



BenchValue

WP4 - case study overview: Ireland

Project meeting: Vienna, Austria. 23rd October, 2019



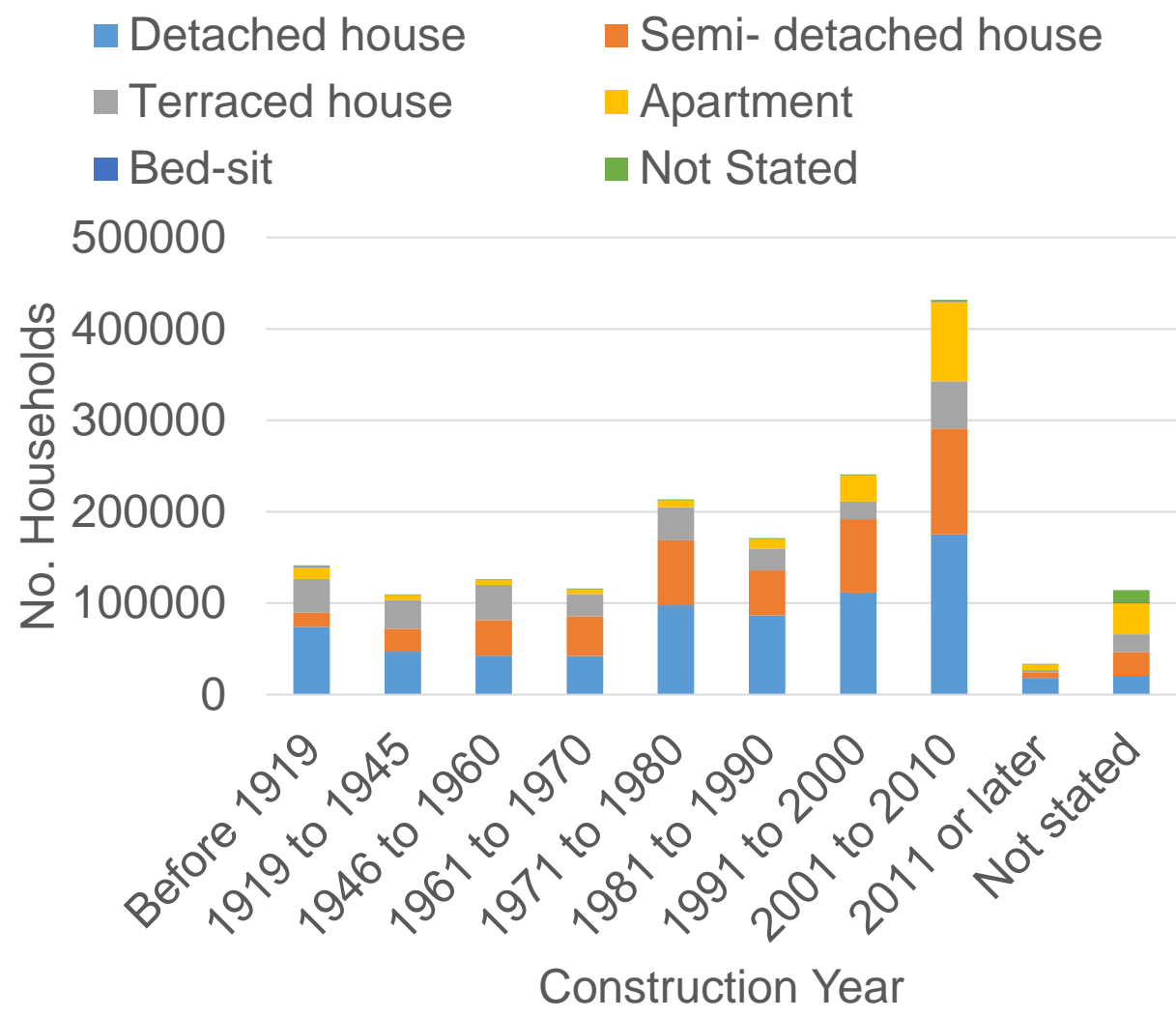


Contents

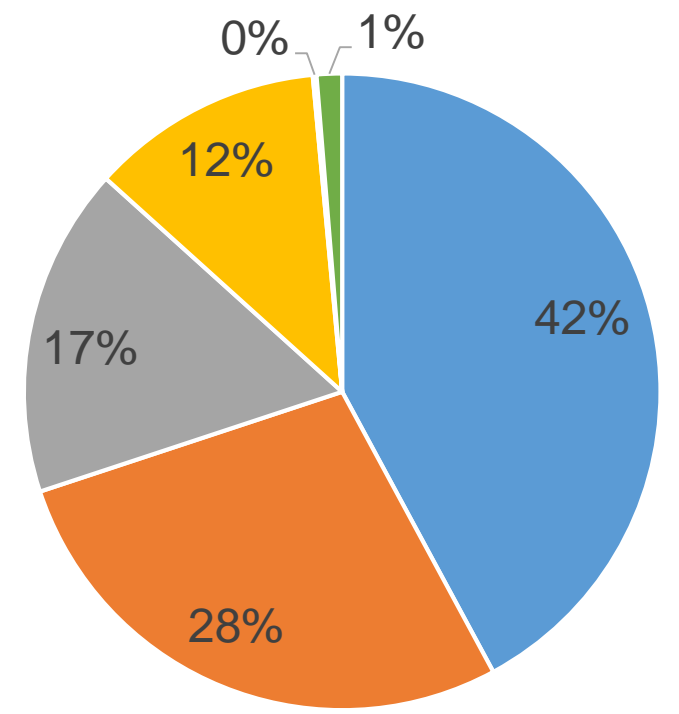
- Overview of the Irish residential building stock
- Case study description
- Life Cycle Assessment results
- Conclusions



