



DESCRIPTIVE SPECIFICATIONS OF THE WORKS



# INTRO



From the 1<sup>st</sup> of January 2021 all new buildings, both public and private, must be "nearly zero energy buildings"

**NEARLY ZERO ENERGY** buildings are buildings that have a very high energy efficiency, that is, with very low or almost zero energy needs largely covered by renewable energy sources with consequent savings of energy and reduction of operating costs. This is also accompanied by a high quality standard and high conditions of comfort for the inhabitants.



## Why build a NEARLY ZERO ENERGY building Energy and economic savings

A NEARLY ZERO ENERGY building is characterized by a very low heating need and therefore allows you to substantially save on heating and air-conditioning costs. These are the particularly important components: An effective insulation of the outer shell of the building, the presence of thermal insulated windows that let in as much light as possible but prevent the escape of heat, an airtight construction.



#### Comfort and wellness of the rooms

A good insulation of the walls in addition to reducing consumption costs also increases the internal comfort. Insulation of the external walls increases the temperatures of the internal surfaces, while at the same time lowering the temperature of the rooms. This has positive effects on the living comfort and energy needs. A good insulation of the perimeters of the building is also useful in summer, because it is one of the main factors to prevent overheating. We spend 90% of our time indoors and it is for this reason that the quality of the internal space has a significant influence on our well-being and health.

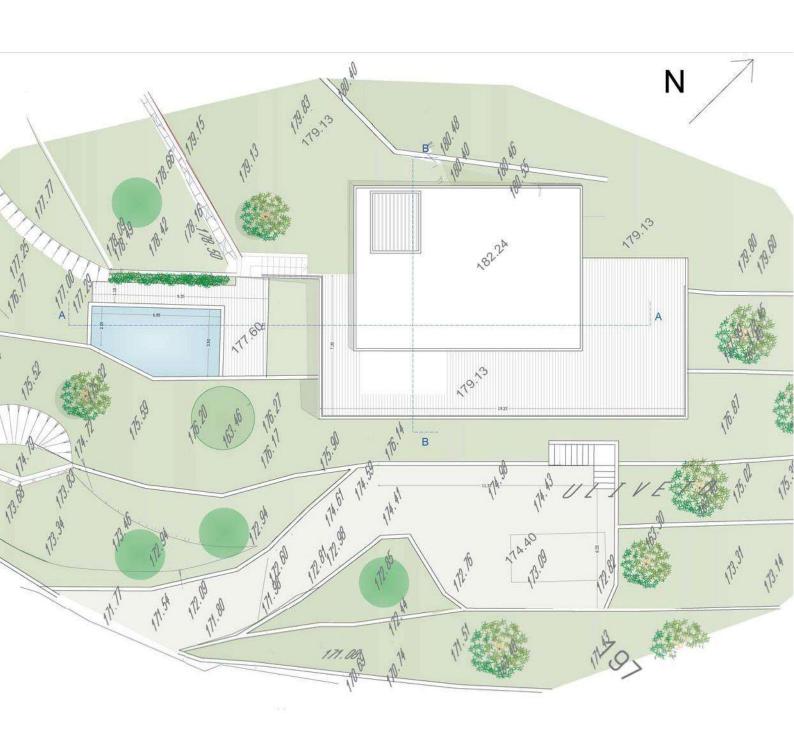


#### Increase in value over time

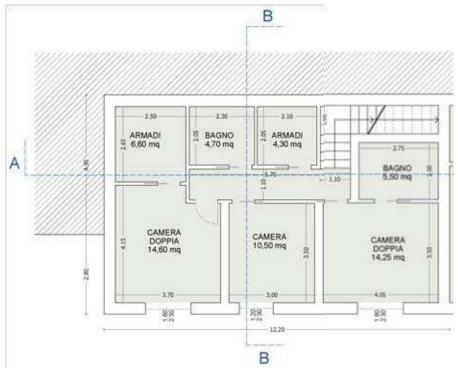
The result of studies conducted by the real estate agencies confirms that a property built with the energy saving and eco-compatibility criteria has a value that is more than a traditional house has; the study confirms that houses with a good grade of energy efficiency, can have an increase in value up to 15% more than a non-ecological building; the increase reaches 22% in the northern Italy where a well-insulated and energy-efficient house is more important for the climatic reasons. In the real estate market, every technological renovation has always led to an increase in the prices of houses that were adapted to the changes. From today and more and more in future years, the house built with ecological criteria and equipped with renewable sources will have its real estate value increase. Today, innovation is measured in terms of energy saving, compatibility and sustainability in the environment.

