

Zonneluchtverwarming *Chauffage solaire de l'air*

Een marktrijpe technologie met kansen voor de lichte metaalbouw
Une technologie offrant des opportunités pour la construction en métal léger

A bright sunburst graphic with rays emanating from a central point, set against a dark blue background that transitions to a lighter blue at the top.

kansen voor de lichte metaalbouw
des opportunités pour la construction en métal léger

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waar markt en technologie elkaar ontmoeten
quand marché et technologie se rencontrent



scholen: secundair onderwijs
écoles: enseignement secondaire







Signature



White



Gooswing Grey



Alaska Grey



Anthracite



Black



Ice Blue



Albatross



Pure Grey



Merlin Grey



Andenne



Marlstone



Honesty



Mushroom



Straw



Mole Brown



Hamlet



Meadowland



Moorland Green



Svelte Gray



Olive Green

Classic



Chili



Petra



Terracotta



Barn Red



Burano



Jade



Heritage Green



Juniper Green



Ivy



Van Dyke Brown



Solent Blue



Wedgewood Blue



Ocean Blue



Sargasso



Raven

- **Opportunity** new schooling policy
- **Technology** colour coordination

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landbouw
agriculture





- **Opportunity** agricultural intensivation
- **Technology** sandwich panel
 matt, robust coatings • HPS200®
 ammonia resistance • Colorfarm®



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Opportunity

- EU 2020
- Near Zero Energy Buildings
-
- Energy saving in buildings
- Renewable energy in buildings
-
- Vision 2050

Figure 0.1 Progress of Member States towards 2020 climate and energy targets



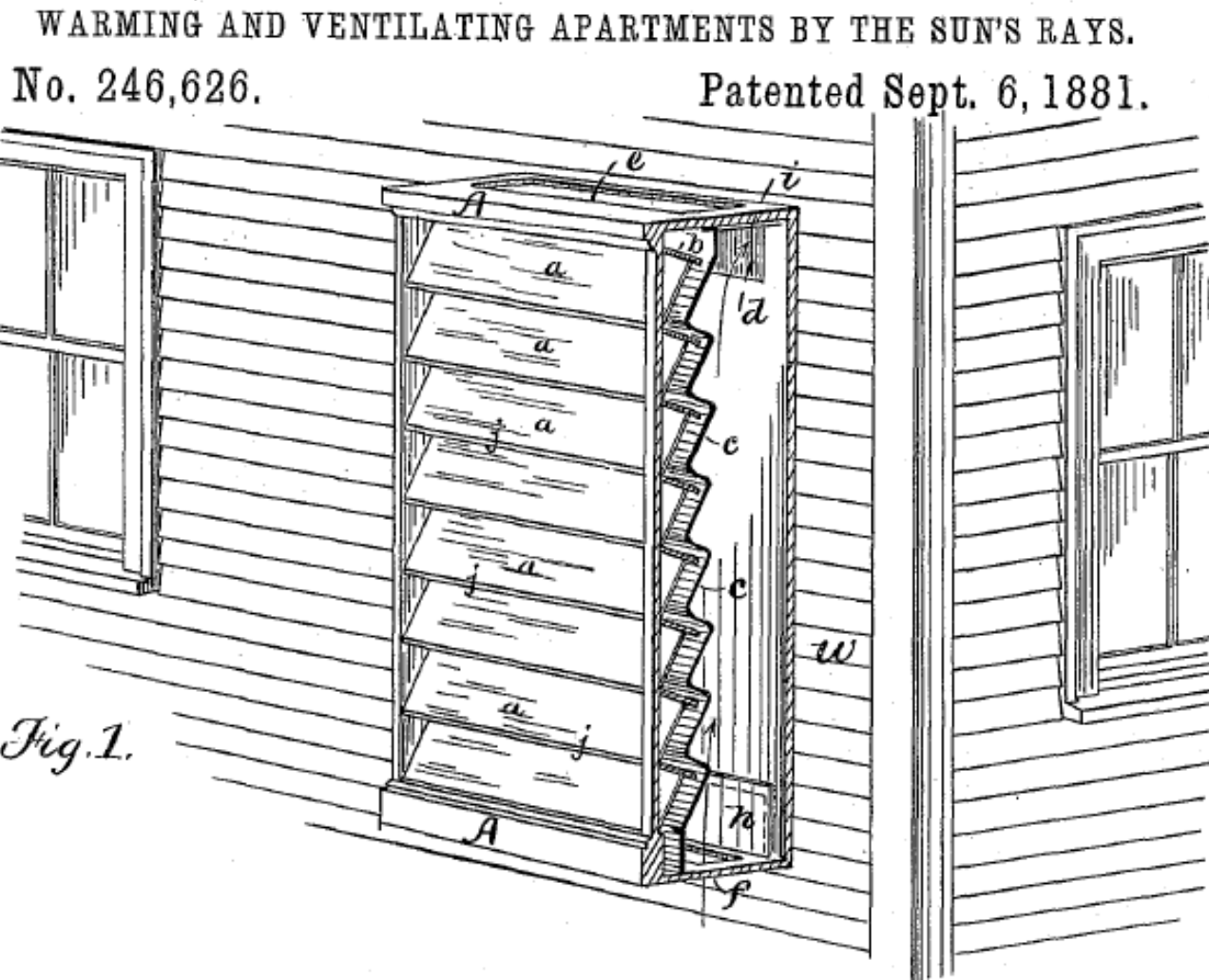
Source: EEA.