Irish Residential Building Stock



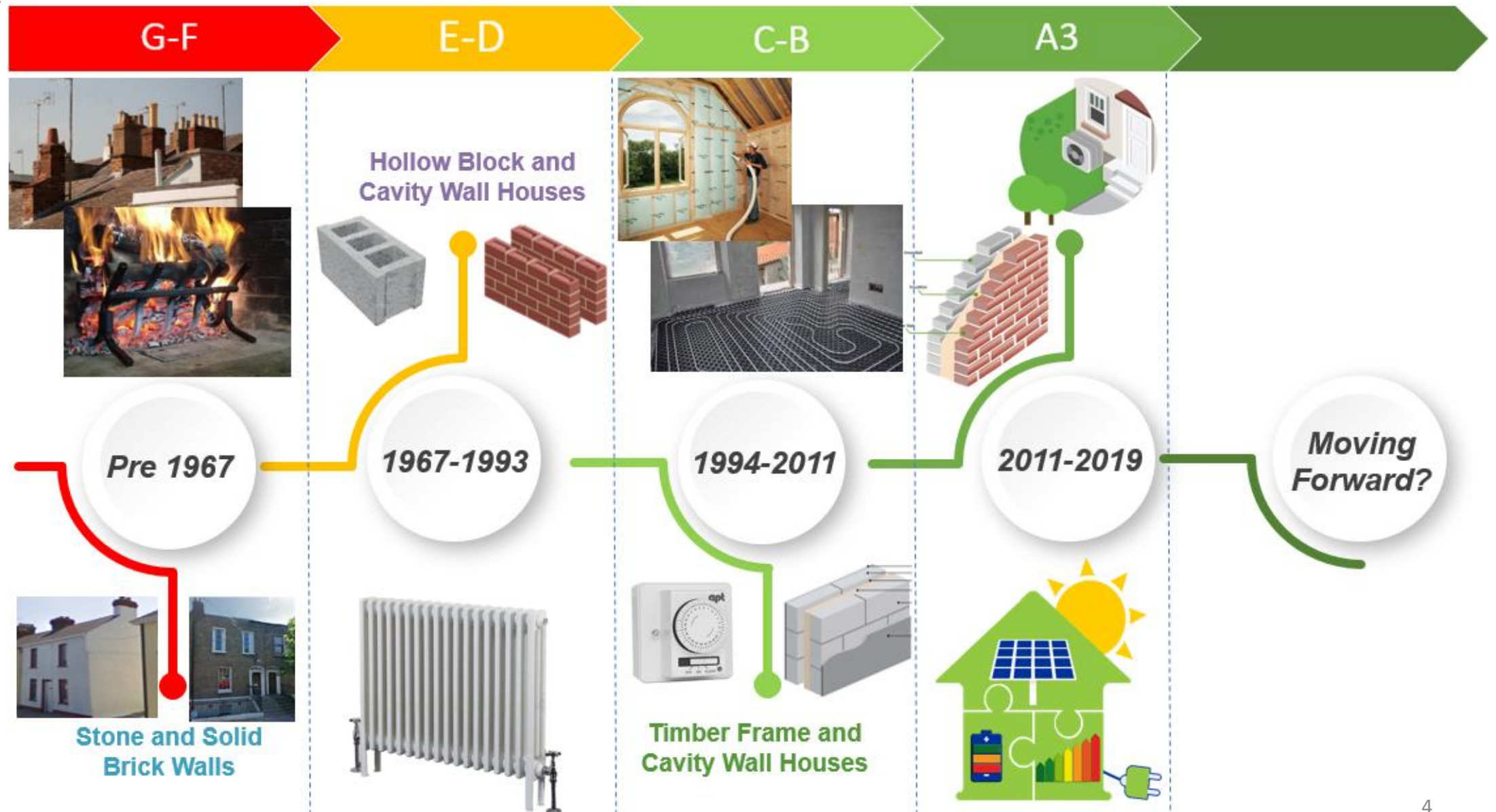
- Detached house
- Semi-detached house
- Terraced house
- Apartment
- Bed-sit



Source of data: Central Statistics Office [1]



