

THE POWER OF "EMBODIED CARBON"

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RCHTECH

**EMPOWERING YOUTH TO REDISCOVER EUROPE'S
ARCHITECTURAL LEGACY**



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When we talk about the European Green Deal and the transition to a climate-neutral continent, the conversation usually turns to electric vehicles, solar arrays, and high-tech new construction. But look out your window at any European city, from Valletta to Athens. The landscape isn't made entirely of modern eco-complexes; it is woven together by centuries of historic architecture.

In the **ArchTech** project, we focus heavily on bridging the gap between Europe's architectural legacy and digital technology. We believe that empowering young citizens to rediscover and protect our urban cultural landscapes is vital for European identity. But saving these structures isn't just about romanticizing the past, it is a core pillar of a sustainable future. The green transition doesn't mean tearing down the old to make way for the new. In fact, European heritage is one of our greatest secret weapons for sustainability. Here is exactly how our historic buildings support the green transition.

The Power of "Embodied Carbon"

The greenest building is often the one that already stands. When a new building is constructed, it triggers massive greenhouse gas emissions from manufacturing concrete, transporting steel, and executing construction. This is known as **embodied carbon**.

When we preserve, adapt, and reuse a historic building, we keep that carbon safely locked away. Tearing down an old structure to build a "zero-emission" modern one can take decades to break even environmentally. By protecting our built heritage, we stop carbon spikes before they even start.

Built-In Ancient Engineering

Long before modern HVAC (heating, ventilation, and air conditioning) systems, historic builders had to work *with* nature, not against it. Many historic buildings across Europe feature brilliant sustainable design principles built right into their DNA:

- **Thermal Mass:** Thick stone or brick walls absorb heat during hot Mediterranean days and slowly release it during cool nights, naturally regulating indoor temperatures.
- **Natural Ventilation:** High ceilings, interior courtyards, and strategic window placements create natural drafts, reducing the need for mechanical cooling.
- **Local Materials:** Built using timber, stone, or clay sourced just a few kilometers away, these structures represent a hyper-local circular economy that modern construction is desperately trying to replicate.

Circular Economy and The New European Bauhaus

The green transition is as much a cultural shift as a technical one. The EU's *New European Bauhaus* initiative matches sustainability with aesthetics and community inclusion. Historic buildings are the soul

of our neighborhoods. By retrofitting them with sensitive, reversible green technologies, like smart energy tracking, breathable insulation, or hidden solar elements, we prove that sustainability doesn't have to be sterile. It can be beautiful, rooted, and full of character.

The ArchTech Vision: Through our *Buildings Alert!* app and interactive digital maps, we are training the next generation of youth workers and digital citizens to map, monitor, and champion these structures. When young people document a historic facade, they aren't just saving a piece of history, they are identifying a physical asset that keeps our cities compact, walkable, and culturally resilient.

The path to a green future doesn't require us to wipe the slate clean. By marrying digital innovation with historical preservation, we can transform Europe's historic cores into thriving, low-carbon communities that honor where we came from while protecting where we are going.