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Chauffage solaire de l'air

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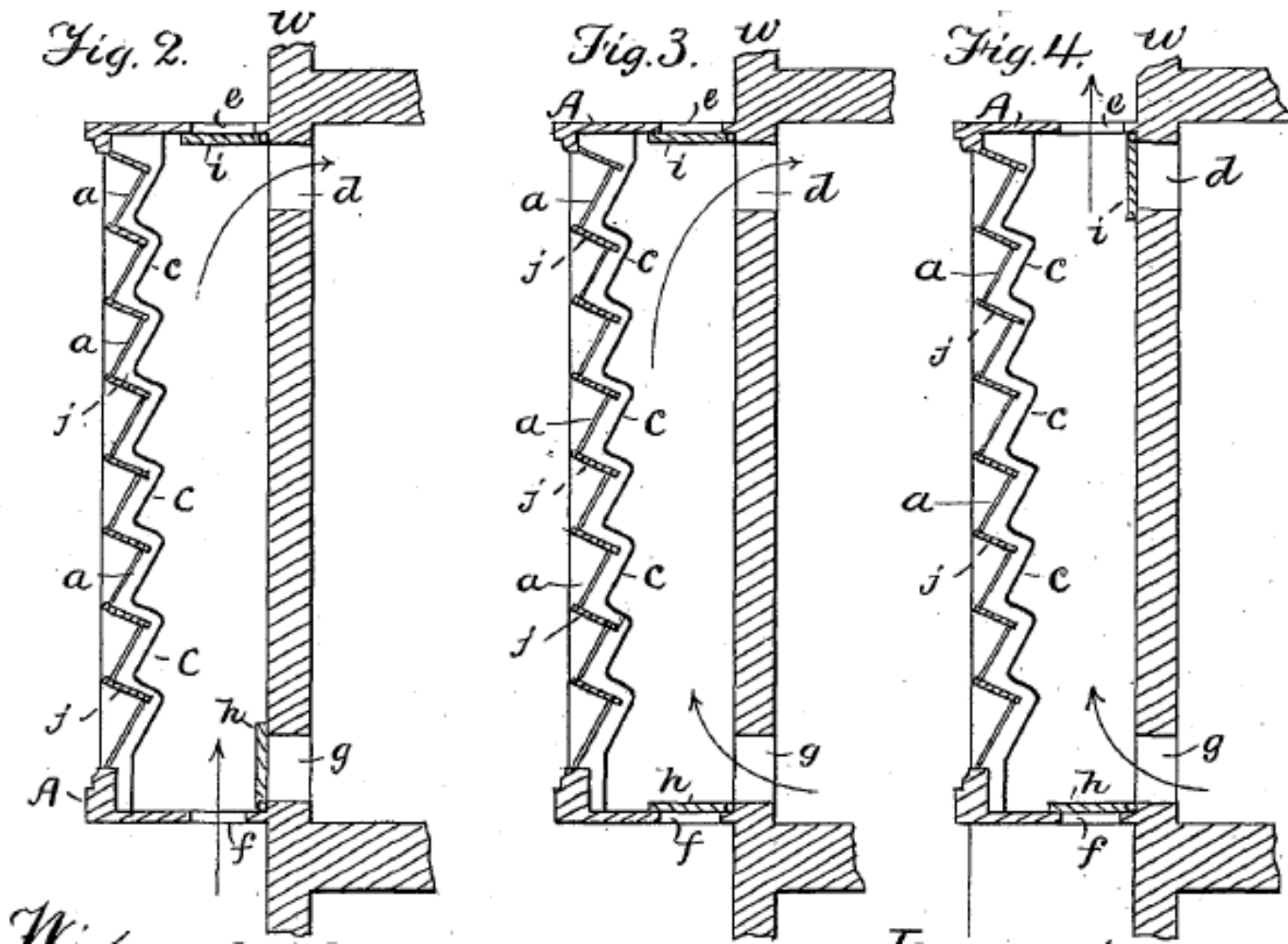
Edward Morse invents a Solar air heater . . later named "Trombe wall"