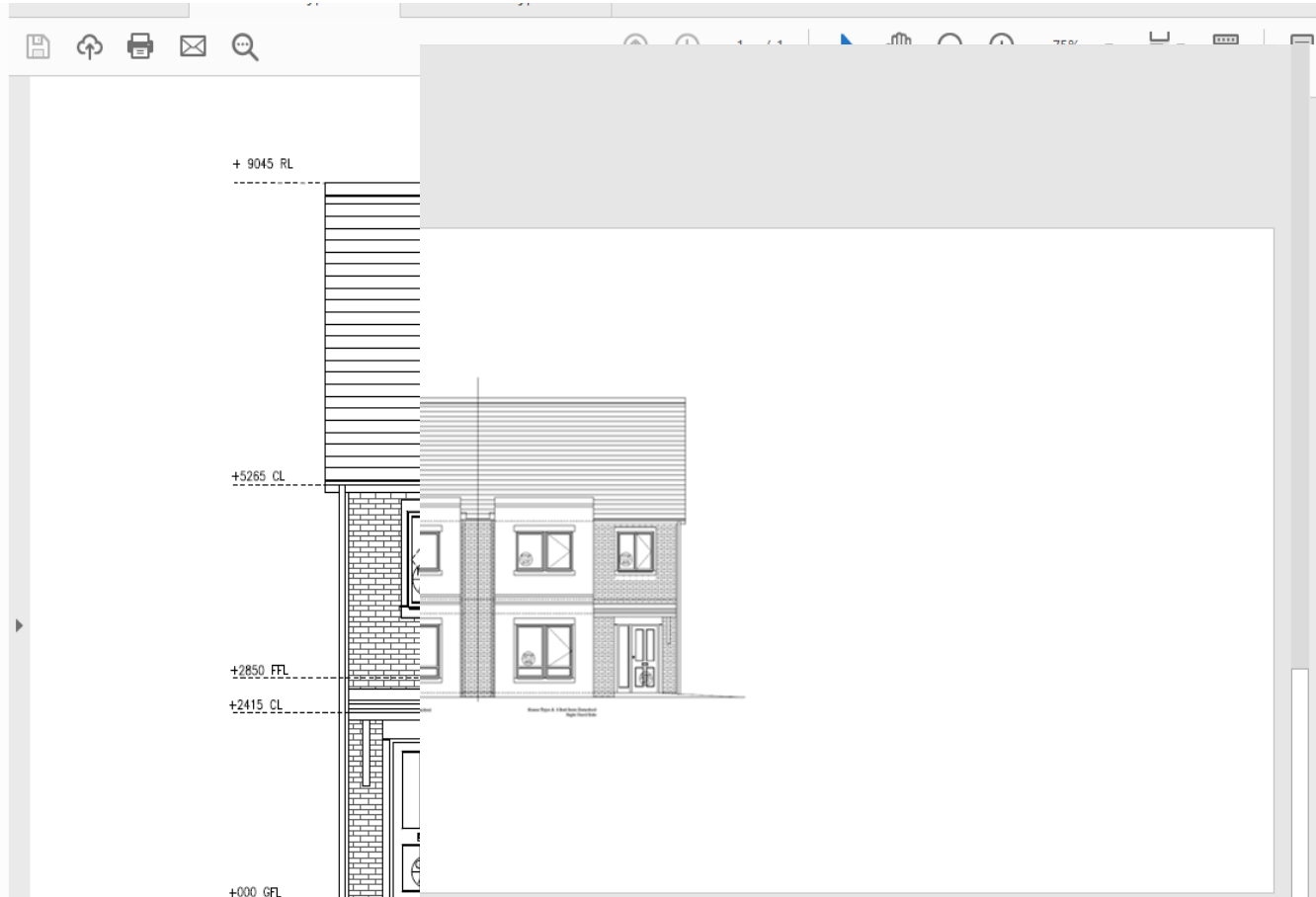
Irish Residential Building Stock



Source timeline is based on [2]

