

Care Blanket

Buildings are responsible for approximately 40% of energy consumption and 36% of CO2 emissions in the European Union. The Basque Country has one of the oldest housing stocks in Southern Europe—57% of residential buildings were built between 1940 and 1980, before energy efficiency regulations existed. In Vitoria-Gasteiz's Bustaldea neighborhood, five housing blocks from this era stand isolated, energetically obsolete, yet structurally sound. Rather than demolish, we propose to care.

Care Blanket Concept

A modular "care blanket" facade system that wraps existing buildings in protective, functional layers. This isn't just insulation—it's a composite system combining high-performance thermal envelope with attached living spaces, environmental features, and aesthetic expression that reflects local identity. The modular approach enables mass customization: standardized technical components ensure efficiency and replicability, while surface treatments and configurations can be customized through community participation to avoid monotony and reflect neighborhood character.

System Components:

Multi-layered envelope: Cork-timber insulation + expanded balconies + integrated BIPV + community gardens

Modular prefabrication: Dry-mounted components for rapid, crane-installed deployment

Community co-design: Resident workshops determining colors, patterns, materials from local palette

Bio-sourced materials: Cork, reclaimed ceramics, timber aligned with circular economy principles

Basque vernacular response: Materials and rhythms echoing regional architectural tradition

Implementation Strategy: The system enables building envelope renewal in weeks through off-site prefabrication and crane installation, allowing residents to remain in homes during renovation. A phased approach permits gradual rollout with community feedback informing subsequent interventions. The strategy emphasizes resident participation—from design workshops to workforce training opportunities—transforming technical retrofit into community-building exercise.

The modular kit-of-parts ensures replicability across the Basque Country's 500+ vulnerable neighborhoods while maintaining uniqueness through local customization.

Project Benefits:

Rapid deployment: Prefabricated modules enable envelope renewal in weeks, not months

Zero displacement: Residents remain in homes during construction, minimizing disruption

Community ownership: Participatory design builds social acceptance and neighborhood pride

Scalable uniqueness: Standardized system with customizable appearance solves replicability vs. monotony challenge

Long-term sustainability: Maintainable, adaptable design with community stewardship protocols

Regional prototype: Positions as scalable model for Basque Government's broader regeneration strategy

Chapter 1: Care as Urban Acupuncture

Cities grow through layering—buildings, infrastructure, communities, time. But what happens when layers fall out of sync? Vitoria-Gasteiz's post-war housing faces uneven aging: structurally sound yet energetically obsolete, spatially constrained yet locationally valuable. This temporal misalignment feeds a default response: demolition and replacement.

We propose care as alternative. Not erasure, but precise intervention. Like acupuncture, we identify pressure points where minimal intervention triggers systemic transformation. Each building becomes part of a broader urban narrative—one updated through strategic care rather than wholesale replacement.

Care Blanket operates as flexible framework, not fixed formula. It reads local conditions, scales accordingly, and applies tailored interventions across five levels: city, district, neighborhood, building, and ecosystem. By reactivating neglected structures and reframing them as shared infrastructure, we build transformation models that are circular, inclusive, and replicable—turning perceived obsolescence into renewed urban life opportunity.

Chapter 2: The Intermediate Scale

We focus on the intermediate scale—the building, the courtyard, the threshold—to explore how minimal yet strategic interventions trigger deep transformation. Instead of demolishing, we reorganize, repair, and reprogram existing fabric. We act precisely on housing block infrastructures, understanding their latent potential lies in what's already built.

The ground floor becomes shared infrastructure, hosting diverse programs responding to neighborhood needs. Internal spaces transform into accessible public passages, connecting fragments and opening sites to the city. Each element—facade, units, rooftop, patios—becomes part of a system balancing continuity with renewal.

Technical Interventions:

Roof transformation: Solar panels, rainwater collection, urban gardens, communal greenhouses

Facade enhancement: Cork-timber skin dry-mounted onto existing walls, balconies breaking thermal bridges

Unit reconfiguration: Interior reorganization preserving original envelope, improving ventilation and adaptability

Ground floor activation: New neighborhood-serving uses, accessible elevator addition

Structural respect: Acknowledging original construction as starting point for strategic transformation

Chapter 3: A New Domestic Layer

Transformation begins within the unit. We reconfigure interior layouts through light interventions—removing non-structural partitions while preserving original envelope and load-bearing structure. This enables compact or cross-ventilated units, adaptable to evolving living arrangements.

Facade Toolkit Assembly

A new facade system mounts dry onto existing walls—no demolition or perforation required. The system combines timber frame with expanded cork panels and attached loggias, significantly improving thermal and acoustic performance. Each module acts as "patch of care," customizable with different finishes: exposed cork, reclaimed bricks, artisan ceramics, perforated screens, or integrated solar panels.

This patchwork logic invites residents to participate in facade design, building collective identity through expressive variation. All components are dry-joined without foams or adhesives. The facade can be updated, disassembled, or reused, following circularity principles. This new skin doesn't just insulate—it creates depth, identity, and opportunities for individual and collective appropriation.

Energy Performance Achievement: The building achieves Energy Class A through five coordinated steps: cork-timber insulating blanket (U_{wall} reduced from 1.4 to 0.21 W/m²K), improved airtightness with heat recovery ventilation (80% efficiency), glazing replacement (U_w from 4.0 to 1.1 W/m²K), system electrification using air-to-water heat pump with floor heating (SCOP 3.1), and 15 kWp rooftop photovoltaic system providing self-consumed electricity. Results: heating demand drops to 42 kWh/m²-year (-78%), non-renewable primary energy use reduced to 48 kWh/m²-year, and CO₂ emissions fall to 8 kg CO₂/m²-year.

Replication Framework

This approach positions Bustaldea as prototype for region-wide regeneration. The modular system addresses Basque Country's 500+ vulnerable neighborhoods through replicable technology with locally unique character—transforming building renovation into community building, technical improvement into social infrastructure, and isolated blocks into connected neighborhood fabric.