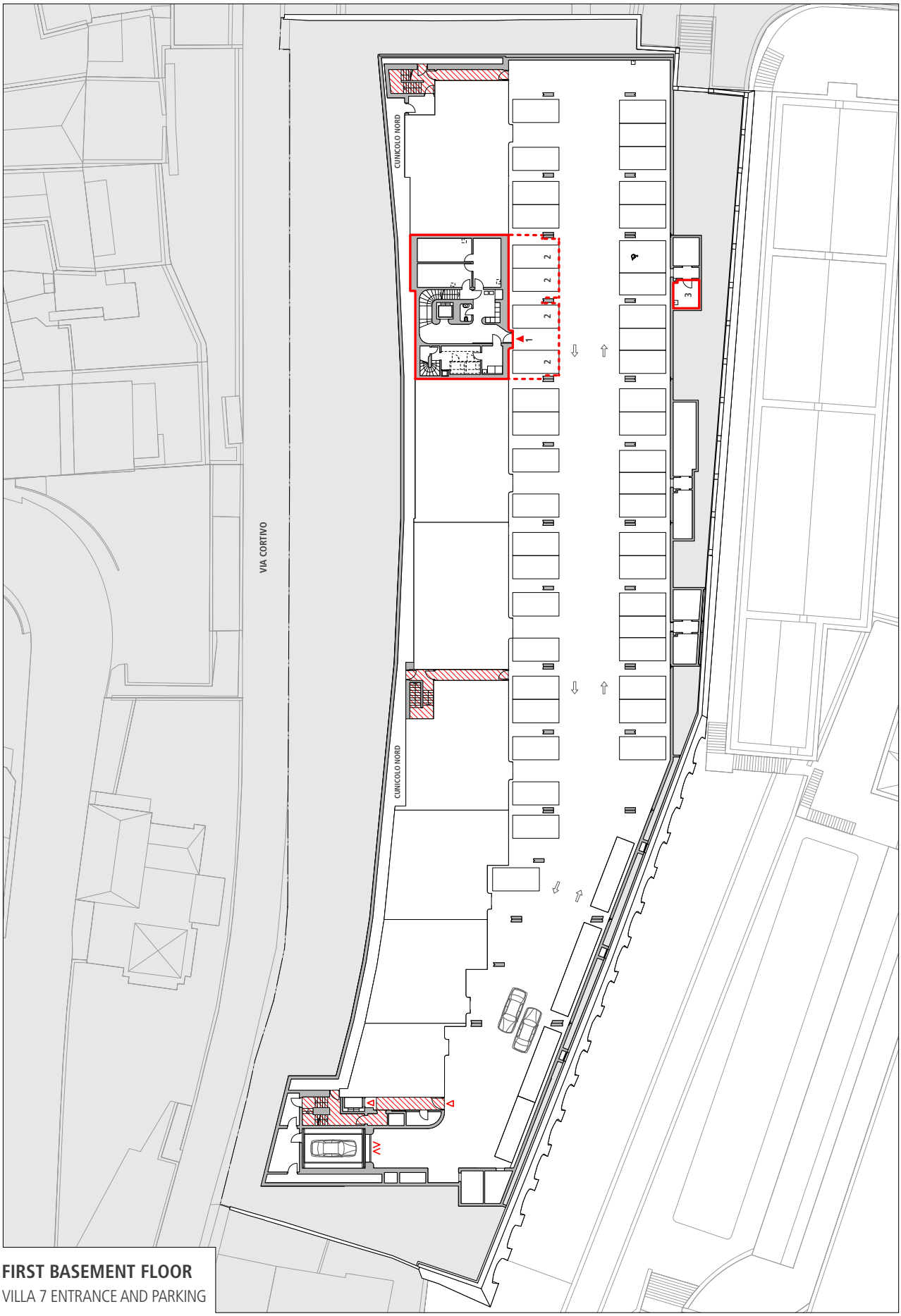
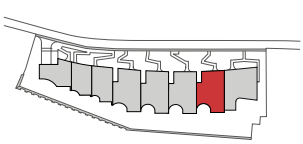
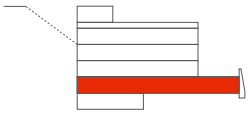


FIRST BASEMENT FLOOR
VILLA 7 ENTRANCE AND PARKING





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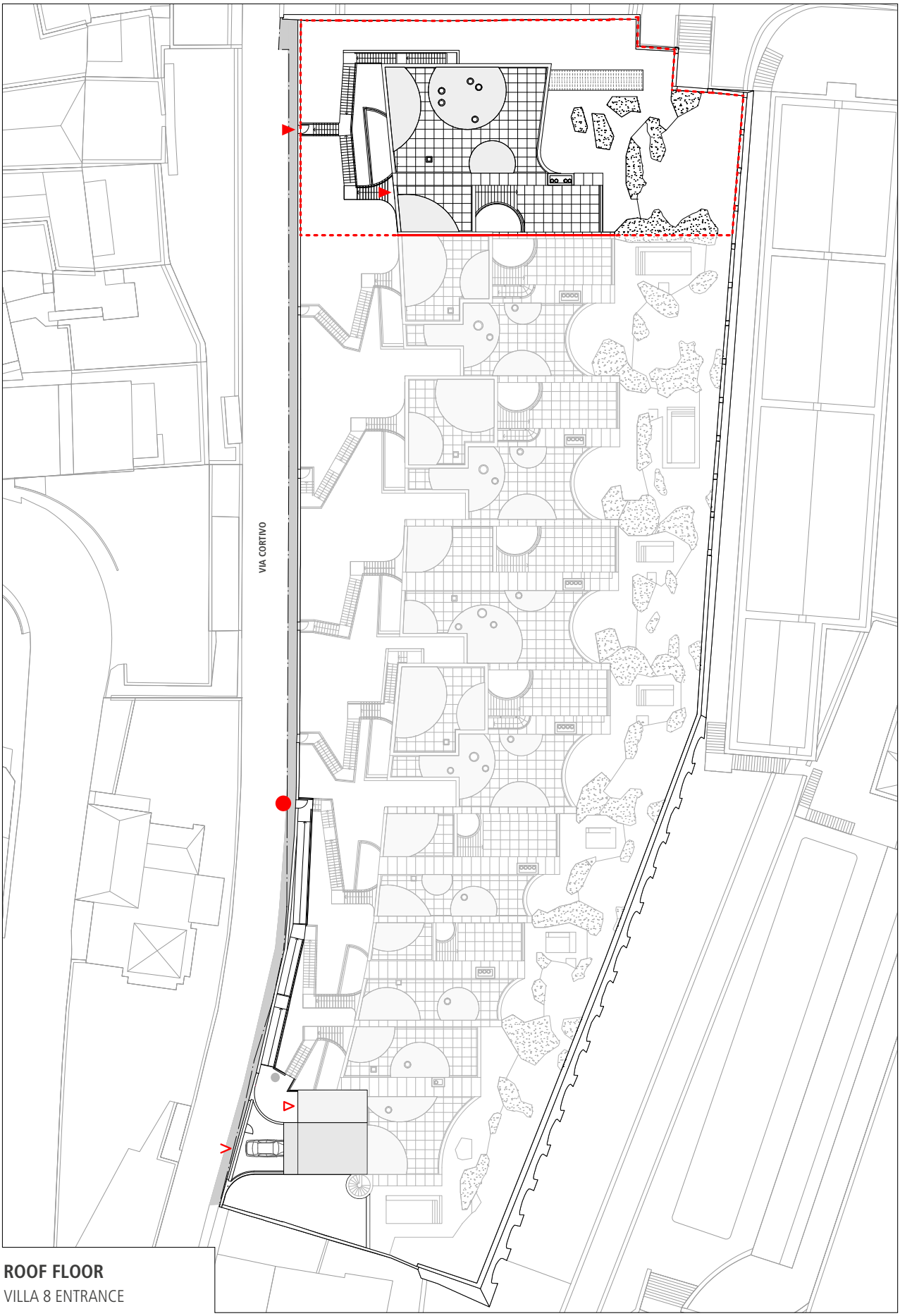
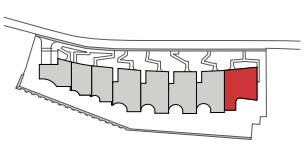
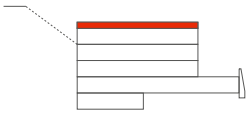


ROOF FLOOR
VILLA 8 ENTRANCE





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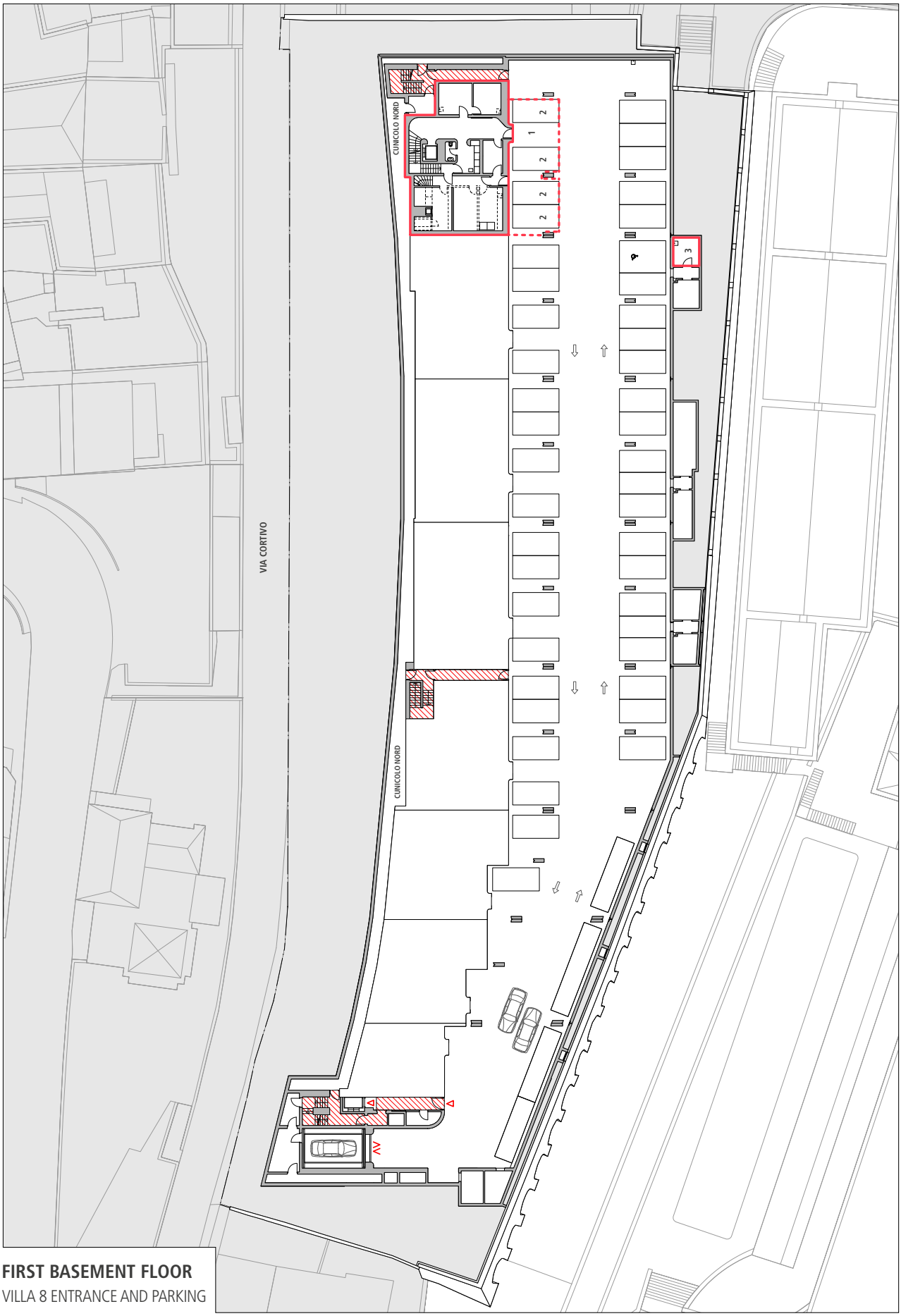

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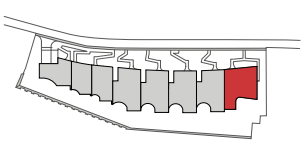

