Patio on the sea

by gruppoforesta studio d'architettura / 2015-07-03 10:32:39 / Italie / 13304 / IT

Primary energy need :

23 kWhpe/m^2.anno

(Calculation method :)

ENERGY CONSUMPTION

Economical building — *Building*

< 50	A	A
51 à 90	B	
91 à 150	C	
151 à 230	D	
231 à 330	E	
331 à 450	F	
> 450	G	

Energy-intensive building

Building Type : Terraced Individual housing
Construction Year : 2013
Delivery year : 2013
Address 1 - street : via dei bacini 73010 PORTO CESAREO (LE), Italia
Climate zone :

Net Floor Area : 136 m^2
Construction/refurbishment cost : 300 000 €
Number of Dwelling : 1 Dwelling
Cost/m2 : 2205.88 €/m^2

Certifications :

PROTOCOLLO ITACA

General information

In Porto Cesareo, 30 meters from the shore, in an area with high environmental impact, in the bay of Torre Chianca, was recovered one of the many buildings mostly squatters, ravaging the coast of Salento. The building appeared as a box of little constructive value, made in the late '60s, with numerous additions and accretions abusive stratified over time. Nestled counterslope coastal dunes, developed two floors at the beach while at the back, following the excavation of dunes had been converted into a low floor. The lack of foresight constructive and the use of inferior materials used does not guaranteed, inside, provided that health, as well as static. A new commission "enlightened", inclined to invest in Salento, it becomes an occasion for the study of architecture to transform gruppoforesta abuse built on the dunes of Porto Cesareo, in a sustainable building, energy class "A" according to legge13 / 08 "Standards for sustainable living" and to the Protocol Ithaca. The project aims to improve the building envelope and its relationship with the surrounding environment, through architectural choices and techniques in line with sustainable living and the quality of the works of architecture. The research starts from the genius loci. Salento, "a land boldly prolonged in the Mediterranean Sea", characterized by strong exposure to the sun, from a temperate climate with an average annual temperature ranging around 16-20 ° C. This weather condition becomes the starting point of the project, marks the choices, it determines the final result. In the Mediterranean basin it is easy to see that light, the wind and the sun become building materials like brick or stone. The special feature of recovery of the article is not so much in the "technological

sustainability" of the building itself - as now accessible and necessary - as in the ability of designers to combine architectural quality, energy performance and especially the genius loci. The recovery is not nostalgic of the traditional "best practices" of the building of the territory, such as the orientation with respect to the winds and the sun, the use of materials with high thermal inertia, has allowed us to reach the goal of sustainability without resorting to solutions technological and plant exasperated. The artifact meets the regulatory requirements, through the interpretation of place and history, making dialogue the architectural quality and energy performance of the building, using traditional construction solutions and the use of technology always "at the service" of architecture and not as a necessary condition to the achievement of quality of living. The surgery was first and foremost to demolish, autodenunciandosi, abuses and bring the building back to its initial state. Subsequently, due to phenomena of rotation present on the substrate, it was considered necessary an intervention of static consolidation through the realization of a frame system AC framing the terrace facing the sea. To ensure health through direct irradiation, it was gutted the center to create a small courtyard on which rotates the new internal distribution. The color of prospectuses resumes shades of sand in front and glass railings eliminate any visual barrier. The green area is planted with native tree species. Despite the existing score (3.12) designers, and consequently the client, have decided not to use the rewarding of airspace in respect of the environment and the Saracen tower that marks the entire bay. All this is to not have a negative impact on an area already consumed, plundered and humiliated and has continued the process of the Protocol Ithaca to give the project the building and obtained a certificate of quality; moreover, it would not be possible to use, given the location of the property, the rewarding, least of incentives by the City (of course absent). When interfacing with nature, the property value is less than the interest of the community and the environment.

