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Company Description

Who

Inform Design is a Malmö based consulting practice initiated in January 2017. Our field of work is in Facades, Building Physics and Indoor Climate with an emphasis on highly glazed constructions.

What

Our goal is to serve design by providing high performing facade options that simultaneously serve the Architectural intent. Our work is most often tailored to the building we examine and it is a product of interactive collaboration with the Architects and the Design team.

Why

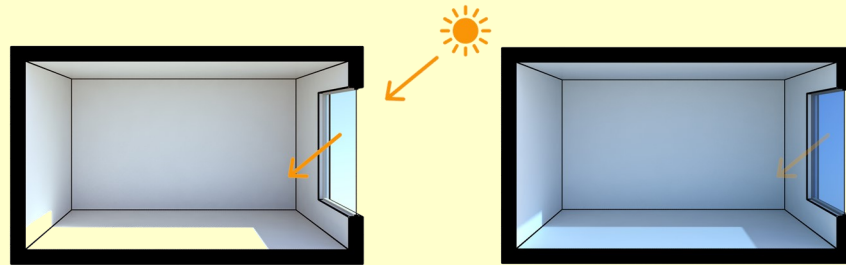
Our services aim to predict real life performance and ensure we do things right the first time, without ending up with ad-hocs that increase costs and compromise the initial Architectural intent. We believe in the value of good engineering and that complying regulations does not necessarily lead to good building performance.

How

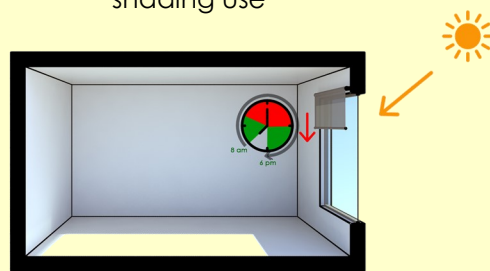
Our services can be valuable from early project stages when driving design towards the "right directions", up to later stages when accurate performance assessments are required. Our work is based on deep understanding of building physics and façade performance. The high level technical engineering of our team ensures that we provide accurate and valuable input when informing the façade design.

More information on Inform Design can be found in our web site under: <https://www.inform-design.se/>

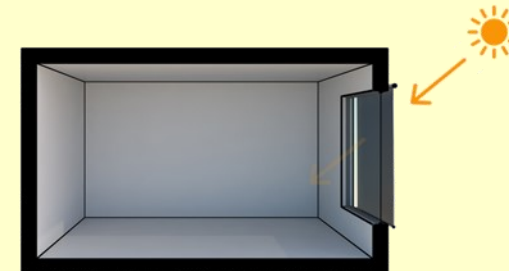
Advising on glazing types (clear vs. solar control glasses)



Assessing the required frequency of shading use



Advising on shading properties

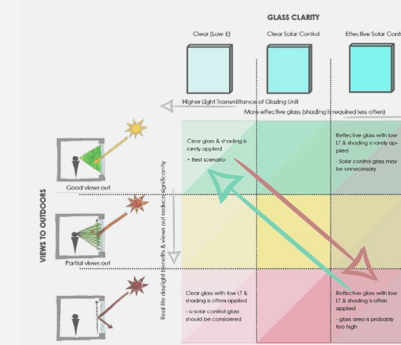
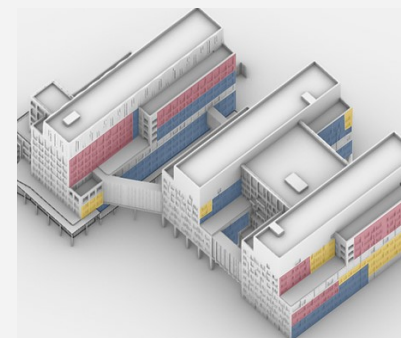


Service & added value:

Although selecting the right glass & shading combination seems a rather basic task, it can often become rather complicated when one part of the façade is highly exposed to the sun and the other is heavily shaded. Assessing adequate performance and predicting the frequency of required shading use allows us to avoid ad-hocs that increase costs and compromise the Architectural intent.