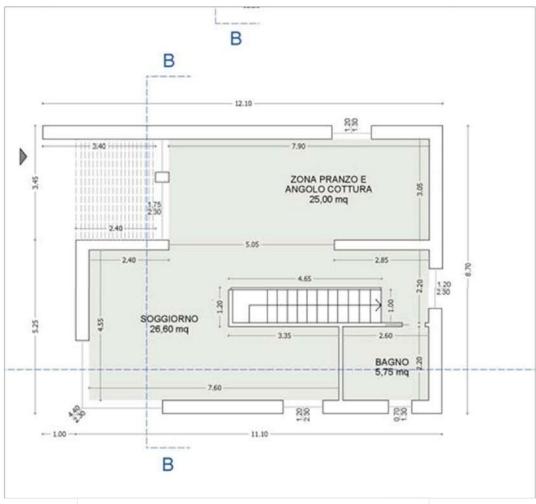
# **PLAN**

# Land of 1500 sqm



# LAYOUT





Total Gross Area 180 sqm

# PERSPECTIVE DRAWINGS



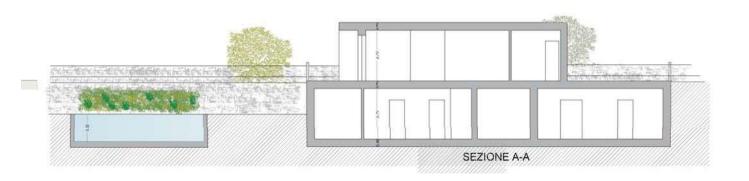






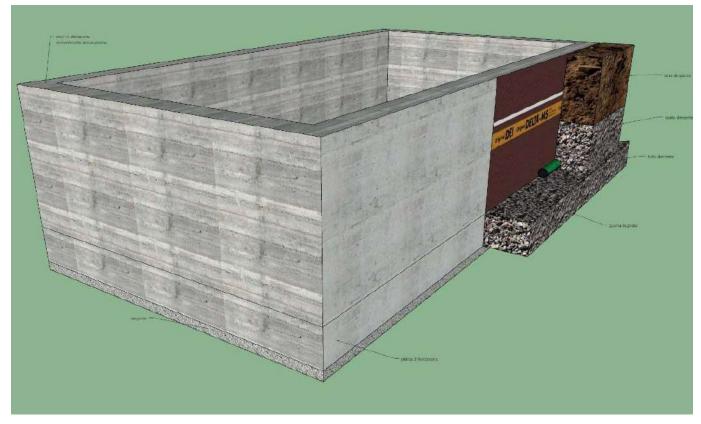
# SECTIONS |





## **WORKS ON REINFORCED CONCRETE STRUCTURES:**





## WORKS ON THE SWIMMING POOL STRUCTURE

The construction will consist in the execution of the following works:

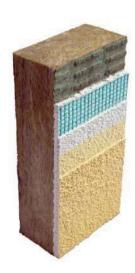
- a) excavation of the area of land for the structural foundation works, with the exception of the works of disposal of the resulting land that will be stored on site for subsequent reinforcements;
- b) realization of non-structural foundation with lean concrete in order to create a leveled support;
- c) reinforcement, supply and installation of construction iron of type B 450 C, including the subsequent casting of the foundation slab designed to have a height of 30 cm, with concrete of type C 25/30;
- d) reinforcement, supply and installation of construction iron of type B 450 C, including the subsequent casting of the retaining walls designed to be 25/30 cm thick, with concrete of type C 25/30;
- e) supply and installation of drainage pipe of 125 mm in diameter for conveying rainwater outside the foundation;
- f) supply and installation of ashlar shell;
- g) execution of the backfill consisting of 1 layer of the draining material of a height of circa 1 meter and subsequent filling by using the land stored on site during the excavation works.

# **EXTERNAL WALLS**

(THERMAL INSULATION OF REINFORCED CONCRETE WALLS OF THE GROUND FLOOR)

The external insulation of the reinforced concrete walls in the ground floor and the first floor will consist of a thermal cover system of 12 cm thick rock wool.

The panels covering will be carried out with two layers of smoothing with interposed reinforced reinforcement mesh complete with corners, profiles for fittings, sealing, profiles for window fitting. The finish working will be carried out with siloxane-based paint in a color of the customer's choice in soft colors.



