

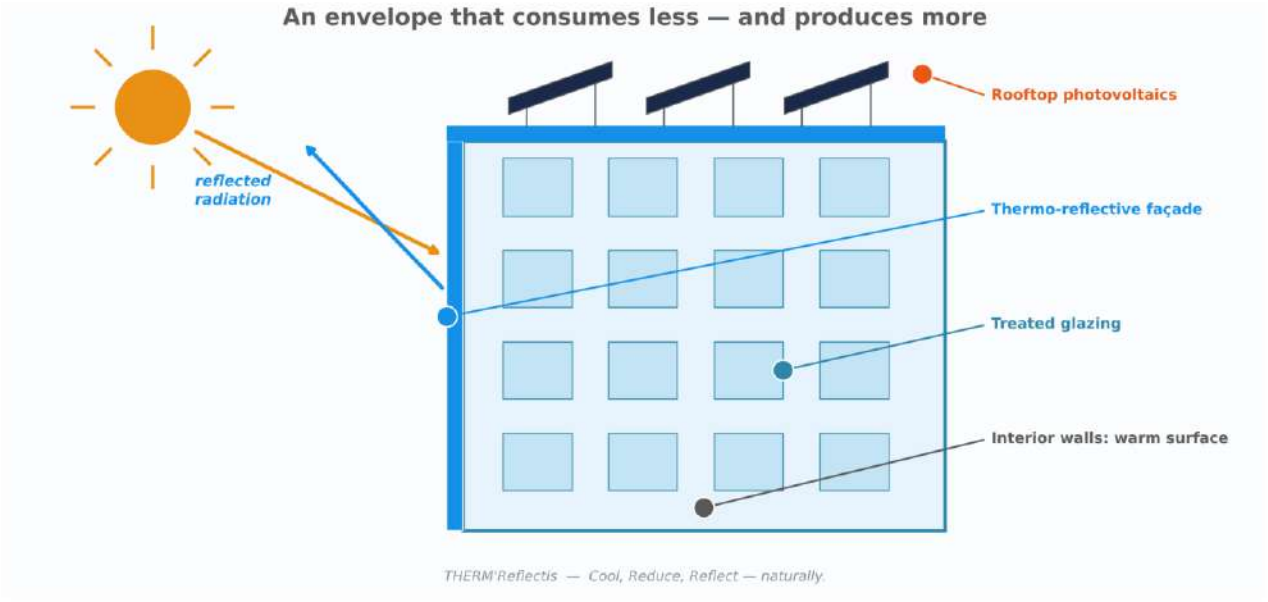
Reflective roof, photovoltaics and greening: an envelope that consumes less and produces more. (AI-generated image)

Renovate the existing, don't demolish it

The thin thermo-reflective layer, a discreet ally of energy renovation

We read, pencil in hand, the specialist publication by ewz devoted to the energy renovation of the Swiss building stock. One finding runs through it: renovating the existing stock could cut up to 50% of the country's heating-related energy consumption — and yet only one building in a hundred is being renovated. This remarkably well-documented dossier also says where thermo-reflective solutions belong: not to replace insulation, but to complement it — as a thin layer, outside and inside alike, and in perfect complementarity with photovoltaics.

By Joël Kohli, Founder & Director



One envelope, four levers: thermo-reflective façade and roof that send the sun back, treated glazing, tempered interior walls — and photovoltaics that benefit from it. Consume less, produce more.

What a close reading reveals

It is rare for a technical publication to state so clearly why our trade makes sense. Reading the dossier "Energy renovation: potentials and strategies for durable existing buildings", published by ewz, one thread stands out: **the real pool of savings lies not in new builds, but in the existing stock** — and it remains almost untapped.

The figures are staggering. In Switzerland, the building stock accounts for **around 40%** of energy consumption and nearly a quarter of greenhouse-gas emissions. More than 80% of buildings were built before the year 2000, many are still heated with oil or gas, and often poorly insulated. Renovating this stock could cut **up to 50%** of the national consumption linked to heating alone.

And yet the pace is stalling: **barely one building in a hundred** is under renovation. At this rate, the publication warns, neither the replacement of fossil heating nor the insulation targets will be met by 2050. The framework, meanwhile, is tightening: the Climate and Innovation Act, the MuKEn 2025 that now see buildings as "energy hubs", the SIA 390/1 standard that counts carbon across the whole life cycle. To wait is to risk seeing one's property lose value — a "stranded asset".