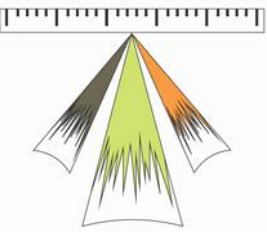


Case Study Building: 3 Bedroom Semi-Detached

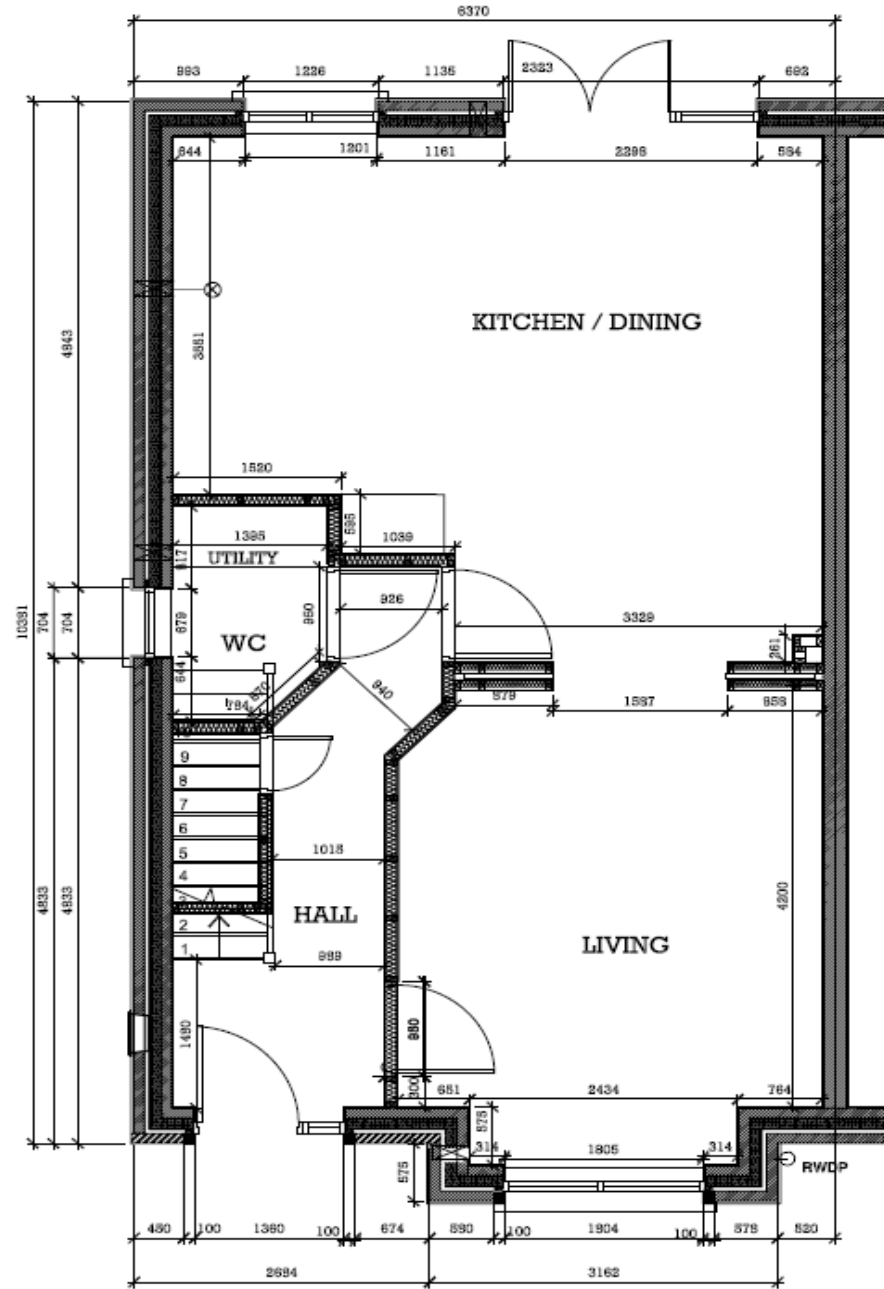


Front Elevation

