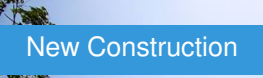



## Faubourgs of Anfa

by Jérémiah Cozar / 2017-06-01 20:43:29 / Maroc / 14736 / FR

**Primary energy need :**

39 kWhep/m<sup>2</sup>.an

(Calculation method : Other)

**ENERGY CONSUMPTION**

*Economical building*

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

*Energy-intensive building*

*Building*

**A**

**Building Type** : Collective housing < 50m  
**Construction Year** : 2018  
**Delivery year** : 2018  
**Address 1 - street** : Bd Sidi Abdellah Ben Cherif 20000 CASABLANCA, Maroc  
**Climate zone** : [Csa] Interior Mediterranean - Mild with dry, hot summer.

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**Net Floor Area** : 43 200 m<sup>2</sup> Autre type de surface nette  
**Construction/refurbishment cost** : 600 €  
**Number of Dwelling** : 391 Dwelling  
**Cost/m2** : 0.01 €/m<sup>2</sup>

**Certifications :**



**Proposed by :**




General information

The real estate transaction Les Faubourgs d'Anfa is a residential area located on the former right-of-way of the airport of Casablanca, where the new business district of Casa-Anfa develops, which will eventually include numerous office towers, Housing buildings and a large park in the heart of this neighborhood.

The operation as a whole is certified HQE Passeport Excellent 10 stars (a first in Morocco for a residential building), ILTIZAM, and has environmental labels of clean construction Green Site Office Platinum and ECOSITE. It consists of three construction slices, we will talk about the tranche 1 here which is currently in delivery phase.

It is composed of 2 separate buildings, accounting for 114 housing units in total, ranging from studio to spacious duplex. The guests have a choice of ambiance when booking, timeless (marble and wooden joinery) or modern (gray anthracite tile and white cladding) without impact on the sale price of the property. The common parking lot for both buildings is on 2 levels of basement and each apartment has one or even two places. Outside the buildings, there are green spaces with lots of trees, secure access paths, shared recreation areas and a playground for children in the heart of the island, which allows a high quality of life common to the Within the residence. The right of way of the residence and delimited by fences and the accesses are secured by codes or badges, a guard is present 24/24 in each buildings

The accommodations are compact and functional. The interior comfort is ensured by different arrangements made by the Owner. First of all, the high-performance acoustic and thermal insulation complexes on the façade and between apartments ensure a high degree of tranquility at home.

Also the layout of the buildings on the plot and the orientation of the apartments was studied by the architect Omar Alaoui to provide the future occupants with the most appreciated views, in addition to a maximum natural brightness in the accommodations for comfort Visual display.

In terms of equipment and services, the apartments are equipped with a home automation system that can manage either the entire accommodation or for each room the position of roller shutters, lighting, temperature, and allows continuous monitoring Of the energy consumption of housing. This system can also be controlled remotely via an application for smart phones. They are equipped with reversible air conditioning (heating and air conditioning) hidden in false ceiling which contributes to the ease of use, adjustable by the home automation or individually by the thermostats installed in each dry room. It also has a self-adjusting VMC system (air intake above the exterior joinery and exhaust vents in the humid rooms), which allows the continuous renewal of indoor air to avoid harmful odors and mold when Prolonged absence of occupants. The sanitary facilities (showers, fittings, baths ...) are of good quality certified and has a system of reduction of the consumption of water to improve the energy performances of the dwellings.

## See more details about this project

<http://lesfaubourgsdanfa.com/>

## Data reliability

3rd part certified

## Stakeholders

### Stakeholders

Function : Contractor

ANFA 3B2I - BOUYGUES IMMOBILIER MAROC

Karim BOULAFRA (06 61 08 91 56) / Jérémiah COZAR (07 62 75 30 29)

<https://www.bouygues-immobilier.com/>

Property development

Function : Designer

Omar Alaoui Architecte

<http://www.omaralaoui.ma/>

Architect

Function : Assistance to the Contracting Authority

Bureaux Veritas

<http://www.bureauveritas.ma/>

AMO HQE

## Contracting method

Off-plan

## Owner approach of sustainability

Subscription and obtaining environmental labels HQE passport Excellent 10 stars and ILTIZAM. Respect of the environmental approaches specific to the Bouygues Construction yards worldwide, namely Green Site Office Platinum, and Ecosite.

