

Nanotechnology in refurbishment: The MF-Retrofit project

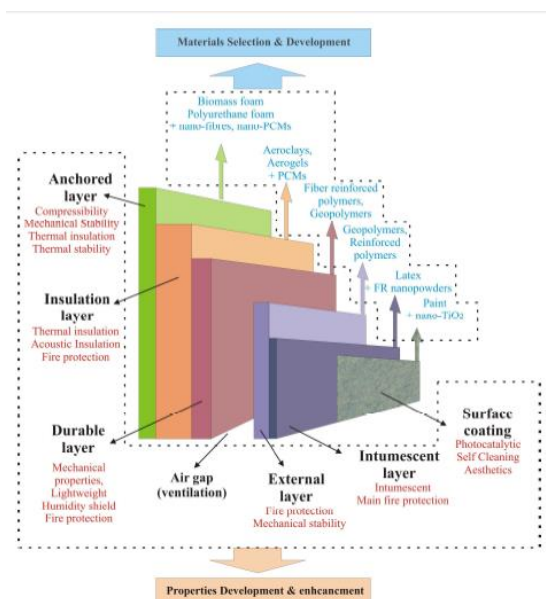
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In Europe more than 40% of the overall energy consumption and 36% of the overall CO₂ emissions are produced by buildings. On the other hand, only 1-1.5% of the European building stock is newly built each year and 1–3% of energy end-use per annum goes to the replacement of existing building stock, which means that the majority of energy is consumed by existing buildings.



The MF-Retrofit project aims to address these issues by developing a light-weight, durable, cost-effective and high performance façade retrofitting panel. Its layered structure allows for separate but also synergistic function regarding high thermal and acoustic insulation, excellent mechanical properties, flame retardant properties and photocatalytic activity. The resulting panels will be substantially lighter, more durable and easy to install. The materials employed include polyurethane with bio-based content, aerogels, geopolymers, PCMs, photocatalytic coatings as well as plastics with integrated nanomaterials.