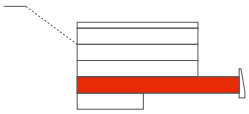

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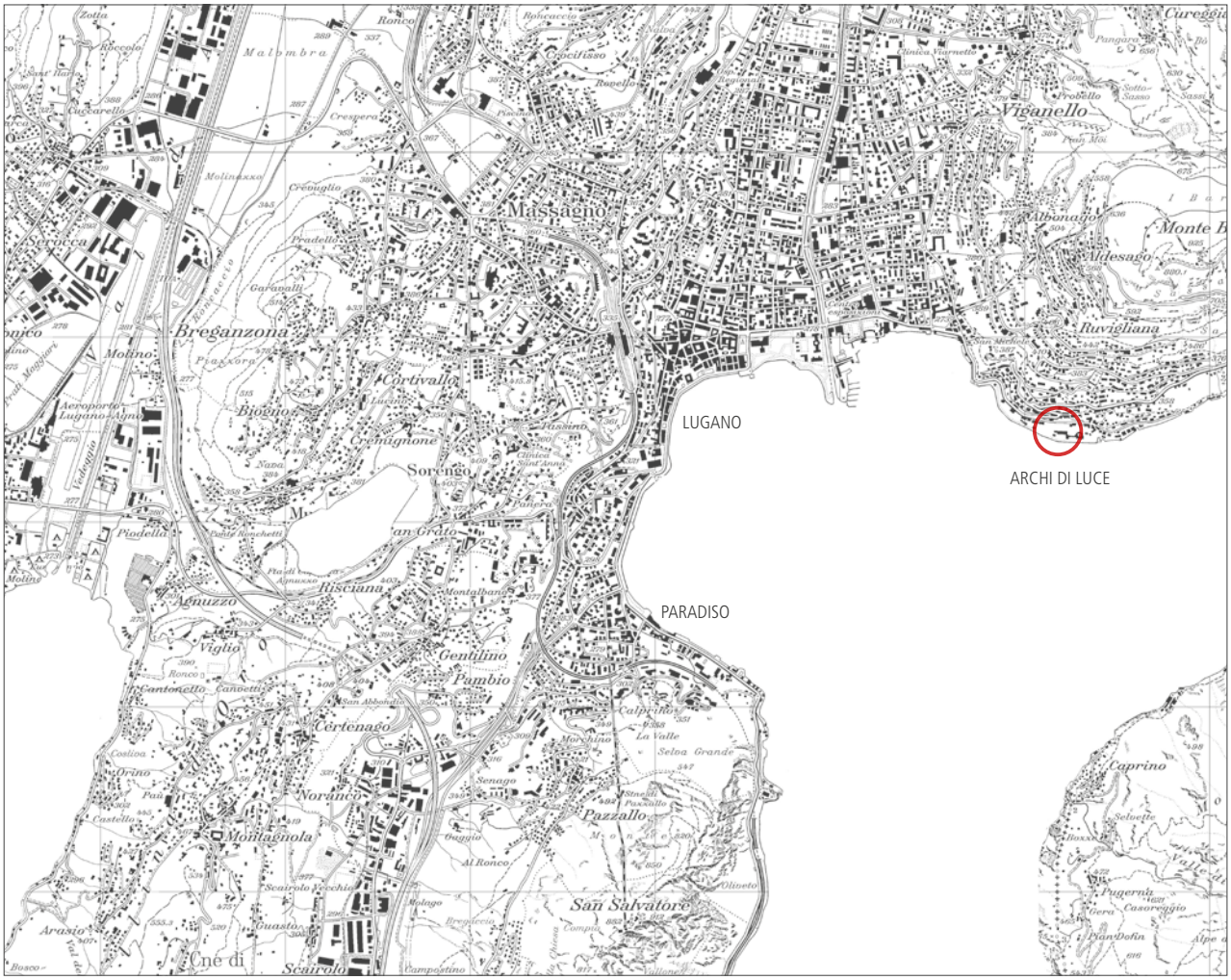
ARCHITECTURAL CONCEPT



LAND AND SITE

The land on map section N. 1747 is located in Lugano, Castagnola, at Via Cortivo 6 and is a terrace within the Villa Favorita area.

LOCATION
VILLA FAVORITA

The Villa Favorita area of Lugano is a historic seventeenth century park extending of 45,000 sq m on Lake Lugano at the foot of Monte Bré. Thirteen romantic period buildings stand in the park area which were built between 1687 and 1932. The eclectic style of these buildings is also characteristic of the architecture of Ticino of a kind that can also be seen with other famous villas on the shores of the lakes in northern Italy. Originally built as an independent group of villas, today the Villa Favorita area is surrounded by buildings of more modern construction dating from the latter half of the twentieth century. This is typical of a monumental building process in the Ticino region that is a result of the magnetic attraction of Lugano as location for second homes and as a financial district. Map section 1747 of Castagnola is a piece of land that until recently belonged to the grounds of Villa Favorita. A supporting wall completely covered in vegetation creates a terrace and a garden, which were used in the past by Villa Favorita for a swimming pool. Just below this wall can be found the famous eighteenth century Casa Glorietta and the art gallery built in 1932.

ARCHI DI LUCE
A TERRACE OF
8 INDEPENDENT VILLAS

The residential complex is made up of eight individual but adjacent Villas, all with lake views. The body of the construction as a whole follows the lie of the land, while the arrangement of the individual villas meaning that each has its own privacy and the individuality of each is properly emphasised. The buildings are on a north south axis while the two end villas enjoy the advantage of their special positions to also take in the east and west.
Instead of a large block of apartments, we offer a new type of housing that is inspired by the Villa. All the villas have in fact access to the garden and have terraces at different levels.

OVERLAPPING GEOMETRIES

The supporting walls perpendicular to the slope form the fundamental order to the project. Overlapping this orthogonal line are horizontal and vertical circular openings that form arches and inner courtyards to create geometrically complex external and interior spaces with interesting plays of light and shade. The resulting architecture has that eclectic style referred to that is so characteristic of the Lakes Region, but without slavishly copying it. Even small service spaces like the lifts, bathrooms and utility rooms contribute to the geometry of the circle; with the result that the main rooms penetrate each other rather stand alone.

DRAMATIC TOPOGRAPHY

The northern boundary is Via Cortivo, a secondary road that links with Lugano with the Gandria pathway. Each Villa is accessible from the road or by way of the joint underground garage. The densely forested slope drops steeply from the road and includes protected trees as well as trees that hide the new buildings from the view of others.
The southern side of the property is a flat garden area that enjoys lake views. Each of the villas thus extends from this terrace over three or four floors. They rise abruptly upward as they cling to the hillside to provide spectacular views. They form a cascade that creates diagonal views through the whole house, from the lake to the mountains, and is reminiscent of the typical steps of the Ticino region. The living areas of the villas are located at garden level while the bedrooms are on the upper floors.

BUILDING MATERIALS

The reinforced concrete supporting structure is faced with a mineral plaster. The windows are teak, some with large surface areas. They are recessed into the main structure and are protected by overhanging balconies and arches. The second floor roofs and terraces are covered with stone or covered with vegetation. Blinds and fabric rollers provision further shade from the sun. The combination of different natural materials mean the structures sit well in their genteel setting.

LANDSCAPING

To the northern side, on Via Cortivo, the trees and bushes sacrificed during construction have been replaced, while the protected plants have been maintained. To the south are planted tall trees to give shade without blocking the view. Their size will be similar to that of the trees in Villa Favorita. Curved screening and hedges ensure the privacy. The exterior is designed by the landscape architect Michel Desvigne who has ensured the project blends harmoniously with the Villa Favorita parkland.

VIA CORTIVO

The special nature of the area of Villa Favorita, rising up to the road, is maintained in the new project. For this reason it has been suggested that the existing wall and railings with their metal gate on a curb should be replaced. An exception is however made for the massive plastered concrete parapets that enclose the sides of the vehicular car lift entrance. The construction of the fence is in clear modern vein (image 1), avoiding any historical references. It does however have an additive geometry and in this sense reminds us of the formal language of the existing wall along via Cortivo (Image 2). At the same time its slender and stylish design finds a reference point in the historical wrought iron (Image 3). The cubed features of the fence prevent a perception of its depth and its size. Only with the front view can filter through to the eye. The Villas are however still l protected from prying eyes by the lush vegetation that rises from the slope between the road and the buildings themselves. The individual entrances from Via Cortivo are discreetly integrated to the design to leave the continuous image of the railings unspoilt.

1. Example

2. Via Cortiva wall

3. Door with iron grating in Villa Favorita

COLOURS

The Villas have two main colours. The facades' colouring has been specially selected for this project, while the white of the interiors extends to the terraces and balconies to create an interesting twin colour effect.

LANDSCAPE CONCEPT

LANDSCAPING CONCEPT

The residential complex "Archi di Luce" is a part of the Villa Favorita area which is characterised by lush and exceptional vegetation The quality of the landscape has been preserved while in addition gardens and terraces have been created that interact with the personality of the location. The areas where there has been particular intervention are that of the garden along Via Cortivo, the south garden and the terrace-roofs.

THE NORTH GARDEN

Along Via Cortivo there are majestic trees of the kind to be find in such adult parkland as that of the grounds of Villa Favorita. The main species are the Atlas and the Himalayan cedars. The "natural" pre-existing environment has been reconstructed here. This is also essential for the creation of the screen of greenery that provides the property with its privacy. The planting has been organised as follows:

- Large trees that reinforce and complete the adult tree structure.
- Middle-sized trees with immediate effect to re-establish the screen
- The pre-existing vegetation along Via Cortivo.
- Small cedars to ensure the perennial nature of the wood and prepare for the renewal of the adult trees.
- Evergreen shrubs to complete the undergrowth layer.
- Green ground cover to protect the land and make it resistant to erosion.
- The steps that provide access to the Villas flow over the natural environment almost without touching it, where their geometry has been designed to weave around existing trees and limit views of the adjacent Villas.

THE SOUTH GARDEN

Villa Favorita's grounds extend in a line along the shores of the lake. The South garden reflects the linear development that is open to the land and to the landscape. The space has been conceived as a unique feature in direct continuity with the rest of the park. Each Villa has its own clearly bounded and private part, while the garden design is a unified and flowing whole that means that the residents can feel they are set in the huge parkland of Villa Favorita. The large trees provide a foreground that filters the view of the Villas, thus perpetuating the close relationship that exists in the grounds of Villa Favorita between the trees and the buildings.

The dominant species is the pine Pinus pinea. Firstly because it partakes of the "Mediterranean" image that historically characterizes this region, and then because their habit leaves great transparency beneath their foliage. Their arrangement is naturalistic and non-geometric in its organisation. They frame certain viewpoints of the landscape from within the housing area. The crowns of these trees give shade and coolness to the garden and to the Villas without interrupting the views of the lake.

The gardens are made up of paved areas with large flagstones up against the Villas, completed by a lawn to the south in the direction of the lake. Groups of shrubs, selected for their colour, longevity of foliage and their blooms, creating drapes of different heights according to a careful composition for perspective and function:

- Particular attention has been paid to the views from inside the building: the swathes of bushes overlapping on different planes to create the presence of greenery that emphasises the depth of the garden as it merges both with the landscapes of the mountains and the lake.

- The taller shrubs are to be found on the boundaries between the various properties and ensure privacy by limiting visual contacts between the Villas' gardens. There is tubular metal fencing concealed between the masses of vegetation to ensure physical separation between the various properties.
- The overall prospect of the shrubs organise the space according to the different uses of the parts of the garden. A great table stands in the loggia or on the lawn, a lounger can be seen shaded by the greenery and the shadows of the trees or else in full sun, depending on the season or the time day, whether standing alone or one of many among a group of guests.

THE ROOF TERRACES
THE FIFTH FACADE

In contrast to the luxuriance of the plants on the north and the Mediterranean southern garden, the roof terraces linked to the architecture of the building are joined up to form a single face, the so-called fifth facade. The neat and selected habits of the plants of different volumes are arranged within geometrical designs that hide the basic circular shape.
The roof terraces are not for walking on.

THE PLANTING

North planting: Large trees consisting of Himalayan and Atlas cedars, evergreen magnolia, holm oaks and cypresses are accompanied by a selection of evergreen shrubs and deciduous flowering plants of mostly light shades.
South planting: Of the large trees, the pine stands out with its horizontal and half-domed crown accompanied by the presence of oaks and cypresses.
Tall evergreen shrubs provide thick greenery and the camellias (both japonica and winter) have decorative blooms that range through pink and white.
Medium and low shrubs (including some similar species of tall shrubs) maintain the bushy evergreen theme with the addition of fragrant osmanthus whose delicate perfumes fill the air in late spring, early summer and the autumn.
Roof terrace planting: Very compact ground-covering sedum complete the architectural design.

