

Northern Lights

The region of Scandinavia has a very unique relationship with light, due to its northern location and extended periods of darkness. But how does this affect the role of lighting designers based there? arc's Matt Waring investigates.



Whether we are aware of it or not, each and every one of us is shaped according to our culture; our childhood upbringing, our social status, our race and religion – these factors make us who we are. This extends further to a whole host of outside elements too: our geographical location, our surrounding environment, even the climate

where we live – all of this has a huge impact on how we work and our perception of the world around us.

This is none more evident than in Scandinavia. The northern European region is perhaps best known in equal parts for its clean, minimalist design, echoing the sparse landscape, and the stunning natural phenomenon of the Aurora Borealis.

While tourists flock to the region to try and catch a glimpse of this radiant display of light, natural light can be hard to come by across Scandinavia. Its proximity to the North Pole means that the summer months consist of long days with plenty of sunlight, while in winter residents live almost entirely in darkness – in Northern Scandinavia, for example, summer means 56 days of continuous daylight, with 32 days of darkness in winter.





Chiara Carucci



Isabel Villar



Seren Dincel



Aleksandra Stratimirovic

All of this means that the region has a very distinct, unique relationship with light, and its own culture of light that designers have to take into account. While this process might be fairly straightforward for designers born and raised in Scandinavia, how do those from further afield, from different cultures with different climates and, as such, completely different attitudes and perceptions of light, adapt?

Chiara Carucci is a lighting designer at Tengbom. She first moved from Milan to Stockholm in 2015, and she explained the transition of moving from Italy to Sweden: “It was more than a culture shock, especially when I first saw the snow falling, in May!

“When I understood the very different role of architects in the design process, I realised how getting into this culture would have been a challenge. However, I was very curious about Scandinavia, because here there are municipalities such as Malmö that have a lighting designer on staff. Generally, everything is less hierarchical, and the most important thing is the community.”

Isabel Villar, a lighting designer at White Arkitekter, moved to Sweden from Chile thirteen years ago. Initially only intending to stay there for three months, the duration of the Daylight Design course at the KTH Royal Institute of Technology, this turned into a Master’s, and then a job opportunity, and now a place that she calls home. Because of this, she feels that her integration into Swedish culture was a much slower process, although she says that the differences are vast, particularly in the appreciation of light.

“There’s no comparison with Chile when it comes to the cultural awareness Swedes have on how lighting affects us as human beings,” she said. “The lack of daylight during wintertime and the excess of it during summertime is something unique for people living at this latitude, and cannot be compared to the natural lighting conditions people have further down south.

“Here, the sun is something people long for, in Chile it is something we often want to shield from.”

“I had so much sun in Italy, but I never appreciated it as much as I do now,” Carucci agreed. “I find myself doing the classic sun worship, closing my eyes and facing the sun, like a classic Swede.”

While Carucci and Villar have both embraced the Swedish culture and the local appreciation of light on a personal level since moving to the country, they both believe that, when it comes to lighting design, gaining an understanding of the context surrounding a project, whether that be in Scandinavia, or elsewhere, is essential.

“To respect and understand the context and the light culture of the place we are working in is crucial at the start of our projects, and we carry this information with us all along our design process,” explained Villar. “Understanding the local daylight conditions should be at the start of every project, as well as considering any cultural associations that light can have within the context, such as specific traditions or even light preferences when it comes to lighting qualities.

“That being said, every so often we are involved in international



Pic: Lasse Olsson

Left ÅF Lighting's design for Odengatan, one of Stockholm's most central neighbourhoods, features newly replaced smart lighting luminaires. While providing functional lighting, the levels never become overly bright.

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Isabel Villar, White Arkitekter

projects where the client's wish is to bring the 'Scandinavian flair' into the project, especially when it comes to the design, materials, character of light and colour temperature.”