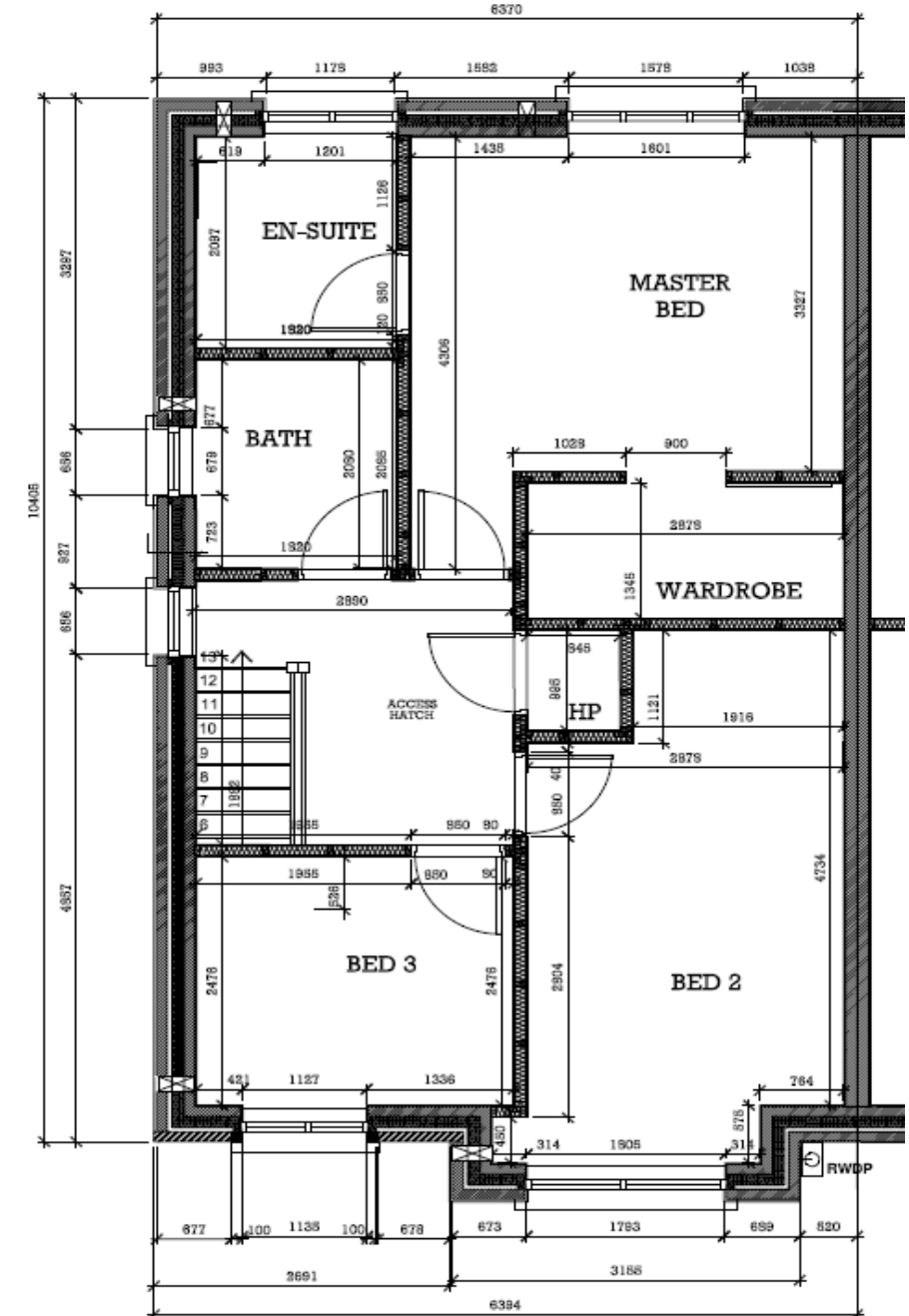
Back Elevation



Case Study Building

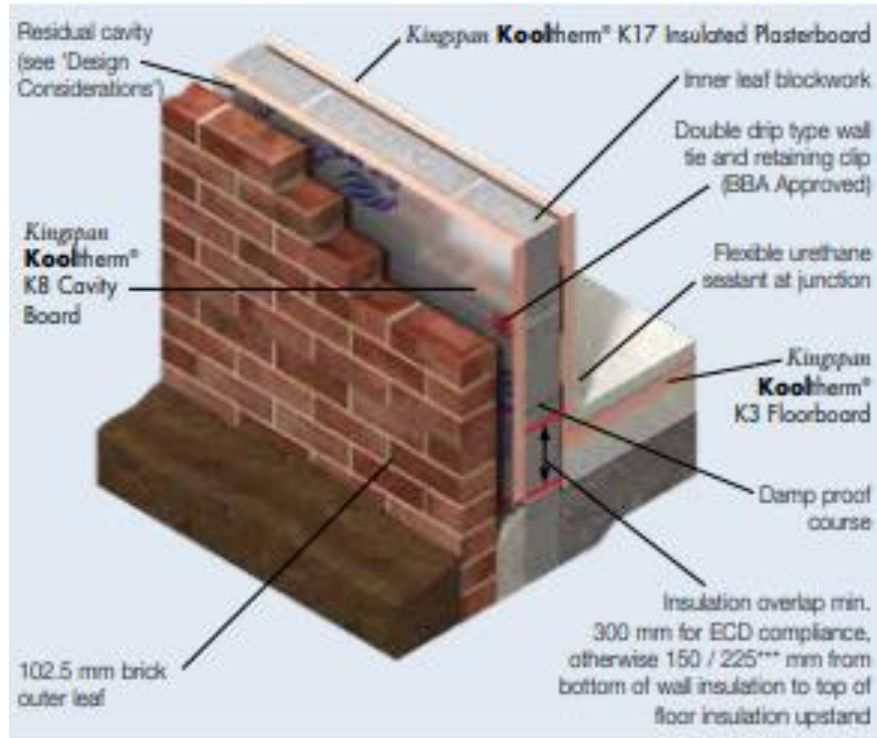


Ground Floor

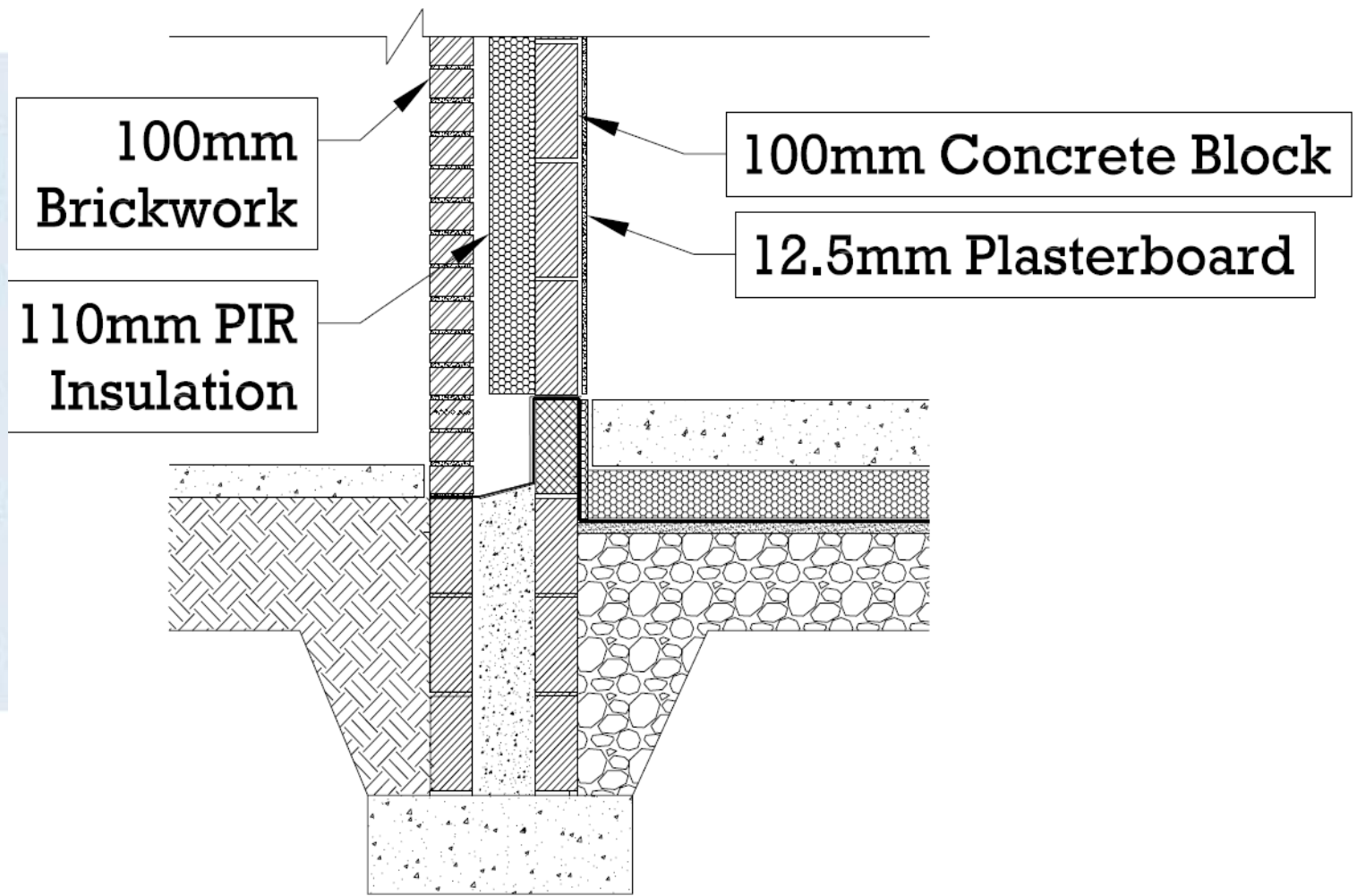