GARDEN GATES

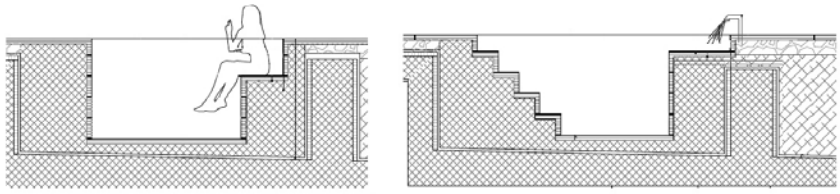
There are gates between the villas' gardens, set in the tubular railings and intended only for use in garden maintenance.

IRRIGATION

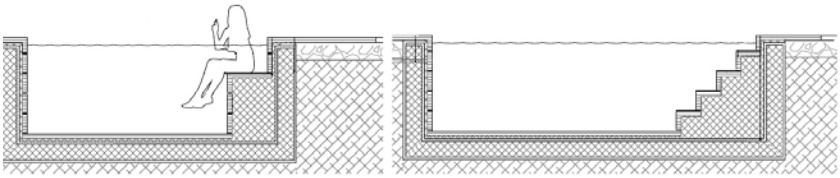
The automatic irrigation system serves the Villas' south, north and roof gardens and is controlled from a central control unit. For each Villa there are also outdoor frost resistant taps, located in the south garden, the north garden, the inner courtyard, the roof terraces and the north lightwell.

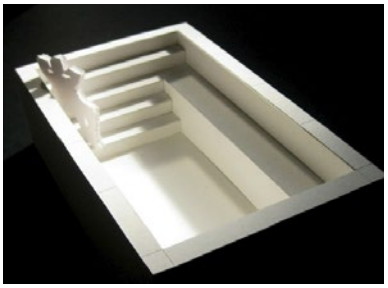
SWIMMING POOLS

Types of swimming pools

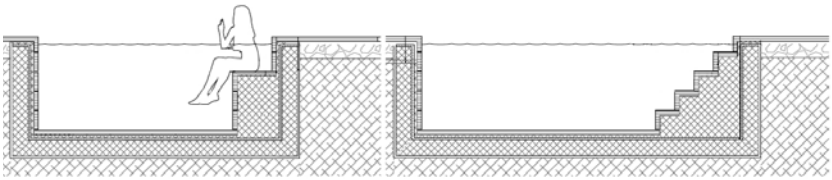


Type 1 swimming pool: villas 2 and 3





Type 2 swimming pool: villas 4 and 5

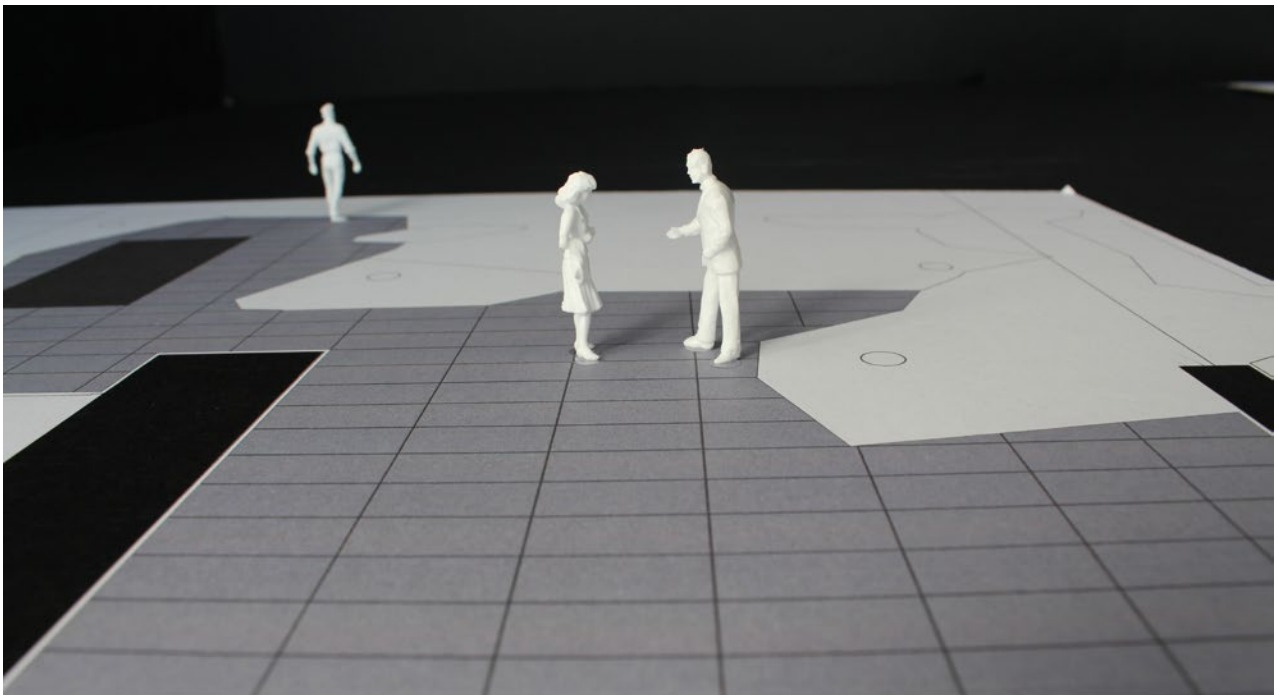


Type 3 swimming pool: villas 1, 6 and 7

Special features: The swimming pool has an endless pool for swimming against the current, air jets from the seat and water jets from the wall. LED lighting is incorporated.
Covering: Automatic slats pool covering with guards to prevent children or animals falling in, while providing heat insulation to maintain water temperature.
Controls: A central control unit for the monitoring and control of the pool.
Disinfection: The swimming pools are disinfected by means of a salt electrolysis process.
Additional details: See the plans and manuals of accessories and equipment.

GREENERY AND STONE

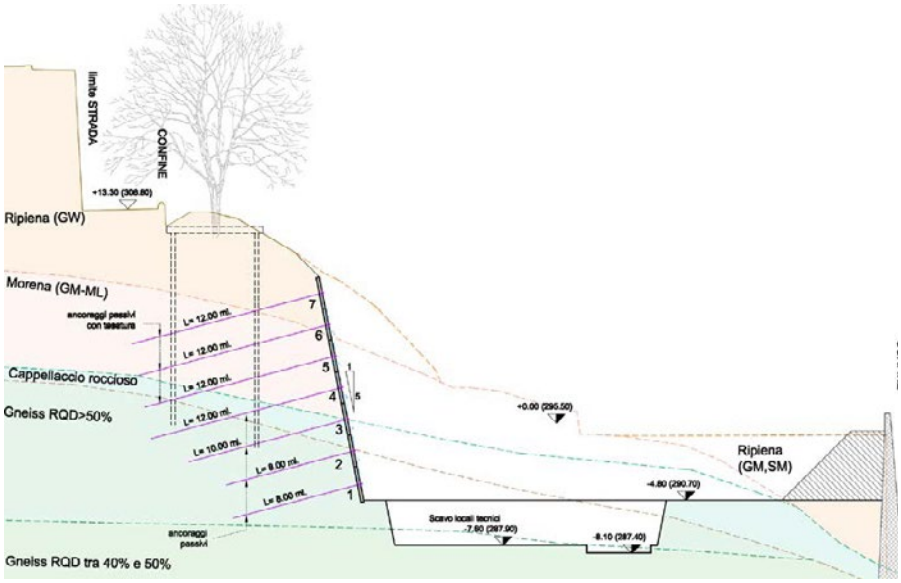
The garden is divided into two distinct mineral and natural surfaces. The flagged areas, which include the individual pool area, are made up large natural stone slabs cut to rectangles. The natural stone feature extends from the garden to all the outdoor areas like the balconies, terraces, steps, courtyards and roofs.



THE STRUCTURAL CONCEPT

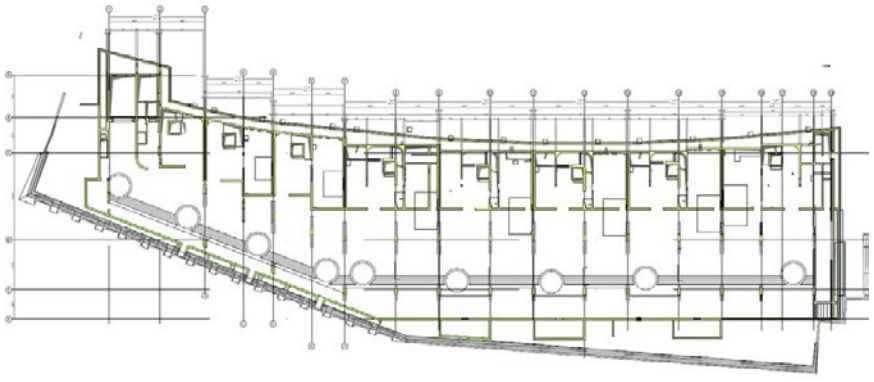
STRUCTURAL CONCEPT

The building's supporting structures are made entirely of reinforced concrete. The structural concept is the same for all the dwelling units.



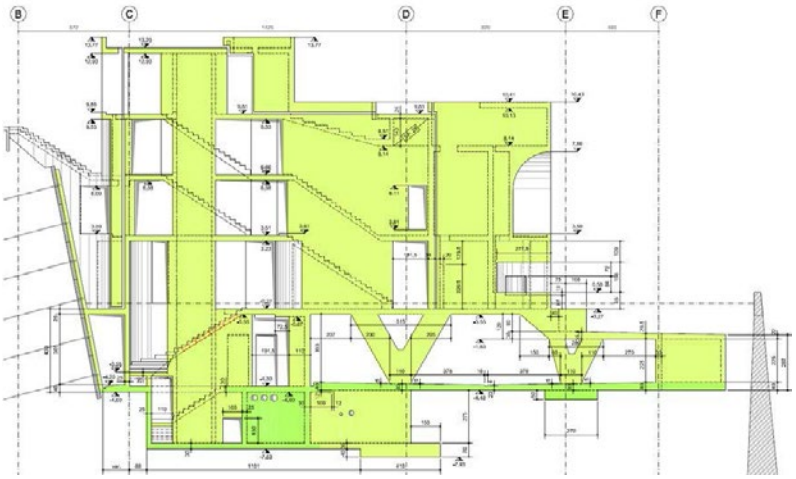
Section of the general excavation.

The foundations generally reach the bedrock and so are shallow foundations with local deep areas where there is greater loading. Where the foundations do not reach the bedrock, micro-pile foundations have been employed.

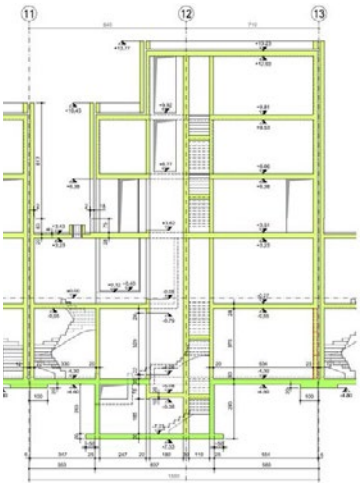


Garage plan

The garage roofing rests partly on pillars and beams running across load bearing walls. The foundations of the basement and the related lowered structures have no expansion joints.
The structures above the building, at the cut-away face, respond to the major pressure of the terrain and disperse it to buttressing building walls at right angles to the cut fact. From these the forces are directed back into the underlying foundation ground.



Long section of Villa



Cross section of Villa

The floor slabs rest mainly on wall bearing elements and in general make up a static system with one or two spans respectively.
The floor slabs are made of partially prestressed reinforced concrete.

The horizontal loads acting on the building (such as the pressure of the terrain as described above, the wind or seismic activity) are taken up by the longitudinal and transverse load-bearing walls. On the upper floors, given the scarcity of cross walls, the horizontal loads are partly reflected by the frame system of elevations and floor slabs.

THE PROJECT'S ENERGY AND ACOUSTIC PRINCIPLES

INTRODUCTION

This report summarises the fundamentals of the energy and acoustic design of this project. The aim is to provide an overview of the technical design from the point of view of building's physics and the questions of comfort and privacy. The two main areas considered are the building's shell and the technical installations which together work to produce Villas of very high quality.

