Oficinas Santa Catarina (FINSA offices)

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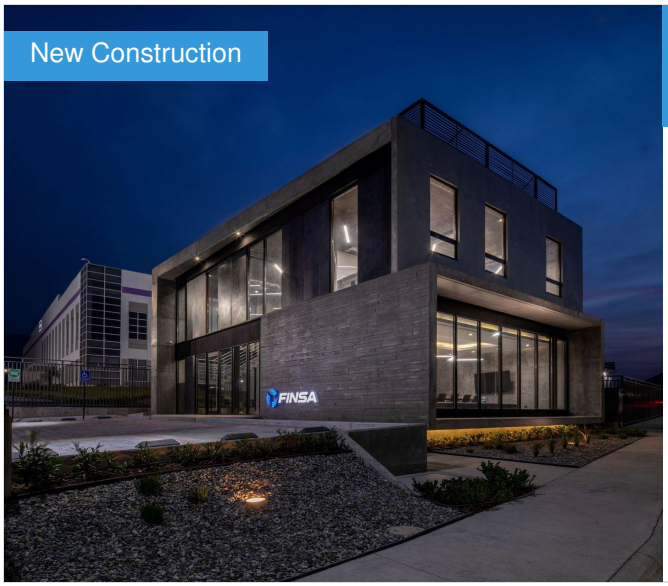

Primary energy need :
kWhpe/m^2.year
(Calculation method :)

ENERGY CONSUMPTION

Economical building *Building*

< 50	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 : Office building < 28m
Construction Year : 2019
Delivery year : 2019
Address 1 - street : Parque FINSA Santa Catarina 64000 NUEVO LEóN, Mexico
Climate zone : [BSh] Subtropical Dry Semiarid (Steppe)

Net Floor Area : 243 m^2

Certifications :

Proposed by :

General information

The new FINSA offices are situated within the FINSA Industrial Park of Santa Catarina, which is strategically located in northern Mexico with easy access to central Mexico and Texas. The industrial park serves a variety of industries with tenants that range from automotive to logistic companies. The office provides a resource-efficient work space for FINSA, one of Mexico's leading industrial real estate companies. The two-story office building has meeting rooms, an on-site warehouse and recreational spaces for staff to gather.

The operational costs of the office building are expected to decrease by more than one-third because of its green measures that were implemented at no additional cost to FINSA. Features such as an energy-efficient air conditioning system and occupancy sensors reduce the use of energy while low-flow faucets conserve water. The use of construction materials such as precast concrete panels for the external walls also reduce the embodied energy in materials.

FINSA is committed to building industrial spaces that use resources more efficiently with minimal impact on the environment. They believe that building green also positively impacts the lives of those who work within the building. Oficinas Santa Catarina is the first EDGE-certified project by FINSA, but the company hopes that it will be a model for future offices. Oficinas Santa Catarina has received final EDGE certification from GBCI.

See more details about this project

https://www.edgebuildings.com/projects/oficinas-santa-catarina/

Photo credit

Photos provided by FINSA

Stakeholders

Construction Manager

Name : Finsa
Contact : aacosta[at]finsa.net
https://www.finsa.net/

Energy

Energy consumption

Breakdown for energy consumption : 2 kWh/m2/year: heating142 kWh/m2/year: air conditioning31 kWh/m2/year: ventilation 6 kWh/m2/year: other9 kWh/m2/year: lighting34 kWh/m2/year: computers

Envelope performance

More information :
Roof U - Value: 1.99 W/m² KWall U - Value: 1.86 W/m² KGlass U - Value: 5.9 W/m² K

More information

Final Energy consumption: 4542.31 kWh/month

Real final energy consumption

Final Energy : 224,30 kWhfe/m^2.year

Renewables & systems

Systems

Heating system :
- Individual electric boiler

Hot water system :
- No domestic hot water system

Cooling system :
- VRV Syst. (Variable refrigerant Volume)

Ventilation system :
- Natural ventilation
- Single flow

Renewable systems :
- No renewable energy systems

Products

Product

Reduced window to wall ratioReflective Paint/Tiles for Roof - Solar Reflectivity (albedo) of 0.81Variable Refrigerant Flow (VRF) System - COP of 3.53Energy-Saving Light Bulbs - Internal SpacesEnergy-Saving Light Bulbs - External SpacesOccupancy Sensors in Bathrooms, Conference Rooms, and Closed Cabins

Product category : Second œuvre / Plomberie, sanitaire

Low-Flow Faucets in All Bathrooms - 1.43 L/mindual-flush water closetsWater-Efficient Faucets for Kitchen Sinks - 2.03 L/min

Product category :

Floor Slabs: Concrete Filler SlabExternal Walls: Precast Concrete PanelsFlooring: Finished Concrete Floor

Costs

Construction and exploitation costs

Additional information on costs :

Base Case Utility Cost: 602.17 $/MonthUtility Cost Reduction: 207.86 $/MonthIncremental Cost: -1,364.52 $

Health and comfort

Life Cycle Analysis

Eco-design material :

One of the great challenges posed before today's society is the reduction of CO2 emissions, as we generate CO2 both in industry and in our daily consumption habits. Fortunately, however, trees contribute towards reducing CO2, which is absorbed and stored in the wood. And so, by using wood as a raw material, we contribute toward reducing emissions considerably. For example, a 2m2 wooden table holds the same amount of CO2 as that generated by four cars driven for a full day. Thus, we can say that wood is a renewable, recyclable and sustainable resource.

Water management

Consumption from water network : 240,00 m^3

Water Consumption/m2 : 0.99

2 Lts/Day/person : water faucets22 Lts/Day/person : water closets & urinals4 Lts/Day/person : food court6 Lts/Day/person : otherWater Savings: 84.30 m^3/Year

Carbon

GHG emissions

GHG in use : 102,50 $KgCO_2/m^2$/year

CO_2 Emissions from Electricity Generation: 457.75 g/kWh

Contest

Reasons for participating in the competition(s)

Energy (34 % energy savings): Reduced window to wall ratio, reflective paint/tiles for the roof, variable refrigerant volume (VRV) cooling system, energy-saving lighting and occupancy sensors.

Water (32 % water savings): Low-flow faucets in bathrooms, dual-flush water closets and water-efficient faucets for kitchen sinks.

Materials (42% less embodied Energy in Materials): Controlled use of concrete for floor slabs and internal walls, precast concrete panels for external walls and finished concrete flooring.

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