

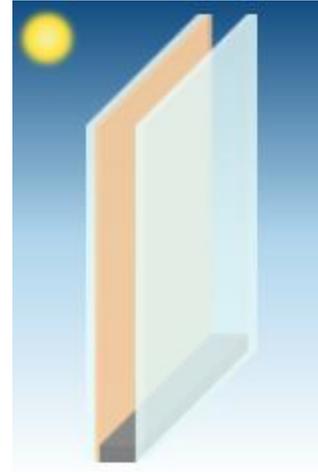


**Low carbon façade:
References
Solutions
Products**

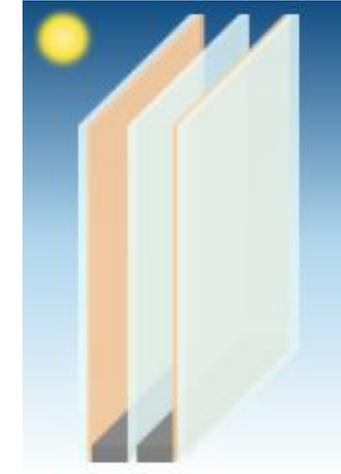
AGENDA

- References for retail, residential and commercial facades
- Low carbon solutions for visual and thermal comfort
- Low carbon products

AGENDA



DGU



TGU

- References for retail, residential and commercial facades
- Low carbon solutions for visual and thermal comfort
- Low carbon products



Mäster Samuelsgatan
kv. Blåmannen
60-50

Hötorgspassagen

Drottninggatan Mäster Samuelsgatan
70-58 488-46A

5,5



ECLAZ

Diamant



**PRE-LOVED
ARCHIVE**
LAUNCHING OCT 29TH





Bad choice of coating: DGU low iron $u=1,0$



Vy57 Jönköping: SKN 183+ECLAZ



Villa Ola: SKN 183+ECLAZ



Wisdome SKN 183 Diamant





Forskaren Stockholm: XTR 70/33+ECLAZ TGU Diamant



Top floor: XTR 61/29+ECLAZ Diamant





Gate:01 Frösundavik: XTR 70/33 Diamant







Villa Anders, XTREME 70/33

Hästen 21 Stockholm



● SET BACK

RESIDENTIAL ●



OFFICE



● RETAIL







Hästen mock-up, UPB Liepaja

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ADJUST GLASS COATING AND GLARE CONTROL CURTAIN COATING

Product	LT	g-value	g-tot Verosol*	g-tot Kvadrat**
TGU SKN 183 + ECLAZ	>68%	0,37	0,14	0,18
TGU XTR 70/33+ ECLAZ	>63%	0,31	0,12	0,15

*g-tot for IGU + inside shading Verosol Silver Screen calculated EN 52022-3 summer case