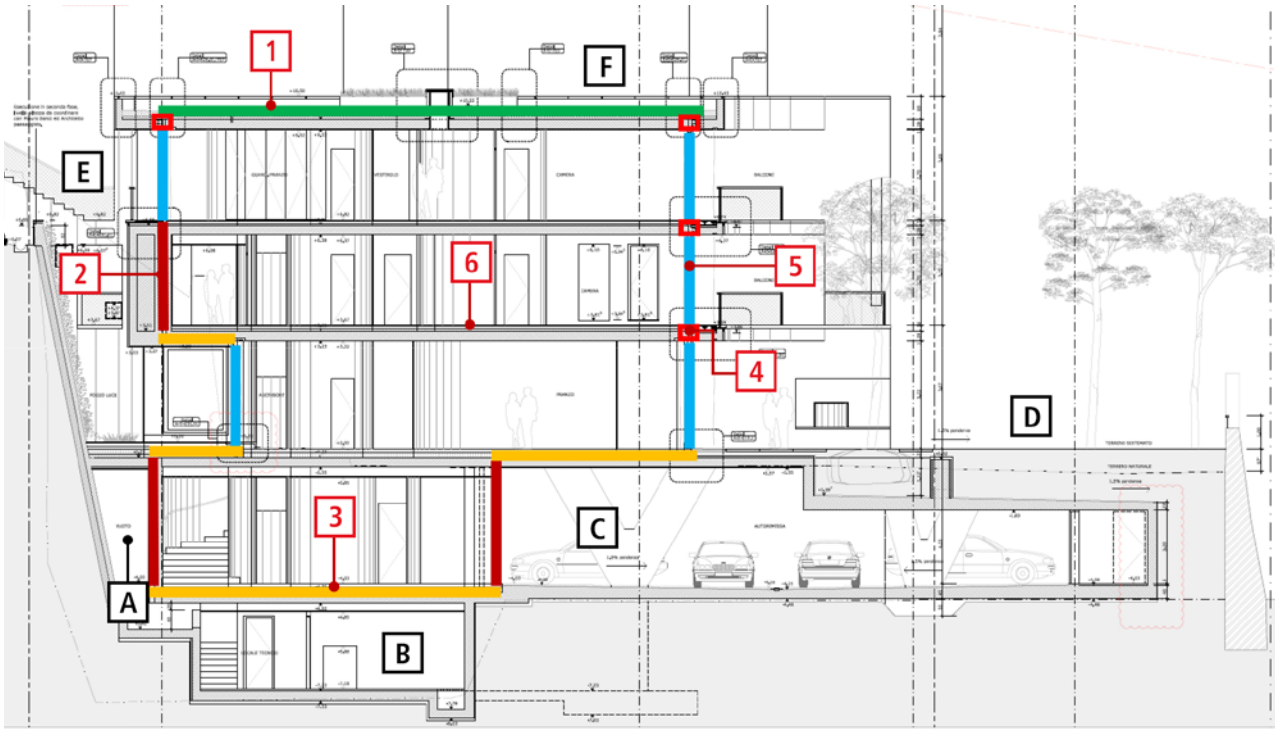
ENERGY

ENERGY AND COMFORT PLANNING

The land runs north to south. The Villas present large glass surfaces to the south with lake views for best exploitation of the sun's rays. On the north side are the utility spaces that separate the Villas from the terrain (the north passage) to create a technical area between the Villas and the rock wall behind. The energy concept underlying the project ensures good heat insulation (based on the regulatory requirements for energy according to RUEn: 2009), combined with a large mass for the accumulation of heat and coolness in the form of the reinforced concrete building elements such as the perimeter walls, floors and roofs. The buildings' systems best exploit the renewable energy sources to heat and to cool the Villas to the maximum comfort of the final resident.

THE SHELL

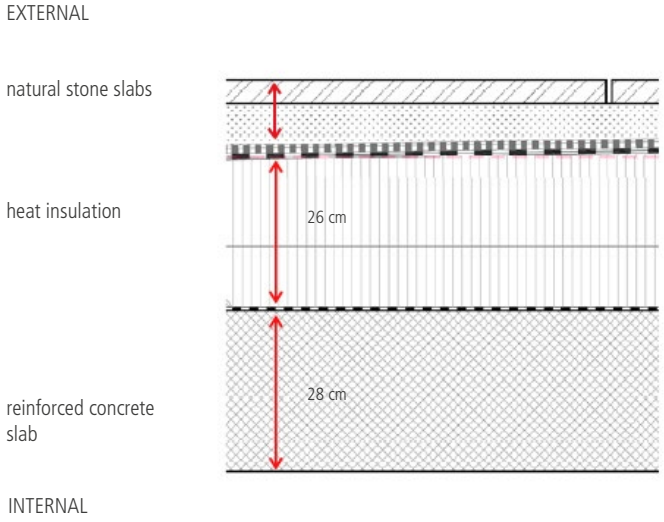
There follows a brief description of the elements that form the shell of the buildings.

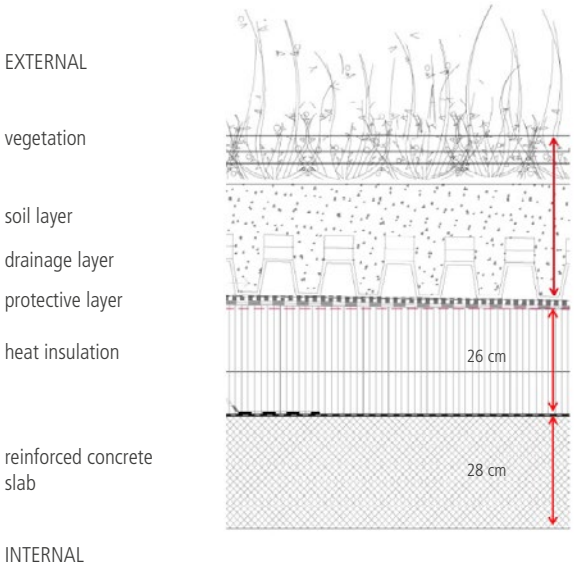


Cross section
A. Technical space
B. Second basement floor
C. First basement floor
D. Garden
E. Second floor entrance
F. Roof terrace

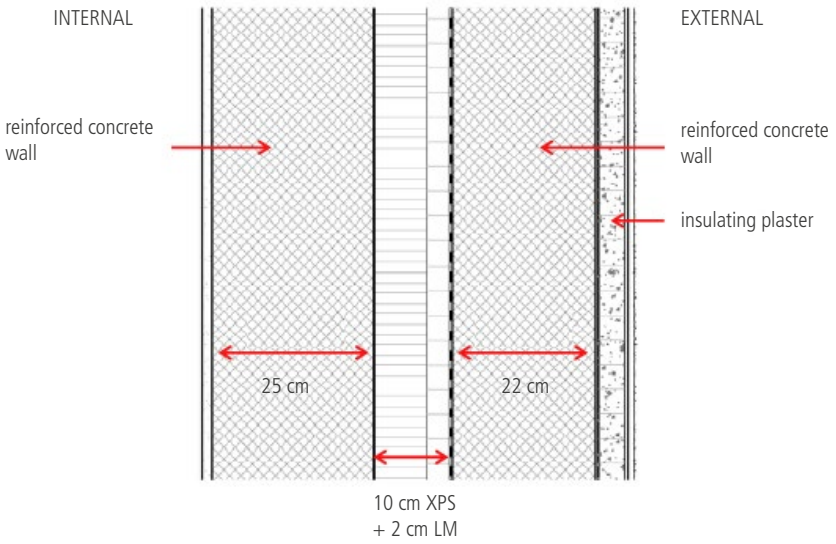
See chapters
1. Roofing
2. External walls
3. Flooring to outdoor or unheated rooms
4.Thermal breaks
5. Doors and windows
6. Internal divisions

1. Roofing - A reinforced concrete slab with high level of external thermal insulation, being of a thickness of 26 cm. The result is very good heat management both in winter and in summer. The roofing areas employing greenery also help to keep the Villas cool in summer.



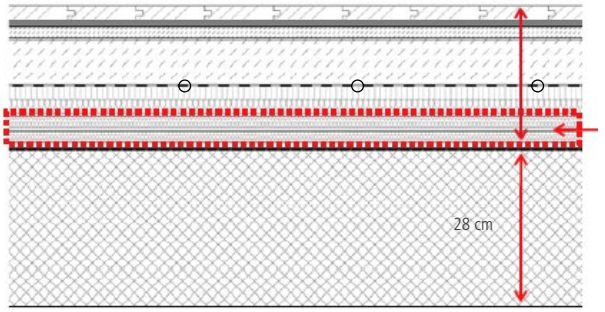


2. External walls - They are made up of a double reinforced concrete wall with two layers of interposed insulating material. The first of these is a 10 cm layer of extruded polystyrene foam and the second is 2 cm of mineral wool (LM). On the outer surface is a 4 cm layer of insulating plaster and s in overall terms provides good thermal insulation in winter and in summer with excellent shielding from external noise.



3. Flooring to the outdoors or to unheated rooms - All the floors towards the outer or unheated rooms are insulated with highly insulating materials.

INTERNAL



Burma teak

heat insulation with high power insulation (low thickness for insulating capacity)

reinforced concrete slab

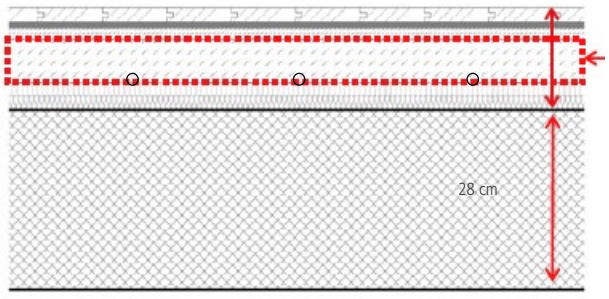
EXTERNAL

4. Thermal breaks - The project ensures the continuity of the insulating layers with the use of thermal breaks inserted into the reinforced concrete structures to ensure the absence of thermal bridges.

5. Doors and windows - Made with wooden frames and triple-glazed low-emission glass. The glass chambers are a good compromise between the sun screening effect and colour rendering, i.e. not altering the perception of the outdoors. An effective system of external blinds (south side) stops the Villas from overheating in summer.

6. Internal partitions - These are made from reinforced concrete to form heat storage during the winter and coolness during the summer, helping to keep room temperatures constant.

INTERNAL



Burma teak

heat / cool radiating floor

reinforced concrete slab

EXTERNAL

TECHNICAL PLANT
HEATING AND COOLING EQUIPMENT

The generation of heat and of cool air is handled by an independent system for each Villa. Each consists of a high efficiency reversible heat pump using condenser water from the lake. In winter, the system produces heat by taking water from the lake and raising it to heating temperature as well as using it for domestic hot water. For cool air conditioning in summer conditions, the heat extracted from the Villas is introduced into the lake water.

HEAT DISTRIBUTION

The Villas are equipped with a radiant floor system that can heat and cool the building, (not including technical rooms at the second basement floor, with the exception of Villa 1). This system ensures pleasantly constant and uniform temperatures. Each room can be individually temperature-adjusted.
Further data: See detailed plan.