See more details about this project

http://www.gruppoforesta.com/progetti/patio-sul-mare/

Data reliability

3rd part certified

Stakeholders

Stakeholders

Function : Designer

IMPRESA ESECUTRICE DELLE OPERE EDILI : DE MATTEIS COSTRUZIONI, COPERTINO; IMPRESA ESECUTRICE INTONACI: PR EDILIZIA DI PELLEGRINO ROBERTO, LEQUILE; IMPRESA ESECUTRICE DELL'IMPIANTO DI RISCALDAMENTO E DELL'IMPIANTO IDROSANITARIO: PELLEGRINO ARMANDO IMPIANTI

https://www.gruppoforesta.com/

Contracting method

Build and sell construction

Owner approach of sustainability

When interfacing with nature, the property value is less than the interest of the community and the environment. This intervention can become an example of how the regional law 13/08 can generate self-regeneration processes on the environment if given and taken in cultural and economic terms by individual citizens. In this way, illegal Porto Cesareo, violent explication of private interest, can become a powder keg positive, exploding spontaneously, can self-generate a system of urban renewal, environmental and social general, going beyond the architectural regeneration of individual buildings.

Architectural description

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courtyard on which rotates the new internal distribution. The color of prospectuses resumes shades of sand in front and glass railings eliminate any visual barrier. The green area is planted with native tree species. Despite the existing score (3.12) designers, and consequently the client, have decided not to use the rewarding of airspace in respect of the environment and the Saracen tower that marks the entire bay. All this is to not have a negative impact on an area already consumed, plundered and humiliated and has continued the process of the Protocol Ithaca to give the project the building and obtained a certificate of quality; moreover, it would not be possible to use, given the location of the property, the rewarding, least of incentives by the City (of course absent). When interfacing with nature, the property value is less than the interest of the community and the environment.

If you had to do it again?

nothing

Building users opinion

The property purchased in poor condition has now become a strong signal of architectural quality, where comfort and technology blend with the environment.

Energy

Energy consumption

Primary energy need : 23,00 kWhpe/m^2.anno

Primary energy need for standard building : 41,00 kWhpe/m^2.anno

Calculation method :

CEEB : 0.0001

Final Energy : 18,00 kWhfe/m^2.anno

Breakdown for energy consumption :
Thermal energy demand for ACS (Qw) 6.15 Losses plant for ACS (Ql, w) 0.3 Auxiliary power supply (Qaux, w) 0 Thermal energy for DHW produced by the plants to renewable energy source (Qg, w) (B) 12 Auxiliary power supply for ACS produced by plants to renewable energy source (Q g, l, w) 0 Primary energy demand for ACS (Epacs) 18

Initial consumption : 41,00 kWhpe/m^2.anno

Envelope performance

Envelope U-Value : 0,62 W/m^{2}K

More information :
DescrizioneMURATURA EXTERNAL COAT Noteprogetto GiacituraVE = Vertical external Origin of datiDa stratigraphy Spessorem0,615 Massa superficialekg / m²801,033 Massa totalekg / m²857,033 Heat capacity internakJ / (m² • K) 58.11 Heat capacity esternakJ / (m² • K) 29 48 Thermal Resistance of materialim² • K / W2,284 Thermal resistance totalem² • K / W2,454 Thermal transmittance totaleW / (m² • K) 0,407 Thermal transmittance periodicaW / (m² • K) 0,005

Building Compactness Coefficient : 0,61

Indicator :

Air Tightness Value : 1,85

Renewables & systems

Systems

Heating system :
- Heat pump
- Low temperature floor heating
- Solar thermal

Hot water system :
- Heat pump
- Solar Thermal

Cooling system :
- Reversible heat pump

Ventilation system :
- Free-cooling

Renewable systems :
- Solar Thermal

Renewable energy production : 66,00 %

Solar panel system with instant boiler. The solar circuit is composed of a system of collectors, from the group pumps and safety and the connection pipes. The circulation pump of the solar circuit is activated by a temperature differential controller when the temperature inside the collector is higher than the reference temperature set in the storage tank.