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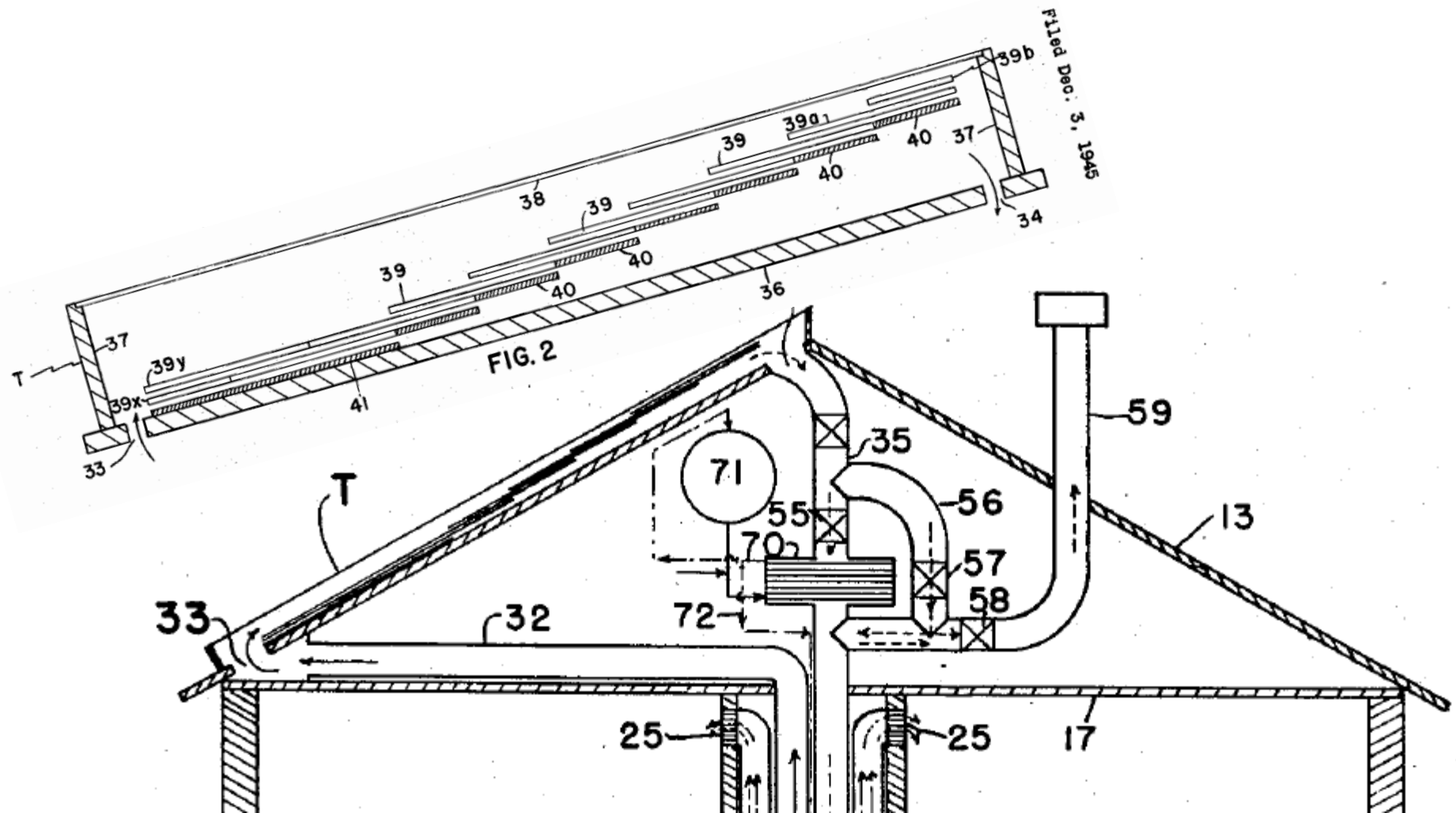
Edward Morse invents a Solar air heater . . using corrugated iron as a collector