“In my opinion, it's all about the dialogue with locals,” continued Carucci. “Knowledge about lighting design and its applications, experience in the field and research are not enough. Curiosity, sensitivity and sensibility are fundamental: we should listen and create a concept together with the main stakeholders and, possibly, with the users of the space.

“This research and dialogue can be used to create the basis for understanding, to facilitate the achievement of common goals, and therefore a project tailored, not adapted, to the local context and culture.”

Such research forms the basis of a Master's thesis conducted by ÅF Lighting's Seren Dincel. Dincel relocated to Stockholm having previously worked for JVL Studio in Turkey, and her studies examine the possible connection and influence of Scandinavian culture, climate and way of living on lighting design.

“There is a cultural tendency for being reserved, calm and tranquil among individuals, not bringing something to the forefront as an achievement,” Dincel explained. “Prevalently known as 'lagom' in Swedish, which means the adequate amount of something, not too much and not too little, this has an impact on many things, from social behaviours to design approaches.

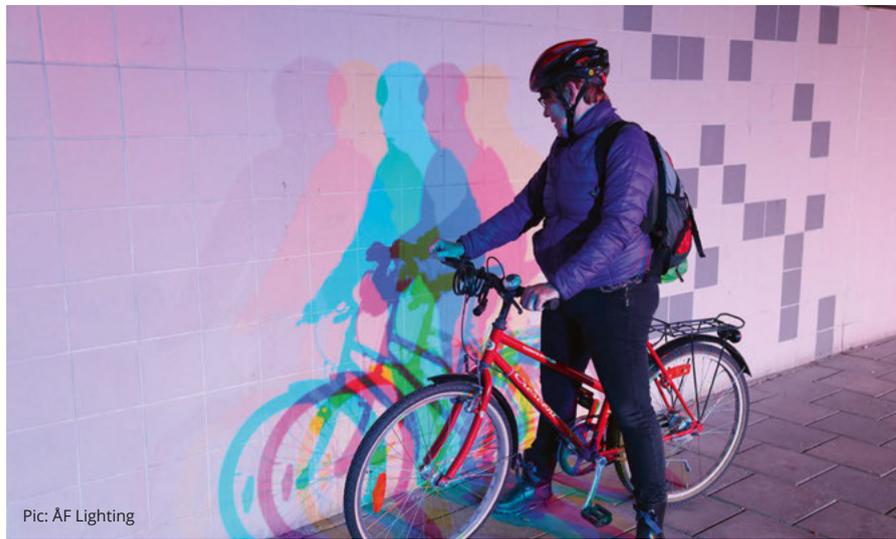
“I assume this reflects on the lighting design generally by not making bold or extravagant concepts, or using too bright or dramatic lighting schemes, instead keeping things functional and smooth.”

During her relatively brief time in Sweden – she joined ÅF Lighting in late 2016 – Dincel says she has noticed how “city lights are mostly not so bright or colourful, and not all the historical, significant buildings or parks are illuminated, even though these spaces are exposed to longer periods of darkness every year”.

This idea of using relatively low levels of illumination is recurrent across Scandinavia, despite the prolonged periods of darkness. Both in terms of larger architectural lighting schemes, and in residential environments, there appears to be a warmer, altogether more subtle approach to lighting, compared to areas with more natural light.



Pic: Isabel Villar



Pic: ÅF Lighting



Pic: Robin Hayes



Pic: Isabel Villar

Above Left Julstjärna (Christmas stars) are a familiar sight in the windows of residences across Sweden.

Top Right Designed by ÅF Lighting, the *Story Wall* transformed a formerly dark pedestrian tunnel into a secure and fun environment.

Above Middle *Cellula*, designed by Aleksandra Stratimirovic for Alingsås Hospital, is one of several examples throughout her portfolio of lighting being used to aid wellbeing.

Above Right During the summer months, there is a greater appreciation for the sunlight across Scandinavia, with residents wanting to make the most of it while it is available.