Architect:
White Arkitekter
Client:
Region Skåne
Location:
Malmö, Sweden

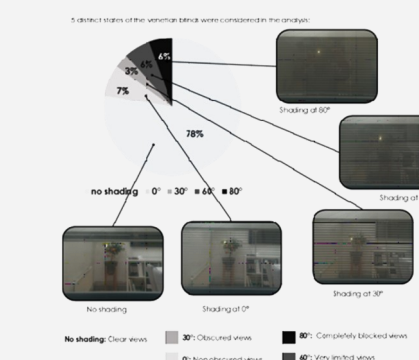
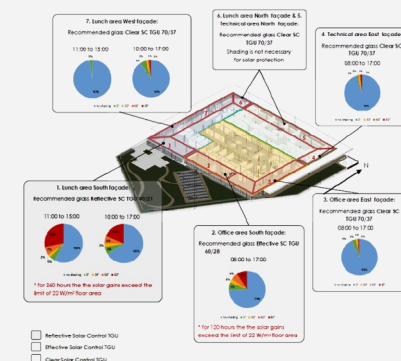


NSM Vårdbyggnad (Malmö hospital)

Our work included dividing the façade into different areas according to their solar exposure. Areas highly exposed require increased solar protection (provided either by solar control glass or frequently used shading) and areas less exposed could significantly benefit from clear glasses with increased Light Transmittance values.



Architect:
Tengbom
Client:
Region Skåne
Location:
Malmö, Sweden



NSM Service Building (Malmö hospital)

To support the Architects vision of transparency we provided façade solutions, balancing between solar control glass, daylight levels and views to outdoors. This was achieved by assessing the frequency of shading use and the indicative daylight availability with the specific shading schedules for several glazing options.



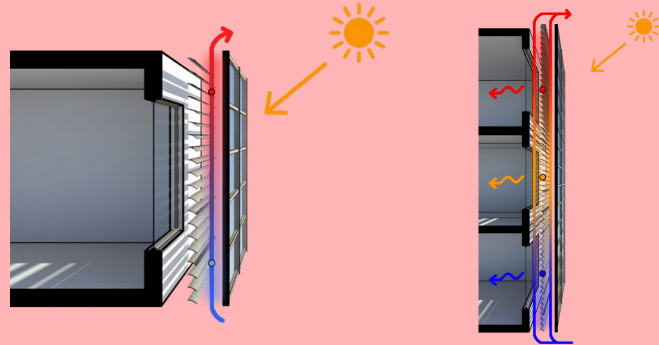
Architect:
Wingårdh
Client:
JM
Location:
Stockholm, Sweden

Glazing	Required fabric	Glare control	Views out (OF)	Appearance from out	Daylight quality	Frequency of shading use				Pros & Cons
						S	W	E	NW	
TGU 70/33 (current suggestion) 18 or 28 or 38			4%	Reflective						<ul style="list-style-type: none"> rather clear glass reflective fabric looks from out doors shading is frequently used for South and West office facades
TGU 40/28 4D			10%	White						<ul style="list-style-type: none"> non reflective fabric glazing needs to be changed for South and West facades minimum effect on the frequency of shading use for South and West office facades glare control for offices
TGU 50/22 5D			10%	White						<ul style="list-style-type: none"> non reflective fabric low frequency of shading use for South and West facades can allow for fabrics with non-reflective look from outdoors glazing needs to be changed for South and West facades rather dark glazing affecting the quality of daylight
TGU 70/33 + 35% of fill (recommended) 8A			4%	White						<ul style="list-style-type: none"> non reflective fabric with high OF low frequency of shading use for South and West facades same glazing for all facades. If applied only where necessary same quality of daylight can allow for fabrics with non-reflective look from outdoors lower selectivity (g-value vs. LT)
Adjusted façade elements										

