Light Experiment in Svalbard

Most of us, as humans inhabiting the world, are lucky enough to get to experience natural light everyday. However, that is not the case for people living in certain areas in the Northern Hemisphere, especially in the Arctic Circle. The lack of daylight can lead to depression and health issues, as Vitamin D is vital for the production of serotonin. Thus, there is a dire need for a long-term solution, may it be artificial.

Philips, the renowned electronics company, came up with a terrific initiative for people living in the Northern Hemisphere. In order to fight off sleep inertia, Philips gave thousands of lamps to the **people of Svalbard**. The artificial light from the lamp would help them wake up in a healthier not so sudden way, as they would feel the light on them, almost like the sun light, before fully waking up. This experiment increased people's moods and took away the morning grogginess. Such experiments evoke just how significant light is in our every day life. As an interior designer, **people s comfort comes to mind first,** thus this experiment shed light on an extremely important matter that I perhaps did not pay that much attention to before: lighting can make or break a space. I have seen so many spaces with huge potential ruined by the misuse of light, or not so well taken care of spaces where the right amount and colour of light changed the space entirely. Light has a direct relation with our mood, therefore, if I want people to want to spend time in an interior I design, I have to figure out a way to use light efficiently. *Dim light can either create a relaxing, cozy atmosphere for example, whereas a bright, neon light works well for supermarkets were people need to stay active and alert.*

So what makes it such an ingenious product? – First of all It combines advanced ‘sun rising simulation’ light technology with new, personalised sound options, it provides an easy-to-use navigation panel on the front of the product. There is also a USB port for uploading various sounds or music, thus, one can tailor the wake up ritual to their own preference. This experiment makes it evident how essential light, whether it is natural or artificial, is for all aspects of our life. This product showcases features such as the sunrise simulating process which is adjustable from 20 to 40 minutes, 20 brightness settings, coloured sunrise simulation that goes from red, to orange to yellow and light intensity of 300 Lux. To conclude, I find it that such a complex product should serve as an example for innovation to other lighting firms, and should hopefully, at one point in the foreseeable future, become a staple.

Sources: fig1: Philips Wake up Light – www.philips.co.uk

fig2: View of Svalbard at night- www.vogue.com

Sources: Zaki, S. (2023) *Innovation in lighting & Philips’ strategy Shahid Zaki.*

Temp, A. et al. (2017) Well-being at the Polish Polar Station, Svalbard:Adaptation to extreme environments.


Wake up naturally
with **sunrise simulation**

Lighting Exercise

During class we were each given a photo of a space where light had a dramatic effect and created a contrast with the interior. Mine was a very minimalist cathedral, where a gigantic cross stood tall as the epicentre of the interior. I found the way the fractions of light were being cast through the openings created by the cross quite astonishing. Using a "Thermal" app, we were able to see ***the dramatic difference various types of light can create.*** *It reminded me of Le Corbusier's chapel, Notre Dame du Haut, where light is undoubtedly the epicentre. Small squares cut out from the concrete walls create a surreal atmosphere and accentuate the somberness of the space. Upon analysing and doing research about the building, I have come up with a list of characteristics regarding the lighting that truly stood out to me.*

Natural Light Integration: Le Corbusier placed significant emphasis on the integration of natural light into the Notre Dame du Haut. The chapel features strategically placed openings, including small windows, large glazed areas, and an oculus in the roof. These elements allow natural light to enter the interior in varying ways throughout the day.

The Oculus : This large opening, allows sunlight to filter into the space, creating dynamic patterns of light and shadow. This intentional use of natural light enhances the spiritual experience within the chapel and it creates a sacred feel, working hand in and with the purpose of the building, as light becomes a metaphor for the divine. Thus, the space created transcends the purely functional, traditional aspects of architecture.

Artificial Lighting Considerations: While natural light is a dominant feature, artificial lighting is also carefully considered. Le Corbusier designed specific fixtures to complement the natural lighting and provide illumination when needed, ensuring that the chapel remains functional and welcoming during evening services or darker periods.

Material Selection: The choice of materials in the construction of Notre Dame du Haut also contributes to the play of light. The use of rough stone and other materials such as textured concrete interacts with light in a way that adds texture and depth to the interior.

It is safe to say, that Le Corbusier’s Notre Dame du Haut is a remarkable example of the way light can be used as a fundamental element in the design of a religious space. The intentional integration of natural and artificial light and the consideration of the dynamic qualities of light and shadow all contribute to providing an immersive and sensorial experience for this visiting. The same effect is obtained in the example I received, through the massive cross opening.

Moreover, I generated an AI interior of a cathedral, meant to convey the same feeling as Notre Dame du Haut, through the intelligent and effective use of light.

