COOL HAVEN INNOVATIVE CONSTRUCTION SYSTEM FOR BUILDINGS

CASE STUDY: "CAP SOLIDARITÉ À LA CROIX VALMER, FRANCE"

José Henriques[a], Helena Gervásio[a], Joaquim Rodrigues[a] and Luís Simões daSilva[b]

[a] Cool Haven – Habitações Modulares Eco-sustentáveis, SA, Coimbra, Portugal
ahenriques@cool-haven.com, hger@dec.uc.pt, jrodrigues@cool-haven.com
[b] Departamento de Engenharia Civil, Faculdade de Ciências e Tecnologia, Universidade de Coimbra, Coimbra, Portugal
luisss@dec.uc.pt

KEYWORDS: Modular; Construction; Innovative; Automation; Efficiency.

ABSTRACT

Cool Haven – Habitações Modulares Eco-sustentaveis, SA is a company which developed a distinctive and innovative construction solution for low-rise buildings. The proposed modular construction system provides a simple, sustainable and innovative solution focusing on the client needs. Due to the possibility of easily adding/removing modules upon request, Cool Haven enables the client to evolve with his house as the family grows in a simple way. The structural system is based on structural components (mainly made of steel cold-formed profiles) which incorporate the technical infrastructures, the thermal and the acoustic insulation. Then, using practical connections, the construction is an assembly of these structural components. The prefabrication of the structural components guarantees a technically innovative product, with controlled quality, and ensures a reduced execution time. Furthermore, the use of materials 100% recyclable combined with improved energy efficiency of the building provides a sustainable solution fulfilling the European directives regarding construction.
In this paper a case study is presented demonstrating the application of the proposed system. The "CAP Solidarité" building constructed in La Croix Valmer - France, is a collective building of two floors (ground + 1st floor) which includes a total of fifteen studios and social areas, where six studios are for people with reduced mobility. The total area of construction is approximately 1000m2. In the paper, the concept of Cool Haven is described and demonstrated with this project.

CONCLUSIONS

In the present paper the constructive system proposed by Cool Haven has been presented [1]. This consists in a panelised modular construction and based on an industrialized/automatized production increasing its efficiency and quality control. In order to achieve this goal, Cool Haven is currently implementing a complete production layout using automated production lines [2]. The first cellule is already installed and in a phase of tests (Fig. 1).
In order to demonstrate the concept of Cool Haven, the construction at La Croix Valmer, France, has been presented (Fig. 2). Though, this may not be the final "version" of the constructive system idealized, as the process is under maturation with the implementation of automated production, it expresses the main ideology.

Fig. 1: Cool Haven automotive production layout – 1st automatize cellule

Fig. 2: Erection of CAP Solidarité building – La Croix Valmer, France

REFERENCES

[1] QREN – Quadro de Referência Estatégico Nacional, 2012. Casas modulares e eco-sustentaveis. SI&DT Empresas individuais – competividade, inovação e conhecimento. NUP: Centro-01-0202-005527.

[2] QREN – Quadro de Referência Estatégico Nacional, 2012. *Cool Factory – Industrialização e internacionalização do conceito/produto Cool Living.* Inovação produtiva. NUP: Centro-07-0403-FEDER-026960.