“At home in Sweden, we use warm light, 2700K or even lower; we use candles, are very sensitive to glare, and when it gets dark, we dim the lights to very low levels,” explained Villar. “But if you go to places that are hot, take southern Europe as an example, the lights are much cooler, they are more intense as if when the sun goes down you should have the same level of light from electrical sources, and you very seldom see candles around.”

Carucci agreed: “More or less explicitly, designers, as well as every other person, use light according to their culture.

“At home, each evening my mother would come in and draw the translucent curtain in the living room when it got dark, and the roller shutter before going to bed, so light from the public sphere wouldn’t bother us and we would have privacy.

“Here, nearly every window is not only beautifully decorated, but also features at least one charming lamp, usually hanging, or placed on the windowsill. They contribute to the cosiness of the Swedish flats, of course, but also make the neighbourhood look better and brighter after dark, especially in winter.”

While the local conditions mean that residents across Scandinavia interact with light in a different way, the lack of natural light has a very real impact on the approach of lighting designers, for a variety of reasons.

“It does have a huge impact, and this is something I identified soon after arriving in Sweden,” said Villar. “Because the lack of daylight impacts us so much, physiologically and psychologically, daylight availability and time should be taken into account when designing lighting strategies at this latitude.

“We strive to run daylight simulations of sDA (Spatial Daylight Autonomy) at early stages of every project, to have a better understanding of how the building ‘breathes’ throughout the year, taking into consideration the different orientation of the rooms and the weather conditions specific to each site. This gives us valuable information to map areas that receive low levels of daylight and that might need ‘higher quality’ of electric light to compensate the lack of natural light, as well as areas with good daylight levels where electric lighting takes a secondary role during the day.”

“It has increased my awareness and consideration about darkness, both in terms of preserving it and illuminating spaces for the needs of people,” added Dincel.

“However, from my point of view, the balance of using both light and darkness should be key. The conservation of darkness enables us to see natural elements like the night-sky, stars and Northern Lights in the northernmost parts.

“My colleagues at ÅF Lighting have been working on a project for the new city centre in Kiruna, located in the northernmost part of Sweden, that involves the implementation of lighting control systems for enabling the visibility of the Northern Lights. Several aspects need to take place in order to experience this light phenomenon, however, and in the inner cities where there is too much light, the chances are even lower. The project is still ongoing, however the idea is to use a lighting control system that adjusts illumination levels based on the presence of the natural light phenomenon.”

Carucci added that, because of the prolonged

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Chiara Carucci, Tengbom

Pic: Isabel Villar

periods of darkness, effective lighting design, particularly in public spaces, also becomes much more important in terms of safety, security and equality. “I think about it constantly when designing for public spaces,” she said. “Not only is it more complicated to set scenarios and define dimming levels during the night, it’s a matter of culture and background: Swedes know that it’s not only dark at night time. They are in fact used to living in utter darkness for substantial parts of the year. “The development of sustainable and safe environments is vital in most city planning projects today. Usually the goal is to create socially coherent, acceptable urban environments for inhabitants and visitors alike. But what happens to these qualities when darkness falls?