12 cm thick <u>rock wool</u> cover with breathable siloxane finish <u>transmittance</u>: 0.27 W/mqK = > legal limit value: 0,34 <u>summer phase shift</u>: 12.48 h <u>material breathability</u>: Value of  $\mu$  2 (high breathability)

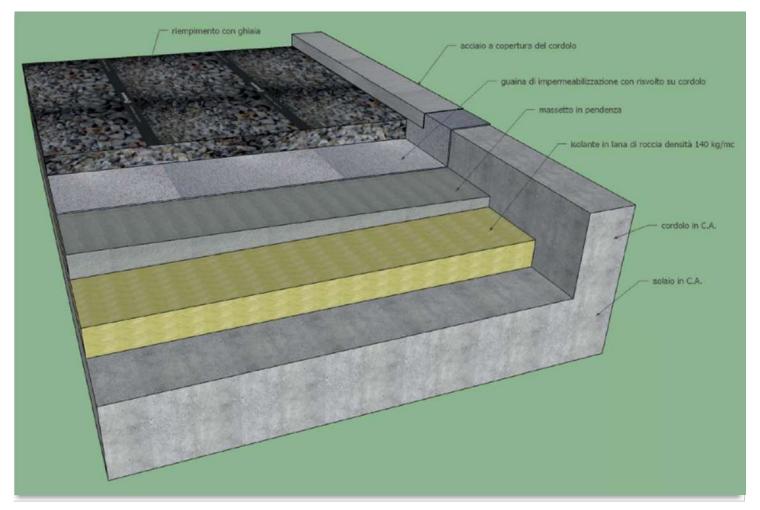
**TABELLA 1** (Appendice A) Trasmittanza termica U di riferimento delle <u>strutture opache verticali</u>, verso l'esterno, gli ambienti non riscaldati o contro terra

Zona climatica	U <sub>rif</sub> [W/m <sup>2</sup> K]	
	Dal 1° ottobre 2015	Dal 1° gennaio 2019/2021
A-B	0,45	0,43
С	0,38	0,34
D	0,34	0,29
E	0,30	0,26
F	0,28	0,24

Value by Law

#### **FLAT ROOF:**

Cover thickness (excluding suspended ceiling and slab) 30 cm



(above) 3D image of the type of the flat roof stratigraphy proposed

Description from the inside to the outside of the flat roof:

- a) construction of reinforced concrete roof 30 cm thick slab, according to the structural calculations of Engineer Marco Savini;
- b) supply and installation of the thermal insulation consisting of panels in rock wool or wood fiber of the primary brand of 10 cm thickness, with an average density of 140 kg/mc for rock wool and 110 kg/mc for wood fiber. To avoid the interstitial condensation between the insulating layer and the slab, a suitable steam insulation sheet will be laid;
- c) realization of heat-insulating screed to be performed with product of Lecamix Facile della Leca type or similar product, of average thickness of about 8 cm, adequately levelled-off and properly finished;

- d) waterproofing with a modified single-component cementitious polymer micro-fiberreinforced product, including the lapels with a special elastic band and the placement of special drain pipes to prepare the discharges of rainwater;
- e) filling of gravel suitably confined to the intern of alveolar structure in polypropylene (see example photo below)





f) installation of galvanized steel sheet that is pre-painted in anthracite color.

# THERMAL INSULATION OF GARAGE AND UTILITY ROOM CEILINGS:

Realization of the thermal insulation of the ceiling of the garage and the wall bordering the staircase inside the garage and utility room since they are considered for thermal purposes as "unheated rooms". The insulation will be performed with YTONG Multipor panel, 10 cm thick, including stucco works in two layers with interposed fiberglass mesh.



(above) example of installation of the proposed insulation system and insulation material image

# **STONE CLADDING:**

The stone cladding of the walls indicated in the image in the annex is to be provided for with the use of local stone including the possible supply ex-site of stone and the preparation processes.



(left) example of stone cladding with local stone

# **INTERIOR PARTITIONS - INTERIOR WALLS:**

# INTERIOR PARTITIONS (thickness of circa 13 cm):

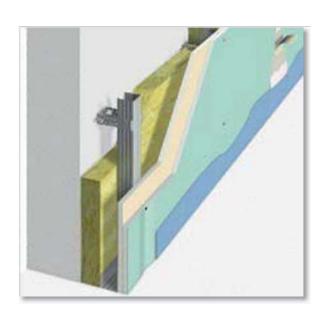


the interior walls of subdivision of the rooms will be made by "dry" technology, consisting of a 100 mm wide steel metal structure, on which 1 sheet per side in 12.5 mm thick fiber plaster will be fixed and inside a 70 mm thick glass wool panel will be inserted.