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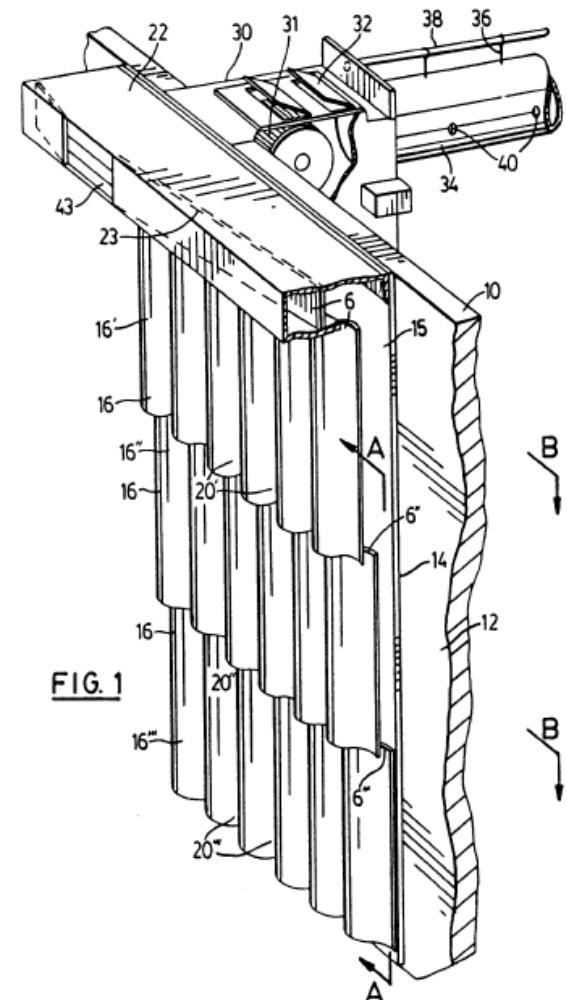
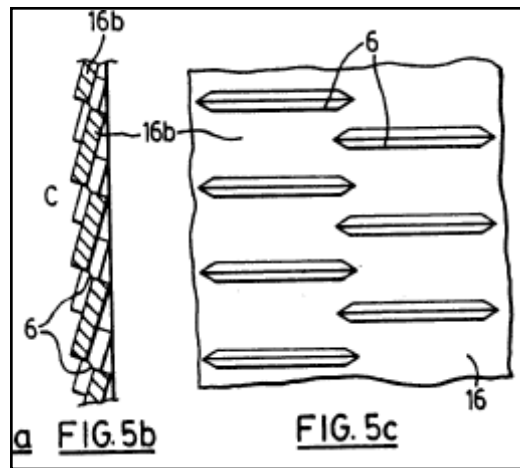
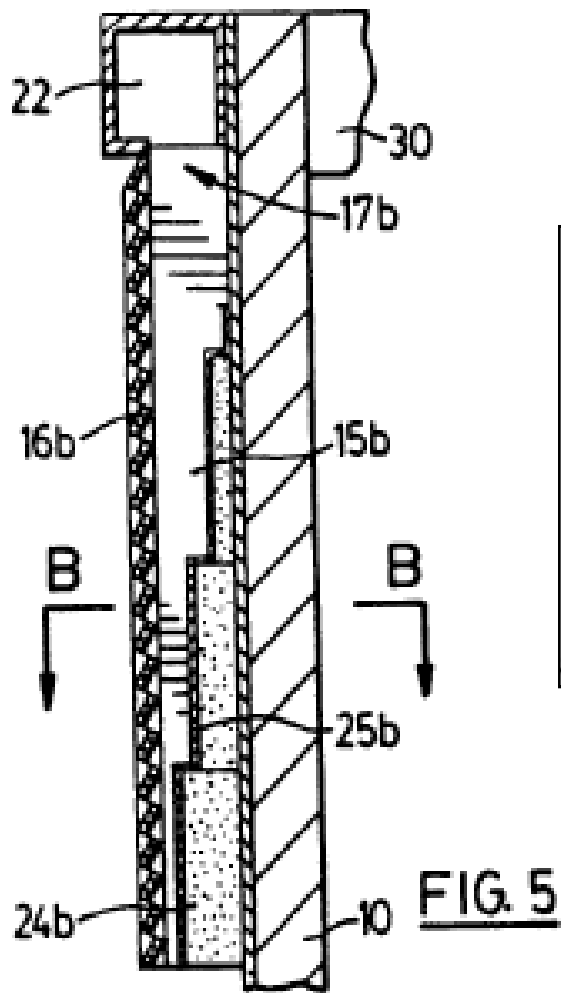
Prof. George Löf builds a first Solar heated house in Boulder, Colorado