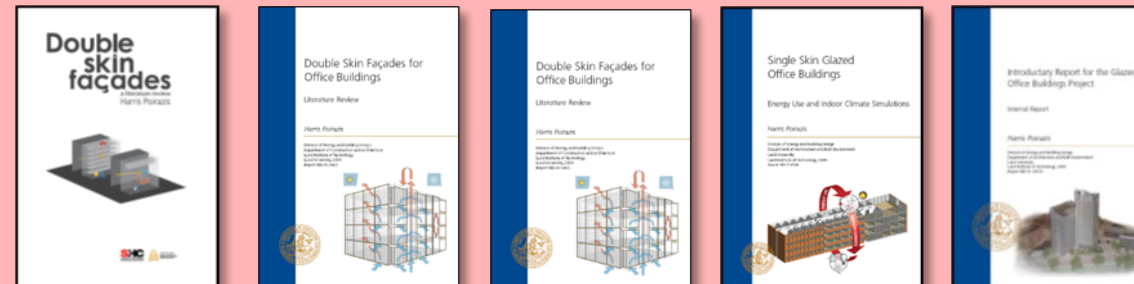
K1 (JM Stockholm Headquarters)

Our role was to advise on TGU build-ups, (internally placed) shading fabrics and internal venetian blinds that can meet the set requirements and provide a good real life performance. To do so, we needed to take "one step back" and re-examine the effectiveness of different (glazing & shading) configurations.

Naturally & mechanically ventilated Double Skin Façades



Our publications in Double Skin Façades



Service & added value:

Through an extensive experience in advanced facades we can assist our Clients with proper designs. Key to our service is using appropriate methods to properly predict façade performance which is based on a thorough understanding of complex physical phenomena.



Architect:
**Kanozi Ar-
kitekt**
Client:
**UBA Glas &
Fasad AB**
Location:

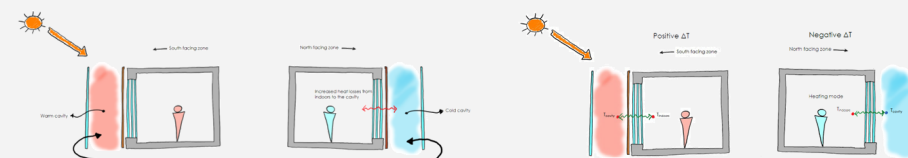


7 Stjärnan (E-ON)

The aim of our study is to assist our Client with solar performance and overheating risk assessments. Our work focused on 2 issues: (a) examine whether the desired solar performance can be met with the current design and (b) assess cavity air temperatures for a South and West rectangular Double Skin façade cavities.



Architect:
White Arkitekt
Client:
ACC Glasrådgivare
Location:
Skellefteå Sweden



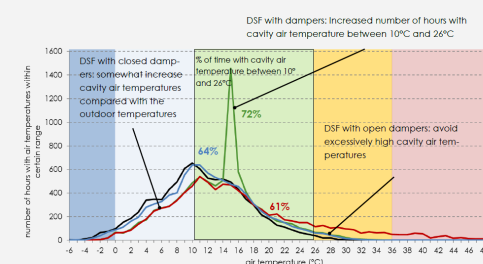
Kulturhus Skellefteå

Early involvement with the design team allowed us to brainstorm on the ventilation strategy of the Double Skin Façade of the Skellefteå Kulturhuset. Due to the low outdoor air temperatures and the intense solar radiation, we examined a potential in energy savings if we circulate the air across the Double Skin Façade on every floor level.



