

Smart Hybrid Streetlight Design Research applying Service Design Process for Crime prevention in Jeju Olle Roads

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1. Background and Purpose of Research

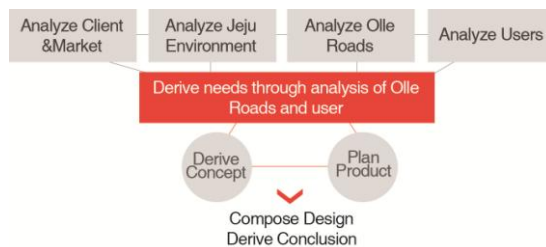
Jeju Island is a volcanic island. In Korea, Jeju island was chosen as Biosphere Reserve in 2002, recorded as the world natural heritage in 2007, and acquired global geoparks recording 3 crowns in UNESCO natural environment area. Also, Olle Roads were made that pointed out the characteristics of Jeju bring a new trend of healing and health, which became new tourism trend. Olle Roads are not only popular in Korea but foreign tourists favor the roads and other countries even benchmark the place. Olle Roads are in the form of Camino de Santiago of Spain with narrow roads and there are a total of 21 courses within Jeju Island. When walking in the Olle Roads, Jeju's culture and history can be felt. However, for the last few years, there were few cases of crime and less people have been visiting.



Index 1. Olle Roads Expectation according the design development of Smart Hybrid Streetlight

This work is a method that prevents crime that occurs in Olle Roads. Service Design Process was introduced in the design development process of Smart Hybrid Street Lights. Through various angles of user analysis and environment analysis, crime in Olle Roads is to be prevented. Thus, effort is to be put in to sustain Jeju tourists and the development of negative recognition.

2. Design Process



Index2. Smart Hybrid Streetlight Design Research Process

3. User and Environment Analysis

First, the needs of users were analyzed. To set the direction of service design process, environment analysis about Hybrid Street Lights within Jeju Island, Olle Roads user F.G.I, and environment analysis according to the setting of Olle Roads crime prevention installation area were executed.

3.1. Derive Needs through Analysis of Olle Roads and Users

Jeju Self-Governing Province (Client): Along with the prevention of crime, the Smart Hybrid Street Lights, which have innovative technology, arouse with the nature with the purpose of communication with the people within Olle Roads.

Olle Roads (Environment): The part where communication is lost from the Olle Roads course. The part where accidents occur. The part where there are not a lot of people. Parts were analyzed by courses to set the priority installation location of street lights.

Tourist (consumer): The purpose is to charge cell phones when walking on the Olle Roads or acquire comprehensive information about Olle Roads and alarm service when walking the dangerous parts.



Index3. Analysis Conclusion

Development for recognition of tourists by strengthening public order and developing the negative recognition of Olle Roads is needed. Efficient information is provided when touring Olle Roads by providing comprehensive service.

3.2. Device Concept and Plan Product

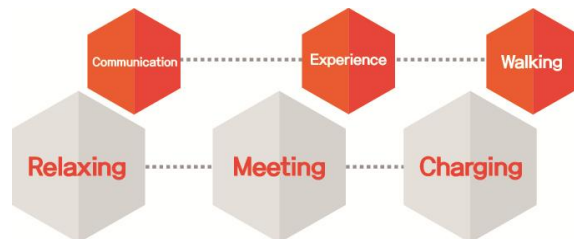


Figure1. Smart Hybrid Streetlight Design Concept

For the concept keyword about Smart Hybrid Street Lights was derived to three key words: Rest, Meet, and Charge. The design research was centered on the concept as 'a small rest area of Olle Roads'. Rather than producing functional street lights, needs were derived based on user experience resulting in a comprehensive service design. Also, installing the Smart Hybrid Street Lights within the Olle Roads aim for safety of tourists while providing comprehensive service and enhancement of negative recognition.

4. Design Composition

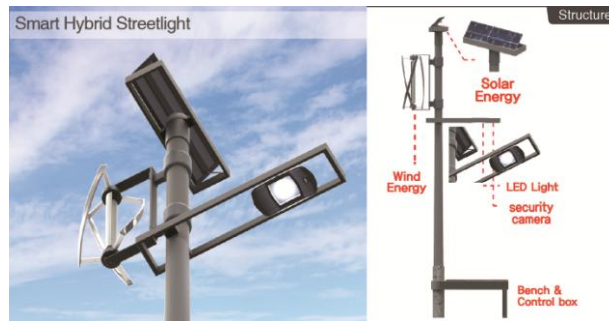


Figure2. Smart Hybrid Streetlight Design

The composition of Smart Hybrid Street Lights is made of solar panels of the top part and two wind generators that create energy using the power source of the street light. To control the public order problems of Olle Roads, security cameras are installed on the LED part and this camera is in surveillance real-time with the wireless networking system of the street light. Also, with the provision of the sign system, comprehensive information can be obtained about Olle Roads. Along with the benches for rest, there is an emergency bell and a smart phone charger for emergency.

5. Derive Conclusion

With the effect of Smart Hybrid Design to strengthen public order of Olle Roads, tourists can be given recognition about safe traveling in Jeju Island. Also, with the concept of safe tour within Jeju Island, it will appeal to the tourists and prevent accidents in the stance of Olle Road.