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Rolf Peter & John Hollick improve the solar collector with perforated metal sheets



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technologie

technologie

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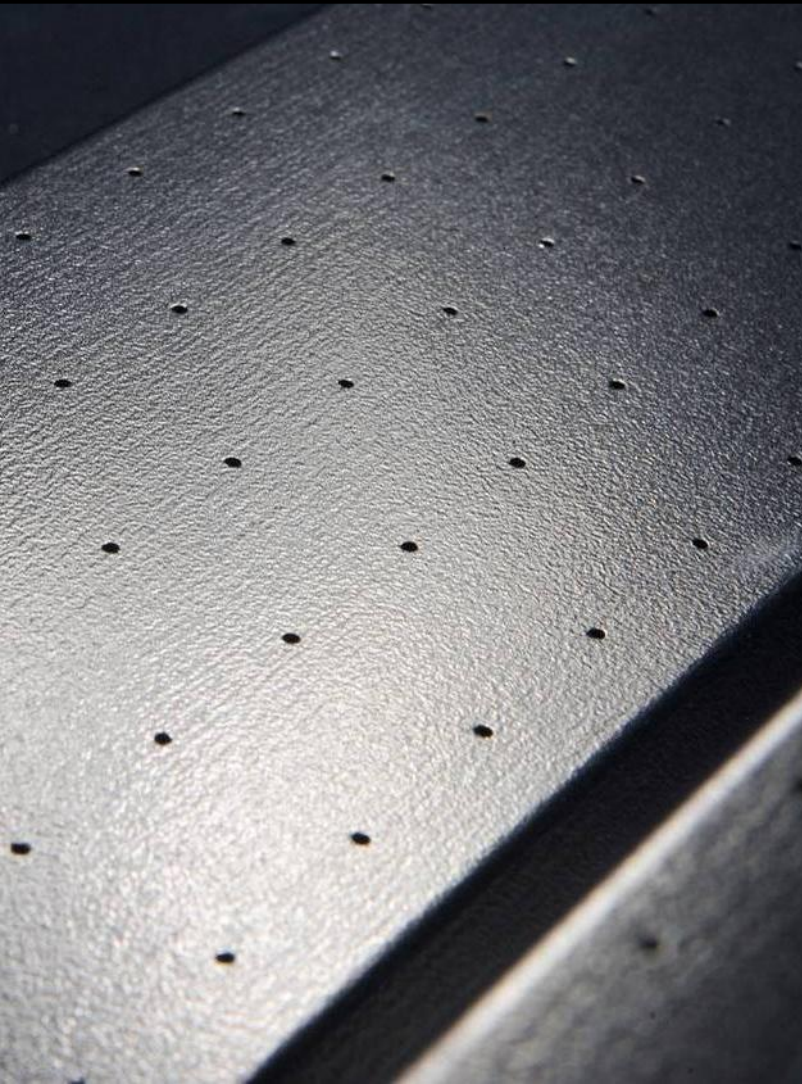
Colorcoat Renew[®] Solar Collector



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Colorcoat Renew[®] Solar Collector

