



# NEA POLIS

MASTERS  
OF LIGHTING

Company profile

## **Architectural & Urban lighting**





16-20 Zinopoulou Str.,  
11476, Athens, Greece

+30 2108137084

[info@neapolist.gr](mailto:info@neapolist.gr)

[neapolist.gr](http://neapolist.gr)

Nea Polis is an independent lighting design firm. For over 25 years, our **experienced team**, with its **diverse background**, has proved its ability to offer **effective solutions** in every project it takes on.

We believe that lighting design is an essential part of any project; a balanced study in **creativity**, **perception**, and **engineering**. Light can provoke **emotions** and it is our mission to amplify this experience.



- Provision of **architectural lighting design** and **study services** for private or public projects.
- Proposals for **upgrading the lighting in existing facilities** according to the European standards and Greek Directives (ELOT, TOTEE, etc.)
- Proposals for saving energy/money by **upgrading lighting** in existing facilities using new technologies.
- Consulting services and preparation for the participation in **public tenders** relating to lighting.
- Project supervision and supply of materials where requested.
- **Master Lighting Plan** – Energy saving on municipality/region levels.

Today, lighting is one of the key items of study in every project, both in terms of lighting levels and in terms of energy consumption. A fully documented approach to the lighting of each project leads to facilities with low operating costs, low maintenance costs and high visual quality.

**Our goal** is to create environments of the highest quality for the users/clients, meeting their expectations whilst continuously looking for the right equipment and achieving reduction of energy consumption and costs.

**Our approach** is based on different methodologies we have developed for different types of projects that guide us to work pro-actively in order to achieve the best possible result.





# Methodology



## Development

- Customer communication
- On-site metering
- Determine parameters & objectives
- Lighting fixtures survey



## Mapping

- Design development
- CAD & 2D drawing
- 3D modelling
- Photometry
- Lighting fixtures performance
- Daylight and shadow analysis
- Lighting calculations
- Mockups & original designs



## Execution

- Ensuring the accuracy of the design (planning / budgeting)
- Project management (installation)
- Anticipating changes of conditions
- Coordination to reduce unforeseen costs
- Review of installed lighting equipment



## Monitoring

- Meeting with customer to ensure needs completion
- Energy saving monitoring (optionally)





## Advantages

Our **continual interest** and **research** ensure that the best possible solutions are provided for each project and help to further advance our approach in designing processes.

**Strategic partnerships** in the field of lighting enhance and ensure the quality of services provided. Knowing the supply of lighting materials in the Greek and global market, we have carefully selected our close partners.

Parallel to that, the access to materials that are less well known in the Greek retail market enable **the best possible proposals to be made at the best possible market prices**, combining proposals from different suppliers for each project.

