



"A lake is a landscape's most beautiful and expressive feature.

It is Earth's eye;

looking into which the beholder measures the depth of his own nature."

Henry David Thoreau







Villa Michelin is the result of the renovation of a historic mansion, once owned by Vaccarossi family, founder of Michelin Italia Company. Originally used as a family house, later on the Villa was given to the company and used as a holyday house for the employees.

The project includes the realization of 10 apartments with different sizes, 1 one-bedroom apartment, 3 two-bedroom apartments, 6 three-bedroom apartments.

The Villa is surrounded by nature, it has a private garden, inside a 48.000 sqm park, called Villa Michelin Park, in communion with the other buildings inside the property.

Villa Michelin

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TECHNICAL SPECIFICATION BUILDING STRUCTURES

The project, drawn up in compliance with the ministerial decree 14/01/2008, is characterized by mixed structures, with bricklaying load-bearing walls and reinforced concrete pillars.

Reinforced concrete works

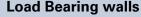
Foundations, sub-foundations, pillars, bearing partitions, underground walls, beams and curbs will be made of reinforced concrete, cast in situ and suitably vibrated, with B450C steel reinforcement.

Floor slabs

For the floor on the ground will be created a ventilated crawl space (H 40/50 cm), with cast in situ reinforced concrete and EPS insulation (H 20 cm)

The existing separation floors of the ground and first floors have a masonry structure with EPS insulation.

The upper floors will be built with the floor type "Isobiotherm", a floor slab with reinforced concrete beams cast on site, interposed with EPS panels, which give the floor lightness and high thermal performance.



The existing walls of the ground and first floor, will be maintained and integrated where necessary. The new walls in contact with the ground, the bearing partitions and the pillars will be made of reinforced concrete, cast on site.

The remaining load-bearing walls will be made of Poroton P800 bricks, 30 cm thick.



Roof

The roof will be made of structural wood, suitably insulated and waterproofed, with Portuguese tiles roofing. Anti-fall safety system in accordance with the current law.

Internal walls

The dividing walls between the apartments will be made of Poroton P800 bricks, where load-bearing, and plasterboard, where not load-bearing, with double structure (double metal structure, 5 plasterboard sheets in total, double internal insulation).

The internal partition will be made of plasterboard, with metal structure, double plasterboard sheet on both sides and internal insulation.

Wall Insulation

The perimeter insulation is made of EPS of varying thickness: 10 cm for the stairwell, 15 cm between the stairwell and the apartments, 20 cm on the perimeter walls.

Finishing with plaster.

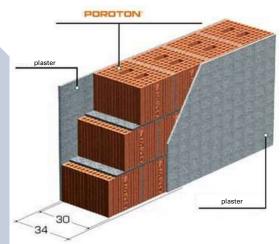
Soundproofing

The perimeter walls, with Poroton P800, have considerable mass and honeycomb structure that offer high protection against medium-low frequencies, thus making the environments protected from external noise.

The floors will be equipped with an impact noise insulation to guarantee the best comfort between floors.

Water Proofing

Terraces and balconies will be waterproofed with a PVC sheath properly welded, 10 years guaranteed.







SYSTEMS

Heating system

From the point of view of efficiency and environmental protection, the best choice is represented by the heat pump, which allows you to provide heating without using fossil sources and introducing a significant contribution of renewable energy.

The villa will be equipped with a centralized hydronic heating system, located in a technical room, which, in combination with the photovoltaic system, will provide heating and cooling for all the apartments through internal hydronic ducted units. Each apartment can regulate the temperature individually.

The heat pump, in addition to serving the air conditioning, guarantees the correct need for domestic hot water in all apartments.

Water and sanitation system

The sanitary water system made with Wurth Prineto pipes or similar suitably insulate.

Geberit or similar Silent drains, self-supporting pre-wall toilet tanks: Geberit Duofix/Combifix or similar.

Mechanical Ventilation System

In the building will be installed a centralized controlled mechanical ventilation system, it is a double-flow building ventilation system with heat recovery that provides constant exchange of air for the rooms with minimum waste of energy, recovering up to 90% of the heat from the air extracted from the environment.

A VMC system improves indoor air quality by increasing environmental comfort for the well-being of the occupants, preventing also the formation of humidity.