(example of internal arrangement of partitions by dry structure)

# INTERIOR WALLS (thickness of circa 6 cm):

The internal perimeter walls in correspondence of the reinforced concrete walls on the first floor and ground floor, will be made by the "dry" technology consisting of a 50 mm wide steel metal structure on which 1 12.5 mm thick fiber plaster sheet will be fixed.



# BATHROOM AND KITCHEN ROOM PARTITIONS (thickness of about 17 cm):

The internal partitions of the bathroom and kitchen rooms will be made by the "dry" technology, consisting of a double metal steel structure that is 50 mm wide on which 1 12.5 mm thick fiber plaster sheet per side will be fixed.

(example of the partition dry structure in the bathroom and kitchen room)

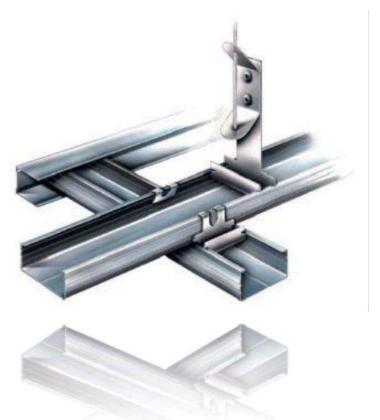


#### **SUSPENDED CEILINGS:**

# (Ground floor)

Realization of plasterboard suspended ceiling consisting of the primary and load-bearing support warping made with galvanized sheet metal profiles of 6/10 thickness with "C" section of 49x27 mm anchored to the existing ceiling by means of metal tie rods and appropriate dowels; perpendicular secondary structure placed at a distance of 500 mm with special interlocking orthogonal hooks; profile with a "U" section to be installed on the perimeter parts of the false ceiling with nails or appropriate dowels. Coating of the structure with a sheet of plasterboard of 12.5 mm thickness of the primary brand of KNAUF type or similar, screwed to the galvanized sheet metal structure by means of special screws. Finishing of the joints of the screws and corners with grouting and subsequent levering-off ready for finishing.

The estimate includes eventual holes for the preparation of eventual spotlights and the inspection hatches to be installed on the ceiling for the inspection of the systems passing through the ceiling.

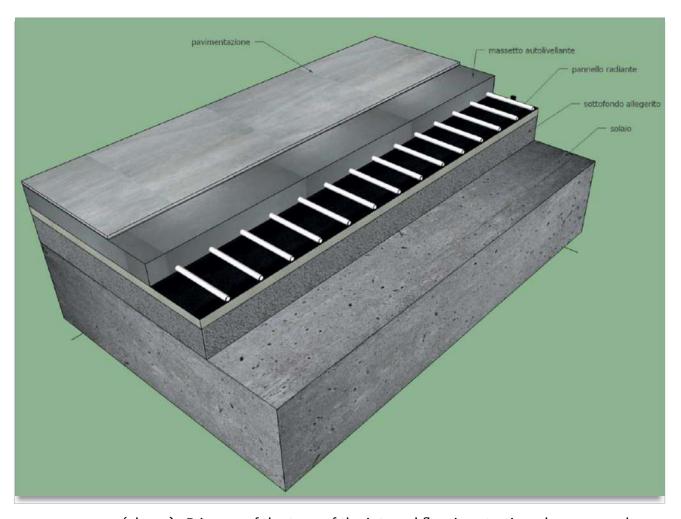


(left) example of internal suspended ceiling

## STRATIGRAPHY OF INTERNAL FLOORING:

(First floor and ground floor)

Thickness of the internal flooring stratigraphy of the ground floor and first floor (excluding slab) 22 cm



