



Towards the densification of the city of Liege "case study"

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ABSTRACT

The city of Liege, one of the most important cities in Belgium, making it more attractive for residents and become susceptible to most urban problems affecting the city's properties. These problems have prompted the government to consider several solutions, there including densification. The goal of densification is to try to rebalance the social housing and quality of life with new homes zero energy consumption.

KEYWORDS

Liege - Langdoz - population - density - urban planning - densification - habitat - comfort- energy - simulations - thermal - construction.

PROBLEM

- The number of existing homes is not in line with the proportion of high population density in the city of Liege.
- Most of the town houses are old and consume a lot of energy.
- Lack of resources for homeowners to improve the situation of old buildings.
- The number of empty homes is very high by the displacement of the population periphery
- The nature of the difficult climate of the city,

OBJECTIVE/HYPOTHESIS

- Make an anatomical study of the city and identification of study buildings
- Densify the city by the construction of new houses that conserve energy.
- Improve the quality and performance of old buildings.
- Energy simulation study of some buildings in the city.
- Develop strategies needed for good densification of the city.

AUDIENCE

Civil engineering student - engineering professors - businesses in construction - civil engineering- architects

RESEARCH QUESTION

- Why densify the city and for what purpose?
- How to Improve and Enhance the performance of buildings and houses to resist consumption and energy Losses?
- How can we add houses with zero energy consumption?

ORIGINALITY

- An anatomical careful analysis describes the status and performance of existing buildings in the neighborhood.
- Identify buildings that we can accept and condense them.
- Make a simulation of buildings using DesignBuilder program.
- Develop appropriate strategies for good densification of the city.

METHODOLOGY

- Definition of the target.
- Analyzing the urban park district longdoz.
- Identify and know the buildings that will underpin the study.
- The development of an appropriate strategy to complete densification.
- Simulation of the energy performance of buildings.



RESULTS



Fig.1,The results of analyses and points of densification (M.A.Berredjem 2015)

CONCLUSION

This study anatomical analysis and we have taken from this area with regard to the energy performance of buildings and structural. To study the possibility of densification, we conclude that there are buildings do not accept the addition and can not be tolerated, and there are buildings that accept add, that's why we use these buildings to study the capacity , energy and structural performance to add houses that consume or do not lose energy , using the energy simulation programs.

Resources

Cf. MAÏZIA M., TRAISNEL J.P. (février 2008), « Tendances et scénarios de la réduction énergétique dans le bâti », Cahiers de l'AURIF : Contraintes énergétiques et mutations urbaines, SALAT, S., CELNIK, S., NOWACKI, C., VIALAN, D. (2009), Etude de la relation entre consommation d'énergie et paramètres de forme urbaine, Rapport d'analyse comparative, Peronato, G. (2014). Built density, solar potential and daylighting: application of parametric studies and performance simulation tools in urban design (No. EPFL-STUDENT-201758) le service d'urbanisme de la ville de Liège.

/Densification and Building Performance Simulation