We wanted to extend that reading with our own: **where this dossier describes envelope measures, summer comfort and solar production, thermo-reflective solutions bring a concrete, thin and complementary answer.** Here is how.

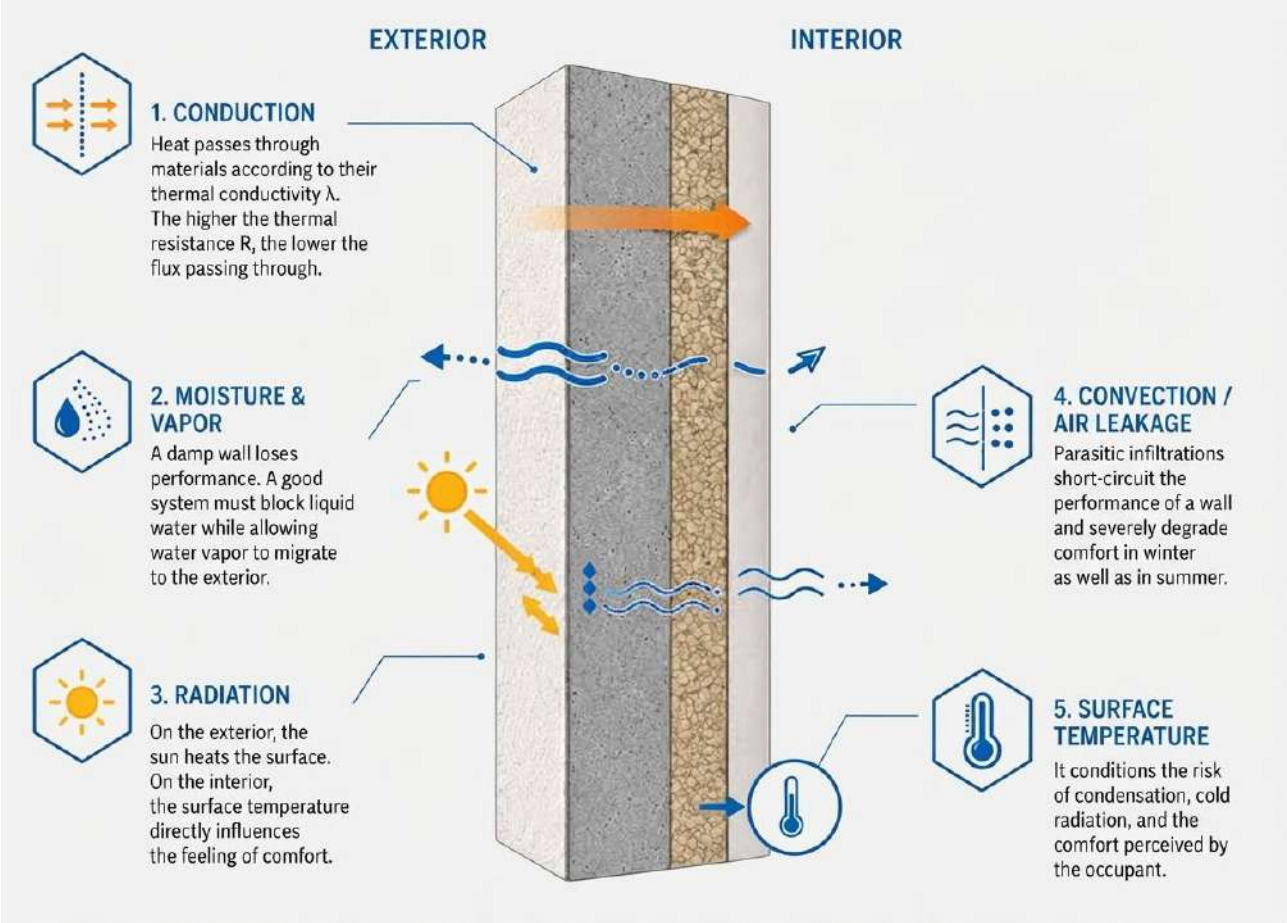
Insulate, yes — but not always through thickness

From the mountain to the building: the story of a thin layer. In the late 1980s, a membrane transformed sports textiles and mountain footwear. Its wager: to make a garment waterproof *and* breathable — ending the compromise "either protected, or comfortable". No added thickness, no heavy lining: a thin, functional, almost invisible layer that changed everything. Many were sceptical; today it is a standard, from the hiking anorak to the trail shoe.