Architect:
AHMM
Client:
FMDC
Location:
London, UK

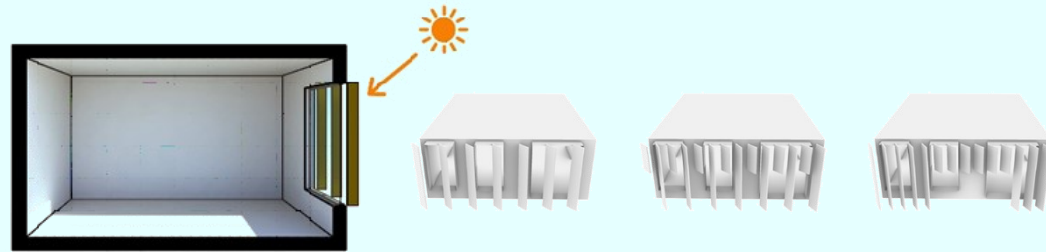
	Frequency of shading use	Fabric Opacity Factor	Fabric's appearance from outdoors	Solar performance	Plant growth
Step 1. DSG + external shading	Either high frequency or of shading use, depending on the South facade (24%)	2%	Reflective	Higher transmitted solar than the top-glass panel	Not relevant
Step 1.1 Effect of different DSG types	With DSG 80/20 the frequency of shading use is reduced significantly	Same as for step 1	Same as for step 1	With DSG 80/20 the solar performance is met	Not relevant
Step 2. DSG + external overhangs	Similar as for step 1	Same as for step 1	Same as for step 1	Similar as for step 1	Not relevant
Step 3. DSG + external overhangs and side fins	Small improvement over for the South facade	Same as for step 1	Same as for step 1	Similar as for step 1	Not relevant
Step 4. DSG + integrated shading	Similar as for step 1	4%	Allows for non-reflective fabric	The suggested limit is met	Requires further equipment to meet the benefit
Step 5. Well performing DSG (with ventilation control)	The frequency of shading use can be reduced by the plants in the cavity	Same as for step 4	Same as for step 4	Same as for step 4	With proper ventilation control, we can increase the time with cavity air temperature suitable for plant growth



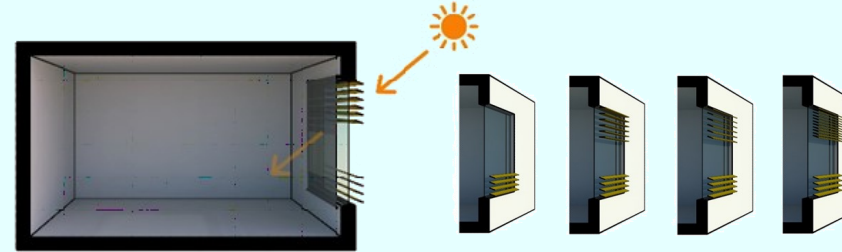
Belgrove House

The scope of our work was to assist our Clients (facade engineers - FMDC) by examining the advantages and disadvantages of (1) fixed external shading in a Single Skin Façade and (2) a second skin (Double Skin Façade). Through a comparative study we identified the design parameters that can maximize the potential benefits.

Design of vertical elements



Design of horizontal elements

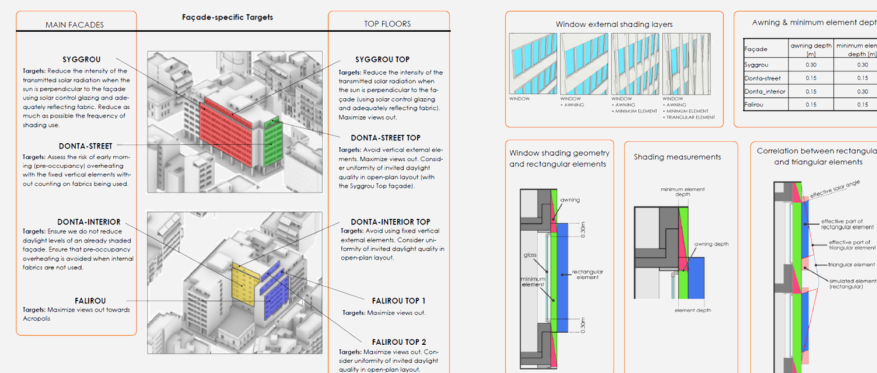


Service & added value:

Using combined Raytracing and Dynamic Thermal Modelling methods, we can design fixed external elements which allow us to improve real life performance. The added value of our services includes controlling solar gains, minimizing the frequency of movable fabric use and therefore increase actual daylight levels and views out.