Environment

GHG emissions

GHG in use : 5,00 $KgCO_2/m^2$/anno

GHG before use : 33,00 $KgCO_2$ /m^2

Building lifetime : 25,00 anno/i

, ie xx in use years : 6.6

Life Cycle Analysis

Eco-design material : DURING THE DESIGN AND CONSTRUCTION INTERVENTION MUCH WEIGHT HAS BEEN GIVEN TO THE MATERIALS AS FOLLOWS BY THE PROTOCOL ITHACA. Encourage the use of recycled materials and / or recovery to decrease the consumption of new resources. Facilitate the procurement of heavy materials such as aggregates, sand, cement, brick, steel and glass, produced locally. Promote a design to allow selective dismantling of components so that it can be reused or recycled. Encouraging thereby reduce the consumption of raw materials and demolition waste. Encourage the use of materials biosostenibili.

Water management

Consumption from water network : 49 992,00 m^3

Consumption of grey water : 49 992,00 m^3

Consumption of harvested rainwater : 45,00 m^3

Water Self Sufficiency Index : 0.5

Water Consumption/m2 : 367.59

Water Consumption/Dwelling : 49992

Purpose: Reduce the amount of effluent discharged into the sewer. Performance Indicator: The ratio of the volume of waste liquid products and the reference quantity calculated according to water needs for indoor use. Verification tools The effluent from domestic activities are generally discharged directly into the sewer. To minimize the phenomenon is possible to act on reducing consumption and using appropriate recovery systems and / or wastewater treatment. The calculation of the volume of drinking water needed to meet the water demand for indoor use was obtained as prevsito the Area Plan 2009 ATO Puglia: Class 2,000 population <pop <20.000^145 l / ab * g Number of apartments: 1 Population per apartment: 4 Volume of drinking water (A) required to meet the water requirement: 4 * 145 * 365 = 211,700 l / year Calculation of the volume of water saved for use indoors using technology strategies: Use of reducers / regulators flow faucets for washbasin, bidet, sink and shower Cons. per capita daily water for bath / shower: 42.5 l Cons. per capita daily water for washing dishes: 10.63 l Cons. per capita daily water drinking for body care: 9.56 l Cons. per capita daily water for cooking / drinking: 7.44 l Cons. per capita daily drinking water for household cleaning: 3,19 l Cons. per capita daily water for other uses: 8,50 l Cons. per capita daily water total: 81.82 l Number of apartments: 1 Number of inhabitants per apartment: 4 Annual water consumption of drinking water for the uses (bath / shower, washing dishes, personal hygiene, cooking / drinking, household cleaning and other uses) 4 * 81.82 * 365 = 119,457.20 l / year Savings speculated: 41,85% Volume of water saved: 119,457.20 49,992.84 * 56.43% = l / year

Indoor Air quality

The air changes are guaranteed, in most of the environments of the main, from a mechanical ventilation which ensures a constant air flow rate of Category II according to UNI 15251.

Comfort

Health & comfort : METHOD 'Ray Conditioning SEASON Summer INPUPT ERSON Height 1.80 m Weight 70.0 kg Dermal Area 1.88 m² Emissivity 0.97 Clothing Summer Normal Activities met at 1:15) Standing still, talking with gestures quiet b) Sitting , talking, doing movements such as opening drawers, writing, etc. INPUATM ENVIRONMENT Emissivity 0.92 Temp.Soffitto 26.0 ° C 26.0 ° C Temp.Parete Temp.Pavimento 24.5 ° C Relative humidity 55% STRUCTURE nc OUTPUATM ENVIRONMENT Temp.Aria bs 27.2 ° C Temp.Media Radiant 25.7 ° C to 26.4 ° C Temp.Operante Temp.Rugiada 17.3 ° C OUTPUT PERSON Temp.Superficiale 31.9 ° C 0.72 Coefficient of view Power metabolic total 125.95 W Radiant Power 47.1 W exchange rate 37.4% (40% -50%) 18.6 W Power convective exchange rate 14.8% (20% -25%) Power evaporative + sr 60.2 W exchange rate 47.8% (30% -40%) Dt sup.corpo-sup.ambiente 6.2 ° C Radiant power unit 7.6 W CHART COMFORT Area positioning Feeling hot η exchange body-environment 0.80 Balance

Acoustic comfort : 53.1 dB

Products

Product

stoneware

monocibec ceramiche

info@monocibec.it

http://www.monocibec.it/ita/default.asp

Product category :