Colorcoat Renew[®] Solar Collector for hall heating



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Colorcoat Renew[®] Solar Collector



Air ducts

Fan

Air entry

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Air duct with jets

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Construction:

- Wall
- Spacers
- Mounting rails
- Colorcoat Renew[®] profiled sheet, made with Colorcoat Prisma[®]
- Airspace behind profiled sheet



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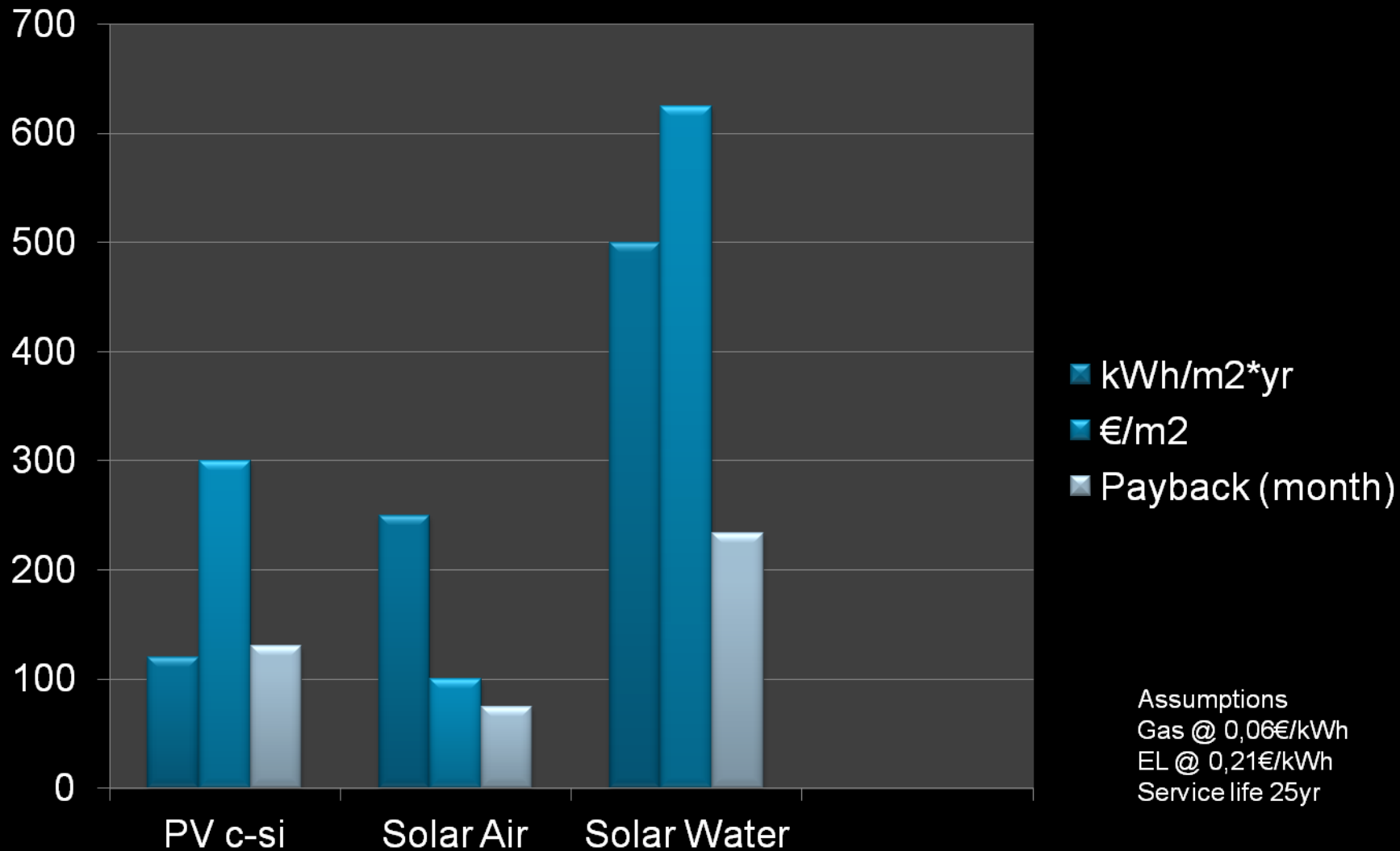
Chauffage solaire de l'air