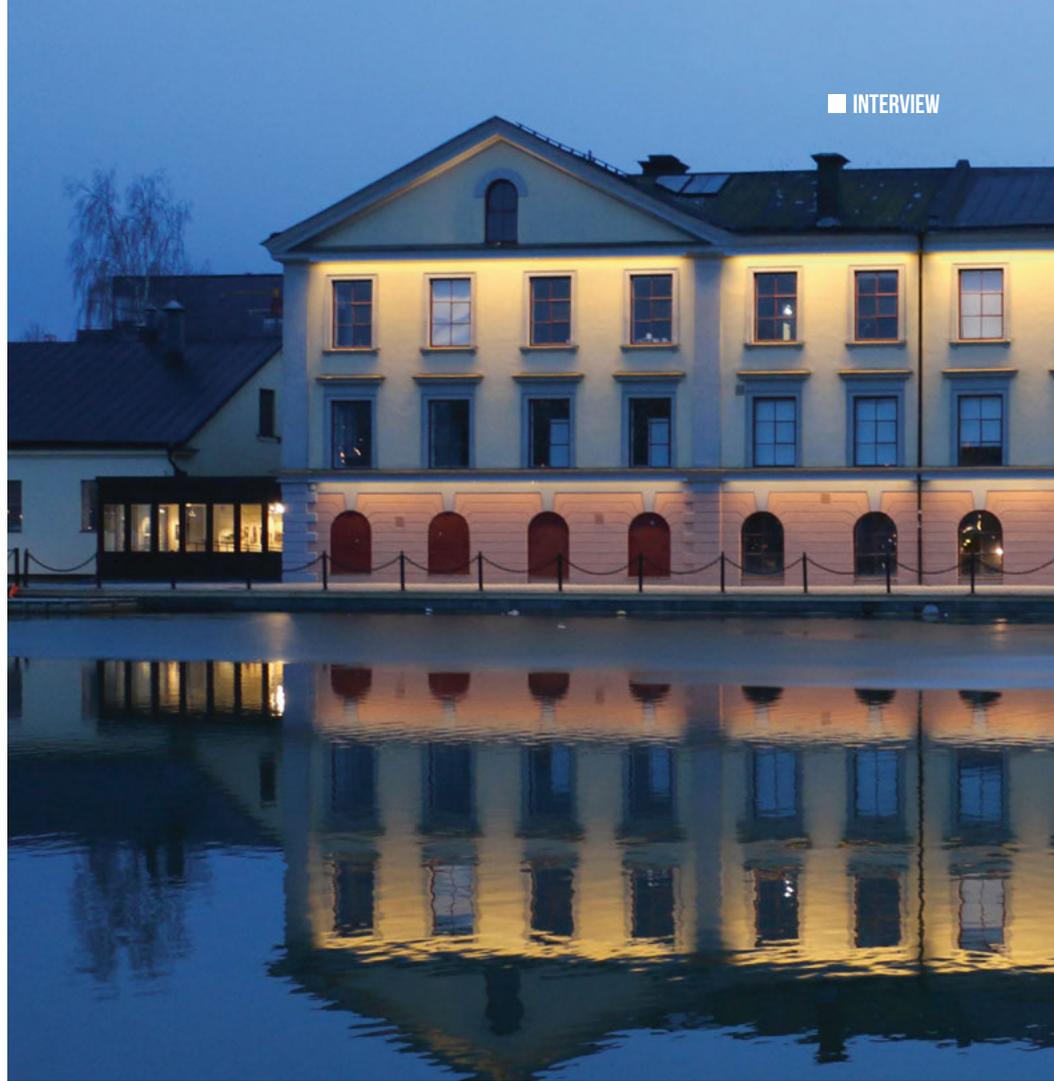
“In order for our urban environments to thrive, we are dependent on the correlation between architecture, urban planning and lighting. In a liveable city, 24/7, one simply cannot live without the other. In the municipality of Eskilstuna, through a frame agreement with Tengbom, through collaborative, multi-disciplinary processes, we are actually providing the right conditions for the development of urban sustainability, equality and economic

progress around the clock.”

“Reinforcing the sense of security outdoors has a tight connection with the continuity of social life, particularly in winter,” added Dincel. “One way to handle extensive winter darkness is through fun projects and lighting events that bring people together and encourage them to spend longer amounts of time outside, although it’s dark outside.” Dincel cited the *Story Wall* in Eskilstuna as a clear example of this. Previously a dark, unwelcoming pedestrian tunnel, ÅF Lighting installed coloured lights along the space – an uncommon occurrence in Sweden – to transform it into a secure, fun environment. Elsewhere, in Fröslunda, Carucci and city landscape architect Malin Christensson have collaborated with an urban anthropologist and sociologist, alongside teachers and 50 schoolchildren to define the real needs of the area. The project was initially based on creating lighting for a path from the centre of the area to the surrounding schools, but it soon became clear that the proposal needed much more than “fun lighting for the kids”. Carucci and Christensson hosted a series of workshops, with children painting jars, drawing lamps and mapping out their routes home, alongside two sessions with the local youth centres, to help define new goals