First Floor 6

Case Study Building: Traditional Build

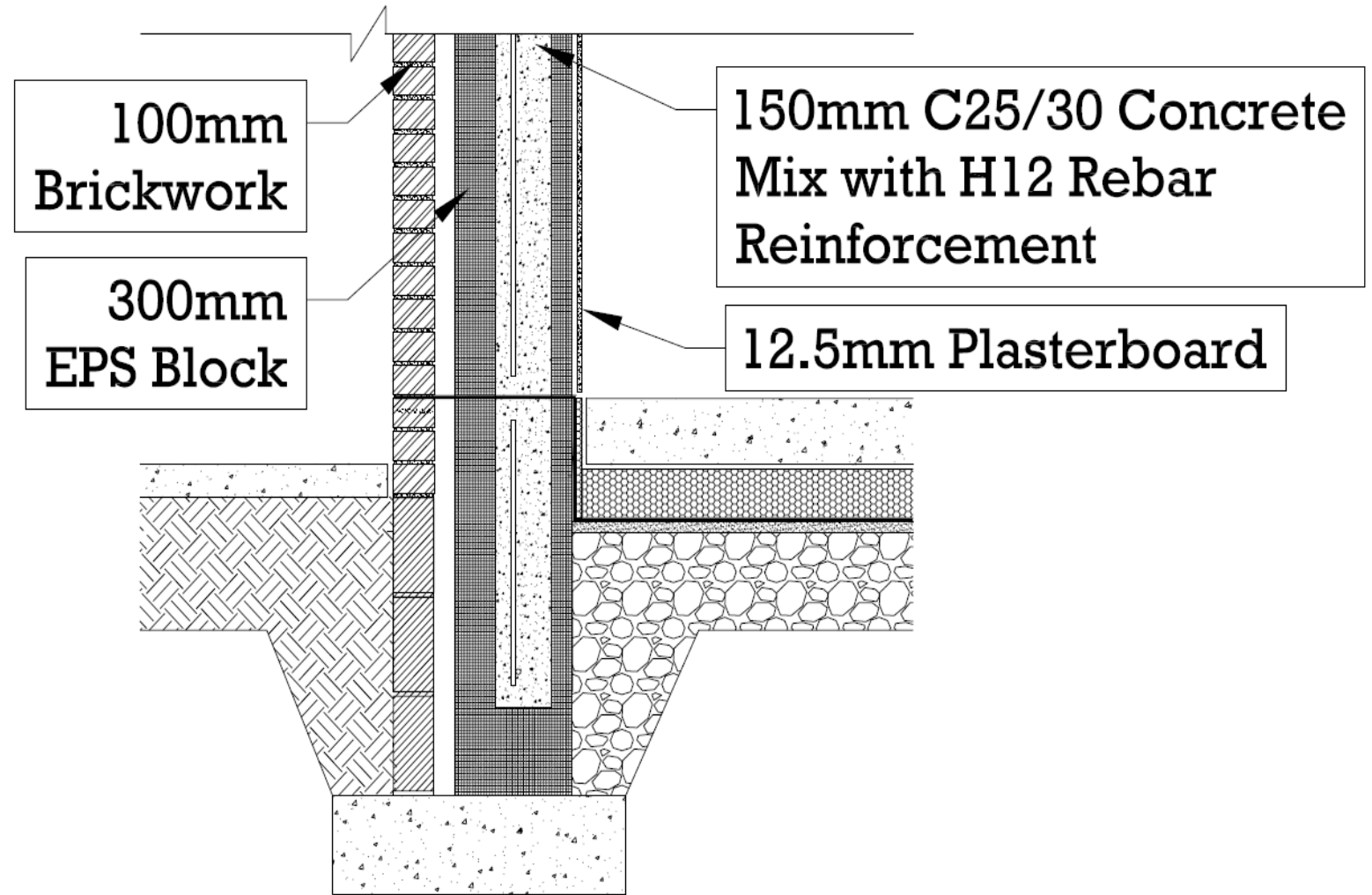
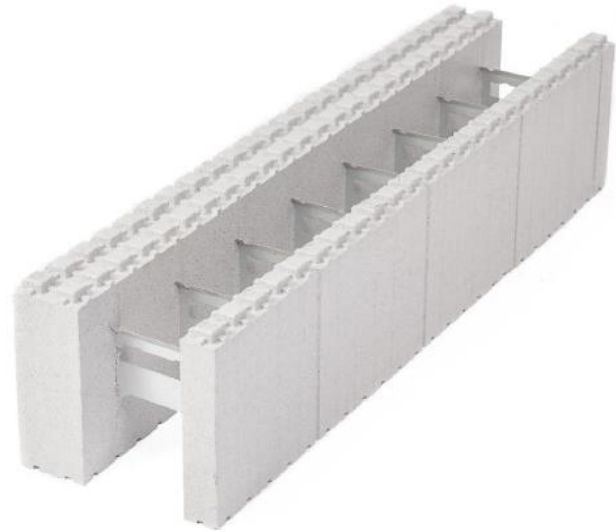