technologie met kansen
technologie offrant des opportunités

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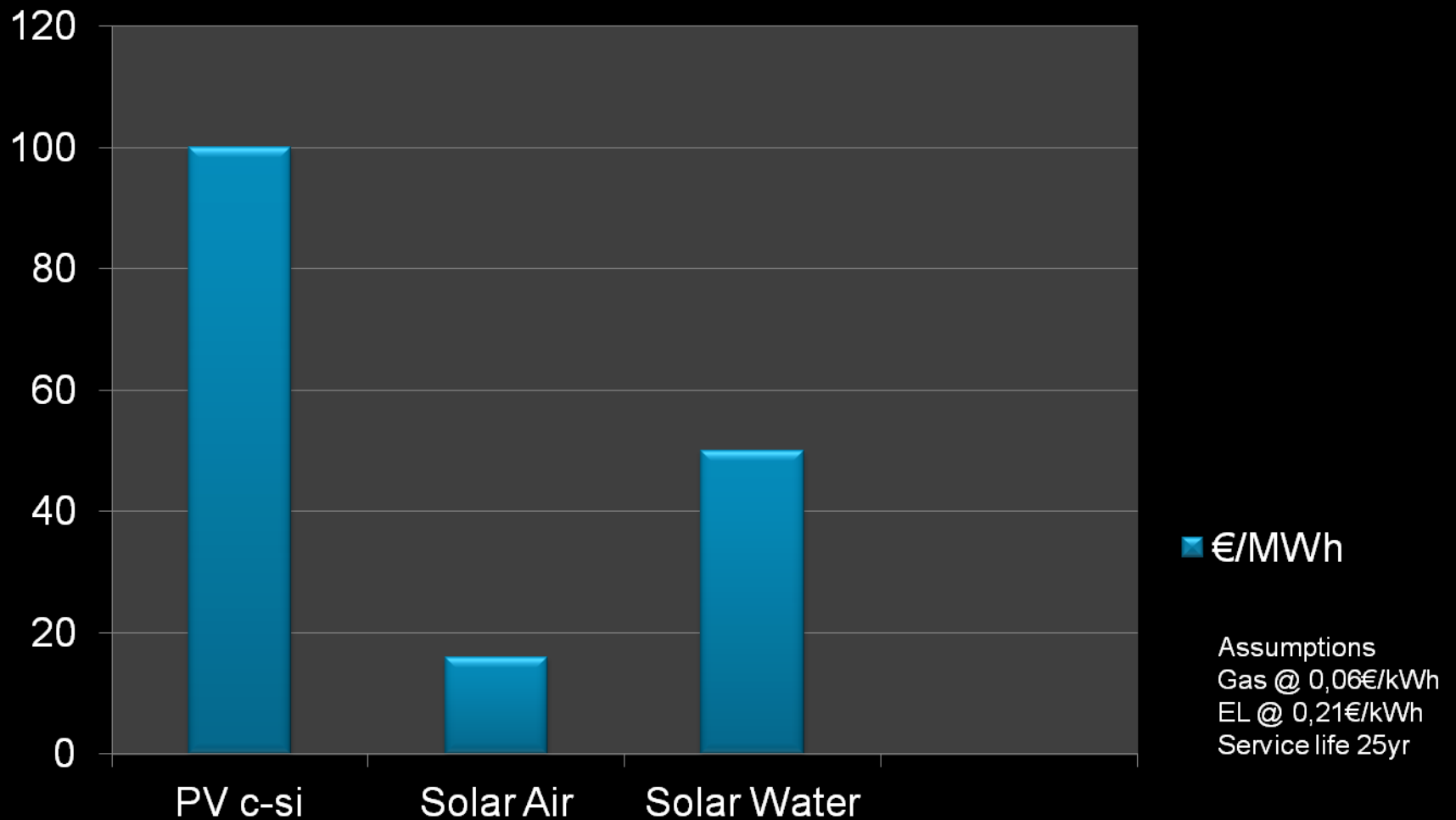
Economic effectiveness



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Economic effectiveness



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Standards development

2009/28/EC

EU recognises SAH as active renewable energy

- SAH can be element of government policy

EN12975

Thermal solar systems and components. (Draft 2013)

- Standard for solar boilers is extended to Solar Air Heaters!