Buildings are living, at their own scale, the same shift. For a long time, insulating better meant *adding thickness* — centimetres of insulation, a lining, a load. Thermo-reflective coatings offer another path: a

thin, functional and — a key point on an old wall — breathable layer, that acts where thickness cannot go. Performance without the mass.

Envelope insulation remains the flagship measure: according to the Confederation, better façade insulation cuts total energy consumption by **10 to 20%**. But it is not always possible, nor even desirable. On a protected building, a fine period façade or an object on the inventory, perimeter insulation is often forbidden. Elsewhere, the embodied carbon of a heavy renovation — manufacturing, transport, removal — can weigh heavily on the very climate balance one is trying to improve. This is where the thin layer finds its place: outside as well as inside.



Two faces, two logics: outside, reflect solar radiation before it enters; inside, warm the wall, reduce thermal bridges and master the air.

Outside: reflect the heat before it enters

ewz's specialist publication stresses it: faced with rising temperatures, **summer thermal insulation is a full-fledged aspect** of energy renovation, and external solar protection is an effective way to prevent overheating. This is precisely the role of a thermo-reflective coating applied to exposed surfaces: it reflects up to **91%** of solar radiation on an opaque surface, sharply lowers the surface temperature, and keeps the interior cool without running an energy-hungry air-conditioner. A durable building, the publication reminds us, must be protected against overheating to stay comfortable in ever-hotter summers.

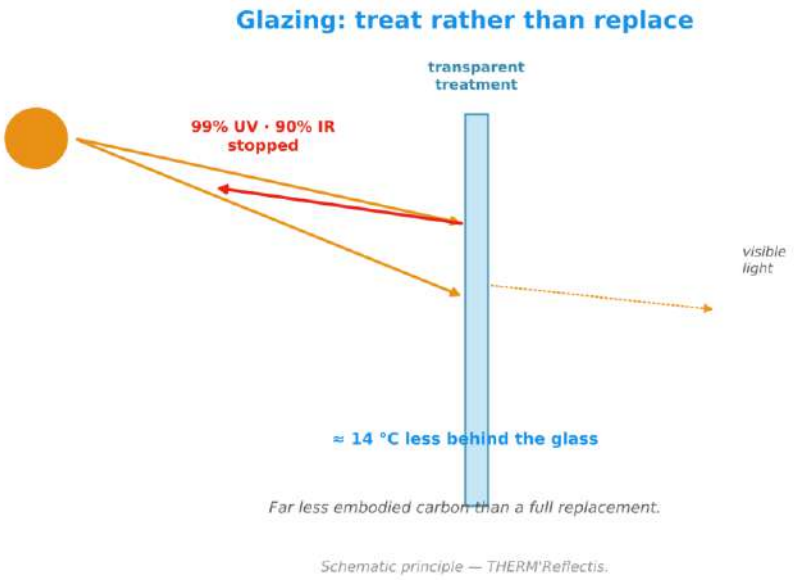
Inside: putting an end to cold walls

Where the façade is untouchable, the action shifts indoors. The aim there is no longer to reflect the sun, but to **eliminate the cold-wall sensation, reduce thermal bridges and master air-tightness** — by treating the air leaks that drag down the balance. A thin layer raises the wall's surface temperature on the

room side: one stops overheating to offset cold radiation, and condensation on cold spots disappears. Depending on the substrate and the objective, several formulations exist — silica aerogels, ceramic flakes or microspheres — always **vapour-permeable** to let the old wall breathe, and always as alternatives, never combined.

Glazing: treat rather than replace

For windows, the publication cites a study (FenSanReuse, FHNW) with a clear finding: in many cases, **treating the existing panes or adding double glazing is enough** to improve efficiency significantly — and it is preferable, in terms of resources and embodied carbon, to a full replacement. A transparent treatment filters up to **90% of infrared and 99% of UV**, for a difference of up to 14 °C behind the glass. A double gain: comfort, and the protection of furniture, parquet and panelling against UV.