**g-tot for IGU + inside shading PVC-free Kvadrat Niesen ClearView enligt EN 52022-3 summer case

Calculations done in ES-SO ESBO for IDA-ICE

THE STORY OF REGIONENS HUS BEGINS AT AFRY HOUSE GOTHENBURG



- Hybrid facade
- Openable window to service shading and outer skin

A NEW SOLUTION FOUND 2017



- Single skin
- Inside shading
- 30% cost reduction on whole facade

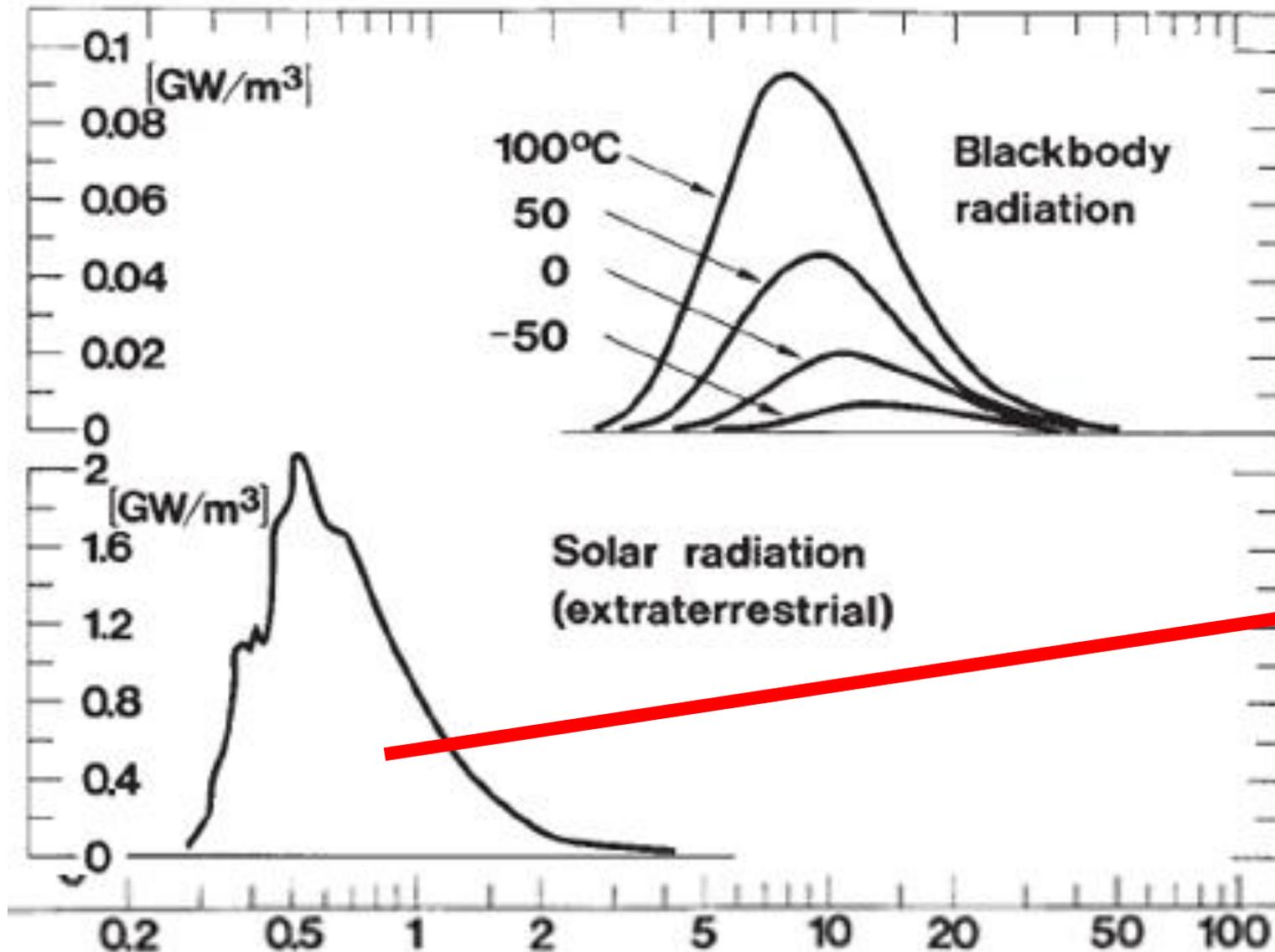
Light without heat: Regionens Hus, Gothenburg