MONOCIBEC The quality of a material with many qualities Monocibec has been pursuing for years a careful and continuous industrial ecology policy. The whole productive cycle offers special guarantees for environmental protection. All Monocibec products are manufactured using raw materials with low impact on the environment and limitedly using natural resources such as water and natural gas; in particular the electricity used is self-produced through the cogeneration system, dramatically reducing emissions in the atmosphere. All scraps are reused in the production cycle. All wastes from activities not included in the production are carefully and separately collected, recycled and disposed of. Each step of the product manufacturing (raw material extraction, glaze preparation, glazing, firing, sorting and packaging) takes into account the respect for the environment and man through an analysis of the whole life cycle of the product. La tranquility of safe hygiene Pulibile water Coefficiente friction Anallergico Resistenza chemical attack Resistenza color light Ecosotenibile Impermeabile Resistenza bending Resistenza stain Resistenza frost Ignifugo The logo 100% Made in Italy testifies to a precise geographical indication of origin and a way of doing business related to the highest ethical and cultural values of Made in Italy. The products made by FINCIBEC GROUP are completely designed, developed and manufactured in Italy with the highest respect for the environment and man, aimed at building materials to the highest standards of aesthetic and performance through the optimization of all resources. THE PRODUCTION PROCESS The fine porcelain is a ceramic compact texture, hard, non-porous. The term "homogeneous" means that the mass of ceramic tile is extremely vitrified, compact, which the produce exceptional strength and frost resistance. The production process of porcelain stoneware unfolds along the following phases: Grinding The raw materials composing the ceramic mixture of porcelain stoneware (clay, sand, feldspars) are first stored in a dedicated box, and then ground within large continuous mills according to a recipe that identifies the optimal composition. To underline how many products Monocibec enjoy the certification issued by Bureau Veritas for a presence in the mix of a presence of recycled material (by processes of precious materials such as crystal) of at least 40%. The compound atomization liquid that comes from the mills, commonly termed "slip", it is sprayed at high pressure into the atomizer, where is provided a powder of fine granulometry and homogeneous, commonly called "dough", suitable for the subsequent pressing step. The pressing of atomized body is conveyed into special molds and then pressed by means of high tonnage presses in order to create the support of the tile in the format, edges and surface structure desired. Drying The pressed support of the tile, once expelled from the presses, it is routed into the dryers at high temperatures, where it is completely dried. Glazing / decoration support the tile once dried enters the glazing department where it can receive or not receive applications and glazing engobbiatura but almost always receives applications of decoration that give the tile the aesthetic properties. Always within the department glazing / decoration tiles Monocibec undergo the process of digital decoration technology according DJS (Digital Jet System) Cooking The formed tile, glazed and decorated is then, after resting in boxes dedicated and placed within storage areas, addressed to the baking furnace where, subjected to temperatures of nearly 1300 ° C, undergoes the process of sintering which gives the characteristics of resistance and imperviousness that distinguish the porcelain stoneware. Processing EOL Much of Monocibec products undergo further processing after cooking that increase the added value which the adjustment, which allows the production of tiles perfectly squared and single work, and the lapping / polishing, which gives a polishing effect more or less pronounced on the basis of the aesthetic effect to be obtained. Choice After resting inside the storage of the fired material, the tiles are routed to the department choice where, one by one, they are evaluated at both the physical characteristics (size, orthogonality, flatness, etc.) That cosmetics, both through machinery specific by highly specialized personnel; subsequently, the tiles are packed in boxes and placed automatically on wooden pallets to be moved directly to the shipping department to send to the client.

good result

Teak

alberani parketti

Lepark - Società Cooperativa Zona Industriale - 73020 Nociglia LE - Italy Tel. +39 0836 936756 Fax +39 0836 936899 E-mail: info@lepark.it


BUREAU VERITAS
Certification
NEXT
Certificato di Conformità
ALBERANI PARKETTI SRL
SEDE LEGALE ED OPERATIVA:
Via Leonardo da Vinci, 1 Zona Industriale
73020 NOCIGLIA (LE)
ISO 9001:2008
in relazione al seguente scopo
Produzione di pavimenti in legno a due strati prefiniti.
06
20/04/2011
20/04/2011
19/04/2014
ACCREDIA

http://www.alberani.it/

Product category :