Electrical System

The electrical system will be built in compliance with current legislation on safety and fire prevention for residences, with the following arrangements: (lamps not included):

ROOMS	POWER OUTLETS	LIGHT SOCKETS	TV OUTLETS
ENTRANCE	1	1	-
DOUBLE BEDROOM	4	1	1
SINGLE BEDROOM	3	1	1
CORRIDOR	1	1	-
BATHROOM	2	2	-
STORAGE	-	1	-
KITCHENETTE	2	1	-
LIVING ROOM	6	2	1
TERRACE >10 m ²	1	1	-

It will be installed a common TV distribution system for tv and satellite, a video intercom system, and a wi-fi system for the building.

Modern plates Bticino, model "Light" or "Living Now".





Elevator

Kone Mono500 elevator, or equivalent, that serves the floors from the street level to the last floor.

The technological heart of every Kone lift, called Ecodisc, is the traction machine, a revolutionary system based on an axial synchronous motor, with variable frequency drive and gearless technology.

In addition to reducing energy waste, the Ecodisc does not use oil:

This eliminates, therefore, the risk of pollution of soil and groundwater and the risks of fire connected to the hydraulic systems. All this ensures the system a longer life and greater reliability and quietness.

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Photovoltaic system

The renovation of Villa Michelin and its park aims at harmony with the nature that surrounds it and the complete sustainability of the energy aspects of its components.

The design of the electrical systems has focused on the research of the maximum energy efficiency and affordability of the system that includes the photovoltaic panels arranged in the Michelin Park.

This objective has been achieved through the constitution of a "Comunità di energia rinnovabile" (renewable energy community) (Art. 42bis, Legislative Decree 162/19) whose main target is to provide environmental, economic and social benefits to its members.

Every member of the renewable energy community has many advantages, both in immediate economic terms thanks to the self-consumption of electricity and the fixed costs' reduction, both in strategic terms for the possibility of future extension of the system, freely decided by its members.

The initial goal is to self-produce in one year the same kwh amount consumed for heating and domestic hot water production.

The long-term goal, compatible with the landscape law restriction, is to cover 100% of the consumption of the community, with the possibility of connecting to the system also electric car stations for its members.





Utilities Management and subdivision

The management of the utility facilities will be condominium type, and the expenses will be divided among the residents based on the actual consumption.

<u>Water supply:</u> the utility will be required by the condominium, the bill, for the portion inherent in the common areas (pool and fountains) will be divided according to the percentage of property (Tabelle Millesimali), and for the portion of the individual units will be divided according to actual consumption.

<u>Electricity utility:</u> the utility will be required by the condominium, the bill, for the portion inherent in the common areas (heat pump, outdoor lighting, elevator, stairwell lighting and everything in common) will be divided according to the percentage of property (Tabelle Millesimali), and for the portion of the individual units will be divided according to actual consumption.

<u>Internet utility:</u> it will be realized a shared wi-fi system, accessible to all the apartments, the bill will be divided among the apartments. Individually for each apartment will be prepared the cable duct in the case some resident wants to opt for a single line: It will be the single resident to request the connection of the apartment.

<u>Photovoltaic production:</u> the system will be condominium type; the expenses and revenues will be divided according to the percentage of property (Tabelle Millesimali).

<u>Utility connection reimbursement:</u> the construction company will request the connections of the condominium utilities for the installation of the facilities meters, charging the amount pro quota to the apartments.

FINISHINGS

Stairwell

The staircase will present central lift with metal structure. For the first stair ramp, it will be reused the marbles and the original wrought iron handrail of the ancient stairwell of the villa, for the following stairs it will be use similar elements.

Sidewalks and paths

The flooring will be the same for all sidewalks, and will be made of stoneware tiles with a modern design, as well as baseboards.

The walkways and paths will be made of natural stones like the existing ones, or alternatively of stone-effect selfblocking paving.



Swimming pool

It will be realized a in fibreglass swimming pool of dimensions $9,50 \times 4,00$ m, with appropriate underground technical room for the filtration system.

There will be a stoneware sidewalk around the pool.







Terraces

The floors of the terraces will be the same for all the apartments, and will be made of stoneware tiles with a modern design, with floating floor installation.

The railings will be made of iron, with simple design combined with the existing ones of the terraced floor at street level, which will be maintained.

The supporting pillars of the porches will be made of white Sardinian granite.





Windows

The windows will be of Cocif Evo Wood/Aluminum type, white, with one or two doors, with triple glass and double cavity with argon gas.