CONTROLLED MECHANICAL VENTILATION (SWEET AIR)

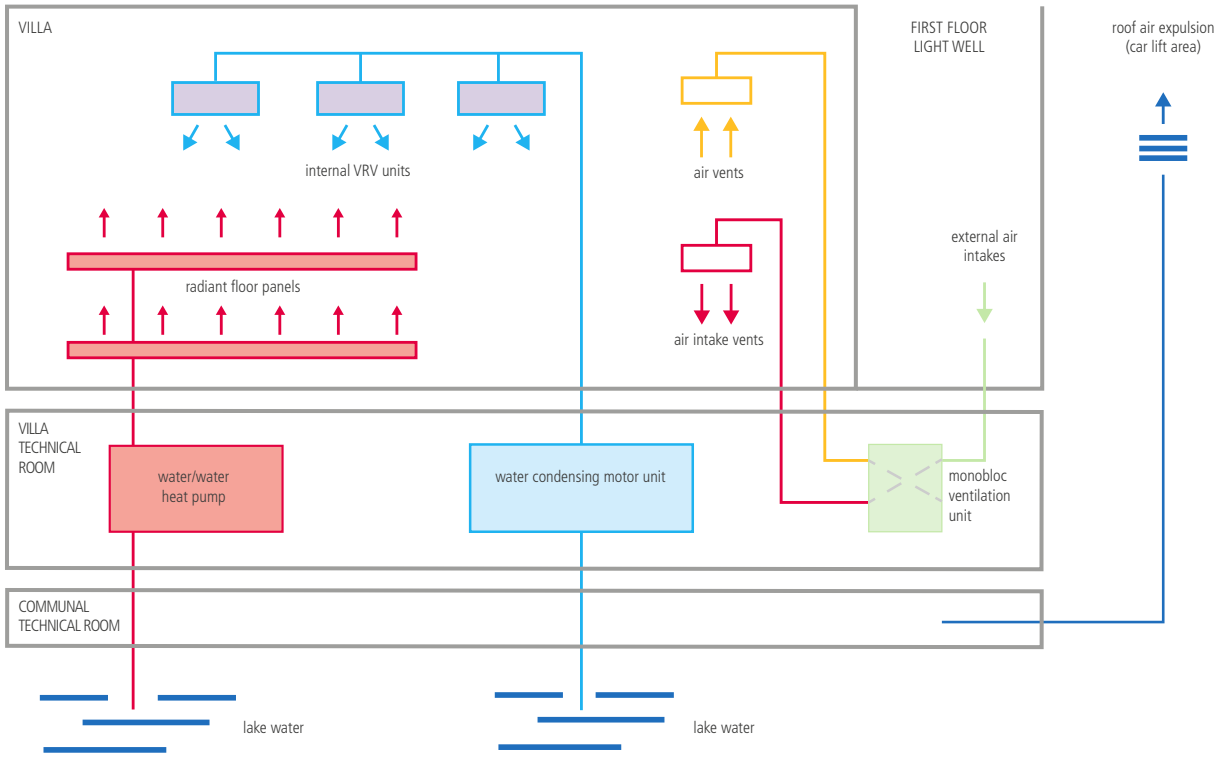
An autonomous system of controlled double flow mechanical ventilation with high efficiency heat recovery ensures the airing of each Villa.
The main advantages of this system are:

- High indoor air quality: incoming fresh air is filtered to remove external pollutants like pollen, smog and dust; indoor air is expelled with any household odours, mites and household dust.
- Thermal comfort and energy efficiency: thanks to the heat exchanger, the heat of the exhaust air is recovered and transferred to that entering. Mechanical ventilation ensures effective continuous air replacement without the doors and windows having to be opened.

AIR CONDITIONING

There is an independent VRC air conditioning system for each Villa (Variable Refrigerant Volume) that consists of a water-cooled condensing unit and multiple indoor units connected by a hydraulic circuit. The indoor units can work separately from each other for completely flexible use.
Further details: See detailed plans.

RCV system



The equipment is discreetly housed in the rooms in cupboards or sunken ceilings. The classic Daikin VRV system is used. The sound levels from the equipment is limited to from 25 to 35 dB(A) at 1 metre distance. The air-conditioning equipment uses coolant gas and is connected to a single system cool air production plant.
The central air conditioning system is installed for each villa in the technical room on the second basement floor and is cooled using lake water and so with no external apparatus that could produce noise.
As well as having controlled ventilation systems, the technical rooms also have extractor fans controlled by contract, light and timers.
For further detail: see detailed plans.

HOT WATER PRODUCTION

Hot water production makes use of large capacity stainless steel storage systems to avoid excessive heat pump power needs. These storage units are able to assure the needs of the buildings are covered with minimum use of heating power, with a capacity per building of 1,000 litres.

GARAGE VENTILATION SYSTEM

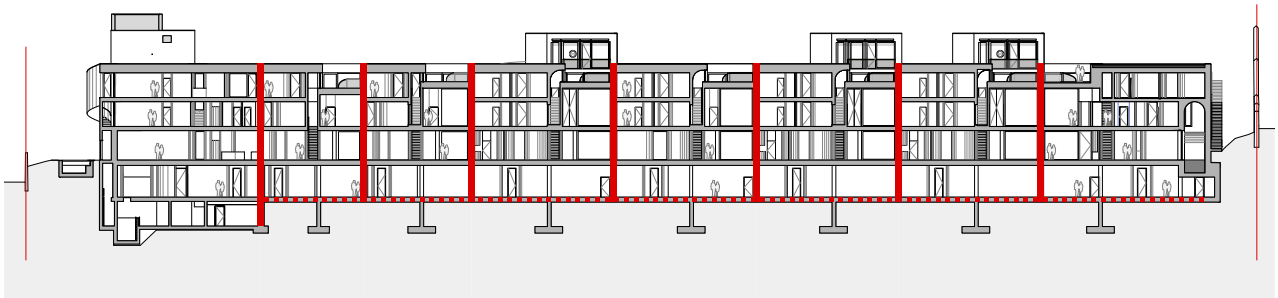
The garage is equipped with a controlled mechanical ventilation system to maintain air quality in this area and particularly any concentration of carbon monoxide gas, as well as to, as far as possible control the ambient temperature.

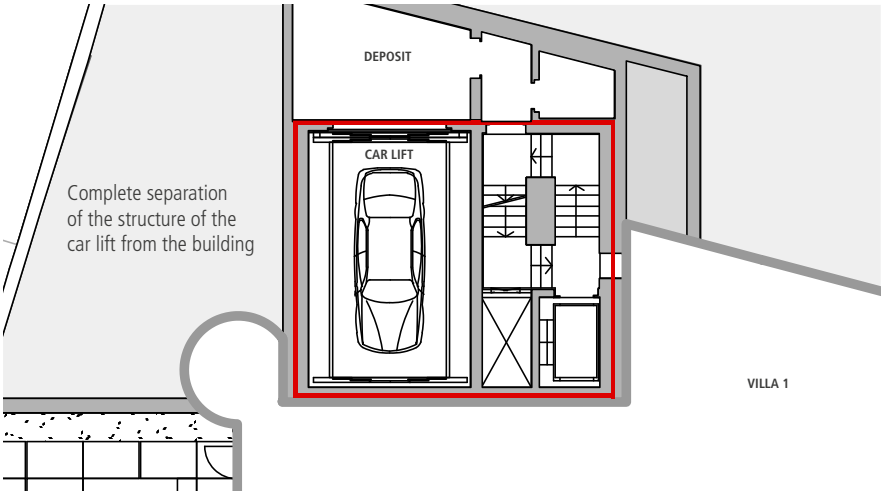
FURTHER DETAILS

See RCVS plans and working systems for each villa.

ACOUSTICS AND VIBRATION
GENERAL STRUCTURAL CONCEPT - SOUND PROOFING

The acoustic design of the building involves the complete separation of the Villas to basement storey where the building are joined for structural reasons.
Each Villa is therefore physically separated from the other by the insertion of sound breaks of mineral wool within the concrete casting in the floors, walls and roofs with special attention to the area adjacent to the car lift. The complete absence of contact between the car lift well and the Villas ensures that no vibration pass through supporting structures.





PARTITIONING

PARTITIONS BETWEEN THE VILLAS

The partition walls between the Villas are made of double concrete masonry interposed with two layers of thermal insulation, one of which is mineral wool. The layers give good soundproofing from airborne noise such as speech and music while the mineral wool layer in the cavity ensures the dampens any impact noise or vibration.

SOUNDPROOFING IN THE VILLAS

Inside the villas have been various "zones", typically the independent dwelling areas like bedrooms with en-suite and possibly wardrobes, so good soundproofing has been introduced. This is achieved using soundproofed internal plaster walls and interior bathroom and bedroom doors that also provide excellent sound insulation. All the floors inside the Villas are made of reinforced concrete above which is a layer of mineral wool impact absorbing subflooring. This is currently the most technologically effective way of cancelling out noise in the air and from footsteps.

PLANT AND INSTALLATIONS

Particular care has been taken over the soundproofing of the plant and systems in the Villas. All the pipes, drains, downspouts etc. are soundproofed. The jet pipes are lined with uncoupling systems to prevent transmission of vibrations while the outdoor jet piping outside have two levels of anti-vibration fastenings with vibration damping collars as well as the non-vibration bracketing.

The technical spaces are made using soundproofed plasterboard closures and completely filled with mineral wool flakes. The controlled mechanical ventilation system has channel silencers installed to reduce the noise generated by the monobloc ventilation. The ventilation channels are fixed to the support structures through vibration absorbers. All the plant and machinery plant such as the heat pump, monobloc ventilation, water-cooled condensing system etc., are secured by anti-vibration mountings so as not to transmit the vibration from their working to the structure of the Villas themselves. The technology introduced at the design stage is the most advanced in the building industry.

FIRE PROTECTION

INTRODUCTION

This report summarises the fundamentals underlying the fire protection systems.
The aim is to provide an overview of the technical and design decisions that ensure safety in the event of fire.

FIRE RESISTANCE

The supporting structure of the building, which is made of reinforced concrete, has a high fire resistance classification (R ~ 60) while the outer walls and the roofing use incombustible external finishing materials.
The vertical walls that divide the Villas are concrete double walls with two layers of thermal insulation within, one of which being mineral wool, with increased resistance to fire (R ~ 90) and have an additional function as fire walls.

Figure 1 - ground floor plan - fireproof walls

FIRE COMPARTMENTALISATION

The project involves the construction of several fire compartments, which restrict any fire to a single compartment, preventing it from spreading to neighbouring areas.
The main fire compartments are:

- Each individual Villa
- Fire door at the entrance to each Villa (on the first basement floor)
- The garage
- The technical spaces in general, including the shafts and wells for machinery and installations
- The car lift
- The joint-use lifts and emergency exit routes

Between the garage and the stairwells, or communal access areas to the Villas is a fire air lock. Each compartment is made of partition slabs and walls with fire resistance class EI 60 (icb), while the compartment doors have fire resistance class EI 30.

EMERGENCY ESCAPE ROUTES

The corridors that serve as escape routes are designed as fire compartments, with the same fire resistance required for the supporting structures, and are separated from adjacent rooms by fire doors.

The project includes the following main escape routes in case of fire:

1. from the underground car park with three exits:
- Stairwell west with external exit to the third floor
- Central staircase with external exit to the first floor
- Stairwell east with external output to the first floor level

Between the garage and stairwells there is a fire door.

2. From each Villa there is an exit on the north side to the outdoors at the second floor (entrance via Cortivo) and on the south side to the ground floor (garden) by way of the internal staircase.

All the doors along the emergency escape routes can be rapidly opened in the direction of flight without additional means (panic exit bar). There will also be smoke and heat removal from the joint stairs by opening the upper exit door, which can be opened from the outside with fire service key.
An emergency lighting system ensures the safe use of the escape routes. There will be emergency lighting for the garage, for the escape corridors with fire doors, the escape stairwells and technical systems rooms.
In addition to the emergency lighting system there are safety signs installed on the wall or ceiling.

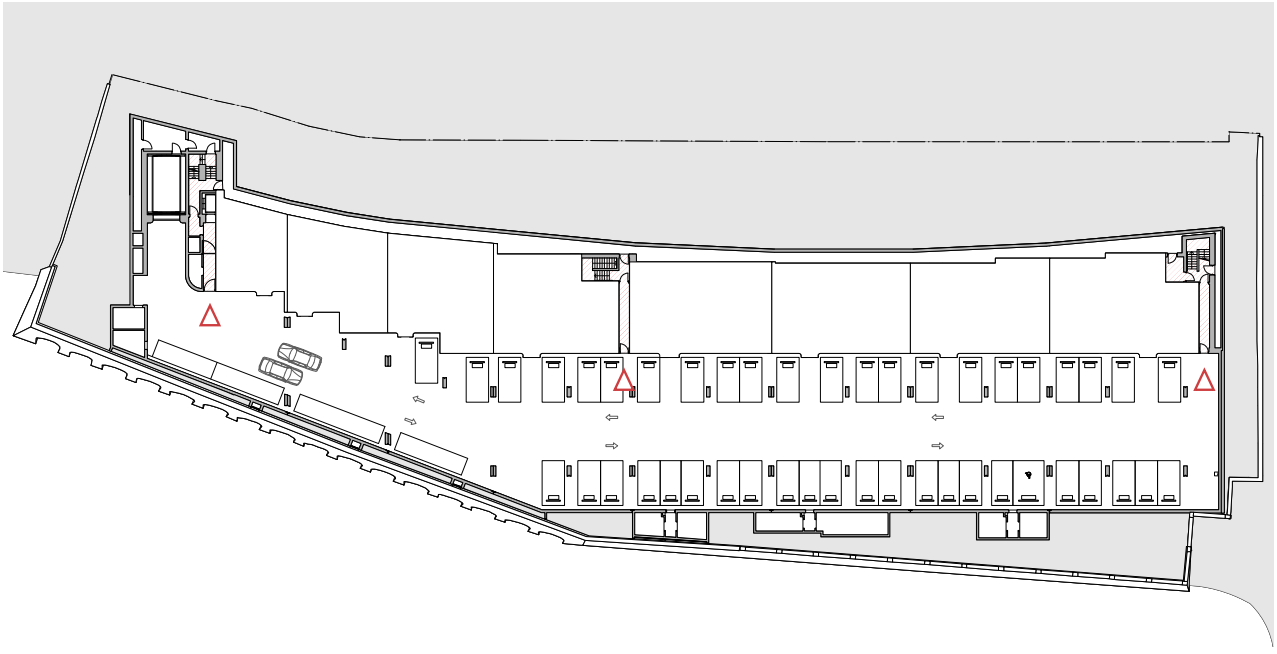


Figure 4 - first basement floor - communal fire escapes from the garage

FIRE PREVENTION SYSTEMS

FIRE DETECTION

An automatic fire detection as well as CO concentration system will be in place in the garage and all the escape roots and communal technical systems spaces.