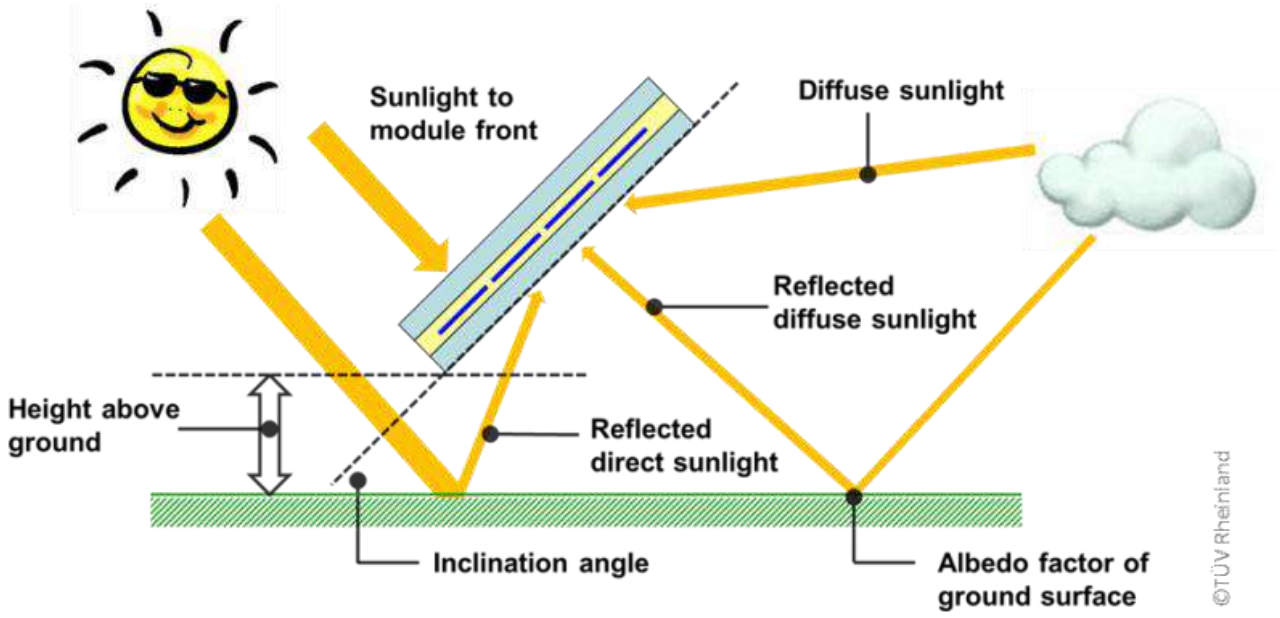
Treat the existing glazing rather than replace it: up to 99% of UV and 90% of IR stopped, ~14 °C less behind the glass — and far less embodied carbon.

Complementarity with photovoltaics

This may be the most strategic point. The MuKEn 2025 **now require photovoltaic modules to be installed during major renovations** — on roofs, and increasingly on façades. Yet a thermo-reflective roof or façade and a photovoltaic array do not compete: **they reinforce each other.**

Two reasons. First, the **albedo effect**: a light, reflective surface placed under or around the panels sends additional radiation back to their faces — a production gain, particularly on bifacial modules. Second, **temperature**: a panel loses yield as it heats up; a roof that stays cool, instead of storing heat, limits this warming and preserves the system's performance.