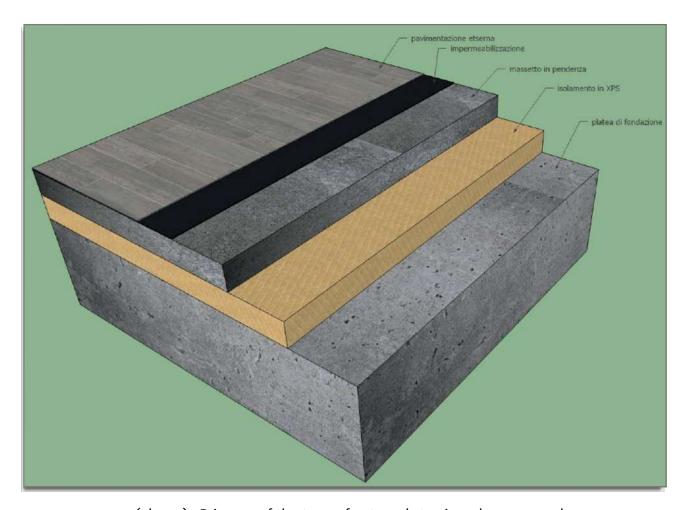
(above) 3D image of the type of the internal flooring stratigraphy proposed

The stratigraphy of the internal flooring will consist of:

- lightened subfloor to cover floor systems up to a thickness of 10 cm;
- ashlar radiant panel composed of 30 mm of insulation and 20 mm of height of the ashlar on which the pipes that will constitute the radiant floor package will be laid (excluding supply and installation);
- self-leveling or high conductivity screed consistency of the "wet land" type of Paris 2.0 for the creation of the laying surface for the subsequent flooring up to a thickness of 5 cm;
- only laying of internal flooring in porcelain stone tiles and/or parquet (excluding supply), including relative skirting boards (excluding supply);
- in the ground floor, we will proceed to realize only the screed and the installation of the flooring with its skirting board (excluding the supply) as it is considered as unheated rooms.

# STRATIGRAPHY OF EXTERNAL FLOORING: (Ground floor)

External stratigraphy thickness (excluding basement slab/slab) of up to 20 cm



(above) 3D image of the type of external stratigraphy proposed

The stratigraphy of the external flooring will consist of:

- basement foundation
- thermal insulation consisting of XPS panels up to a thickness of 10 cm;
- sloping screed made of pre-mixed products such as Keracem Pronto by Kera Koll or similar up to a thickness of 10 cm;
- waterproofing with a modified single-component cementitious polymer micro-fiber-reinforced product, including the lapels with a special elastic band;
- only laying of external porcelain stone tiles flooring (excluding supply), including relative skirting boards (excluding supply).

# **THRESHOLDS AND TERRACE CURBS:**

The supply and installation with Cardoso stone material is planned:

- 1) external threshold of the armored door;
- 2) supply and installation of the external curbs of the terrace that will be of 2 cm thickness and 15 cm wideness;
- 3) coating of the step tread of the internal staircase with stuccoing of the riser.



(left)
example image of the type of
material proposed

#### **INTERNAL FLOORING AND COATINGS:**

In the estimate it is planned to provide the **supply and installation** of the internal coatings related to the floors of all the rooms, with high quality materials to be chosen from the catalog of the primary manufacturer, which is our supplier. The possible installation of mosaics or formats less than 15x15 is excluded, the cost of which will be quantified separately.

The heights of the coatings given in the estimate are:

#### **Bathrooms:**

wall perimeter and shower side: height of 200 cm

#### Kitchen:

kitchen side wall between a top and upper furniture units: height of 100 cm



Laying includes the materials of consumption such as glue of the primary brand of Kera Koll H40 type or similar and stuccoes of the Kera Koll of the Fugabella line with colors of your choice according to the color range.

#### **INTERIOR FINISH PAINT:**

The interior finish paint will be performed with breathable wall water based paint for interior rooms such as Alpha Tex Acryl by Sikkens or similar. The color provided for in the estimate is white, any additions of coloring and/or decorations will be evaluated on request and integrated into this offer.



#### **EXTERNAL WINDOWS:**

The windows will be in width and length according to the Schuco company project







# **SANITARY WARE AND TAPS**

The bathrooms of the building will be complete with sanitary ware and shower cubicle. The materials that will be installed are of Ideal Standard. Any changes requested by the buyer will be calculated separately. The supply and installation of bathroom furniture, such as: washbasin, furniture and anything else that is not sanitary ware, is excluded.



(above and on the right)

Example image of the type of material proposed





## **INTERNAL DOORS:**

#### **INTERNAL SLIDING DOORS:**

as indicated in the architectural project, some internal doors will be of the sliding type, the size of  $80 \times 210$  cm, including its frame for sliding doors of Scrigno type.