Architect:
Tsolakis Architects
Client:
Prodea
Location:
Athens, Greece

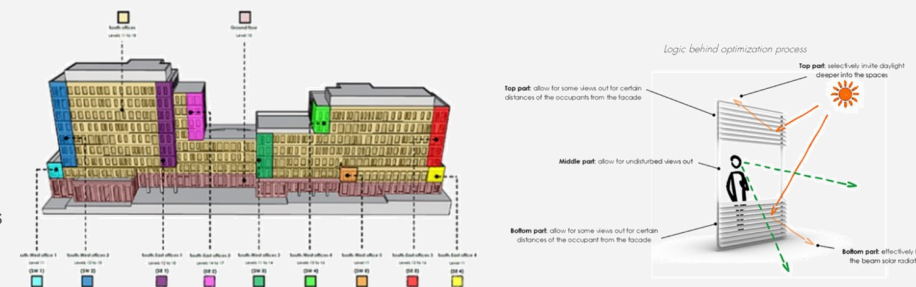


The Wave

Inform Design was invited from an early stage to assist the design team with regard to the solar control strategy of "The Wave". Our aim was to find an optimum balance between: (a) solar control glasses, (b) internal fabrics and (c) vertical fixed external elements (provide a tailored design depending on façade orientation and solar exposure).



Architect:
OpenStudio & EGA Erik Giudice Architects
Client:
Wihlborgs
Location:
Lund, Sweden

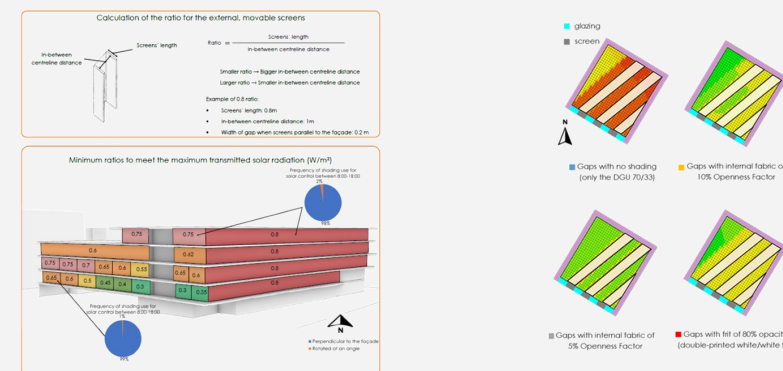


Zenit

We carried out a parametric study in order to devise the optimum inclination and distance of the horizontal fixed elements. The aim was to ensure effective performance and adequate views out. As the views out are dependent on the distance of the occupant to the façade, we have carried an analysis to inform the design of the elements.



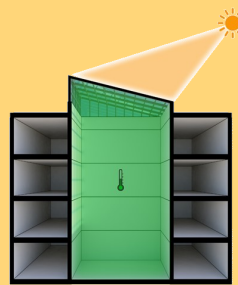
Architect:
SPARCH
Client:
Prodea
Location:
Athens, Greece



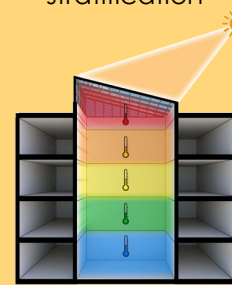
Fragoklisias

The scope of our work was to suggest façade configurations (with regard to glazing & shading combinations) that met the set solar performance requirements and follow the Architectural intent. Considering 50% perforation of the screens, we depicted the minimum ratios to meet the maximum transmitted solar radiation as set by the HVAC engineers.

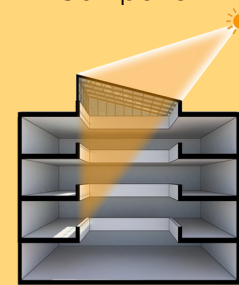
Typical one-node methods



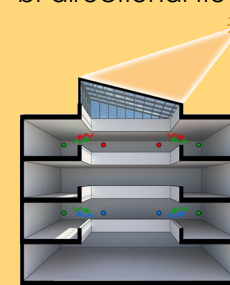
Accounting for temperature stratification