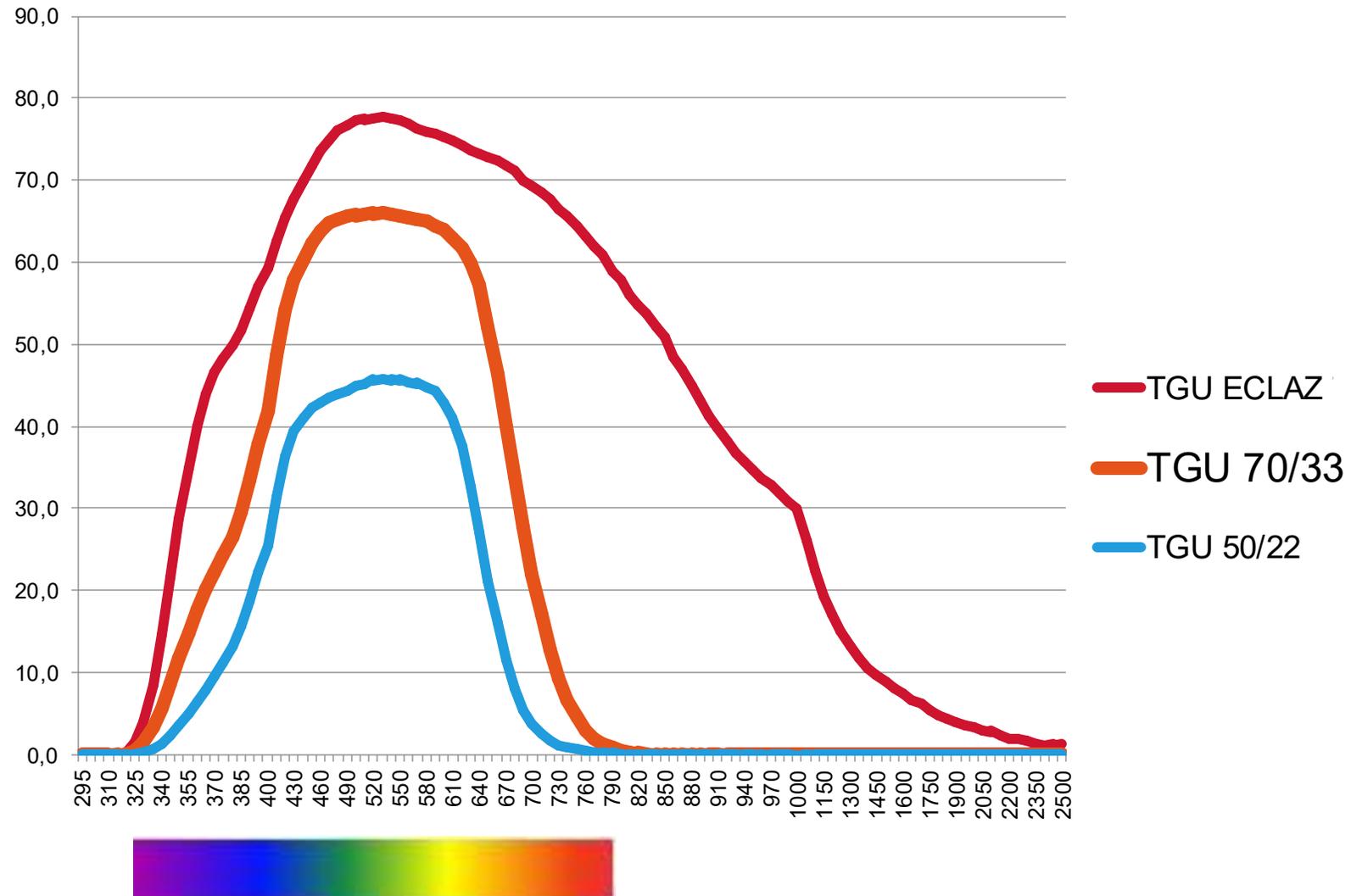
COST ADVANTAGES OF SOLAR CONTROL GLASS + INSIDE SHADING

- Low embodied carbon
- Low investment cost
- No maintenance
- Works every day of the year

THE PHYSICS BEHIND THE SOLUTION



THE MIDDLE CURVE IS PERFECT



COMFORT ADVANTAGES OF SOLAR CONTROL GLASS + INSIDE SHADING

- 50/50 solution, manual override feasible
- Originally a glare control solution
- Curtain before glass gives better views to outside than curtain after glass



EARLY STAGE PLANNING IS KEY WITH THIS SOLUTION

- Orientation influences Window to Wall Ratio (WWR)
- Room size influences WWR
- Cooling capacity influence WWR
 - Summer night cooling
 - District cooling
 - Geothermal cooling