ISO9806

Solar energy: Thermal solar systems: Test methods (2013)

- Test methods for a.o Energy performance of Solar Collectors
- Worldwide
- Liquid and Air





- Standardized circumstances
- Independently confirmed
 $\eta > 50\%$

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Chauffage solaire de l'air

Full scale Research and Demonstration buildings with scientific supervision



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Solar power on façade



< 50 W/m²



~ 150 W/m²



~ 500 W/m²



> 800 W/m² (max ~ 1000 W/m²)

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Solar power on façade



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Chauffage solaire de l'air

technologie met kansen
technologie offrant des opportunités

Hochschule Luzern

Architektur

Bautechnik

Glatz





Collector efficiency > 60%, Power > 12.000 Watt thermal



or



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Opportunities for Commercialisation

Colorcoat Renew® Solar Collector

- Tested and proven
- Integration in steel building envelope
- ~ **20%** of south facing wall
- ~ **20%** energy saving
 - Building with low ventilation
 - Building with high ventilation
- Unique opportunity for steel construction
 - Can this be realised in concrete?

Colorcoat Renew® Solar Collector

will be introduced begin 2015



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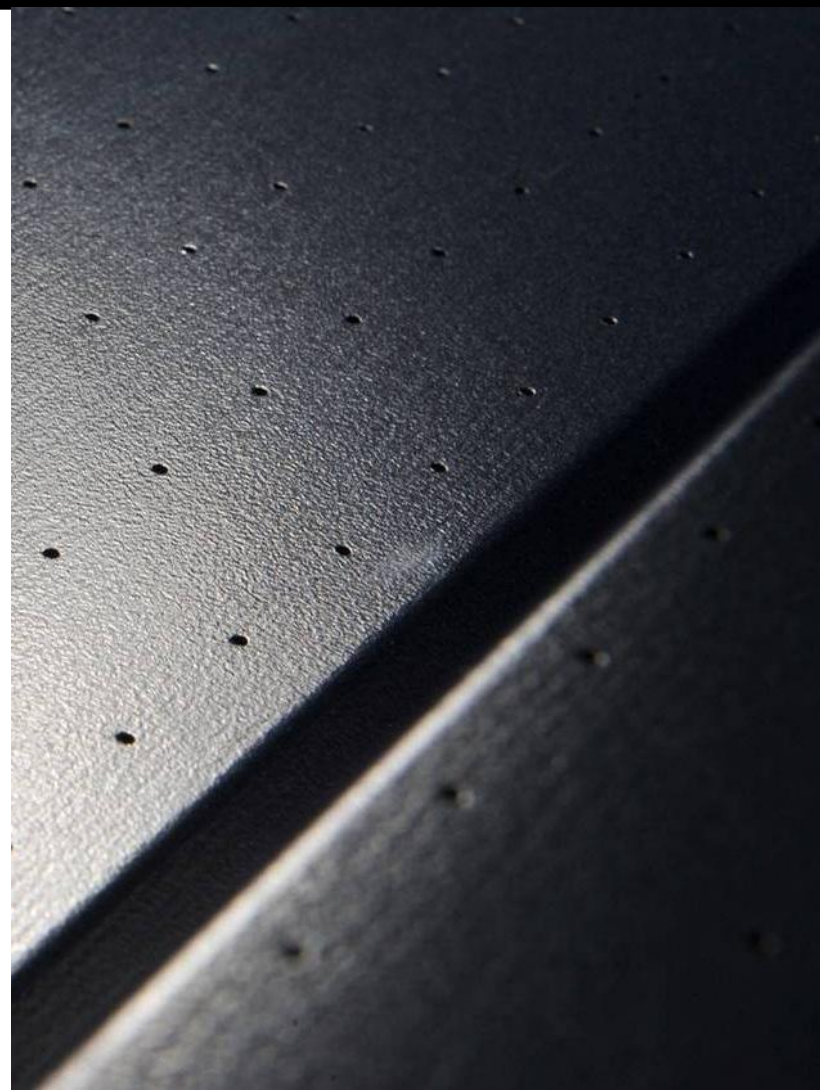
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Opportunities for Commercialisation

Meer info / de plus amples informations

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Dank u wel • Merci