Accounting for Direct Solar Component



Assessing the effect of bi-directional flows

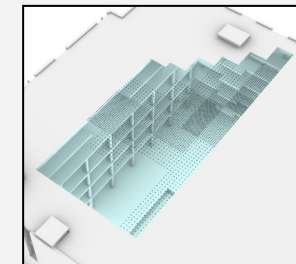
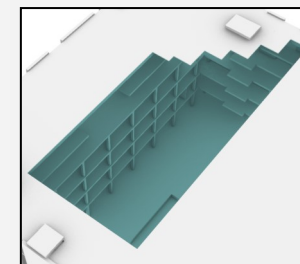
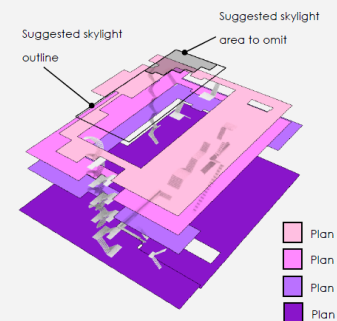


Service & added value:

Atria can be very complex spaces and therefore proper energy and indoor climate assessments can be at times rather demanding. Air temperature stratification, Direct Solar Component (falling on the occupants) and bi-directional flows are most often parameters that if not accounted for, can impact on real life performance.



Architect:
White Arkitekter
Client:
White Arkitekter
Location:
Lund, Sweden

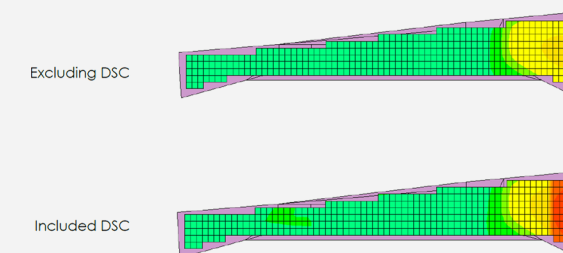


The Loop

The aim of this early (conceptual) study on the skylight was to investigate potential benefits of 3 conceptual configurations for the skylight: (a) Solar control glass (uniform solution), (b) Fritted glazing (unevenly distributed solar control mechanism): (c) Fixed tilted elements (angle dependent solar control mechanism).



Architect:
White Arkitekter
Client:
Kungsleden
Location:
Malmö, Sweden

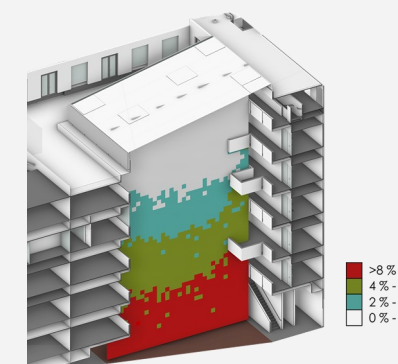
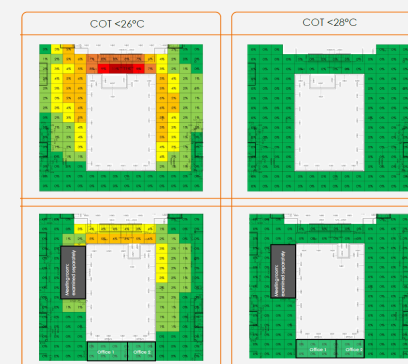


EDEN Co-Work

Our role in this project was to assist the Architects in strategic decisions regarding the atrium design. This included analysis of different glazed façade options and their effect on the indoor environment. The aim was to increase the transparency of the east, west and north glazed facades and allow for undisturbed views out without compromising performance.



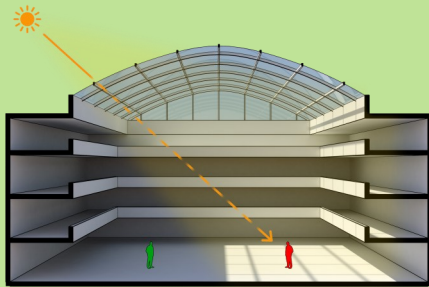
Architect:
Wingårdhs
Client:
JM
Location:
Stockholm, Sweden



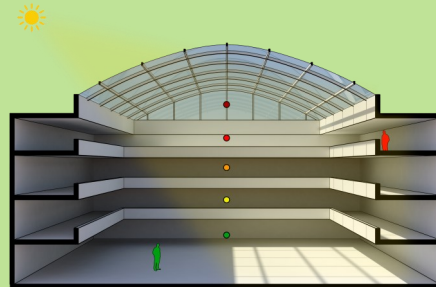
K1 (JM Stockholm Headquarters)

A main reason of Inform Design's involvement was to properly model the Atrium using a Dynamic Thermal Modelling software tool that properly accounts for temperature stratification in the space, as well as bi-directional flows. The aim was to suggest a skylight with maximum daylight benefits while avoiding overheating.