SPRINKLER SYSTEMS

The road Via Cortivo is well served by the existing mains water supply.
As an additional guarantee of safety however in the event of fire, there are installed 3 interior hydrants near the doors that access the escape stairs in the first basement floor.
In the garage and in the technical areas there area also 5 portable fire extinguishers located in a prominent and easily accessible positions.
The location of extinguishers will be indicated with luminescent signs

FIRE BRIGADE PANEL

At the communal pedestrian entrance, by the letter box, there is a control panel for the fire brigade, featuring the following:

- Keys to the smoke evacuation hatches to the communal lift
- Control button for garage smoke evacuation
- Fire alarm button
- Fire brigade electrical socket

Outside in via Cortivo at communal pedestrian entrance there are 2 container boxes, one for the fire brigade's key, and the second for the car and communal elevator.

SMOKE AND HEAT EVACUATION SYSTEMS

There are stairwells with exits to the outside which ensures that in case of need smoke and heat can be extracted by manually opening the external exit door.
In the case of the garage there is a mechanical smoke and heat extraction system.
In the north side technical tunnel there are openings that provide a natural draught system for smoke and heat.

GARAGE SMOKE EVACUATION SYSTEM

The extraction and evacuation of smoke by means of a large fan in the garage on its west side, located in a specially designed concrete light well through which the smoke is expelled. The total volume of the extracted is about 50,000 m3/h.
The plant can be activated in the event of intervention by the fire brigade using the fire alarm panel, and is connected to the fire detection and fire alarm systems.

FURTHER DETAILS

See the detailed plans and operations.

FIRE EXIT COMPONENTS

The corridors have concrete walls and resin flooring. The corridor doors in the fires escape routes are steel fire doors and the garage fire escape doors are white and flush with the wall.

SECURITY

THE NOTION OF SECURITY

The notion of security is important for private homes, and is based here on a number of building features and techniques. Buyers have several options available that permit the expansion of the concept of security to better meet individual demands.

SECURITY AND CONSTRUCTION FEATURES

In principle the whole complex will be separated on the Via Cortivo road by a protective wall with a fence installed above. The east, south and west borders will also be protected by walls and similar fencing. This will provide the owners with preliminary protection.
All the above ground facades of each individual villa have been built with RC2 rated anti-theft systems in accordance with EN 1627 to 1630. The front glass in these areas are class P4A rated according to EN 356. Each Villa also already has a recessed wall safe of security level 111 according to the EN 1143 standard with an electronic lock and dedicated surveillance network.
Buyers are offered the option of creating a separate "panic room". Everything is already in place for such works to be carried out.

SECURITY MEASURES AND TECHNIQUES

Access control: There is a mechatronic (Kaba or similar) system installed for access control for all doors to individual villas and communal area. This system is flexible and may have a time control for example, with access rights to assigned individual persons or groups of persons. The same key (key combination) can be used for the other mechatronic locking systems in the Villas. If the key is lost then mechatronic authorisation blocking can be simply carried to provide security without particular expenditure of money or time. At the purchaser's request further compatible mechatronic locking systems can be installed involving cylinder closing (like those for sensitive data offices).

Video surveillance: For critical security detection, the entire complex has video surveillance (Axis or similar) in the communal entrance area on the third floor, from the driveway and the communal areas (first basement floor, garage), the car lift, which individual buyers as an option can make real time use of. At the buyer's request up to six CCTV cameras can be installed per Villa for surveillance of the outside area that are integrated in relay with the video system for the corresponding Villa. As standard there is a videophone with points for several devices in each Villa (Siedle or similar brand).

Alarms: Another standard fitting is the central burglar alarm system for each Villa with all necessary sensors to monitor the safe (seismic detector) and the facade locking (magnetic contacts), Siemens or similar.

Predisposition: The rooms are predispositions for installation of further surveillance systems of the premises (with dual motion detectors), for the facade areas (infrared detectors) and for the addition of manual touch alarm buttons. Connection of the burglar detection system to the central alarm control is the responsibility of each individual buyer.

ORGANISATIONAL SECURITY MEASURES

It is expected that for the whole complex a single technical services company will be appointed to, among other things, take care of the locking systems and security equipment.

FURTHER DETAILS

See the detailed plans and operations.

SAFE

Protection of valuables: There is a room with a Ferrimax safe that is modular and special execution with 4 removable shelves, Paxos Advance electronic combination powered by current. The safe is certified according to the standards EN 1143-1, insurance class Euro III. External dimensions: H 1700 W 920 D 735 mm. Internal dimensions H 1603 W 825 D 530 mm.

KEYS

Each individual Villa is provided with 5 keys.

The main and technical rooms' locking in the Villas make use of new EVOLO cylinders and digital readers (flagship model of the manufacturer DORMAKABA) which have been used because of their reliability and versatility.

Their strengths are electronic security (each key has a unique electronic number that cannot be duplicated), the versatility with individual programming for opening locks according to the request of the customer (who can choose which key can or can't open the door) and the possibility of being able to read the log of the last 920 movements.

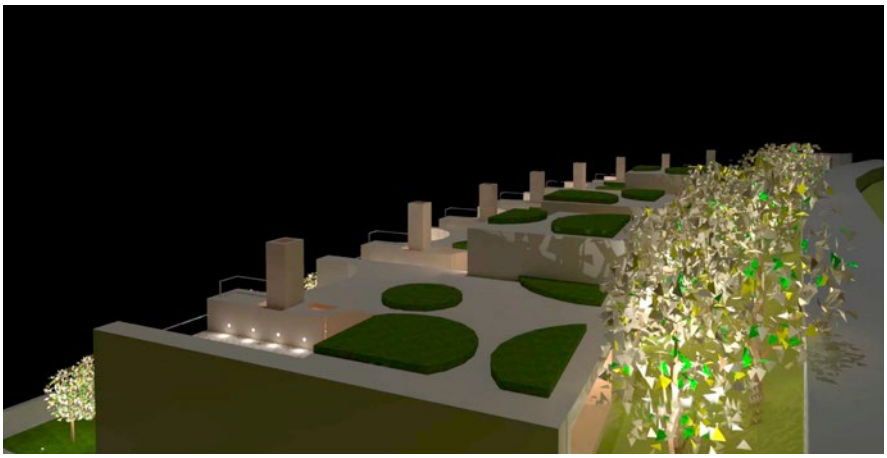
If keys are lost or stolen they can be cancelled without having to change the lock (if the key is subsequently if found it can be reprogrammed).

SLEA-BE004 keys also have a mechanical part to which any mechanical locks can be matched, such as inside doors and wardrobes for which detailed controls are not necessary.

THE LIGHTING CONCEPT

LIGHTING

The lighting concept Archi di Luci as been is designed by Herzog & de Meuron. Only the basic idea of the project have been given and the buyer has the choice for complete interior lighting designed by the architects. The lighting is all connected to and controlled by a domotics system.

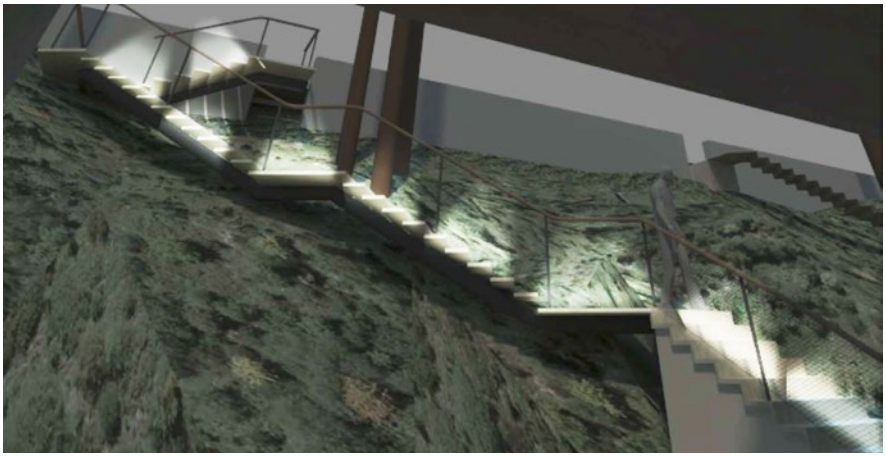


VILLA ENTRANCE LIGHTING

Entrances to the individual villas are embellished by an architectural bronze feature.

NORTH ENTRANCE LIGHTING

The stairs to the entrance from Via Cortivo are lit by LEDs on the left side handrail. This type of lighting enhances the effect of suspended stairs.
The communal pedestrian entrance is also lit by LEDs in the handrail.



GARDEN LIGHTING

The basic garden lighting planned for both the north and south garden is provided with iPro Led Micro iGuzzini spotlights.
The lighting shows off the Villas' gardens and the shapes of the plants, adding much to the effects created by landscape architect Michel Desvigne.
The basic outdoor lighting is controlled for the garden as a whole by Archi di Luce (changes may be made).

VILLA LIGHTING

Where so indicated in the basic plans of Herzog & de Meuron, the balconies come with recessed ceiling spot lighting and the second floor terraces of Villa 2 and Villa 8 have recessed wall lighting by Buzzi & Buzzi. The steps to the third floor terrace of Villa 4, Villa 6 and Villa 7 are also lit by recessed Buzzi & Buzzi wall lighting.
All the other lighting ready points are closed by plate and have electrical connection (with pull wire, cable, terminal or lamp socket).

All the other lighting points in the Villa provided for in the Herzog & de Meuron plans are ready and left rough with pull wire, cable, terminal or lamp socket, leaving the greatest freedom to owners to install their desired kind of lighting.

GARAGE

The lighting of the garage is provided by a number of lights that create even lighting to the space as well as a special ambiance through LEDs recessed into the V-shaped pillars and produced by iGuzzini.

VILLA INTERIORS

MATERIALS

WOOD

High-quality heat-treated Burma Teak up to a maximum size of 230x2400x20mm straight course design.

NATURAL STONE

Natural stone has been chosen as a concept material for the exterior by landscape architect Michel Desvigne. The stone is grey flamed quartzite. The100x50 cm slabs are a unique variant with a full colour homogeneous surface and retain the characteristic solidity and firmness of granite. These were selected specifically for this project, to enhance its uniqueness and feel for quality.

TILES

Fine porcelain stoneware graphite coloured matt tiles of 60x120cm. Sistem B tiles from Marazzi Technica.

GLASS

High quality triple glazing filled with noble gas. Only safety glass has been used in accordance with accident prevention requirements in relation to possible injury. The "white" glass, that is to say transparent glass, has low ferrous oxide content of about 0.015% that permits the passing of > 90% of the light, with pane thickness of 10mm. The peculiarity of this unique glass is that it does not interfere with the view and perception of colours between the interior and the outside. This glass provides excellent thermal insulation and the maximum penetration of sunlight into the building.
Check on purity and visual perfection: the glass has been tested and approved by the Swiss construction glass institute (SIGAB) according to strict procedures to guarantee the high purity of the glass and tolerance of defects, stains or scratches.
Further details: See the test reports and visual checks approvals for the individual sections of glass.

