

PERCEPTIONS: DIGITAL FABRICATION AND LIGHT

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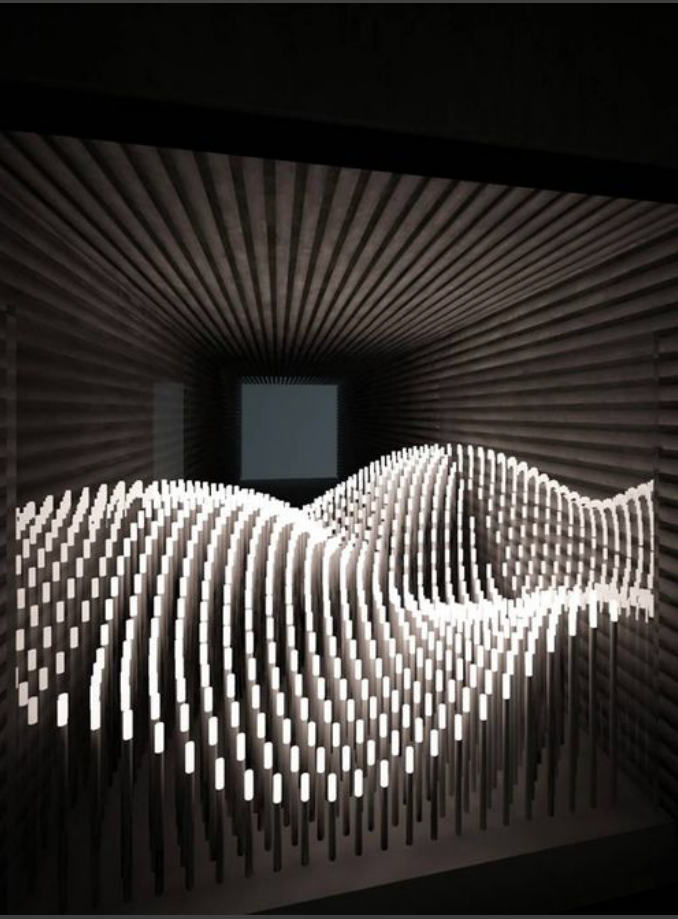
Light is an architectural element. The comprehension and perception of the built space is directly related to the way light interacts with it.

Light is responsible to give the user of a space the ability to distinguish physical forms, dimensions, but can also stimulate diverse visual sensations, experiences and moods. Light can improve or destroy a good design and its action plays a fundamental role in different evaluations of quality in architecture.

Energy or visible radiation are the common definition of light. The human vision is the perception determined by this radiation and our visual system is the physical and psychological tool that process the information provided by it.

The visual comprehension of a space depends on spatiality, atmosphere and visibility. Spatiality refers to physical and measurable aspects of a room such as distance, volume, orientation and proportion. The quality of a light source can make the volume be perceived as huge or small, open or congested. Atmosphere is the general character of a place and is associated with the mental and emotional aspects of light. Visibility is related to work issues and the potential to see things while completing a task such as texture and color.

All these items are well known for natural light and traditional artificial light, but how can digital fabrication affect the spatial, technical and psychological aspects of artificial lighting?



Light is a common element in our lives. Natural and artificial light have direct influence in our daily activities. The use of light in an artistic way can change the way we perceive the spaces around us.

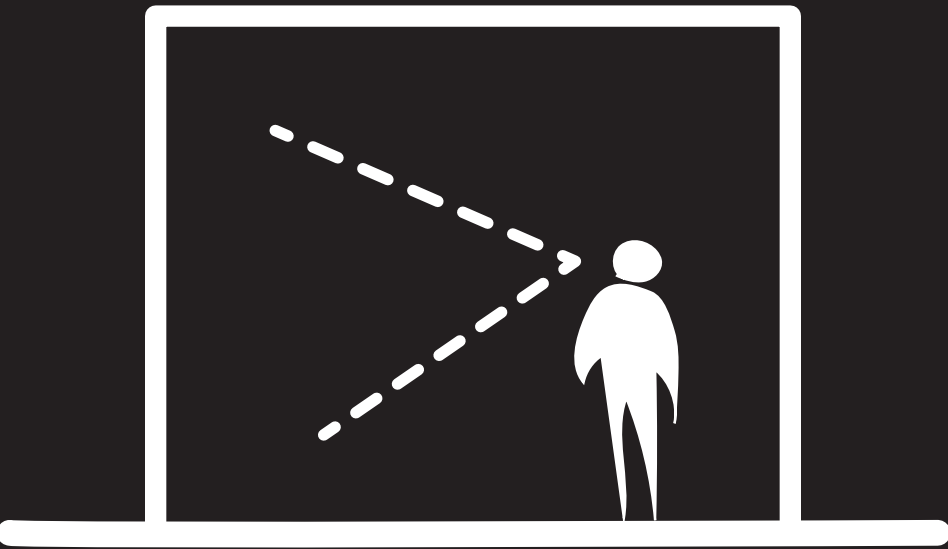
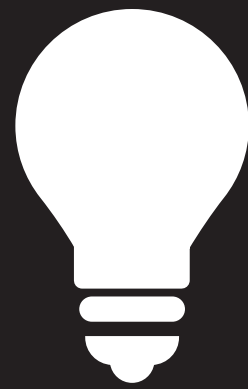
The effects of interaction of light are visual and mental stimuli that can be at the same time intriguing and entertaining to the users of a space.

The main concepts that will be addressed in this research are **movement** and **perception**. The reference projects studied deal with these ideas by generating the impression of a continuous space by the shape of the structure. The first one called *La Lampe*, by Muti Randolph, functions as both a light source and a conceptual art installation. The forms are inspired by waves, but they also create the feeling of movement. The sculpture is reflected in mirrors on the ground and from above, extending the piece. When standing in proximity of the mirrors, the viewers sees an illusion of an infinite, glowing sea before them. The second precedent is called Milkywave, by Aidia Studio, uses a trivial daily oject (the yoghurt bottle) to change the perception about it and the space affected by it.

PROBLEM



What does artificial light means do architecture?



How artificial light can change the perception of a space?

STRATEGY



Make light respond to movement



Generate a pattern that shows the same light in different ways

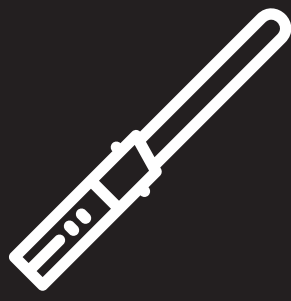


Explore the potential of different opacities in a same material to change the light

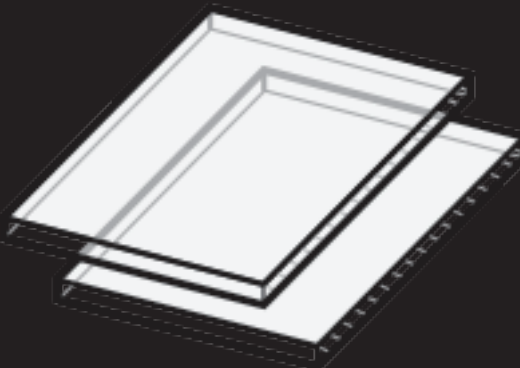
MATERIALS



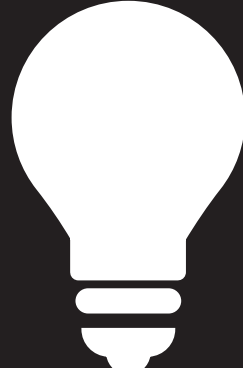
Rhinoceros, Grasshopper plugins and



Lasercut



Acrylic



Regular lamps

OBJECT