for the area. “The kids helped us drawing the lighting fixtures for the path, asked for new benches and a new picnic area and soon, their own vision will become reality,” Carucci said.

It has become widely established over the last few years that lighting, specifically natural lighting, has a beneficial, positive effect on our health and wellbeing. It’s one of the main talking points at trade shows and conferences, and we’ve discussed it at length in the pages of this very magazine. Because of the scarcity of natural daylight for large periods of the year, this becomes a particularly serious issue in Scandinavia. Research has shown that the general lack of daylight, and the lower levels of daylight when it is present, are not enough to effectively set our biological clocks, and due to this, people further up north have a higher chance of suffering from Seasonal Affective Disorder (SAD). In fact, recent studies have found that the number of young people in Scandinavia reporting that they suffer from depression, anxiety or other mental health disorders has risen in recent years, which is something that can be connected to SAD. This puts an added onus on lighting designers to create ‘healthy’ lighting schemes that do what they can to boost



Left Because of its long periods of sunlight in Summer, and prolonged darkness in Winter, Scandinavians have a unique relationship with light. **Above** Eskilstuna City Museum, featuring lighting design from Tengbom, perfectly demonstrates the Scandinavian approach of 'lagom', of not too much and not too little.

health and wellbeing.

"We spend more than 90% of our time indoors, a big part of the year with very little exposure to daylight, so our daily rhythm is mainly triggered by the electrical light that we're exposed to," explained Villar. "Every single person knows how it feels when the 'darker' period starts, and can see how it affects others too: the quality of sleep, the energy levels and even darkness anxiety. "We have seen an increased interest in the WELL certification, where higher levels of daylight need to be achieved and circadian light is a requirement in spaces where people stay for more than one hour. Even though there are some parameters that are difficult to implement, and have to be further developed, having the opportunity to discuss these matters with the project group and client is a big step forward.

"The key lies in first ensuring optimal daylight conditions and then complementing this by implementing a lighting strategy that can change in intensity and colour temperature to vary over time to meet our biological needs for light in specific locations."

"We're so used to judging design only on the surface and our acceptance is given by a double click, then it's over. On to the

next image," argued Carucci. "But lighting design is about more than what meets the eye. We can create aesthetics that have an impact on both cognitive and emotional levels. It's a matter of responsibility and health, in my opinion.

"At Tengbom, we aim to work closely – architects and lighting designers – to take informed decisions and responsibility in the design process, by considering the visual and non-visual aspects of design."

One designer who takes a particular focus on the role of lighting in health and wellbeing is Aleksandra Stratimirovic. A light artist who moved to Scandinavia from Belgrade almost 20 years ago, Stratimirovic has created a wealth of permanent and temporary installations for hospitals, schools, residential areas and different urban environments.

"For me, I find inspiration in the place, and I find inspiration around the place, and the people who are there, who I meet, who I imagine will be there. So in a way my work is linked to the culture and the local style somehow, but as I'm creating something else for the space, I try to balance those two," she said.

Through her work in hospitals, with installations such as *Berså* in Örebro and

Cellula in Alingsås, Stratimirovic has seen first-hand the role that lighting can play in health and wellbeing: "I think it is getting more and more obvious that light is important for wellbeing and for health, so I think in Scandinavia we have that approach, to integrate and include good lighting in hospitals, but also to bring something more than just functional lighting," she said. "Light is such a powerful medium to work with, and if you handle it in the right way, and with a specific aim, it can bring so much positivity to places such as hospitals. Hospitals are very sensitive places, people are there not to enjoy art, or to enjoy architecture, but usually for some not very pleasant reasons. Extra attention and care is very appreciated if you're in a delicate situation, therefore I believe that, besides all the medical care and attention from the healthcare side, implementing positive experiences through art is very important. Artworks that are specifically created for hospitals are made with the aim to give that extra experience."

