



## **ERA NET „SUMFOREST“, Project „Benchvalue“**

### **“Comparison of four versions of an industrial building in France: imported wood, local wood, steel and concrete”**

#### **1. Background**

Historically, wood construction in France was mainly represented by oak roof frame and chalets in mountain areas. Since the end of the 20<sup>th</sup> century, wood construction has been gaining market share because of technical products such as glulam, wood frame walls and Cross Laminated Timber (CLT). The law on green growth and energy transition voted in 2016 lead to the creation of the E+C-label in France, which rewards new buildings with low environmental impacts. A first objective of this label is to reduce the use of non-renewable energy and encourage energy production during the use phase of the building. A second objective is to reduce greenhouse gas emissions over the whole life cycle of the building. A test phase of the label is ongoing and will result in a new regulation by 2020.

#### **2. Case study description**

The building under study is an industrial building made located in Pessac, Nouvelle Aquitaine. The building is made of glulam made from Scandinavian spruce by the Arbonis company in Chemillé, Pays de Loire. The objective of the case study is to compare it with buildings made of local wood from the Limousin area as well as steel and concrete frame buildings. The comparison is carried out based on environmental, economic and social indicators.



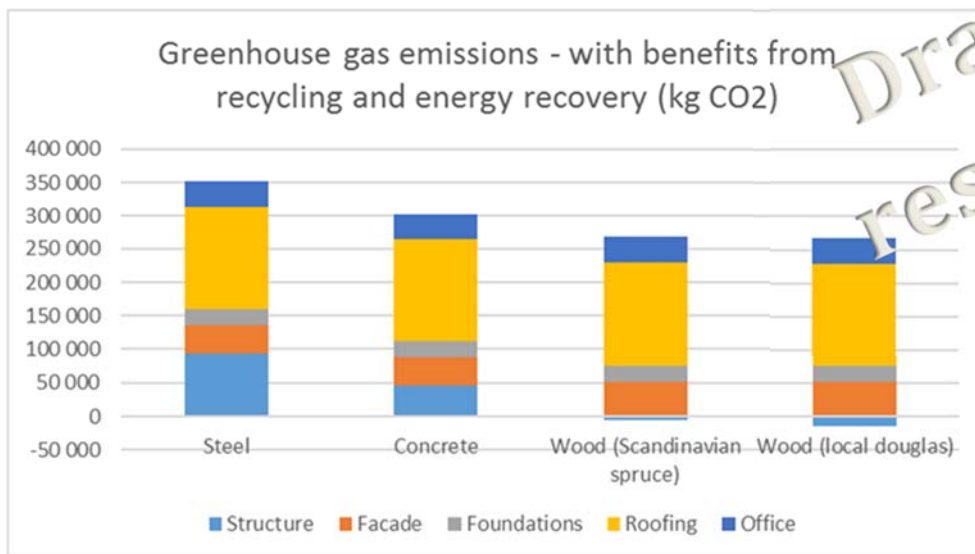


### 3. Results

The steel and concrete frame buildings were designed by the IUT of Egletons, which is part of the University of Limoges. It was essential that the four buildings under study had the same function, that is to say the storage capacity.



An environmental comparison was carried out by a student from the IUT of Evry supervised by FCBA using life cycle assessment data from INIES, the French Environmental Product Declaration (EPD) program. First results show that there is a significant advantage to wood buildings as far as the greenhouse gas impact is concerned.



### 4. Findings and Recommendations

- To be completed.