CORIAN

DuPont Corian is a solid, non porous and homogenous material made up of about 1/3 acrylic resin and about 2/3 natural minerals. The main mineral is aluminium trihydrate (ATH) which is derived from bauxite. It makes it possible to create seamless surfaces adapted to any kind of environment. Corian is a hardwearing, hygienic and resistant material.

CRISTALPLANT

A technologically advanced and unique composite material consisting of a high percentage of natural minerals (ATH derived from bauxite) and a low percentage of high purity polyester and acrylic polymers. The resulting compound is ductile, innovative, hypoallergenic and non-toxic.

COLOURS

- All of the doors, except the teak wooden doors, are lacquered RAL 9010.
- All Corian elements are white
- All the Cristalplant elements are white
- The handrail on the stairs in the Villa are Schwarz Braun (dark brown)
- The roller blinds to the south are, by a common decision of the owners, in browne
- The 'Miami' curtains predisposition is by a common owners' decision are for a pale shade
- The railings in Via Cortivo, the sash to the entrance yard, the portal and the car lift, the iron doors of the communal rooms and all the ventilation grills are in the color Classic 34 Polycoat Dura xal-Classic 34

INTERIOR OF VILLA
FLOORS AND STAIRS

The Villa's floors, such as in living room, bedrooms, library, dining room, kitchen, bathroom, entrance and stairs from first floor basement are in Burma teak without skirting board with 0.8 mm joints up to the walls.

Tiles are used in the technical rooms, stores, laundry, in the staircases leading to the second basement floor, to rooms used as a kitchen and in the swimming pool's technical room.

EXTERNAL FLOORING

The terraces, the balconies, the inner courtyards on the ground floor and the northern court are all laid with natural stone.

INNER COURTYARD

The inner courtyard facade has plaster and the yard is predisposed for planting.

INNER COURTYARD BALCONY

The inner courtyard balcony on the Villa's first floor, except for at Villa 1, the flooring is Burma teak. The supporting structure framed by the arch that gives form to the surface is created from a single piece of wood that is 25x15cm thick and with beams of 22x12cm.

NORTH COURT

The facing of the background wall is in 2 metre-high natural stone with the remaining part concrete facing.

NORTH ENTRY STAIRS

The entry stairs that lead from the road Via Cortivo to the entry to the Villa are in the form of a suspended staircase with heat-treated ash treads and supporting structure with Corten steel plinths. The end of the stairs and the landing at the Villa entrance are concrete faced with natural stone slabs.

HANDRAIL, RAILINGS AND PARAPETS

Handrail and railings: All the handrails are Burma teak with risers and stainless steel mesh of 70x40mm.
North court parapet: at the crown of the north courtyards' wall the parapets stand out with their handrail made up of a Corten steel plate of 4x1cm.

GLAZING AND WINDOWS

The architectural concept of Herzog & de Meuron presents glass panels of same height, undivided and of large dimensions. The structure of the windows are Burma teak. The handles are those of the HAFI steel alloy collection.

Sliding windows: All the large sliding windows have motorised opening and non-crush safety systems.
Window predisposition: The other sliding windows (weight below 400Kg) predisposition for motorisation. The ground floor sliding glass are have the predisposition to take locks.

Glazing: All the window panes have a full wooden door to left or right, made in Burma teak with a doorknob for inside closing.
Tilt and turn windows: All the tilt and turn windows are always floor to ceiling and are mainly in the north court and on the staircases. The north court windows in Villas 1, 2 and 3 have tiling automated opening.

Window locks: All the tilt and turn windows have key locking and those in the stairwells have a security lock and opening lock.

PORTHOLES

Villas 4, 6 and 7 have portholes in the glazing of the bathroom on the third floor and Villa 8 in the bathrooms on the first and second floors.

SKYLIGHTS

All the tubular skylights on the flat roofs have double satin white glazing (HWF).

SUN SHADING

The south facing facades of the Villas and south and north sides of the courtyards (excluding the ground floor) have roller blind outside connected to the domotics of the Villa and to weather sensors. The blinds ensure protection from the sun, privacy and protection also for the doors and windows.
Predisposition: All the Villas are predisposed for roller blind on the north side.

"MIAMI" CURTAINS PREDISPOSITION

Predisposition for external "Miami" curtains for the bedrooms of Villa 3 to Villa 8 with boxes, facade feature in Burma teak to protect the curtains. "Miami" straight or wavy curtains can be fitted to the south face windows. There is also a housing that is built in beneath the balconies for any installation that may be required. The rollers blind and curtains can be controlled by the domotics and connected to the weather sensors.

VILLA DOORS

Main Villa entrance on first floor basement: The entrance to the Villa from the garage has a high quality finish with architectural bronze that starts from the ceiling and reaches the entrance door designed by Herzog & de Meuron. The door has bronze handle and retracting threshold. Inside the Villa the entrance door is made of Burma teak.

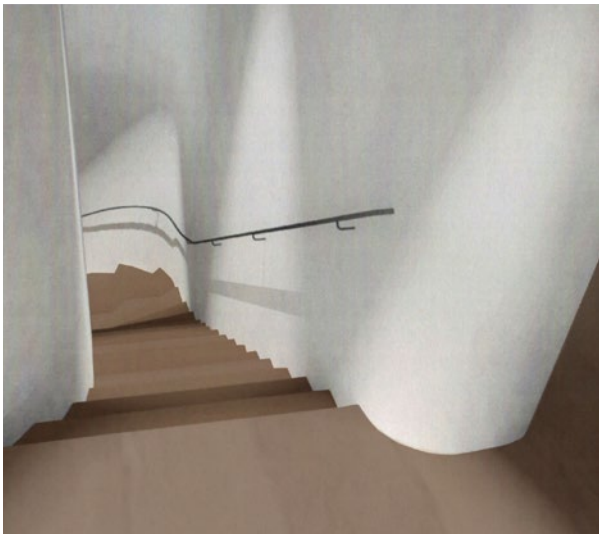
Main second floor Villa entrance: The second floor entrance has a Burma teak door. The two main access doors to the Villa have DORMA hinges and recessed door closers.

Doors in the Villas: The master bedroom doors and those to the main rooms are full height, flush with the walls and with shutters at the edges. The doors are made of white lacquered wood with magnetic locks in HAFI steel alloy collection (except for the doors to the technical rooms). The doors that separate the secondary and service spaces (such as the bathrooms, storerooms, technical rooms and swimming pool) are lower, generally 2.41m.

Soundproofing: Some of the rooms have soundproofed doors with retracting threshold of the Planet Minergie type.

INTERIOR HANDRAILS

The handrails on the stairs are made of tubular steel.



WALLS AND CEILINGS

All the walls and ceilings are finished in white high demand plaster (SMGV Q3). The plasterboard walls that separate one bedroom from another are soundproofed. The false ceilings are white plasterboard with special soundproofing.

FACADES

The facade walls are coated with special plaster with a fine granular finish.

FACADE GRID

Villa 1 has a grid in the facade (west side).

LIFTS

The lifts' interiors have been designed by Herzog & de Meuron. The lifts have a capacity of 9 persons (or 675 Kg) in white Corian with rounded angles (6 cm radius), Burma teak floor and recessed Pixel LED Tulux spot ceiling lighting. The external doors are white and inside in stainless steel.

FIREPLACES

	V1	V2	V3	V4	V5	V6	V7	V8
External (grill) G		✓	✓	✓	✓	✓	✓	✓
Indoor G			✓	✓	✓	✓	✓	✓
Master bedroom 1st floor		○	○	○	○	○	○	○
Library 2nd floor	✓							
External (grill) 2nd floor		○	○	○	○	○	○	○

✓ Provided ○ Fireplace predisposition

The indoor fireplaces provided have stone flooring in front of them made in Nero di Marquinia black stone marble.
Additional data: For details of the fireplace see the instruction manual.

Predisposition: Chimney and flue are already in place.

PERGOLA PREDISPOSITION

Facade with predisposition for installation of ground floor pergolas designed by Herzog & de Meuron.

KITCHENS

MAIN KITCHEN

The main kitchens of the Villas (entertainment kitchens) have been wholly designed for Archi di Luce. The Herzog & de Meuron projects are handled by Boffi Spa. The main material used in the kitchens is Corian. It is used for work surfaces, sink and cabinet doors. The interiors of the cupboards are graphite grey in colour.

AVAILABILITY LISTING

	V1	V2	V3	V4	V5	V6	V7	V8
Main Kitchen	✓	✓	✓	✓	✓	✓	✓	✓
Dumb waiter	✓	✓	✓	✓	✓	✓	✓	✓
Heavy Duty Kitchen	✳	◎	◎	✓	◎	✓	✓	◎
Breakfast Kitchen				✓	✓	✓	✓	✓
Terrace kitchen	○	○	○	○	○	○	○	○

✓ Provided ○ Predisposition ◎ First basement floor predisposition ✳ Second basement floor predisposition

DUMB WAITER

The Villas have a 100 kg capacity dumb waiter connecting first floor basement area to ground floor kitchen. For Villa 1 it also reaches the second floor basement. The dumb waiter is integrated into the main kitchen furniture, where present.

BREAKFAST KITCHEN

The Breakfast Kitchen, where present, is integrated into a cupboard with flush white Corian. The interiors of these are graphite grey in colour.

HEAVY DUTY KITCHEN

The heavy duty kitchens, where present, are also in white Corian but with the steel work surfaces and back guards. The interiors of these are graphite grey in colour.

ADDITIONAL DATA

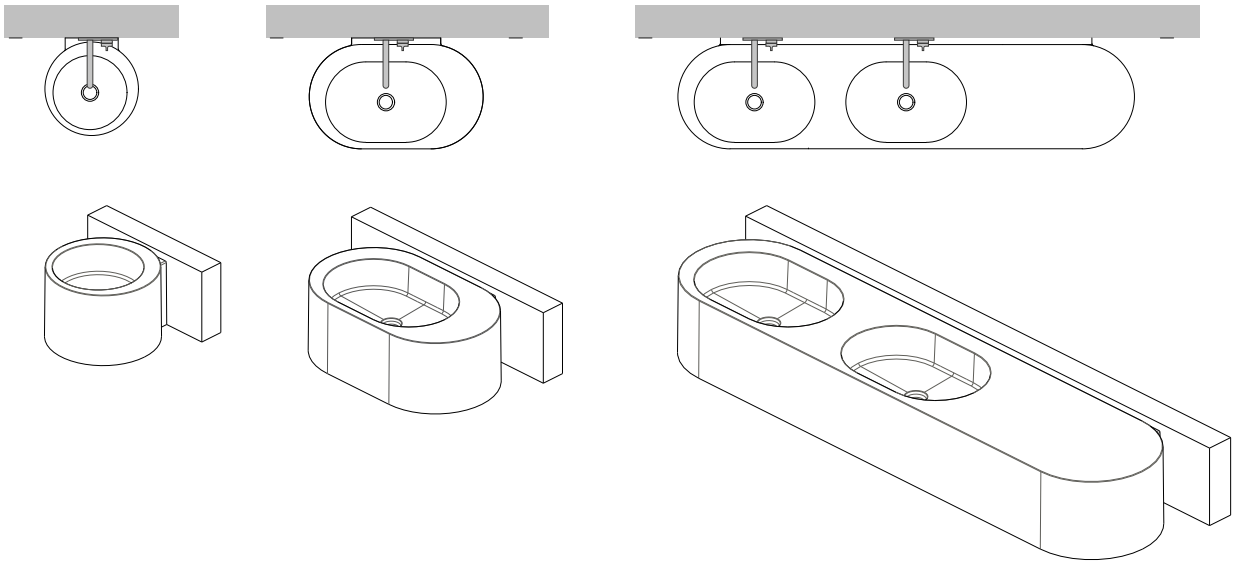
See Boffi Spa plans for Gaggenau domestic appliances, and see list details in domestic appliances and accessories supplied.

LAUNDRY ROOM

The laundry room is on the first floor basement floor (in the case of Villa 1 on the second basement floor). It comes with stainless steel sink, hot and cold-water tap and connections for washing machines and driers (domestic appliances have not supplied).

BATHROOMS

The washbasins, bathtubs and showers in the Villas have been wholly designed for Archi di Luce by the architects Herzog & de Meuron.



BATHTUB AND WASHBASIN

The standalone bathtub, integrated bath and washbasins have been custom designed and made by Boffi Spa. Sinks and standalone bathtubs are Cristalplan and the bathtubs fitted in the wall are Corian.