While it doesn't always take the main focus in her artworks – if present, daylight becomes integrated in her work – Stratimirovic feels that there is an underlying appreciation for natural light



Pic: Erik Hagstrom

Left IALD's Chase The Dark 2019, led by Chiara Carucci and the Nordic chapter of the IALD, saw a team of young professionals and KTH students illuminate the Brunkeberg Tunnel in Stockholm. **Below Left** The 200 Year Pavilion, designed by White Arkitekter for the Stockholm Arkitektur Festival 2019, was intended to recreate the feeling of sitting under a tree and leaning up against its trunk. **Below Right** *Berså*, created by Aleksandra Stratimirovic for the Karlslundsgården nursing home in Örebro is a subtle, dynamic light artwork that evokes the surrounding nature, while inviting a sensory experience for residents.



Pic: Anders Bobert



Pic: Robin Hayes

in Scandinavia, because of the darkness. "Daylight is always a priority in my projects. When I compare where I grew up to where I live now, there is more of a balance between darkness and light," she said. "Those of us who live here are aware of light more than places where you have a more even distribution of daylight throughout the year, but I think in this part of the world we appreciate darkness also. "There is a respect of the darkness that is present, and because of this there is a more sensible approach to the lighting, with respect to the architecture, to the history - more awareness of balanced lighting in relation to surroundings, as well as attention towards the environment, and the effect of artificial lighting on nature." This idea of balance, of celebrating the darkness and the light, is something that Villar has noticed during her time in Sweden too. "When Spring kicks in, you get a bad conscience when you stay indoors for too long, you have to seize every minute and absorb as much light as possible," she said. "People's behaviour changes too: people talk to you at the bus stop, friends invite you for dinner, playgrounds are packed with kids. But after the long summer days, Swedes

long for the winter, for a time to be more reserved, to sit on the sofa and read a book under a soft, dimly lit environment, and to embrace the darkness." "Natural light is a fundamental determinant factor in people's lives," Dincel concurred. "People make plans for their spare time based on the weather and if it's a sunny day with a lot of daylight, you find everyone outside when they're enjoying their day. "I haven't thought about natural light this much before, because in Turkey there are many opportunities to enjoy daylight throughout the day. Now, after living in Sweden these past three years, I have adapted more or less to how Swedish people feel about light and darkness." "The different ways of relating to light are also evident in language, in my opinion," Carucci added. "Swedish language might not have a very wide vocabulary but, like English, the can translate directly 'shimmer', 'twinkle' and 'glisten' - there is no direct translation in Italian, we use 'sparkle' or 'shine' for everything, then describe how. "One of my favourite words is 'mångata', meaning 'moon road', which describes the moon's reflection on the water. It only exists in Hungarian besides Swedish. I believe that

northern populations have so many ways of describing light phenomena because they appreciate the variation of light conditions more." As the lighting design community continues to expand worldwide, it is becoming more and more commonplace for designers to relocate to new countries, with new ways of life, and potentially drastically different attitudes towards light. It's essential then, that designers always seek to integrate into their new surroundings and gain a full understanding of the local culture. This way, we can not only broaden our own minds and discover new ways of thinking ('lagom' for instance), but continue to create beautiful, authentic spaces, as Dincel concludes: "In the long run, it's about creating harmony and meaningful spaces for residents, by understanding natural and cultural attributes. "Every design needs to have a purpose, to bring quality in people's lives." ■ www.afconsult.com www.whitearkitekter.com www.tengbom.se www.strati.se