Sources:

fig1: thermal qualities of the space I examined.- photo taken by me (Daria)

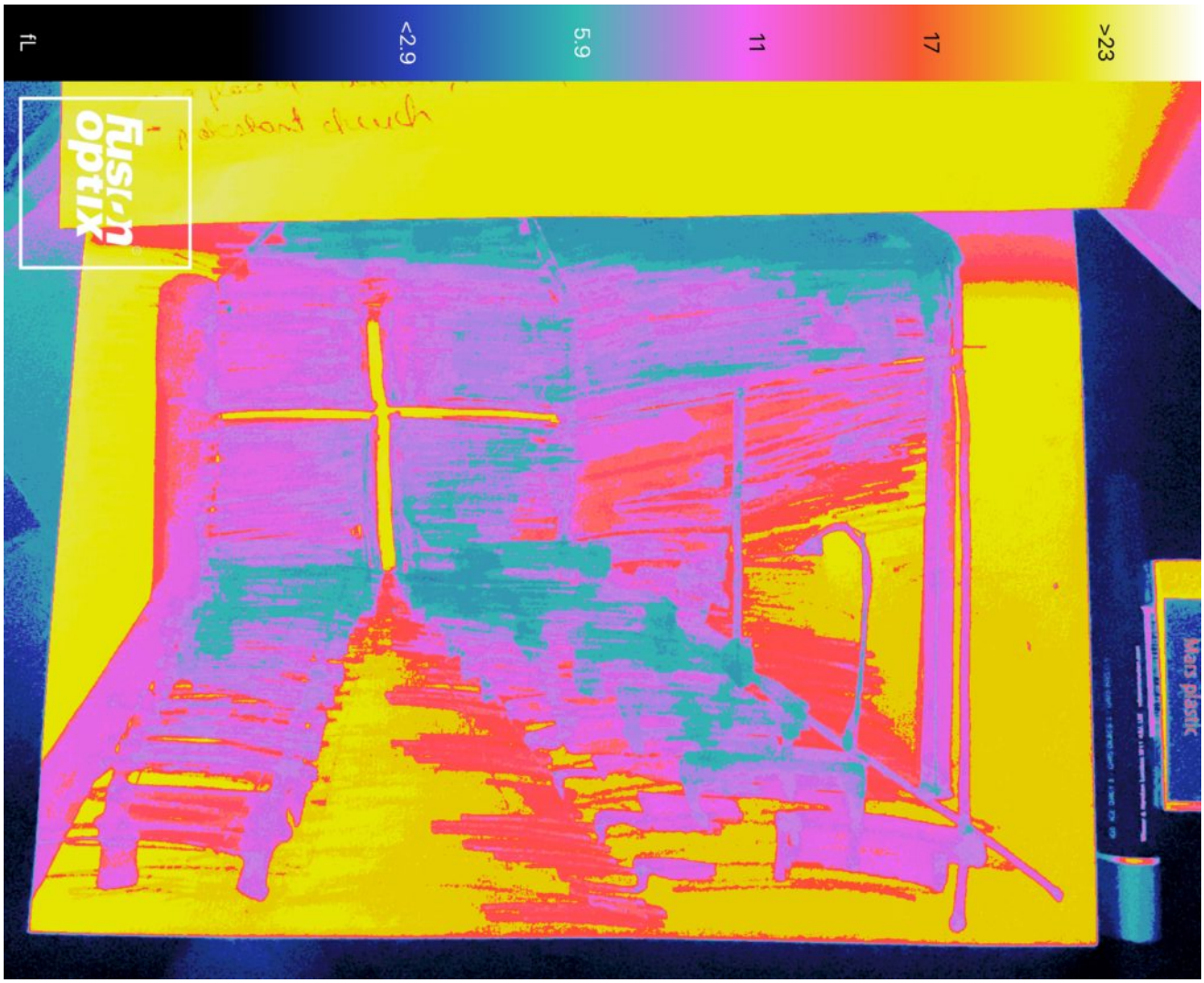
fig2- Notre Dame du Haut- www.fondationlecorbusier.fr

fig3- AI generated cathedral interior

Cimino, V. et al. (2022) Interaction between daylighting and artificial lighting in relation to conservation and perception, according to new illumination system of Sistine Chapel.

Journal of cultural heritage. [Online] 58256–265.Pauly, D. (2008) *Le Corbusier : the chapel at Ronchamp / Danie`le Pauly.* [Online]. Paris ; Fondation Le Corbusier.

Steane, M. Ann. (2011) *The architecture of light : recent approaches to designing with natural light / Mary Ann Steane.* [Online]. Abingdon, Oxon ; Routledge.



Impressive lighting

This summer I went to a temporary art exhibition in my home city, Bucharest. The building itself, an old palace in the old town, is an architectural jewel, with intricate details and a myriad of materials. It was my first time going inside and I was left in awe. The main room, the dome, is covered in a veil of darkness and mystery, with just a few rays of light coming from the

small bulls' eye windows. I find the play between *light and darkness* almost surreal and dream like. Light is a quintessential tool for any interior, as it successfully draws attention to certain key elements.