Wood species: Tectona grandis Origin: South East Asia Hardness: Medium Brinnel 3.5 kg / mm² - Janka 450 g / cm² Specific gravity: 0.68 g / cm³ Linear shrinkage: Low (1.5) Oxidation: The color varies in time conforming Features: Color that goes from chocolate brown to golden brown variegated dark. Weaving average end. Fiber is not always straight. Presence of silicon crystals in the fiber and oils that confer characteristics of long durability, resistance to decay and exceptional stability. Nervousness very modest. Produced with the utmost care by applying four coats of UV protective oil, water repellent, flavored and non-toxic. Ideal for any customizations or antiquing thanks to the conservation of different shades of color.

good result

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abideck

AbidA Srl

Via E. Fermi, 1 - Anguillara Sabazia (Roma) Tel. +39 06 999 44 69 - Fax +39 06 999 54 91 info@abideck.com

http://www.abideck.com/

Product category :

Abideck® is completely free of wood (as opposed to similar products on the market) for which does not contribute to deforestation Abideck® is sustainable because its main component, the husk of rice, is a renewable resource with extremely short cycles is Abideck® restistente all 'be it fresh or salt water and weathering Abideck® is UV-resistant Abideck® not embarks Abideck® not crack and do not crack Abideck® is dimensionally stable Abideck® not splinter so walked barefoot Abideck® is incorruptible Abideck® is non-slip, even in smooth side Abideck®v is resistant to termites and insects Abideck® installs easily and

quickly on both sides Abideck® be colored at will Abideck® requires minimal maintenance Abideck® is workable like wood and with the same utensil

good result

Costs

Construction and exploitation costs

Renewable energy systems cost : 13 000,00 €

Total cost of the building : 900 000 €

Urban environment

The lot of intervention (maintenance and static consolidation with internal restructuring to be implemented) falls in the Plan Territorial Urban Theme "Landscape" (PUTT / p), and was the subject of veriche with that legislation of landscape protection. An examination of the documents of PUTT regarding the ranking of "territorial extended" it is noted that the area which the intervention is on the Land Cadastre of Porto Cesareo to 22 fg part.lla 1123. With regard to the level of the landscape values lot lies in a territory of discernible value "C", right art. 2.2 Section 1.3. the NTA of PUTT, which provides for the preservation and enhancement of the current system if qualified; transformation of the current system, if compromised, to restore and further qualification; transformation of the current system which is compatible with the landscape qualification. As provided by the same thematic tables scale 1: 25,000 PUTT areas with typing the type "C" there are no forecasts vincolistiche existing entry into force of PUTT the landscape, and in particular the areas covered by this are not affected by following constraints: Constraints under Law 1497/39; Hydrology Surface; Civilian use; Galasso decrees; Caves; Geo-morphological peculiarities. Substantially the classification of the area subject of intervention is not classified with an outstanding landscape value-relevant-distinguishable on areas with classification A, but with classification C, slightly higher than the normal value E. As explained before, it is clear that the works for which the intervention does not affect directly and / or indirectly, any part of scenic value, or contrary, no distinct geographical area, but for the case while not subject to immutable constraints, the project was subject to prior authorization landscaping , since the addresses of inherent protection zones C still allow transformations of the current land use, provided that this change is compatible from the point of view of landscape and implemented with caution. With reference to the "Assetto geomorphological and hydrogeological" the project area is located close to the coastline, in the first group of houses that are part of Via Torre Lapillo, locations Scalo di Furno, and appears to be located in an area appurtenance coastal and coastal, covering a significant role positioned in landscape and environment overall scope of reference. The project area is not affected by the presence of slopes, embankment eyelashes and / or channels, blades, ravines or elements characterize the geomorphological structure, nor has other peculiarities of the geological point of view. The intervention in the project still maintains both the geomorphological structure of the whole, that the current hydrogeological structure of the affected areas. At present there are no constraints of prescription basis to be protected, according to the technical rules of the PUTT. The land concerned is situated away from watercourses and slopes and ridges, and is located near the coastal area and the coast, so you maintain the basic requirements envisaged involving the interventions of ordinary and extraordinary maintenance, consolidation static and restoration of artifacts legitimately exist, that does not significantly alter the condition of the premises and the appearance of the site and buildings. I With reference to the "cover crop vegetation botanical and faunal presence", the area object of interest is not to be affected by particular components of recognized scientific value and ecological importance, economic, defense of the soil and / or recognized importance both historical and aesthetic. No recognition of the area in question the presence of rare species of flora or endangered or of special biological interest - vegetation. The intervention did not significantly alter the current structure of the system botanical - vegetational this area, as they have been preserved all native species already present on site, supplemented, when necessary, by essence typical of the Mediterranean. With reference to the "historical layering of the organization of settlements, the area in question does not appear to be affected by particular historical cultural heritage of recognized value and / or recognized role positioned in landscaped this scope.

