

# BERTIM Project



Building Energy Renovation through  
Timber Prefabricated Modules



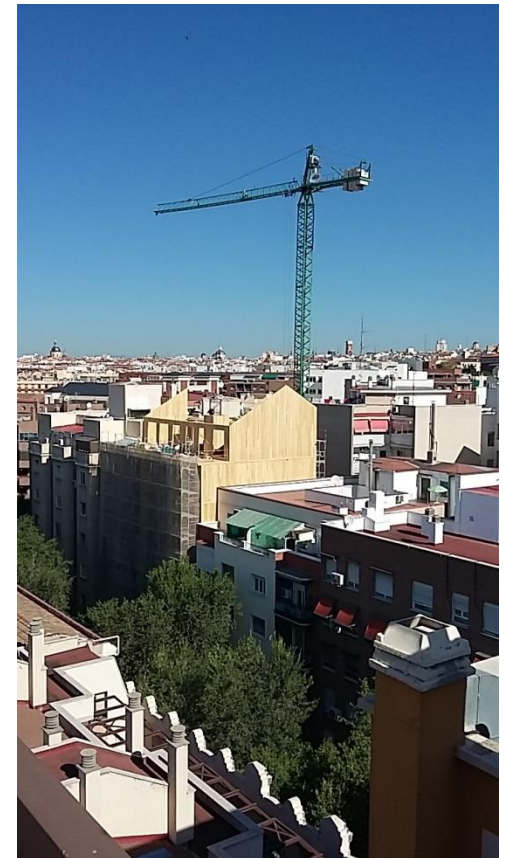
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# WHY NEW RENOVATION APPROACH IS NEEDED?

1. The building sector has enormous impacts on our environment:
  - 40% of the overall energy consumption in Europe is related to the building sector and represents about 1/3 of Europe's CO<sub>2</sub> emissions
  - 50% of all materials extracted from earth and 25% of all virgin wood are transformed into construction materials and products.
2. Deep renovation scenarios are needed if the building sector is to significantly contribute to the 90% GHG reduction target for 2050.





## BERTIM PROJECT

**BERTIM develops a prefabricated solution** which provides the opportunity to renovate improving energy performance, air quality, aesthetics, comfort, and property value at the same time, while ensuring low intrusiveness during renovation works.

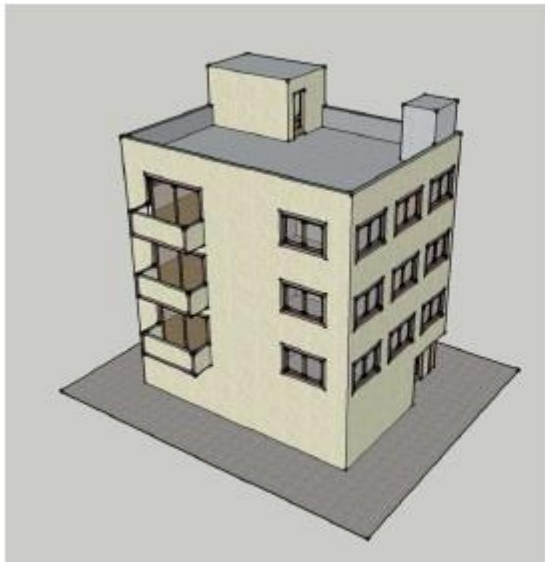
The manufacturing of the solution is included in a holistic methodology for the renovation project process, from data collecting to installation. **The systemic methodology is based in a digital data flow in BIM** that is implemented in a software named RenoBIM, that enables reduction of renovation operation time, customized mass production, and lower financial risk for investors.





## BERTIM GOALS

- **High energy performance prefabricated modules** for deep renovation, integrating windows, insulation materials, collective HVAC systems, renewable energy systems and energy supply systems. The modules are based in timber and recyclable materials for a low carbon foot print. The assembly system with the existing building guarantees a very little time in the installation and low disturbance to tenants.



Pre renovated building

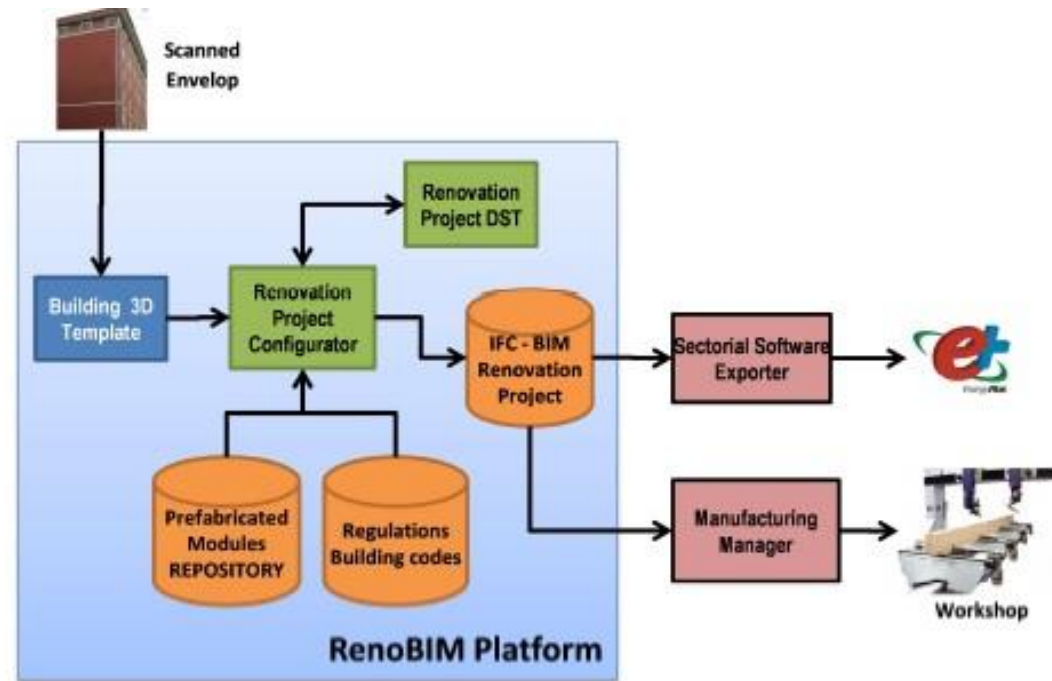


After renovation



# BERTIM GOALS

- **An innovative holistic renovation process methodology** from data gathering to installation that improves the current processes of the wood manufacturing and installation industry. In order to support the renovation process a renovation project design tool oriented to SME integrating BIM with CAD/CAM tools and assuring the interoperability with CNC machines for mass manufacturing processes is developing.





# BERTIM GOALS

- **Affordable business opportunity** for different stakeholders that could take the lead in the launching of the renovation process.



## DEMO SCENARIOS

Prefabricated modules are tested in the following demo scenarios:

- KUBIK By Tecnalía (experimental building)
- Residential Building ( Madrid-SPAIN)
- Residential Building ( Charité sur Loire-FRANCE )
- Residential Building (Oslo-NORWAY )



These demonstration scenarios complement each other very well, as they are located in different regions of Europe: ensuring that very different weather conditions, different building practices and different social values are taken into account and analysed.

# TEST OF DEVELOPED METHODOLOGIES AND TOOLS

Developed methodologies and tools (RenoBIM) for the holistic renovation process are tested in the following industrial setting of timber manufacturing companies:

- EGOIN (Spain)
- POBI (France)
- SETRA (Sweden)







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