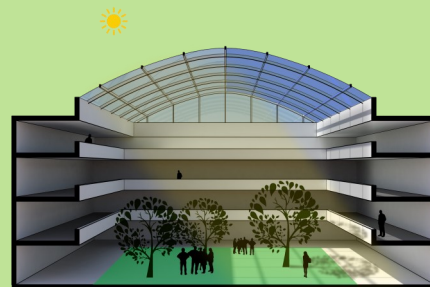
Impact of Direct Solar Component



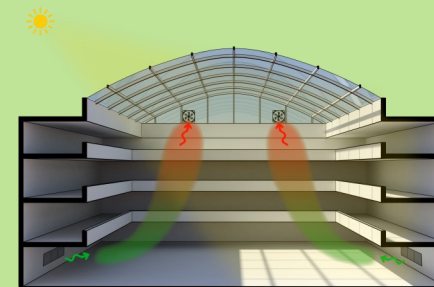
Accounting for temperature stratification



Adaptive comfort models



Natural ventilation strategies

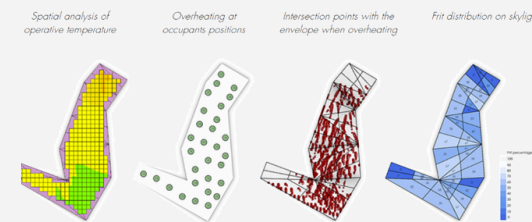
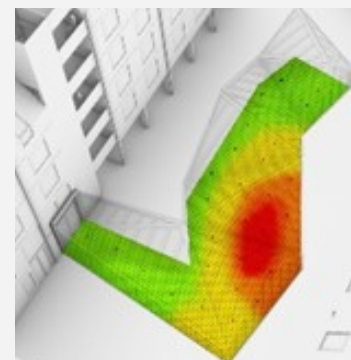


Service & added value:

Transitory spaces can be rather complex as typical thermal comfort requirements do not necessarily apply. If we consider those spaces as regular (mechanically conditioned), we might end up with unnecessarily expensive solutions which do not necessarily provide spaces with "natural feel". Deep building physics knowledge is essential for those type of assessments.



Architect:
White Arkitekter
Client:
White Arkitekter
Location:
Malmö, Sweden



Smaragden

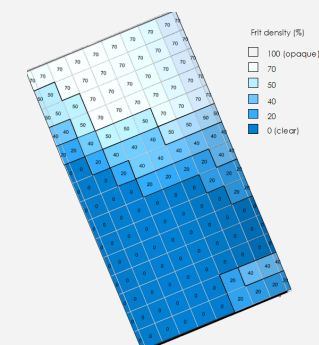
Our contribution to the project was to inform the fully glazed facade design of Smaragden, in order to provide an all-year-round inviting space for the visitors. By applying frit in selected areas of the vertical façades and the skylight, we provided a facade solution which is in line with the Architectural intent and provides adequate solar protection.



Architect:
Kanozi Arkitekter
Client:
Boaktivt
Location:
Mölnlycke, Sweden

1 st floor															
18	19	21	21	23	24	24	24	24	24	24	24	24	24	24	27
18	21	24	25	25	25	25	25	25	25	25	25	25	29	29	33
18	20	25	32	39	47	51	44	70	74	47	35	39	39	39	39
19	20	27	43	44	79	98	99	107	108	111	97	92	92	92	92
19	23	36	49	74	84	140	111	119	120	120	109	107	107	107	107
19	19	26	44	74	79	111	120	120	120	120	112	109	109	109	109
18	20	26	45	84	88	118	120	120	120	120	114	109	109	109	109
18	19	26	45	80	101	118	127	130	130	127	114	109	109	109	109
18	19	26	45	79	101	119	128	130	130	127	114	109	109	109	109
19	28	43	77	98	117	127	132	132	132	112	101	101	101	101	101
19	28	43	77	98	117	126	132	132	132	112	101	101	101	101	101
19	25	42	72	94	109	119	127	131	131	112	101	101	101	101	101
19	24	40	62	80	90	100	105	106	106	99	73	39	39	39	39
19	24	39	58	63	74	74	80	84	85	78	70	39	39	39	39
19	25	38	42	44	48	51	51	53	57	58	54	39	39	39	39
19	24	31	32	33	34	34	33	33	33	36	36	36	36	36	36