Source of image [3]



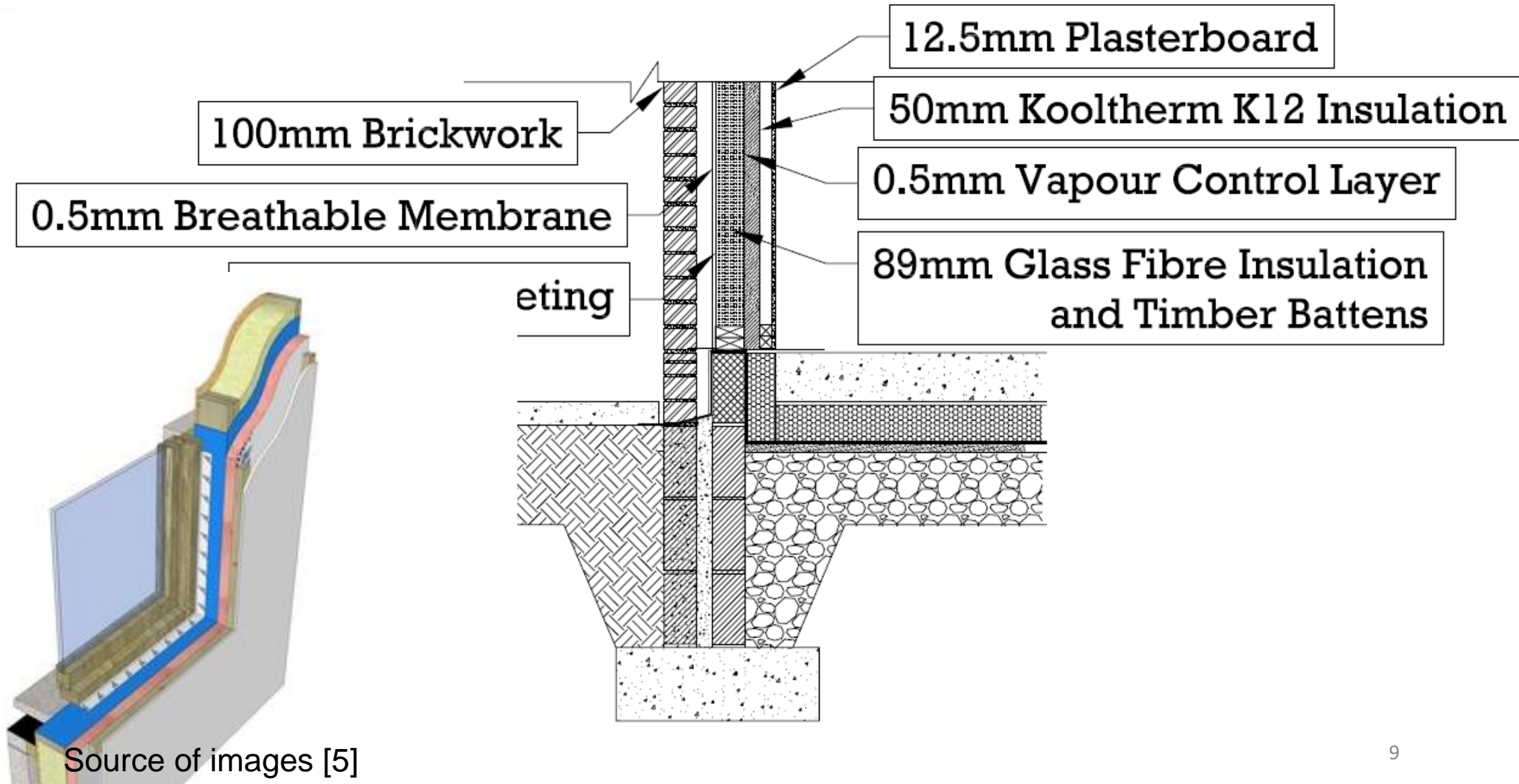


Case Study Building: Insulated Concrete Formwork





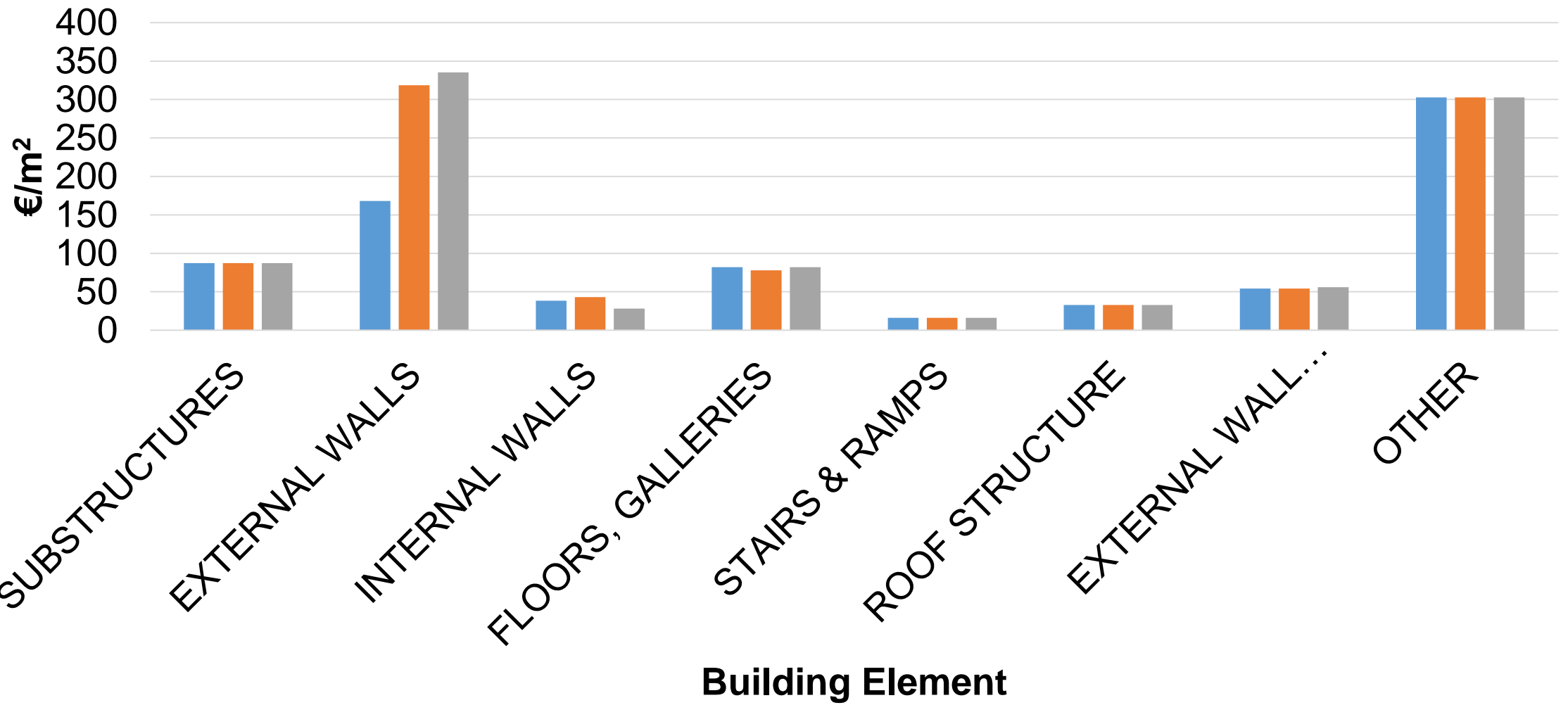
Case Study Building: Timber Frame

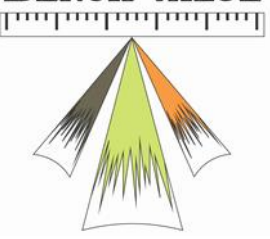




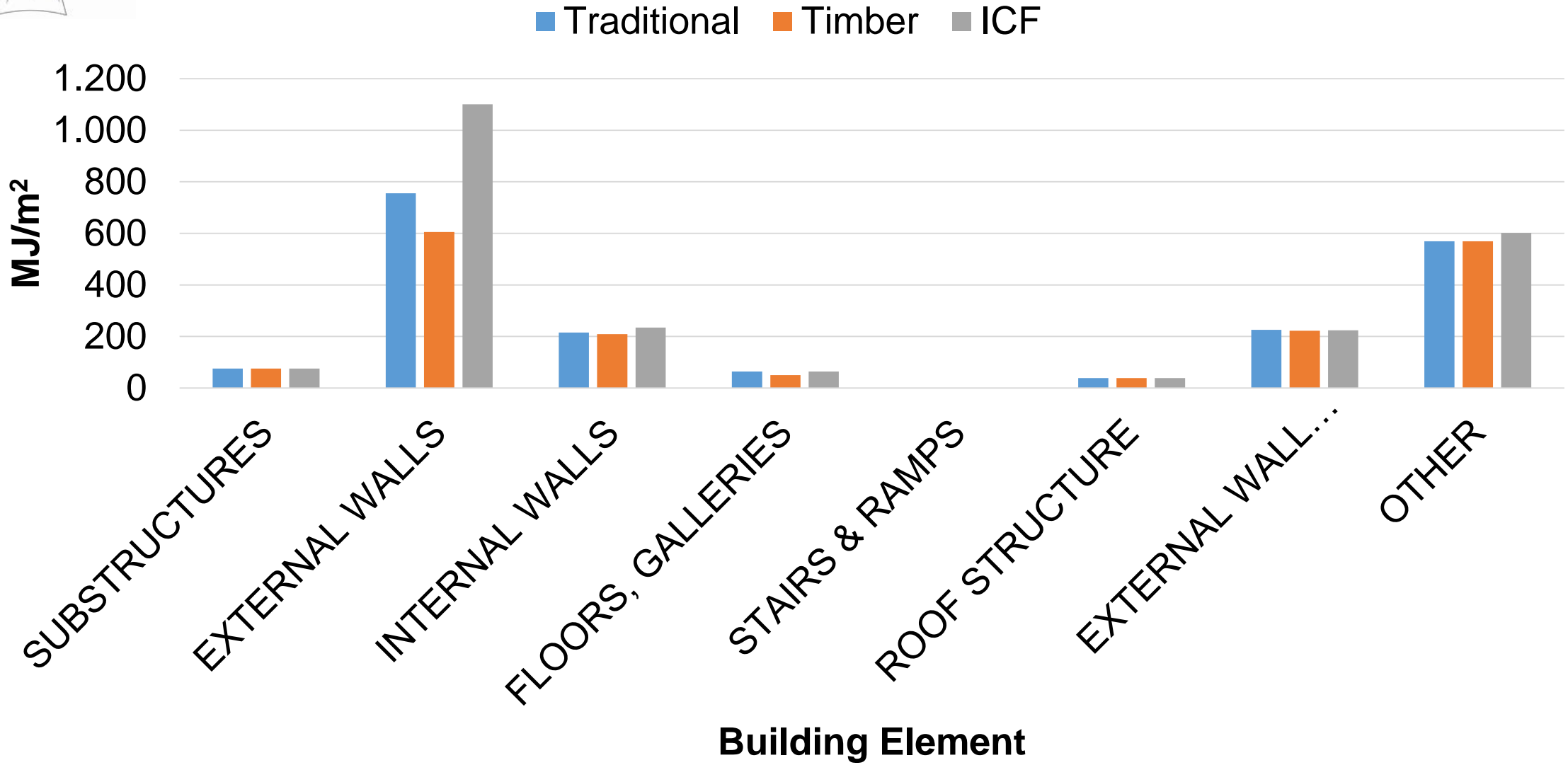
Life Cycle Cost (A1-A5)