SHOWER CABINETS

The shower cabinets, fully fitted into the architectural concept are Corian with tempered glass door and hinges and knobs chromed and Flamea rubber. The shower cabinets, where provided for in the plans, come with spot ceiling lighting from iGuzzini.

SANITARY WARE AND ACCESSORIES

Main bathrooms come with: Toto WC (Neorest AC washlet series) self cleaning with hot water show, heated seat, deodorant function, drying function, EWA TER+, actilight and autofunctions.

Other bathrooms: Suspended Mono Flaminia series WC with soft close wrap around bowl cover and suspended white bidet.

Accessories: Meta 02 series from Dornbracht.

Additional data: See listing of sanitary ware and accessories for specific to each Villa.

LIGHTING

In the bathrooms' halls and all the bathrooms false ceiling lighting have LED spotlights by iGuzzini. All the other lighting included in the Herzog & de Meuron plans are for use and left with draw wire, cable, terminal or lamp socket.

CONNECTIONS (PREDISPOSITIONS)

- It is possible to install the TOTO in all other bathrooms
- Flannel heater predisposition
- Showers with wall jets massage
- Bathtubs with centre massage (the original bathtub must be replaced)
- Predisposition for the installation of any type of sauna (or similar) in the first basement floor rooms

The above list is not exhaustive or complete.

COMMUNAL PARTS

COMMUNAL SPACES

RAILINGS

The perimeter railings at Via Cortivo designed by Herzog & de Meuron are made of aluminium using squared elements of 100x100x4mm irregularly arranged along a single axis of rotation.

TILT RAILING AT ENTRANCE YARD

The entrance yard is closed off by a tilting gate that retracts, the same shape as the railing. The gate has a pedestrian access door and intercom.

LIGHTING

The entrance yard is lit by lights recessed into the wall and the door to the car lift with recessed ceiling spotlights by Buzzi & Buzzi.. The access ramp to the garden is illuminated by iPro LED Micro iGuzzini.

CAR LIFT

The car lift connects the Via Cortivo entrance to the garage on the first basement floor. The insider of the car lift is illuminated with recessed spot ceiling lighting from from Buzzi & Buzzi, stone flooring. It has a capacity of 5,000 Kg (66 persons) with a cabin area of 3x6.02m and a height of 2.2m.
Additional data: See the condominium rules for the vehicle sizes compatible with the car lift.

MAIN COMMUNAL ENTRANCE DOOR

The communal entrance door that gives access to the communal pedestrian entrance is glass with steel frame. The same door is found in the first floor basement giving access to the garage.

LIFTS

The communal lifts connect the pedestrian entrance to the garage (and other communal floors). The interiors are Corian, the flooring natural stone and Pixel LED Tulux spotlights recessed in the ceiling. It has a capacity of 12 persons with dimensions of 2.17x1.1x2.3m. The inside of the lift is designed by Herzog & de Meuron.

INTERCOMS

Each Villa is equipped with an intercom (or video and/or bell) system by Siedle that is integrated with the domotics of the buildings. The tilting entrance gate at the entrance yard and car life can be opened via intercom. The gate at the communal pedestrian entrance from Via Cortiva also has intercoms.

LETTER BOX

The Sielde brand letter boxes are located at the communal entrance at the third floor.

HANDRAIL

The emergency exits from Villa 4 and Villa 8 have a tubular handrail as in the interiors of the Villas. The handrails on the stairs at communal entrance are of two types: a tubular part and a second part made up of a metal rise or a thickness of about 1 cam that also acts as a parapet.

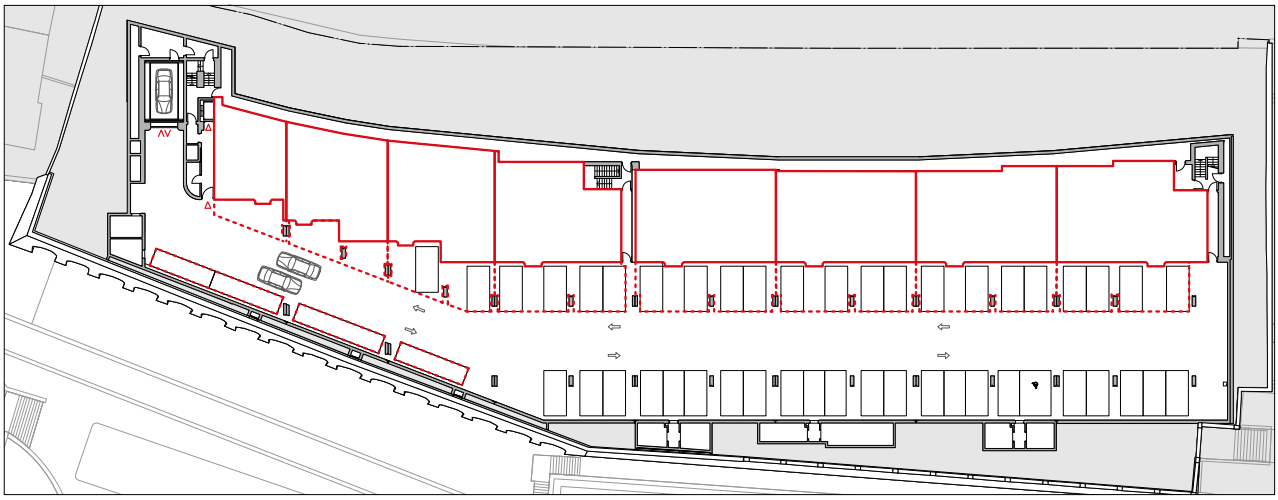
WORK OF ART

Point of view.
Sir Tony Cragg (Liverpool, 1949), son of an electronic engineer studied chemistry but at the end of the seventies turned to sculpture. The first person exhibition of his work was held at the Lisson Gallery in London.
In 1988 he won the Turner Prize. He lives in Wuppertal in Germany. Here in 2006 he created the Skulpturenpark Waldfrieden and the Tony Cragg Foundation.

GARAGE

The floor of the garage is Venetian terrace resin made up of small chippings Carrara white marble dust.

The garage has a series of still unattributed lots and there is also a communal space for car washing with a stainless steel sink (accessories not provided).



COMMUNAL SPACES

Communal rooms for maintenance services and technical rooms. These rooms are accessible by communal stairs, by communal lifts and in some cases also by the car lift.

Second floor: Storerooms/Garden accessible from garden (outdoor staircase), from communal staircase and from car lift. In this rooms there is the space for the lowering of the tilting gate and of the entrance yard.

First floor: Communal electrical room (central system for building) and technical room.

Ground floor: Storeroom/Garden, also accessible from car lift, and bathroom and porter's shower. The bathroom has a wall-mounted toilet, stainless steel washbasin, boiler, shower tray and shower head.

First basement floor: At the garage level there is the car lift space and technical spaces north, east and west.

Second basement floor: Communal technical rooms, available room and technical space north. In the communal room there is, among other things:

- Siemens central control panel.
- An irrigation pump for the garden (lake water).
- A heat exchanger for lake water (with connection to the Villas' heat pump).
- A ventilation system (CO) for the garage and the swimming pool technical rooms with wall air intake at the car lift cabin.
- The car lift cabin aspiration system.
- The condominium fan that draws air in from the kitchen hoods, from the bathrooms and the Villas' sweet air fans. The latter expels the air above the technical room in the communal area to ensure there are no smells bad odors moving from villa from villa.
- The sewage collection well.
- Particular attention has been given to sound emissions to ensure the levels are well below sound regulation provisions limits.

ELECTRICAL SYSTEMS

VILLA ELECTRICAL PLANT

The electric plant provided is complete with all accessories like junction boxes, switches and sockets etc. of the Feller Edizio due line of equipment. The choice of accessories complies with the type of rooms concerned (whether dry, with sprinklers, with additional physical protection etc.).
All lamps conform to standard SN EN 12464-1 with the protection class according to the place of use.

LIGHTING IN TECHNICAL ROOMS

The technical rooms of the Villas and the technical room for the swimming pool at the first basement floor have neon lighting.

ELECTRICAL SOCKETS

There are wall and floor sockets, which are single or triple according to the size of the room.

CONTROL AND REGULATION PANEL

The main control panel is in its cabinet on the second basement floor. In the control panel there is the main switch, the central alarm unit, the UPS back up electrical supply and a multimedia rack.

TECHNICAL ROOM

In the technical room on the second basement floor is the Siemens made control panel to regulate and monitor the RCVS systems, for the plant involved see the diagram in the chapter "Project and acoustic principles" (p 41). The room is equipped with a dehumidifier.

UPS BACK UP

Each Villa has UPS back up equipment (GE VH series 3000 / 30 kVA). The UPS (uninterruptible power supply) back up to provide power in the event of an outage.

ELECTRICAL METERING

Each Villa has an energy metering system relating to:
- Lake water energy
- Sanitary / irrigation water
- RVCS energy metering (see specific chart specific)

ADDITIONAL DATA

See the executive plans for the number of sockets and connections available, as well as the safety and alarm systems.

DOMOTICS

The Villa's domotics are managed by the OmniVision system. The installed system provides the integration and management of lighting in the Villa, the roller blind, heating, security systems and integration with the Siedle video intercoms.

The OmniVision system is very flexible and permits the management and programming of a great many features relating to the working with Villa, as well as integrating the various supplementary systems. Each owner can run the domotic system and create a range of scenarios using the OmniVision touch screen.

OMNIVISION
TOUCH SCREEN

	V1	V2	V3	V4	V5	V6	V7	V8
first basement floor	1	1	1	1	1	1	1	2
ground floor	1	2	2	2	2	2	2	2
first floor	1	2	2	2	2	2	2	2
second floor	1	1	1	1	1	1	1	2
third floor				1		1	1	

An OmniVision touch screen is always available at the door to the lift and at each floor of the Villa.

ADDITIONAL DATA

See the OmniVision manual for instructions on the working of the domotics.

COMMUNAL PLANT SYSTEMS

In all the communal rooms and in the garage the systems are complete with all the junction boxes, switches and sockets etc. Feller Edizio due product line. The choice of accessories complies with the type of rooms concerned (whether dry, with sprinklers, with additional physical protection etc.).

LIGHTING
COMMUNAL SPACES

The lighting of communal spaces and emergency exit routes are included. In the stairwells of the communal spaces LED lights are installed. Lights are switched on by the motions sensors. Every second landing has recessed electrical sockets for cleaning purposes.

SATELLITE TV SYSTEM

A central satellite dish receives the signals for satellite channels. A fibre optic cable carries the signal from the antenna to the main control unit located in the electrical room on the first floor and can be connected up to each owner's Villa on request.

RADIO AND TV SYSTEM

Central connection to the Swisscom and Cablecom networks. In the communal electrical room are located the signal amplifiers and distributors, which can be brought up to each individual Villa on request.
Predisposition: Fibre optic cabling to each secondary distributor of the Villas can be installed.

GSM REPEATER

To ensure perfect GSM reception, a repeater for signal cover in the garage in the first basement floor and in the car lift is installed.

WEATHER STATION

The OmniMeteo weather station analyses and observes light levels at each cardinal point, twilight, wind speed, rain, frost, temperature and other weather data that are used by the domotics security and safety systems for the communal systems and for the individual Villas. The weather station are on the roof of Villa 1 and Villa 7.

BUILDING OPERATING SYSTEMS

In the electrical room on the first floor there are located the control panels for all the Villas and communal elements. The equipment present includes the following:

- The central RCVS unit for supervision, regulation and control (Siemens Desigo)
- Fire alarm surveillance
- CO concentration monitoring
- Video surveillance
- Central unit for emergency lighting
- Swisscom + Cablecom
- Satellite TV
- Metering units
- Master large and small utilities
- Electrical back up unit
- Misc.

ELECTRICAL METERING

Metering system for communal spaces:

- Garage
- External systems (irrigation, lighting, ...)
- Stairwells and emergency exits
- Communal technical rooms
- Car lifts and communal area lifts
- Water, lighting and current in communal rooms… (p 68)

UPS BACK UP

There is an electrical back up system of 30kVA in the communal electrical room The UPS (uninterruptible power supply) back up to provide power in the event of an outage.

COMMUNAL SPACES

The lighting of communal spaces and emergency exit routes are included. In the stair wells of the communal spaces LED lights are installed. The lights are switched on by motion sensors Every second landing there are recessed electrical sockets for cleaning purposes.

ADDITIONAL DATA

See the corresponding plans.