

MoSS - Sustainable Social Model "Casa de la Esperanza"

[Project title]

AW20-VLEVO

[Project ID]

LafargeHolcim Awards (Main Category)

General Project Data

| | |
|-----------------------------|--|
| Project Group 1 | Architecture, building and civil engineering |
| Competition region | Latin America |
| City | Cajicá, Cundinamarca |
| Country | Colombia |
| Client | Siervas de Cristo Sacerdote |
| Intervention | New construction and conversion |
| Status of planning | Final design stage |
| Status of permission | Application in preparation |
| Planned start | Jul-Dec 2021 |
| Project background | Private commission |
| Latitude | 4° 55' 38.481" N |
| Longitude | 74° 0' 43.339" W |
| Elevation | 2560 |
| Other competition | no |

Project Contact

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Carlo Barbieri. Forum "Arquitectura, Mujeres y Ciudad", Universidad UTadeo, Bogotá, March 2018

Project Summary

Casa de la Esperanza is a care Centre for women with mental and physical disabilities who live in a state of neglect. It's run by the "Siervas de Cristo Sacerdote" that leads 26 Centres in South America looking after women victims of violence and abandonment. Their work involves an avg of 50.000 people/yr. The renovation of the Centre (to rationalize the expenses) is the 1st implementation of MoSS. It involves many stakeholders with the aim to reduce inequalities and encourage education, women empowerment and environmental sustainability. It acts through enhancement, functional rationalization, self-support, resource management, synergies and skills that ensure operation and sustainability over time. This project is mainly financed by social entrepreneurship, fundraising and crowdfunding.

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Project Details

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|---------------------------|-------------|
| GFA | 5610 sq m |
| GV | 18470 cu m |
| Construction costs | 3150000 USD |
| Site area | 4245 sq m |
| Footprint area | 1570 sq m |
| Building height | 11 m |
| Building depth | -3,2 m |

Further relevant key figures

Building coverage ratio: 37%, Off-site parking and agricultural land: 2110m², Greenroof area: 1700m², Greenhouse area: 400m², 140/35 guests/employees

Materials

Antiseismic steel structure, Composite slabs, External walls: bricks made in place and wooden formwork pre-built filled with on-site clay, Double-glazed windows+Soundproof PVB on the A45-road side

CO₂ Lifecycle Assessment

The building exploits passive solar energy and prevailing winds for ventilation and cooling, avoiding energy consumption for HVAC. The construction systems reuse materials on site, reducing CO₂ emissions caused by transport and disposal. A good insulation and a correct thermal lag allow to have rooms without heating and conditioning systems. The roof recovers the rain to irrigate. 260 m² of solar-PV panels produce hot water and electricity and protect guests on the roof from the view of the void. The off-grid system ensures energy where the electrical service is not reliable. The vegetable patch and the greenhouse allow you to produce food at zero km for the Centre and the local community. MoSS involves many stakeholders spreading environmental sustainability, energy and resource savings.

Statements on Sustainability

Designed for and with the people. The Centre opens the door to the local community.

The project team lived in close contact with the Centre to understand the needs of the customers, users and the local community, involving the Municipality that affiliated the project. The site was carefully studied to design respecting the context and critical issues.

The existing 70-guest Centre, which presents structural problems and logistical-functional deficiencies, has been redesigned in an ergonomic, useful, flexible way so that it will be able to host 140 people with the same number of employees.

It will offer housing and safety standards suitable for the users and operators' daily activities, and for the Community that will use the collective spaces and the services offered.

The building will be built in 2 time-phases for logistic reasons and not to interrupt the Centre's activity

The project aims to reduce construction, energy, management and maintenance costs.

Given the existing Centre, the use of fast construction methods has been preferred. Thus the building anti-seismic steel structure is quicker to assemble and has proved cost-effective.

Cajicá is a rich clay area, so we decided to use it in the project for external walls. At Level 1, we will use bricks made in place which are resistant, easily washable and suitable for the tomato cultivation. At Levs 2 and 3, to speed up realization times, we will use clay for filling the pre-built wooden formwork walls.