Land plot area

Land plot area : 477,35 m^2

Built-up area

Built-up area : 118,05 %

Green space

Green space : 192,00

Parking spaces

5

Building Environnemental Quality

Building Environmental Quality

- Building flexibility

- indoor air quality and health
- works (including waste management)
- acoustics
- comfort (visual, olfactive, thermal)
- water management
- energy efficiency
- renewable energies
- products and materials

Contest

Reasons for participating in the competition(s)

The building in question is located in an area with high environmental impact on the dunes near the demesne. The state of abandonment besetting was such as to require a complete renovation; despite being one of the few buildings constructed in the 60's with building permit over the years he had been humiliated with additions and accretions. The intervent Noah was primarily to demolish, autodenunciandosi, abuses and bring the building back to its initial state. The will of the designers combined with the commission "enlightened" have helped to create a building "sustainable" energy class that respected the Protocol Ithaca by taking steps to improve the building envelope and its relationship with the surrounding environment, through choices architectural and techniques in line with sustainable living and the quality of the works of architecture.

Building candidate in the category

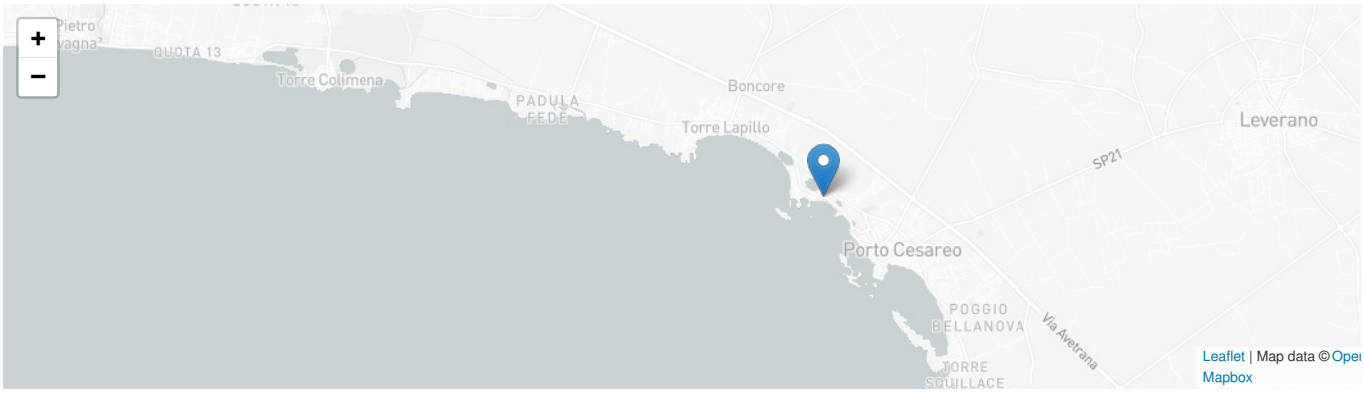
Green Building Solutions Awards 2015
powered by Construction21

Bio-based Materials

Renewable energies

Low energy renovation

Health & Comfort



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