## Architectural description

Les Faubourgs d'Anfa is a very high-quality residential operation consisting of 391 dwellings built on three building blocks, for a total of 7 separate buildings. The architecture is part of a modern architectural registry. Conceived in R + 8 with 2 levels of parkings common to each of the slices. The facades are clad in white to remind the city of Casablanca. A spirit of greenery has been duplicated so that the surroundings of the residence is pleasant for both residents and passers-by. This project was designed to reduce its impact on the environment through obtaining the HQE Passport Excellent certification with a 10-star rating. The accommodations have been designed to meet a variety of needs, ranging from studio to spacious T4, all units are compact for optimal living space. They are also equipped with several thermal and acoustic insulation complexes for an optimal comfort of the residents. Moreover, the services selected by the Client comply with

the standard of the operation, thanks to quality equipment and materials. It has also been chosen to position the air conditioning units in roofing to avoid damaging the aesthetics of the buildings.

## Building users opinion

As the operation is in the process of being delivered, the occupants are not yet installed in their dwellings, so we do not yet have feedback on their opinions, although they seem very satisfied during the pre-delivery visits, and Throughout their acquisition process.

## Energy

### Energy consumption

Primary energy need : 39,00 kWh/m<sup>2</sup>.an

Primary energy need for standard building : 50,00 kWh/m<sup>2</sup>.an

Calculation method : Other

CEEB : 0.0183

Final Energy : 53,00 kWh/m<sup>2</sup>.an

Breakdown for energy consumption :

Heating: 0.959 kWh / m<sup>2</sup> Air conditioning: 17.53 kWh / m<sup>2</sup> Lighting: 20.20 kWh / m<sup>2</sup> Water system: 9.91 kWh / m<sup>2</sup> Auxiliaries: 3.98 kWh / m<sup>2</sup> Pumps: 0.66 kWh / m<sup>2</sup>

More information :

Delivery in progress, we do not yet have operating data.

### Envelope performance

Envelope U-Value : 0,44 W.m<sup>-2</sup>.K<sup>-1</sup>

More information :

Thermal and acoustic insulation complexes were set up for the exterior walls of the apartments, the dividing walls of the dwellings, the internal walls of the dwellings and also in the floors of the buildings

Building Compactness Coefficient : 0,17

Indicator : EN 13829 - n50 » (en 1/h-1)

Air Tightness Value : 0,80

Users' control system opinion : Deliveries are in progress, customers are satisfied that the home automation system in their housings allows the management the lighting, the blindness of the openings (rolling shutters), and the monitoring of the consumptions. Also it is installed a videophone system at the entrance of the buildings and in each dwelling which simplifies the reception of person at home.

### Real final energy consumption

Real final energy consumption/m<sup>2</sup> : 53,00 kWh/m<sup>2</sup>.an

Year of the real energy consumption : 2 017

## Renewables & systems

### Systems

Heating system :

- Fan coil
- Others

Hot water system :

- Individual electric boiler
- Solar Thermal

Cooling system :

- VRV Syst. (Variable refrigerant Volume)

Ventilation system :

- compensated Air Handling Unit

Renewable systems :

- Solar Thermal

Renewable energy production : 43,00 %

#### Other information on HVAC :

The reversible air conditioning system allows easy use of the temperature and thermal comfort settings within the housing of the operation. The room thermostats installed in all dry rooms also allow a different setting in the latter depending on the convenience of the users. This system is also adjustable for the entire housing via the home automation installed at the entrance and via a smart phone application for remote control.

## Smart Building

#### BMS :

A home automation system is installed at the entrances to the dwellings, it controls the position of the roller shutters, the lighting of the rooms and their temperatures, and which allows a regular monitoring of the energy consumption of the apartment.

**Users' opinion on the Smart Building functions :** Customers very satisfied with this system of adjustment during the frequent visits of their property throughout the site.

## Environment

### GHG emissions

#### Methodology used :

HOURS

GHG before use : 44,00 KgCO<sub>2</sub> /m<sup>2</sup>

Building lifetime : 100,00 an(s)

Calculation of the GHG emissions made with the software DESUGNBUILDER V5

### Life Cycle Analysis

Several studies have been carried out by various stakeholders and verified by the HQE AMO.

**Eco-design material :** As part of the HQE approach, floor, wall and ceiling materials, as well as structural and finish products have been studied and analyzed in order to deduce those with the best environmental characteristics. Some products: Low-emission interior coating VOC and Fomaldehyde: Products VARNISH, ALPHA TACTO, parquet from BERRY ALLOC Thermal insulation: Rockwool Brick: See ACV Orobrique Painting: The different types of paints used in the project ensure a low emission of Pollutants in air, namely VOCs and Formaldehydes.