The meteoric roof-collector hosts a technological and green garden designed to take advantage of solar energy, to recover rain to irrigate the gardens and the greenhouse, to house beekeeping, to grow vegetables and flowers and to do "green therapy" for the guests' rehabilitation.

Breaking social differences by creating connections and inclusion.

The MoSS has activated transversal synergies among institutions, non-profits and companies with the aim of developing local knowledge and skills, improving sense of belonging and connecting different social levels.

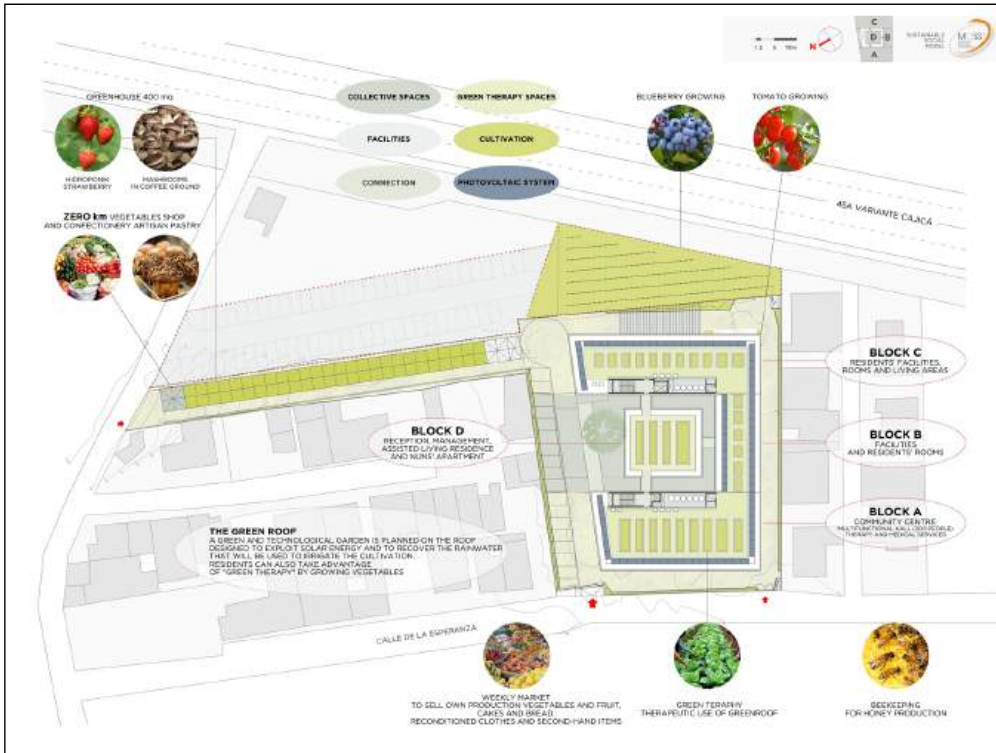
The Colombian Universities and Schools CESA, UTadeo, Nacional de Colombia, Nueva Granada and SENA have included the project in their study programs. Students and teachers think, verify, propose new ideas for sustenance, train future managers and SENA will make systems and internal finishes of the new Centre.

The diffusion of MoSS is also taking place with academic conferences, documentary exhibitions and workshops (JTL- siempre donna), events (charity dinners, bingo bazar), media (ANSA-CO, RadioJTL, RCN, RadioMaria) and social media to raise public awareness and generate consensus

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Project Visualization



Going beyond an architectural proposal to MoSS-Sustainable Social Model. The existing Centre has structural problems and logistical lacks that reduce the reception and care capacity. In addition, there's a need to host an over double number of people compared to the current one. The MoSS aims to improve and increase the reception and care capacity by reducing operating costs. The building works as an incubator of spaces, facilities and services for the self-support, accessible to the community



The design offers a harmonious coexistence with the environment, respecting natural resources, surrounding community, the lifestyles and the social environment on which the project stands. It incorporates wind, air, sun, water, and color in a functional and flexible way for creating a lively space to the women who live there and to the local community. It uses local and on-site materials implementing them in innovative construction systems to enhance the construction chain.

