

# Project title: Trap Environmental Services

Location: Athens, Greece

Category: Small indoor projects

Award: HIGHLY COMMENDED TECHNICAL SOLUTION

## What did the project set out to achieve?

Lighting design challenges:

- a) location (semi underground space with minimum daylight) \_ vertical lighting should be considered to illuminate the walls as well and create a balanced illuminated space with special atmosphere through shadows - light contrasts
- b) space with specific character: industrial style \_ lighting should enhance the space style and should get integrated in its architecture respecting the architectural design
- c) limited types of luminaires that could be installed in an office space without false ceiling \_ a lot of time consumed to find out the appropriate products
- d) Client brief guided a lighting design for people working in the space as well as for the plants placed close to the walls\_ the color temperature and the aiming of the spot luminaires used for the plants illumination was studied carefully
- e) limitation of glare (UGR) was a priority so as to avoid unwanted consequences of vertical and plant illumination
- f) The fact that Tunable white luminaires with DT8 drivers should be selected, limited even more the choices of luminaires that could be used for that project

Lighting control challenges:

- a) Finding out the appropriate adjustment of circadian daylight curve to fit the requirements of the respective application (according to the workers everyday program, personal preferences, plants needs etc).
- b) Finding out the best user interfaces for the application (touchpanel, Bluetooth, buttons)
- c) Finding out the right control groups/scenes, dimming levels

Project challenge:

To provide a human centric lighting design application in low budget

## How is DALI used within the project?

DALI in this application is mainly used for the human centric lighting of the space. It follows the following routine described below:

Time	CCT
00:00-7:59	3000K
08:00-09:59	3500K
10:00-10:59	3800K
11:00-11:59	4200K

12:00-12:59 4600K  
13:00-14:59 5000K  
15:00-15:59 4800K  
16:00-16:59 4200K  
17:00-17:59 3600K  
18:00-23:59 3000K

Furthermore, DALI is used for the dimming of the illumination levels when necessary. The above-mentioned DALI lighting control was implemented with Tunable white luminaires with DALI device Type 8 (DT8) drivers and DALI components as described below:

Tunable white (TW) luminaires\_with DT8 DALI drivers:

- a) 6pcs Apollon square TW, 45W, DALI DT8, surface mounted\_ 51MQ12WD2T12\_ Siteco
- b) 4pcs Apollon square TW, 45W, DALI DT8, suspended\_ 51MQ12WD2T12\_ Siteco
- c) 4 pcs Licross recessed TW, 57.4W, DALI DT8, 51TL12TNT8XW & Licross trunking rail suspended\_ 51TR1C7 \_ Siteco
- d) 24 pcs Thor spot TW, 27W, DALI DT8\_ 2.005B0A9276560D0 \_ LIGHT4U
- e) 28m total length of surface mounted DALI tracks\_ XTSC 6100\_ LIGHT4U

DALI control system equipment:

- a) 1pc DALI power supply, serves as power supply for the DALI bus system\_ 24033444\_ Lunatone
- b) 1pc DALI CDC DIN Rail, enables a day time based adjustment of colour temperature and light level for Tunable White capable DALI DT8 luminaires (circadian daylight curve). The curve was adjusted to fit the application\_ 89453853-HS\_ Lunatone
- c) 1 pc DALI Touchpanel 02, multifunctional DALI control unit. This panel was installed in the middle of the offices space and supports dimming, switching, scene recall, setting of the colour temperature, dynamic scenes and sequencer\_ 24035465\_ Lunatone
- d) 1pc DALI BT Bluetooth 4.0, DALI Bluetooth Low Energy Interface in combination with the DALI Touch App enables operation and control of DALI Systems with iOS and Android devices. It was installed in a watertight box centrally in the office space. Customised layout and menu was stored on DALItouch.com and is accessed by joint users\_ 89453584\_ Lunatone
- e) 2pcs DALI MC+ /0-10V, Push button coupler with 4 inputs for connection with standard potential free switches or pushbuttons (max wire length 0.50m). The device is designed to fit behind a light switch in a flushmounted box. In this application they

were connected with pushbuttons in the entrance/exit of the space so as to control lobby lights and total lighting as well. Each input was individually configured with target address, button behaviour and DALI commands. \_ 86459532\_ Lunatone

f)1pc DALI USB, interface between the DALI Cockpit PC Software and the devices on the DALI bus. It enables the addressing and configuration of DALI installations\_ 24138923\_ Lunatone

### **Why was DALI chosen?**

Digital lighting control, tunable white control via DT8, easy wiring and installation, the property of DALI network to accommodate up to 64 DALI ballasts was fitting to the project scale, flexibility in creating different groups that can be controlled separately.

### **What benefits does DALI provide?**

DALI Tunable white control achieves the desired human centric lighting of the office space, improving work performance, productivity, comfort, health and wellbeing, maximizing concentration and energy, increasing employee motivation, emotional stability, lowering the rate of depression, assuring health safety, improving circadian rhythm and quality of sleep. In addition to the above, the dimming function that the users have access to all the time contributes to the energy saving of the installation.

## **Parties involved**

### **► Sielight team:**

- Ioannis Kokorotsikos, Project Manager, Co-founder
- Alexandra Papantonopoulou, Sales & Marketing Manager, Co-founder
- Orfeas Tzortzis, Lighting & Control Engineer
- Penny Chaintouti, Lighting designer & consultant

### **► Suppliers of DALI products: Siteco, Light4U, Lunatone**