4 th floor															
151	168	174	189	226	284	309	314	313	307	319	304	254	219	188	168
109	135	142	209	239	302	311	314	308	295	296	228	191	165	145	125
90	98	134	196	249	294	307	311	302	290	276	222	189	145	125	105
89	92	118	168	218	268	298	308	302	292	272	222	189	145	125	105
86	89	134	184	234	284	314	314	308	298	278	228	195	155	135	115
81	85	132	182	232	282	312	312	306	296	276	226	195	155	135	115
83	81	103	153	203	253	283	293	287	277	257	207	177	157	137	117
85	81	103	153	203	253	283	293	287	277	257	207	177	157	137	117
92	81	103	153	203	253	283	293	287	277	257	207	177	157	137	117
83	104	154	204	254	284	314	314	308	298	278	228	195	155	135	115
83	105	155	205	255	285	315	315	309	299	279	229	195	155	135	115
87	105	155	205	255	285	315	315	309	299	279	229	195	155	135	115
90	109	159	209	259	289	319	319	313	303	283	233	195	155	135	115
100	110	160	210	260	290	320	320	314	304	284	234	195	155	135	115
104	117	167	217	267	297	327	327	321	311	291	241	195	155	135	115
113	136	161	180	209	227	227	224	224	218	203	188	173	158	143	128

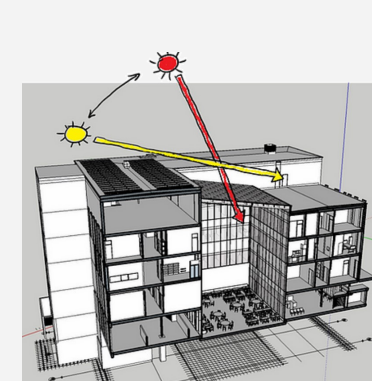


BonTop

Our aim was to advise the Client with regard to Skylight design and natural ventilation strategies, in order to provide a good indoor climate for the visitors and maximum daylight. Adaptive thermal comfort models were used in order to properly assess perceived temperatures and advise on the percentage of clear vs. fritted skylight areas.



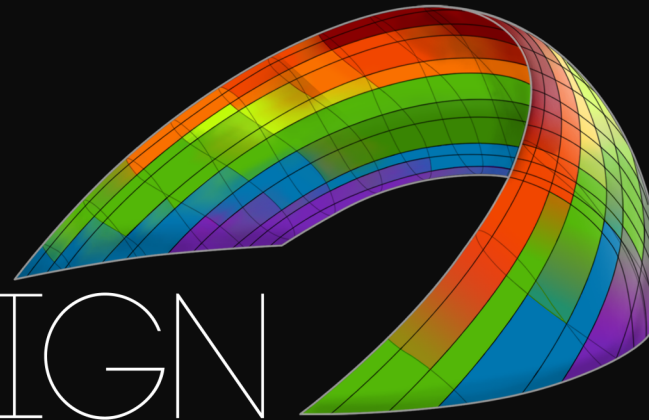
Architect:
LINK Arkitektur
Client:
Regionservice Skåne
Location:
Helsingborg, Sweden



NSH by 23 Psychiatric Hospital

Recognizing the angle dependent geometry of the atria is essential when devising a solar control strategy. Identifying bottlenecks (areas with increased solar exposure) and the areas where daylight is harder to penetrate is essential in configuring the balance between solar control coatings, shading devices and other solar control mechanisms.

INFORM DESIGN



Inform Design AB

Façades - Building Physics - Indoor Climate

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