Upon my work in preparation to becoming an interior designer/architect, I have discovered a myriad of ways in which light can dramatically make a difference. *For instance*, adequate lighting is essential for visibility and functionality in any space. Proper illumination allows people to perform tasks comfortably and safely, whether it's reading, cooking, working, or any other activity. *Secondly*, light has a significant impact on the visual appeal of a space. The way light interacts with colors, textures, and shapes can enhance or diminish the overall aesthetic of a room. Thoughtfully designed lighting can highlight architectural features, artwork, or specific design elements, contributing to the overall ambiance. *Thirdly*, lighting can influence the mood and atmosphere of a room. Different types of lighting, such as warm or cool tones, can create varying emotional responses. For example, warm lighting may evoke a cozy and intimate atmosphere, while cool lighting can create a more lively and energetic feel. *Furthermore*, light also affects how we perceive the size and shape of a room. Well-planned lighting can visually expand or contract spaces, making them feel larger, cozier, or more open based on the design goals. *Lastly*, natural light, in particular, has been linked to improved well-being and productivity. Incorporating natural light into interior design can positively impact occupants by regulating circadian rhythms, improving mood, and reducing eyestrain.

Whilst it is clear that lighting is vital for the spaces we inhabit, it is important to highlight that most luminaires and light fixtures are energy consuming and not eco-friendly. Thus, the world of interior design and lighting has been

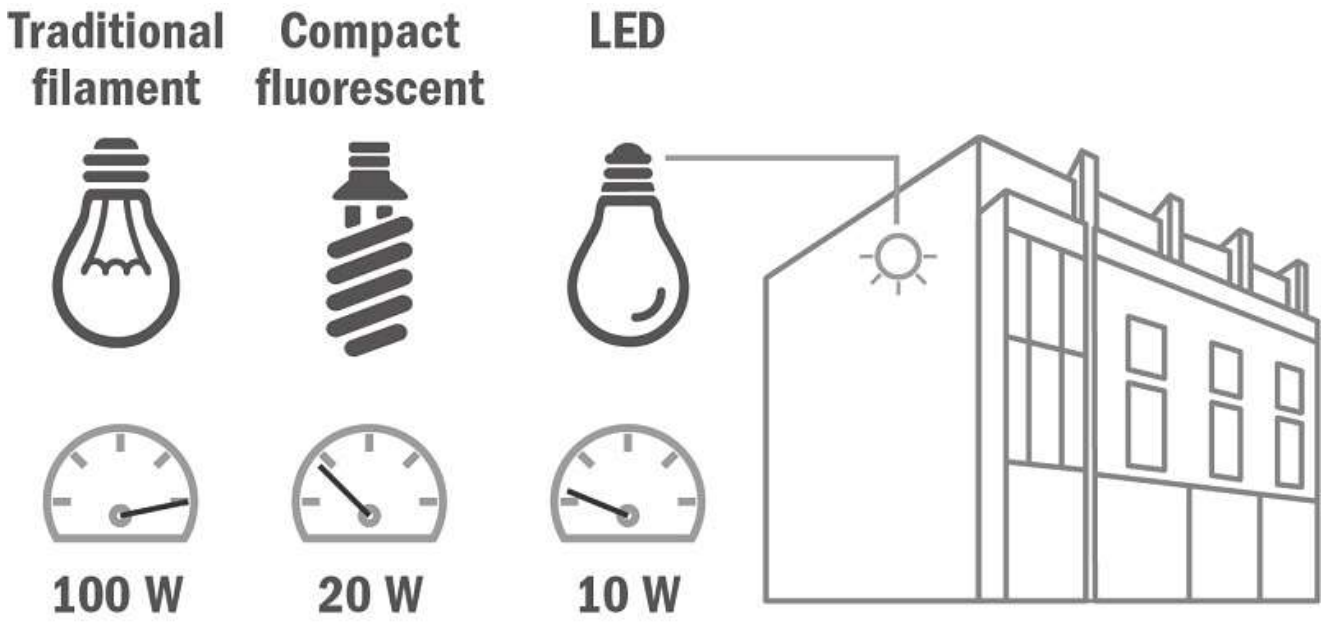
recently opting for alternatives, such as LED lights, which consume less energy, or, many firms have come up with innovative luminaires. The brand Flos, is a great example of being able to focus on both aesthetics and sustainability at the same time. For example, their Super Line Pro luminaire, a suspended bar for working spaces, has been provided with a remote driver that can be easily replaced or upgraded to a dimmable system. Thus, they take the environment into consideration with every product they design.

Sources: fig1- www.iop.org- difference between LED ad traditional light bulbs in terms of Watts

fig2: photo taken by Daria (me), September 2023

Licht, U. Brand. & Wiegelmann, Andrea. (2006) *Lighting design : principles, implementation, case studies / Ulrike Brandi Licht ; [authors: Christina Augustesen [and others] ; editor: Andrea Wiegelmann].* Basel: Birkhaüser.

Smith, F. Kellogg. et al. (1986) *Bringing interiors to light : the principles and practices of lighting design / Fran Kellogg Smith, Fred J. Bertolone ; edited by Diane Casella Hines.* New York: Whitney Library of Design.


Traditional filament
Compact fluorescent
LED
100 W
20 W
10 W