### Water management

Consumption from water network : 44,00 m<sup>3</sup>

Water Consumption/Dwelling : 0.11

The figure 44 in "annual water consumption from the grid" means that compared to a reference state, we save 44% thanks to the installed equipment.

### Indoor Air quality

The dwellings have a VMC system with air intakes at the exterior joinery levels and extraction outlets in the wet rooms. This VMC operates continuously and is self-adjusting as required. In addition, the units are equipped with a reversible air-conditioning concealed in the false ceiling of the dry rooms, which on the one hand allows a better visual comfort (no apparent radiator), and a simplicity of use with a thermostat d ' Positioned in each dry room. These equipment allow a high thermal comfort, and not to evolve in an environment subject to the mold and the degradations.

### Comfort

**Health & comfort :** All facilities, materials and services have been carefully selected to provide comfortable and sustainable accommodation. Indeed, the comfort and health of the future occupants were at the center of discussions when choosing all these parameters: thermal / acoustic insulation (high-performance insulation complexes), visual comfort (building implants and exhibition reflected by architects) , Quality of life (materials and finishes of good quality and high-end equipment).

Calculated thermal comfort : EER (Cooling) = 3.5 / COP (Heating) = 4.1

Measured thermal comfort : EER (Cooling) = 3.5 / COP (Heating) = 4.1

**Acoustic comfort :** High-performance acoustic insulation systems on the façade, between apartments horizontally and vertically. Acoustic tests have also been carried out throughout the construction site at different times of the day and the location of the buildings so that no situation is forgotten, and these tests have been conclusive on all the unit 1 (in delivery), for Optimal acoustic comfort for future residents

## Products

### Product

## Air Conditioning Unit

Hitachi

Pas de contact, contacter par le site internet

<http://www.hitachi.eu/fr-fr>

**Product category :** Génie climatique, électricité / Ventilation, rafraîchissement

Reversible air conditioning unit for heating and air conditioning, adjustable by thermostat in each dry rooms of the housing.

Choice of the contractor of a recognized quality equipment (Hitachi) after refusal of variants proposed by the company considered less efficient



## Solar panels and hot water tanks

Ariston et Chaffoteau

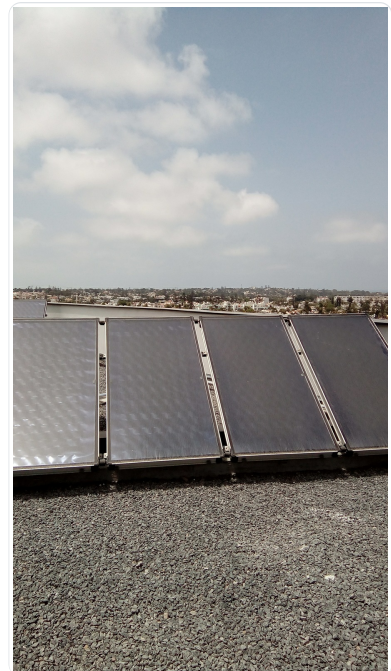
Pas de contact, contacter par le site internet

<http://www.ariston.com/fr/>

**Product category :** Génie climatique, électricité / Chauffage, eau chaude

Solar panels and BECs were installed on the roofs for the panels and in the apartments for the balloons. The panels cover 40% of the DHW requirements of future occupants. Once these 40% are reached, the water is heated by electricity.

It was necessary to find solar panels and compatible BECs so that this association works as well as possible, Ariston and Chaffoteau equipment being compatible for this kind of installation we chose these suppliers.



## Outdoor Lighting Equipment

PUK

Pas de contact, contacter par le site internet

<http://www.puk.it/>

**Product category :** Génie climatique, électricité / Eclairage

Low-power exterior lighting and LED

Choice of the owner to install these design and low consumption equipment.

## Costs

### Construction and exploitation costs

Global cost : 43 550 000,00 €

Renewable energy systems cost : 3 484 000,00 €

## Urban environment

On the outskirts of the city center, future business district

## Land plot area

Land plot area : 14 660,00 m<sup>2</sup>

## Built-up area

Built-up area : 45,00 %

## Green space

Green space : 3,00

## Parking spaces

2 levels of basement dedicated to car parks. 1 to 2 places per apartment.

## Building Environmental Quality

### Building Environmental Quality

- indoor air quality and health
- works (including waste management)
- consultation - cooperation
- acoustics
- comfort (visual, olfactive, thermal)
- waste management (related to activity)
- water management
- energy efficiency
- renewable energies
- maintenance
- integration in the land
- mobility
- building process
- products and materials

### Building candidate in the category



Energie & Climats Chauds



Bas Carbone



Santé & Confort



Coup de Cœur des Internautes

