OPEN FACE

MSC BUILDING TECHNOLOGY GRADUATION · TU DELFT

Translating resident values into modular façade design design

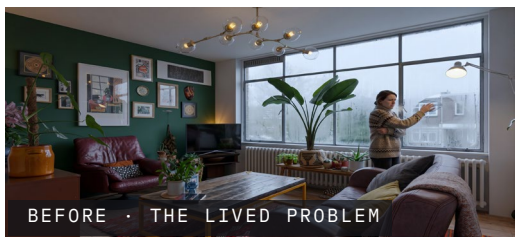
A Value–Indicator Framework for industrialised social-housing refurbishment, the façade as a socio-technical interface between people and performance.

Julie Daniels · 5010470

01 The value-design translation gap

Industrialised retrofit delivers deep energy upgrades at speed , but resident values usually surface **too late** to shape how the façade is actually configured.

For the person behind the façade it is their window, their daylight, their home. This thesis builds the missing step: a traceable way to **link what residents value** directly to **architectural and technical façade parameters** ,making residents co-authors of the configuration, without giving up the discipline of modular construction.



THE TRANSLATION · CO-CONFIGURING THE FAÇADE

Resident
lived experience & value priorities

CO-DEFINE

Façade designer
parameters, layers & components

Designing **with** residents, not **for** them , their values enter the model as **design parameters**, not as after-the-fact feedback.

02 Value–Indicator Framework linking social criteria to façade parameters

8 European cases → recurring resident values → operational façade design

RESIDENT VALUES

6 recurring values

Comfort · Affordability · Fairness · Empowerment · Sustainability · Identity

CO-DEFINED WITH RESIDENTS

DESIGN INDICATORS

17 indicators

Values made operational: thermal performance, operable openings, daylight, solar control, material continuity, façade articulation, affordability upgrade, embodied carbon

FAÇADE CRITERIA

Criteria set

The bridge from values to building: openings, dimensions, adjustable elements, material families and interfaces , the moment residents language becomes façade design.

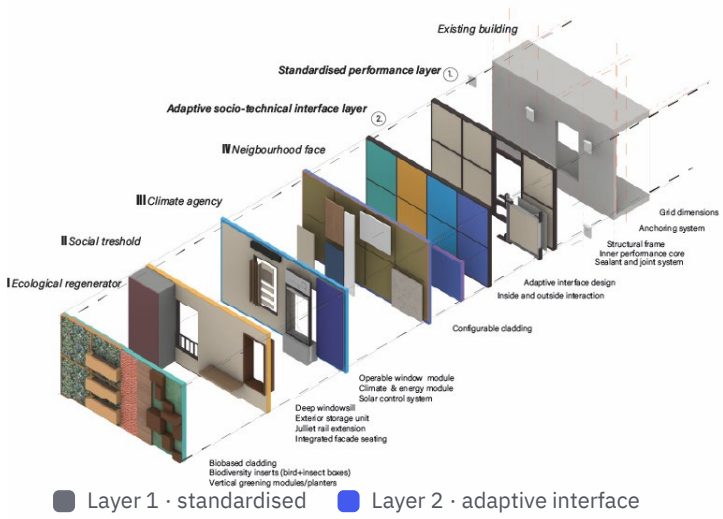
COMPONENT CATALOGUE

Layer 2 modules

Criteria matched to coded, bounded components , organised by value-affinity cluster, ready to configure into a specific façade.

03 VIMFS -the Value-Integrated Modular Façade System

A two layer modular façade system seperating a equal technical baseline and bounded value-led variation



Layer 1 · standardised Layer 2 · adaptive interface

LAYER 1 Standardised performance layer

The equal technical baseline — structural frame, inner performance core, anchoring, sealing. Derived from the building, **identical across every variant**, keeping the system compatible with industrialised refurbishment.

LAYER 2 Adaptive socio-technical interface

The resident-facing layer across the inside–outside boundary.

Bounded variation, navigated through four value-affinity clusters:

ER Ecological Regenerator
SUSTAINABILITY · IDENTITY
Bio-based cladding, vertical greening, biodiversity inserts, BIPV.

ST Social Threshold
COMFORT · IDENTITY · EMPOWERMENT
Deep windowsills, exterior storage, Juliet rails, façade seating.

CA Climate Agency
COMFORT · EMPOWERMENT
Operable insulated windows, ventilation, blinds, movable louvres.

NF Neighbourhood Face
IDENTITY · FAIRNESS
Configurable cladding ,the coherent public face of the block.

04 Four-step configuration logic

starts from the resident, not the catalogue

STEP 1
Project profile
Building conditions, design objectives, living situation & value priorities — for whom, and what must the façade respond to.

STEP 2
Translate to criteria
Value priorities become design indicators & façade criteria through the Value–Indicator Framework.

STEP 3
Layer logic
Layer 1 stays fixed; Layer 2 components are selected from the component catalogue structured by value-affinity cluster.

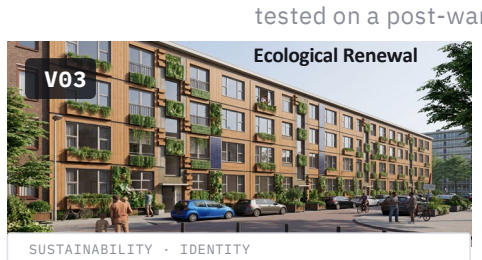
STEP 4
Compare variants
Variants read side-by-side against 17 KPIs - keeping values visible, measurable & differentiated.

05 Four traceable variants · one baseline

tested on a post-war walk-up block, Rotterdam-West · KPI / 17

COMFORT · EMPOWERMENT **15**/17

AFFORDABILITY · FAIRNESS **12.5**/17



SUSTAINABILITY · IDENTITY **16**/17

IDENTITY · EMPOWERMENT · COMFORT **15.5**/17

eurac research · TU Delft · Technische Universität Darmstadt · OpenFace is an Erasmus+ project · Erasmus+

SAME BASELINE, DIFFERENT VALUES
BOUNDED VARIATION, FULLY DOCUMENTED