

Project task

in the subject Lighting Engineering

Academic year 2016/17, Exam date: 06.02.2017

Create a lighting project for Supermarket.

Description of the building:

Supermarket is located in the ground floor building with external dimensions of 26 m x 43 m. The building is divided into the following parts:

- vestibule;
- central communication corridor;
- sales area of supermarket;
- toilets for customers;
- cafe with food and drinks with its own kitchen and toilets;
- three small places for shops with handy storage;
- smaller place for services;
- room for the electrical generator unit (with separate entrance);
- main electrical switchboard station (with separate entrance).

In your lighting plan please consider:

- Dimensions of the lobby and its parts can be taken from the plan in Dialux.
- Ceiling will be classic, made from concrete, installation will be concealed (in ceiling).
- Reflections of individual surfaces in the lobby as well as reflections of furniture and equipment are as stated in attached DiaLux file.
- Dimensions (heights) of the working places can be seen in attached DiaLux file.

The entire building is intended for commercial activities. The entrance to the building is through the sliding glass door and vestibule. The central part of the building includes sales area of supermarket right from the entrance of the size of about 25 m x 28 m. Main part of sales area is occupied by retail shelves and refrigeration cabinets. Along the right wall there are sections for bread, meat and delicatessen with cooling or heating cabinets and appropriate working surfaces for selling staff. The entrance to the supermarket is close to the entrance into the building and customers will exit through one of the five cash registers.

At the other end of the hall on the right side the toilets for visitors and employees are placed.

To the left of the entrance into the building the cafe with private kitchen and bathroom facilities is placed. Cafe is intended for serving food and beverages. Next on the left side of the hall are three smaller commercial outlets, which are designed for shops with various goods. Each of the outlets has on back (left) side also a space for convenient storage which can also be used as a small office. At the end of the hall to the left is outlet for services (like shoe repair or key cutting).

From the outside, the two additional entrance doors lead to the room with the electric generator unit and to the main electrical switchboard station.

The project should include:

- technical report and
- print of the calculation results from DiaLux (or other calculation program).

Technical report should include:

- Short description of each of the illuminated parts of the building.
- List and description of working places (areas) in different parts of the building together with requirements for the lighting (illuminance, uniformity of illuminance, unified glare ration – UGR, colour rendering index – CRI or Ra, other requirements – if any ...).
- Indication and justification of the chosen lighting concept.
- Indication and justification of the selected light sources.
- Indication and justification of the selected luminaires.
- Basic data of each illuminated part of the building, selected light sources and luminaires.
- Results and brief discussion.
- Short maintenance instructions for lighting system.
- List of references and considered documents.

Attachment of the technical report (print of the results from DiaLux or similar software) should contain all relevant information to access the adequacy of the project and compliance of the results with the requirements of the standard SIST EN 12464 or other regulatory documents (e.g. technical guidelines). For each working place (area) you will list in a technical report it is necessary to define a "calculation area" for the calculation of illuminance and to include results on these areas into technical report or attachment.