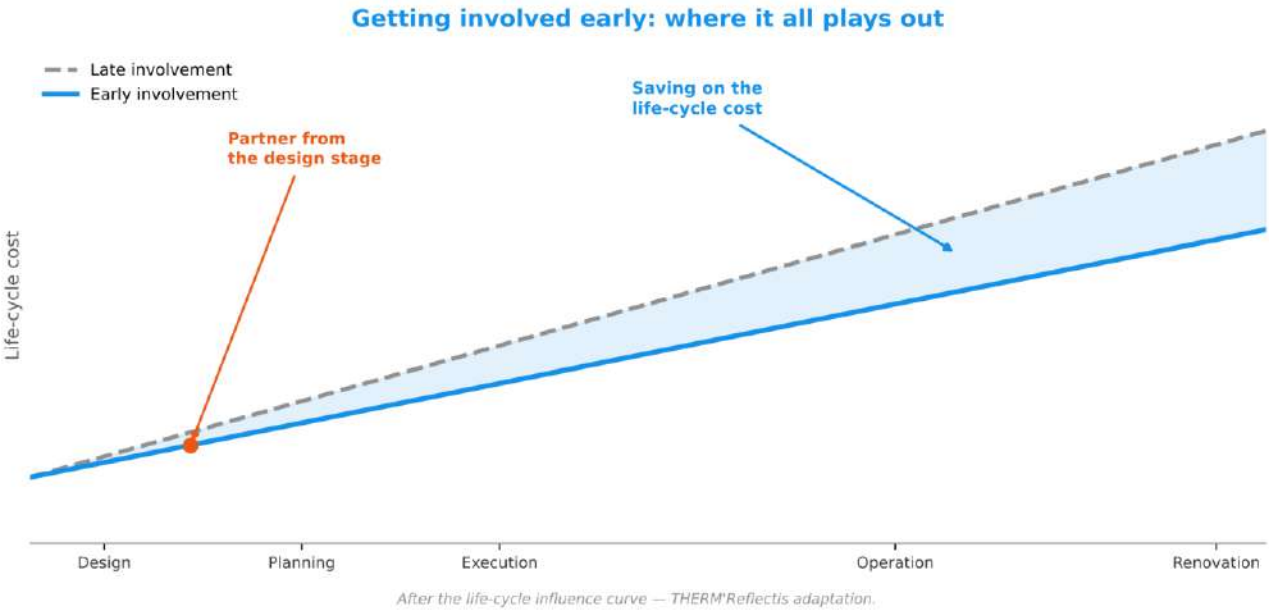
Add self-consumption (ZEV/LEC groupings) and the storage the publication highlights, and you obtain a coherent whole: **an envelope that consumes less, and produces more.** Thermo-reflective is not an alternative to solar — it is its best support.



Far from competing, a reflective surface and photovoltaics reinforce each other: the albedo effect raises output, and a cooler roof preserves the panels' yield.

Getting involved early: where it all plays out

The publication demonstrates it with a telling curve: **the early involvement of the supplier**, from design and planning onwards, has a positive impact on overall efficiency and on life-cycle costs. This is exactly the THERM'Reflectis approach. Brought in upstream of a renovation, we study with the owner, the architect and the planner *where* the thin layer delivers most — façade, interior walls, glazing, roof — and *how* it dovetails with renewable heating and photovoltaics. Not an isolated measure: a link in an overall strategy.



The earlier a partner is brought in — right from the design stage — the greater their effect on the building's overall life-cycle cost. Every early decision weighs for decades.

Renovate rather than demolish, again and again

The best renovation is still the one that preserves the existing. As a thin, reversible layer with low embodied carbon, thermo-reflective ticks the boxes of an energy-sound renovation: it improves comfort in summer and winter alike, supports photovoltaic yield, and fits in where thickness is impossible. The most durable building is not the most recent — it is the one we know how to make last.

Performance without the mass: **one thin layer, and the whole envelope changes its role.**

***Sources** : ewz — "Energy renovation: potentials and strategies for durable existing buildings" (specialist energy-solutions publication, 2026) · SFOE / FOEN — building stock ≈ 40% of energy consumption and ≈ ¼ of GHG emissions · Climate and Innovation Act (CliA) · MuKEn 2025 · SIA 390/1, SIA 380/1 · FenSanReuse study (FHNW) — window reuse/treatment · Technical documentation of partner suppliers: KOKUN Swiss SA (kokun.ch), RENOVCOAT (renovcoat.com), THERMACOTE (thermacote.com).*

Are you planning the renovation of a building or a property portfolio? Bring us in from the design stage.

Request a THERM'Reflectis diagnosis

Cool, Reduce, Reflect — naturally.

Our approach in 4 steps:

***Diagnosis** thermal and structural → **Planning** tailored → **Application** certified → **Monitoring** of the gains*

Was your building designed to meet this new challenge?

Your potential is unique. Whether it is a rental building, an industrial site or a property portfolio to renovate, **every envelope can consume less and produce more —** provided it is thought of as a whole, **right from the design stage.**

> ***Stop letting this potential lie dormant.***
> ***Every surface counts.***
> ***Every degree gained makes a difference.***
> ***Every project contributes to a more sustainable future.***

Contact THERM'Reflectis: together, let's turn your potential into results!

THERM'Reflectis (Suisse) Sàrl
Science and Innovation in the service of buildings.
connect@thermreflectis.com
+41 (79) 456 07 80
http://www.thermreflectis.com

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“Revealing the hidden potential of every surface to create tomorrow's lasting value.
Your project, our mission.”