■ Traditional ■ Timber ■ ICF





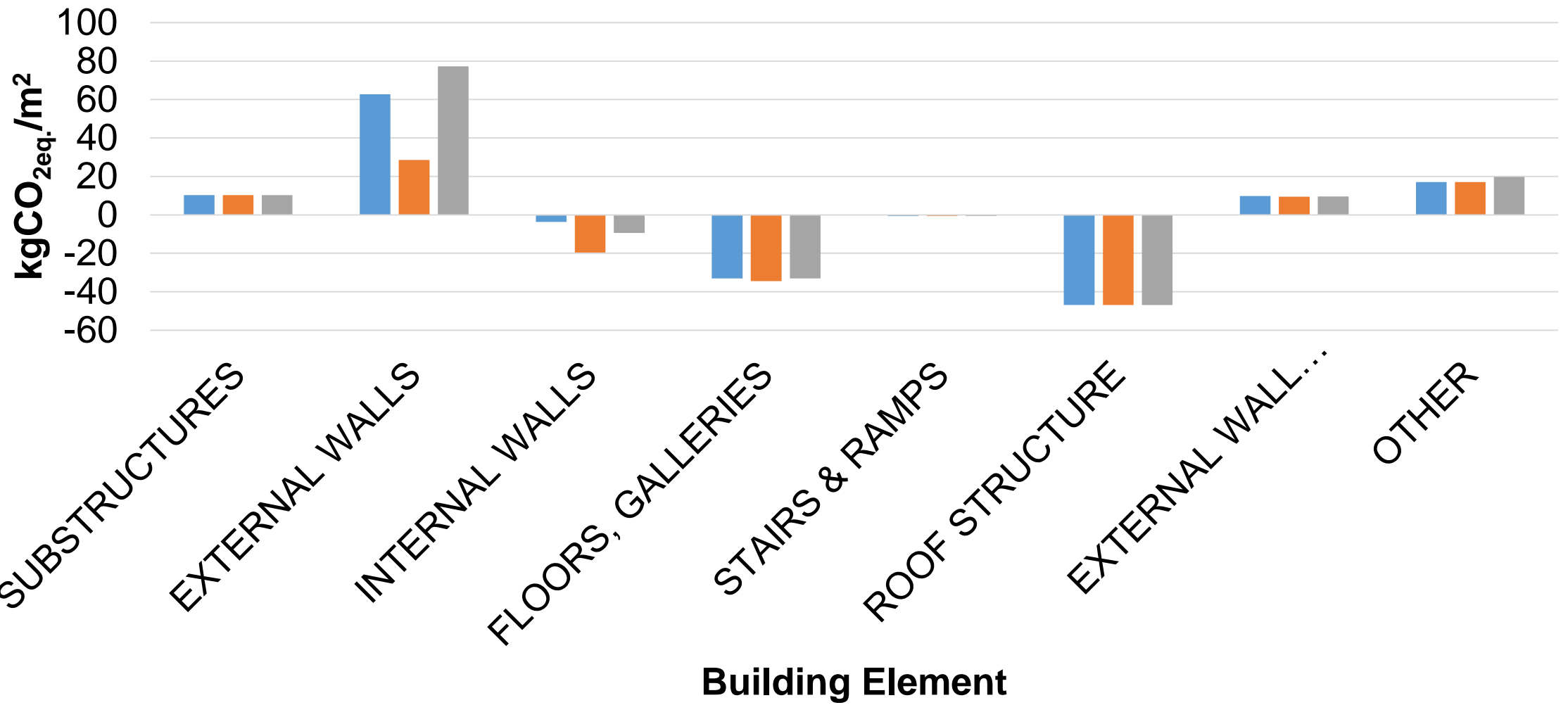
Life Cycle Non-Renewable Energy (A1-A3)

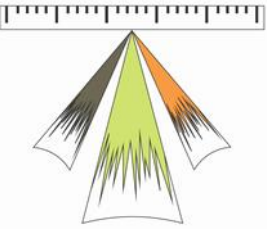




Life Cycle GHG Balance (A1-A3)

Traditional Timber ICF





Conclusions

- Concrete based superstructures are the predominant superstructure type in Ireland.
- Traditional based superstructure (concrete block cavity wall) is the cheaper option for building a semi-detached residential building.
- Timber frame based superstructure is the more environmentally friendly from a life cycle non-renewable energy and GHG balance perspective.



References

- [1] Central Statistics Office, “Housing in Ireland,” 2019. [Online]. Available: https://statbank.cso.ie/px/pxeirestat/Database/eirestat/Profile 1 - Housing in Ireland/Profile 1 - Housing in Ireland_statbank.asp?SP=Profile 1 - Housing in Ireland&Planguage=0. [Accessed: 18-Oct-2019].
- [2] M. Badurek, M. Hanratty, B. Sheldrick, and D. Stewart, “Building Typology Brochure Ireland,” TABULA, 2014.
- [3] Kingspan, “Kooltherm K8 Cavity Board: Partial Fill Cavity Wall Insulation,” Kingspan, 2018.
- [4] Thermohouse, “Thermohouse,” 2019. [Online]. Available: <https://thermohouse.ie>. [Accessed: 27-Sep-2019].
- [5] Kingspan, “Kingspan Ultima Wall,” 2019. [Online]. Available: <https://www.kingspan.com/irl/en-ie/product-groups/engineered-timber-system/engineered-timber-frame-systems/our-systems/wall/ultima>. [Accessed: 27-Sep-2019].



Thank you!



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