Magasin X Uppsala NE/NW
100% glass



SE/SW 67% glass



MAGASIN X: FACADE DESIGN ADAPTED TO ORIENTATION

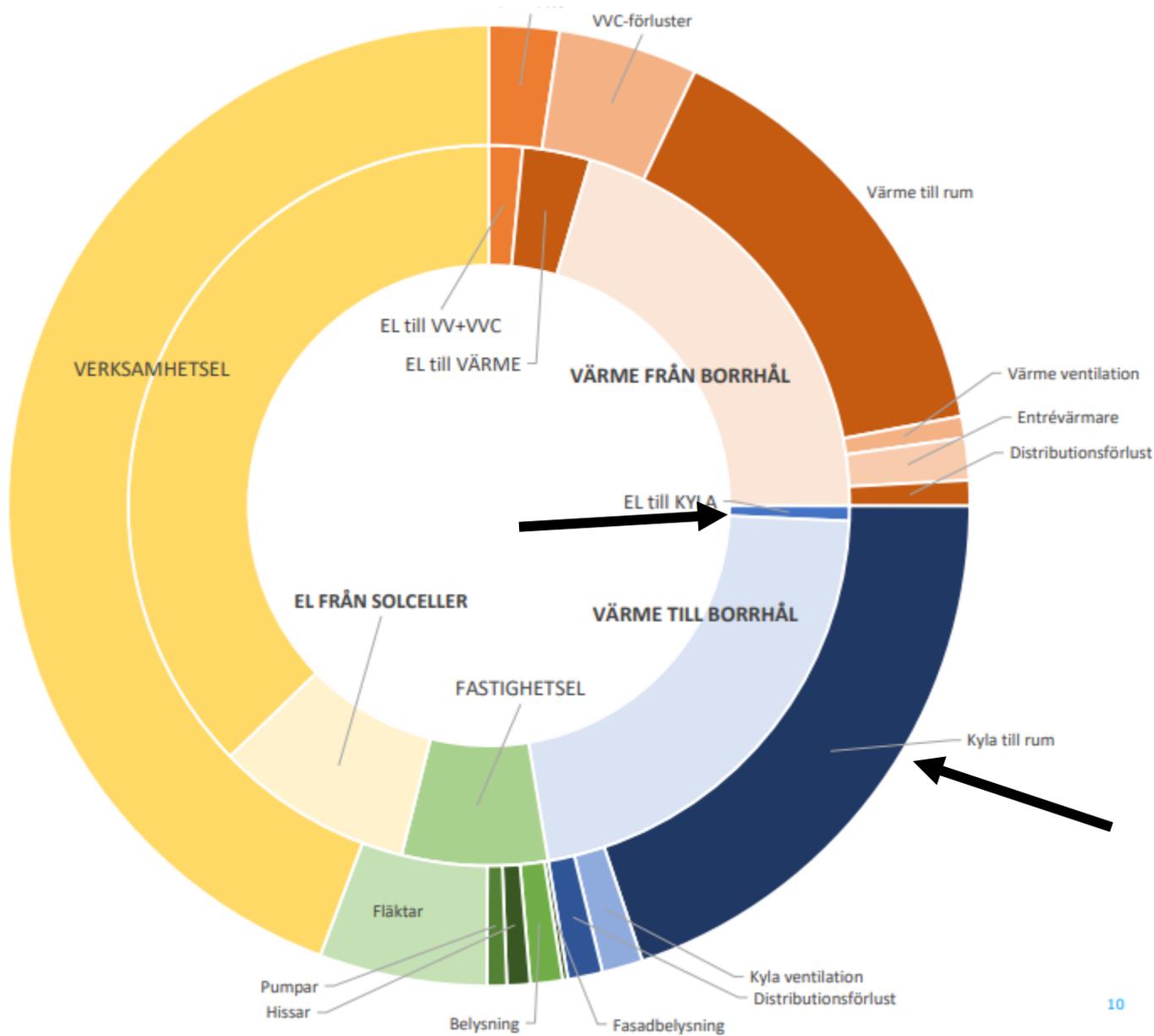
XTR 70/33 TGU

XTR 70/33 TGU
g-value 0.30

XTR 70/33 TGU
+ inside shading
Verosol Silver Screen
g-tot 0.14

XTR 50/22 TGU
g-value 0.19

GEOHERMAL COOLING



Magasin X:
Outer circle:
consumed energy
Inner circle:
purchased energy

ROOM SIZE AND COOLING CAPACITY

- 70/33+inside shading references, Window size effect of cooling effect in open office landscape 7 meters deep

Regionens Hus, Gothenburg, 20W/m2 air cooling





WWR 40% seen from inside



Merkurhuset, Gothenburg, 40W/m² water cooling



WWR 60% seen from inside



Kasper Salin-priset 2023



PRIORITIES FOR FACADE SOLUTIONS

1. Static
2. Dynamic solution inside shading
3. Dynamic solution outside shading

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ORAÉ®



-42%

carbon footprint
of **ORAÉ®** vs
PLANICLEAR®



CHECK OUR
EPD OF
ORAÉ® (4mm)



6.64kg

CO₂ eq./m² for
4mm **ORAÉ®**

That means around
-30/40%
carbon footprint for
a glazing made
with **ORAÉ®** vs
regular glazing

SAINT-GOBAIN GLASS

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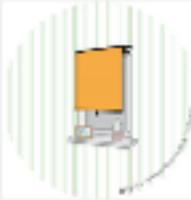
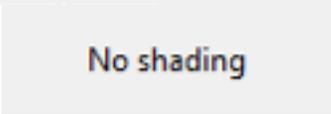


70 000 m2 ORAÈ supplied March 2025



Habitat 7, Gothenburg, all glass on ORAÈ

APPENDIX: WHAT PRODUCTS I WORK WITH AND WHY

Product (u-value 0,5)	LT	g-value	
TGU ECLAZ + ECLAZ*	>75%	0,60	 Exterior screen
TGU SKN 183 + ECLAZ	>67%	0,37	 Interior roller shade
TGU Xtreme 70/33+ ECLAZ	>63%	0,31	 Interior roller shade
TGU Xtreme 61/29 + ECLAZ	>55%	0,26	 Interior roller shade
TGU Xtreme 50/22+ XN	>40%	0,19	 No shading

*(u-value 0,6)