

## PRoF Award abstract – Call 2015

# Light perception for people with low vision

### 1. Research Outline

Acronym	
Project name in English	Light perception for people with low vision
Pitch (1 sentence)	Give visually impaired people an opportunity to experience how innovative lighting concepts can boost their visual functioning in performing every-day activities.
Executive summary (max. 10 lines)	
<p>During the last 2 years, Blindenzorg Licht en Liefde developed a unique new lighting consulting service for people with vision loss. We put together a team of five lighting consultants who offer a full-scale consultancy: they analyse the client's lighting needs, analyse the current lighting situation in their home, and propose them a lighting design that improves their functioning and increases their security. Now we plan to renovate the kitchen in our 'Vlaamsoogpunt' in Kortrijk as a best practice of innovative lighting systems: a led illuminated stretch ceiling creating a shadowless, high output ambient lighting, floor level light accents approving secure mobility, state of the art lighting of the kitchen cabinets,... In this kitchen, clients can experience how these lighting concepts can dramatically improve their visual functioning.</p>	

## 2. Cause and context of the research

The most common visual functions in the home situation are focused on a safe mobility, self-reliance in housekeeping and leisure activities and communicating with other people. In the kitchen, the visual functioning focuses on safe mobility, safely performing cooking activities (sharp knives, hot cooking pots,...), the ability to prepare recipes correctly and the ability to perform different tasks at the kitchen table.

People with low vision can be inconvenienced in different ways while performing kitchen tasks if the lighting is not adapted to their visual needs. This can seriously endanger the self-reliance and the safety. A person with low vision has a need for more illuminance on the workspace as well as on the floor level. Simply adding more lighting fixtures or more powerful lamps is generally not the right solution, neither from a functional, economical nor an ecological point of view.

## 3. Innovation results achieved

To achieve state-of-the-art solutions, we need to search for innovative solutions, such as stretch ceiling covering led fixtures with a high lumen output. This system will be dimmable in order to adapt the illuminance values to the needs of one specific visually impaired client. This solution has many advantages: the illumination level is adaptable to the needs of one client, the risk of becoming blinded is minimised by dividing the total light output over the whole ceiling, creating a uniform light distribution that reduces the risk of shading.

To ensure safe mobility for people with low vision, we need to add light accents that improve the orientation abilities. For this reason, we will add led strips underneath the kitchen cabinets at floor level. In order to achieve the right contrast and brightness, RGB led strips combined with a led driver that enables us to change both the light color and the lumen output will create these light accents.

Finding a white colored plate in a kitchen cabinet with white shelves can be a real challenge for people who suffer from a loss of contrast perception. This kind of problems can be primarily solved by using better contrasts. In addition to the use of better contrasting materials we will apply light fixtures with asymmetric optics to illuminate the inside of the cabinets.

Not only is Blindenzorg Licht en Liefde the first organization in Flanders to launch a project focused on optimal lighting solutions for people with vision loss, we are also monitoring innovative technologies that can solve the very specific needs of visually impaired persons.

## 4. Link to the PRoF values

The main reason for rebuilding this kitchen is to give people with low vision maximum opportunities to perform activities in this room in an independent and secure way. By advising good light solutions, we can ensure our clients a high level of independence in

performing activities. A higher level of independence also improves the client's privacy because the client will no longer need additional help from others to perform kitchen tasks.

The cooking activities that are planned in this kitchen are aimed at getting some people out of their social isolation, caused by their visual handicap.

When developing services or products for impaired people, there is always a risk of stigmatisation. The lighting concepts we have in mind, are chosen not to be stigmatising at all. Fully-sighted persons entering the room should not notice that the lighting concepts are extraordinary. The use of dimming systems strengthens this impression of ordinary lighting and guarantees the inter-generational usefulness and the flexibility to use the lighting solutions for performing different tasks by different kinds of users in different conditions.

This project has two major goals:

- Creating a kitchen that can be used by the lighting consultants of Blindenzorg Licht en Liefde in order to determine the lighting needs of their clients and to let them experience the added value of effective lighting systems.
- Creating a kitchen that can be used by VeBeS for cooking activities for visually impaired members. The lighting systems offer solutions for the special needs experienced by people while performing cooking activities.

## 5. Applicable IPR rules

## 6. Information on the partners

**Blindenzorg Licht en Liefde** is Flanders largest service provider for people with visual impairments. It offers a wide range of services: home care, social service, producing braille print and talking books, advice in digital accessibility (to visually impaired clients and to content providers), training in different skills (mobility, braille reading, house keeping, using ICT-related assistive technology,...), educating caretakers,...

**VeBeS** is Flanders largest organisation for visually impaired people, organising a broad range of activities for visually impaired people. Cooking is one of the activities that VeBeS offers its members.



### **Addendum: Contact information**

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