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Compact Habit, initiative of the construction company from Manresa d'Aro S.A., was established in 2004 to address the need for innovation in construction. So we took a path that led us to re-formulate our ideas on how to build. We started from the experience of almost 40 years of activity in the sector and the concern for overcoming the limitations of traditional building.

We have moved forward in concepts, processes, systems and components. We succeeded in bringing value to construction in terms of quality, comfort, efficiency and competitiveness, sustainability, safety and building maintenance. It was necessary to innovate in the production process, in the product, the development of technology and the business model.

The result of years of research and development is the innovative system eMii – industrialised integral Modular building. An efficient, sustainable and flexible method, applicable to the construction of any building designed from modular units, of variable dimensions, and up to a height of 8 storeys. The eMii system provides the answers to buildings for multi-family housing, hotels, social-health residences, student residences, offices, hospitals, and so on.

The Compact Habit production centre is located in Cardona (Barcelona). It extends over a plot of 45,000 m², on which the production plant is built. A building of 7,500 m², in which, today, two building modules are fabricated every day, and which has a future production capacity of up to 9 modules daily. The eMii system constitutes a new way of building based on the manufacture, transport, stacking and connection of industrialised building modules, completely finished and equipped in the plant.

the eMii system

The eMii system is a new method developed by Compact Habit for the manufacture of three-dimensional reinforced concrete modules. These concrete modules of up to 75m² built, constitute the structural unit of the building, and are built following a process of production and assembly of their various components, installations and materials on an assembly line.

The result of this process are industrialised building modules, completely finished and equipped with all their installations and interior finish, personalised for each project.

The eMii system is a new production system that allows rationalisation and standardisation of the processes, materials and building solutions. Taking the automotive industry as a reference, Habit Compact Habit has created modular industrialised building. To do this, it was necessary to develop and patent our own technology, which had been lacking in the market. The innovation of the eMii system is based on four fundamental aspects:

1. Process

Compact Habit has focussed on rationalising and standardising processes, basing itself on the automotive industry in order to incorporate the advantages of the assembly line in its method of production. Workers have been moved from the site to the production plant, this workforce has been specialised and processes automated. Thus, all the benefits of the production method in the automotive sector have been taken advantage of in the eMii system developed by Compact Habit.

2. Product

Compact Habit makes three-dimensional modules of reinforced concrete, free-standing, which, after going through rigorous quality control and traceability processes, leave the plant sealed, fully finished and with all their fittings and installations. These modules are ready to be transported, stacked and connected at the destination site to become buildings.









3. Technology

The eMii system is the result of development and innovation, both in the machinery that enables the automated building process, and in a unique system of elastic structural joints giving the modules extraordinary qualities of comfort (soundproofing, energy efficiency, etc.). Furthermore, this system of elastic joints provides the buildings with high performance in withstanding horizontal forces like those resulting from earthquakes or wind, and preventing the appearance of cracks. In addition, thanks to this innovative system of joints, buildings constructed under the eMii system have the capability of being disassembled for relocation to another site.

4. Business model

The current situation and the reality of the construction sector require a change in the business model in favour of competitiveness. Compact Habit has focussed its value proposal in offering levels of productivity, quality, sustainability, flexibility, comfort and safety/security never before seen in the building industry.

Furthermore, there is the involvement of all the participants in the process. Teamwork that commits the developer, technical experts (architects and engineers), specialists, suppliers and builder, and, also the end users. Collaborative work that allows continuous improvement and enables an after-sales service lacking in traditional building systems.

advantages of the eMii system

1. Quality and sustainability

With the eMii system, Compact Habit substantially improves the levels of technical, functional and environmental quality of buildings. With this system the carbon footprint of a building is reduced by 35% (energy consumption and CO2 emissions) with respect to the same building if it were built with traditional methods. The thermal and acoustic insulation of each module maximizes the comfort of its users, and the energy efficiency achieved, apart from significant savings in consumption, facilitates obtaining the Energy Performance Certificate “A” for buildings.

The eMii system is conceived under criteria of deconstruction, control and reduction of waste. It enables the work of skilled labour, operating in stable conditions and subject to very strict quality controls, characteristic of industrial production.

2. Productivity and competitiveness

Industrialised production allows for the standardization of building materials, components, solutions and processes. This enables its automation, simplifies the supply chain, favours stable relations with suppliers, and allows advantage to be taken of the logic of economies of scale.

With the eMii system, Compact Habit reduces construction process times by up to 70% in comparison to conventional works. This means that in 5 months a building of 80 homes can be built, which would take between 18 and 24 months with traditional building systems.







3. Safety

With the eMii system, Compact Habit has minimized the risk of accidents in the construction process, reducing by 85% with respect to the current rates in the building sector. This is achieved through automation and standardization of production processes, through the specialization of the workforce and the development of a stable and controlled work environment, characteristic of the industrial sector.

4. Flexibility

The eMii system allows any building to be built that is composed, fully or partially, of modular units. Thus addressing a wide variety of types, from multi-family homes, student residences, hospitals, hotels, offices, old people's homes, and so on. The maximum size of a module is 75 m², but larger functional units can be achieved with adjoining modules. However, the greatest advantage is the flexibility that the system provides for the buildings from a hypothetical future extension to its rapid deconstruction and, where appropriate, relocation.

5. Cost reduction

The industrial processes that we use enable us to achieve economies of scale, financial savings and improvements in the income structure resulting from the reduction in timeframes. The optimisation of resources and exhaustive planning of the transport and assembly logistics also play a crucial role in lowering the costs.





the process

1. Manufacturing

The process starts with the manufacture of a three-dimensional reinforced concrete block module, which constitutes the compositional and structural unit of the future building. In the assembly line, this module goes through the successive assembly workstation, in which each specialist incorporates the respective components until the end product is achieved: an industrial building module, fully equipped, sealed and with the certificate of quality that the traceability and the incorporation of strict quality control processes to which it is subjected awards it.

2. Transporting

Once the production process is completed, the industrialised building modules are taken to the destination site, where the foundations or module support base have previously been laid, and where they will finally be stacked and connected.







3. Stacking

Assembly of the modules is carried out with the help of a high tonnage crane and by skilled operators. This extremely quick process consists of unloading the module from the lorry using the large crane, which places it in its exact location. This process is carried out with great accuracy through positioning and support elements previously put in place on the support base. The assembly operation allows 12 modules to be stacked per day.

4. Connecting

Finally, all the modules are connected by a mechanical system of elastic joints, and then their connection to the building's system of common services (water standpipes, drainpipes, ventilation systems, electric and gas lines, communications, etc.). The whole connection process is always carried out on the outside of the modules, through services meter cabinets, without the need to enter them.





applications of the system

The system is flexible and applicable to the construction of any building designed from modular units, of variable dimensions, and up to a height of 8 floors/storeys. The eMii system thus responds to a wide variety of market systems, verifying the values it offers.





Residential

Multifamily homes, student residences.



A. Goula ©

Healthcare

Social-health residences, healthcare centres, hospitals.



Tourism

Hotels, campsites and vacation complexes.



Education

Day care centres, nursery and primary schools, secondary schools.



Offices

Corporate offices and operating offices.



Companies and institutions that have already placed their trust in Compact Habit:



Idea and project of:



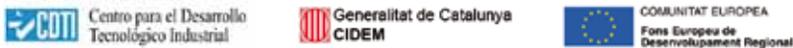
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