The reliability over time, the design, the hermetic seal, the acoustic comfort and the energy saving, are the main characteristics and advantages of our windows.

It is the wood/aluminium system (internal frame in wood and external aluminium coating) that guarantees the maximum protection of the external part of the window from the aggression of the atmospheric agents, even with lack of maintenance, preserving internally the aesthetic quality of the wood.

For the first two floors will be placed awnings canopy, ecru color, for the upper floors will be installed green aluminium shutters.

The thresholds of the windows will be made of granite.







Security entrance door

All apartments, with entrance from the stairwell, will have security doors, Dierre brand, white, with modern design, with 40 dB sound abatement and thermal transmittance 1.3 W/m2K with white lacquered internal cover, panto graphed white lacquered outside cover, and silver-coloured handles.



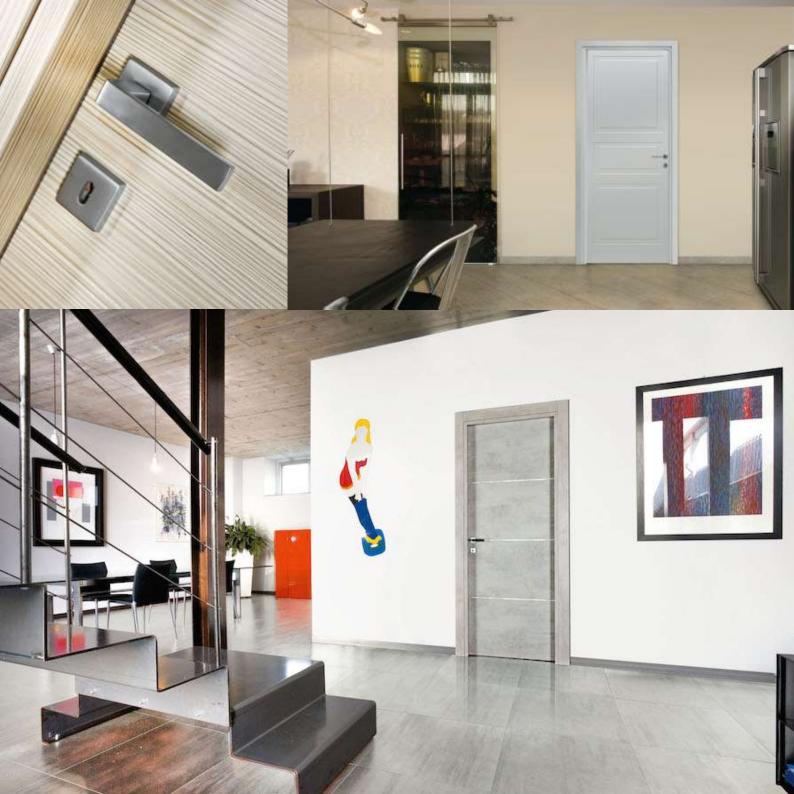
Internal doors

Interior doors, brand Dierre, in honeycomb wood, with smooth, laminate or lacquered finish, with a wide range of colours and shades availability.

The structure and the plywood cover highlight the expressive strength of the wood, that returns to be the protagonist even in modern doors.

The baseboards inside the house will be made of wood, matching the doors.









Bathrooms

Bathrooms are complete with sink, vase, bidet and shower tray: Sanitary ware available in floor mount or suspended versions, in models Artceram File 2.0, or Rak Metropolitan.

Ceramic shower tray, model Hatria lif3, dimension:80x100 or 80x120 cm.

Paffoni Elle faucets, with square lines or Paffoni Light faucets, with soft shapes.

At our supplier it will be possible to view these elements, or choose different models for extra.

Furniture with sink, mirror and shower cabin are not included.





Flooring

Porcelain stoneware floor and interior tiles in different colours, available in different brands, sizes, effects and finishes, viewable at our supplier.

Installation method and tolerances according to UNI 11493-1.





This specification, in case of need, may be modified by the construction company, during construction in case of impossibility to find the material or requests of the competent technicians.

In any case, the use of materials of the same standard and quality as those in this specification will be guaranteed.

It will be care of the constructor company to communicate it to the buyer.

The buyer, only for interior finishing of the apartments, has the right to choose other elements or materials than those presented in the specifications, compensating any cost differences.

For any doubt, curiosity or request contact us by email at info@fracticostruzioni.com.