The type of door proposed is as follows:

## **Liss Series**

white lacquer colour RAL 9010 6 sliding doors of the size of 80 x 210 cm

(right)
example image of the
type of subframe
Scrigno type for sliding doors







(left)
example image
of the type of sliding door
proposed

# **INTERNAL CASEMENT DOORS:**

as indicated in the architectural project, some internal doors will be of the casement type, of the size of  $70/80 \times 210$  cm, including relative subframe.

The type of door proposed is as follows:

# **Liss Series**

white lacquer colour RAL 9010 4 casement doors of the size of 70/80 x 210 cm





(left)
example image
of the type of casement door
proposed

## **ENTRANCE DOOR:**

The offer provides for the supply and installation of 1 entrance blinded one-leaf door of the white RAL 9010 color both internally and externally, chromed internal and external handle, cylinder with keys and lower threshold with thermal insulation.

The supply and installation of the relative subframe is included. The type of door proposed is as follows:

# Sentry 1 model

ice white lacquer colour or RAL 9010 of the size of 90 x 210 cm





(left) example image of the proposed door





(left)
type of lock
provided

# **UP-AND-OVER GARAGE DOOR:**

The offer provides for the supply and installation of 1 up-and-over garage door, with the project size of 2500x2300 mm, MyFusion 400 model by Ballan (double motorization).







Vista esterna porta basculante MyFusion 400, struttura Sikurtec HF, con bordi arrotondati, finitura goffrato legno.



Vista interna porta basculante MyFusion 400, struttura Sikurtec HF, pannelli finitura goffrato stucco bianco simil Ral 9016 di serie.

# **HEATING SUPPLY SYSTEM:**

The heating supply system is foreseen by:

Installation of a radiant floor system of the company Acquatechnik consisting of:

- ashlar panel
- collector, including inspection box with solenoid valves for the separate adjustment of each room controlled by a thermostat
- multi-heat pipe PE-X + ALU + PE-X with anti-oxygen barrier



Installation of a heat pump



## **AIR CONDITIONING SYSTEM:**

The air conditioning system is designed by the supply and installation of adequately sized ducted units from the heat pump.

The system is composed of:

• 2 ducts of BAXI model IQD 110 complete with 3-way valves, channels and box for air distribution in the premises;

It is planned to create a system of the TECNOSYSTEMI, PROAIR model for the radio wave regulation of the temperature, speed in the various rooms, living room and bedrooms.



(left) radio wave regulation system

The estimate also includes the grids and pipes necessary for the proper functioning of the system.

## **ELECTRIC POWER SUPPLY SYSTEM**



(left)

example of the frames provided for in the estimate for the points described below

The supply and installation of the electric power supply system consists of the following components:

- Electric panel of 24 modules complete with all the necessary protections
- dorsal lines for light and socket distribution
- button point complete with a plate and bell
- Video door phone system complete with:
   1 external station and 1 internal workstation (2 internal stations in the villas with 2 floors)
- 20 light points
- 22 light control points
- 25 universal service socket points
- 5 socket points controlled by the switchboard for washing machine, dishwasher, fridge, oven
- 2 points group sockets kitchen worktop
- 4 points terrestrial TV sockets and TV switchboard including antenna
- 2 phone points
- 2 thermostat points
- execution of general ground network complete with points
- execution of connection points for thermo-hydraulic system

## ANTI-INTRUSION AND VIDEO SURVEILLANCE SYSTEM

The supply and installation of an anti-intrusion system of ARITECH brand of Advance Line as follows: 32-zone control unit complete with telephone dialer and GSM module manageable through the Mobile App

4 Internal volumetric double technology with anti-masking of Grade 3 Grade 3 magnetic contacts on each gate (doors and windows)

- 1 Control keyboard complete with a proximity reader
- 1 Internal siren
- 1 External siren

The supply and installation of the IP video surveillance system of **ARITECH** brand, Truvision line composed as follows:

- 1 Network Video Recorder for 8 channels with resolution available for 4 K cameras
- 4 outdoor surveillance cameras with 4 Mpx resolution

Remote management software and App for mobile devices (Smartphone and Tablet), which enables the reception of alarm notifications and the display of cameras



# **EXCLUSIONS**

The following are excluded from these specifications:

- The supply of internal and external lighting fixtures
- The plants in the garden, except those that are already in the garden
- Architectural modifications of the garden and related infrastructures
- Everything that is not expressly indicated in these specifications is excluded



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