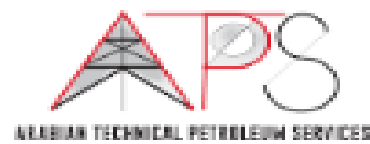
# Partnerships

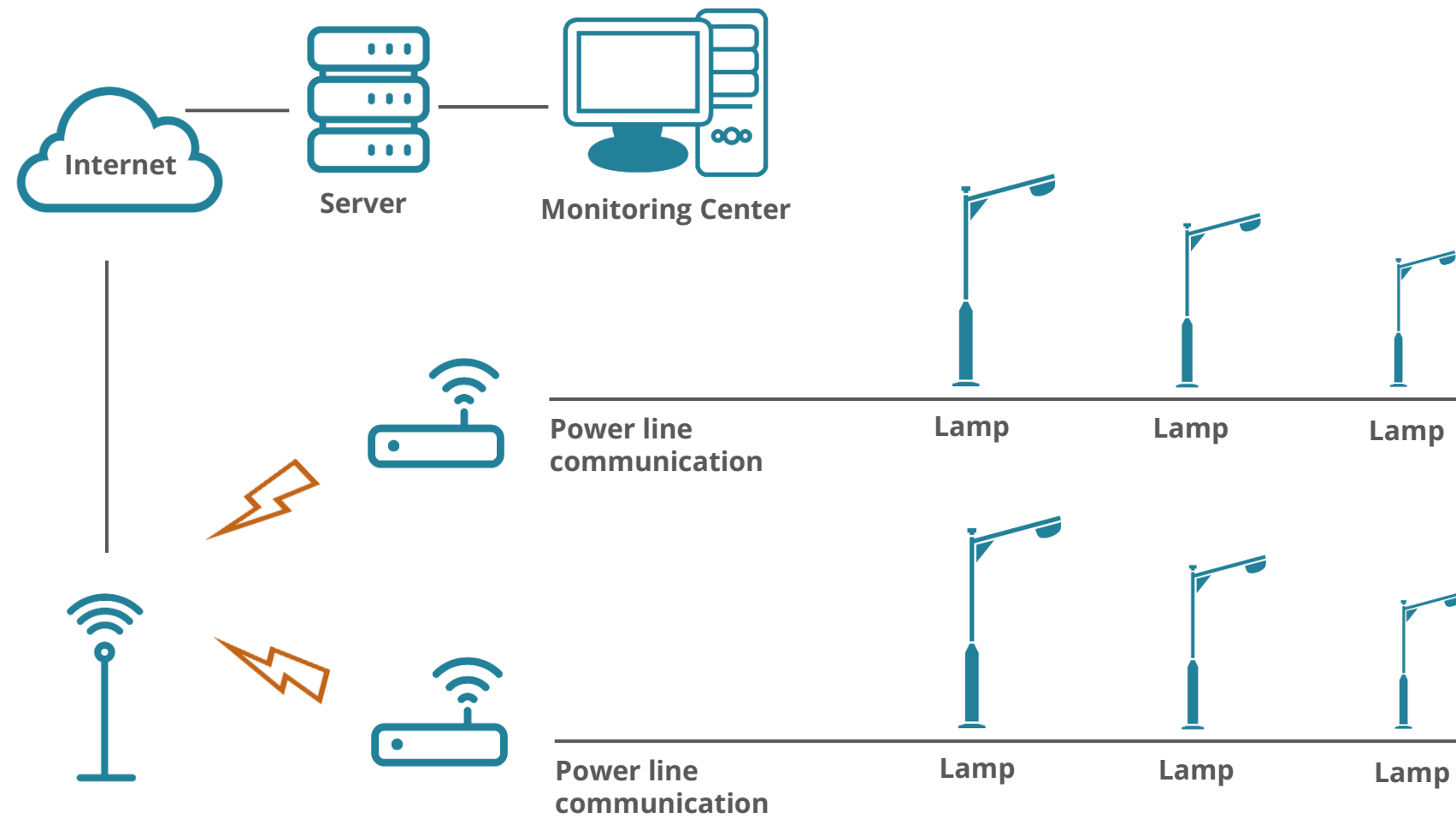
Indicative





Clients  
Indicative





By completing out range of services together with external partnerships we can propose additional services in the field of energy monitoring and management:

**Metering, Monitoring & Control Systems.**

# Projects





**Mitsis Group Hotels:**

- **Sofitel Athens Airport**, Lighting Study, Material supply
- **Mitsis Rinela Beach Resort & Spa**, Lighting Study, Material supply
- **Blue domes - Kos**, Lighting Study, Material supply
- **Laguna - Crete**, Lighting Study, Material supply
- **Faliraki - Rhodes**, Lighting Study, Material supply
- **Alila - Rhodes**, Lighting Study, Material supply

**Kensho Boutique Hotel and Suites:**

- **Ornos - Mykonos**, Lighting Study, Project management
- **Psarou - Mykonos**, Lighting Study, Project management

**Navarino Waterfront, Costa Navarino**, Material

**Tainaron Blue Hotel - Mani**, Lighting Study, Material supply

**Santa Marina - Mykonos**, Lighting Study, Material supply

**JV Athens Plaza**, Material Supply

**Athinais Hotel**, Lighting Study, Material supply

**Herodion Hotel - Athens**, Lighting Study, Material supply

**Filippos Hotel - Athens**, Lighting Study, Material supply

**Gargaretta Bistrot - Athens**, Lighting Study, Material supply

**The Island Concept Hotel | Luxury Boutique Hotel - Crete** Material supply

**Elounda The Villas**, Lighting Study, Material supply

**Rodos Princess - Rhodes**, Lighting Study

**Volcanic Slopes Vineyards - Winery, Santorini**, Lighting Study, Material supply

**Point a | Bar & Restaurant - Herodion Hotel, Athens**, Lighting Study, Material supply

**Villa Koukounaria - Kefalonia**, Lighting Study, Material supply

**Acro Suites Agia Pelagia - Crete**, Lighting Study, Material supply

**Blue Emerald - Mykonos**, Material supply



# Mitsis Group Hotels

Athens, Rhodes, Crete, Kos





# Rinela Beach Resort & Spa

Mitsis Group Hotels





# Sofitel Athens Airport Rooms

Mitsis Group Hotels





# Sofitel Athens Airport Reception

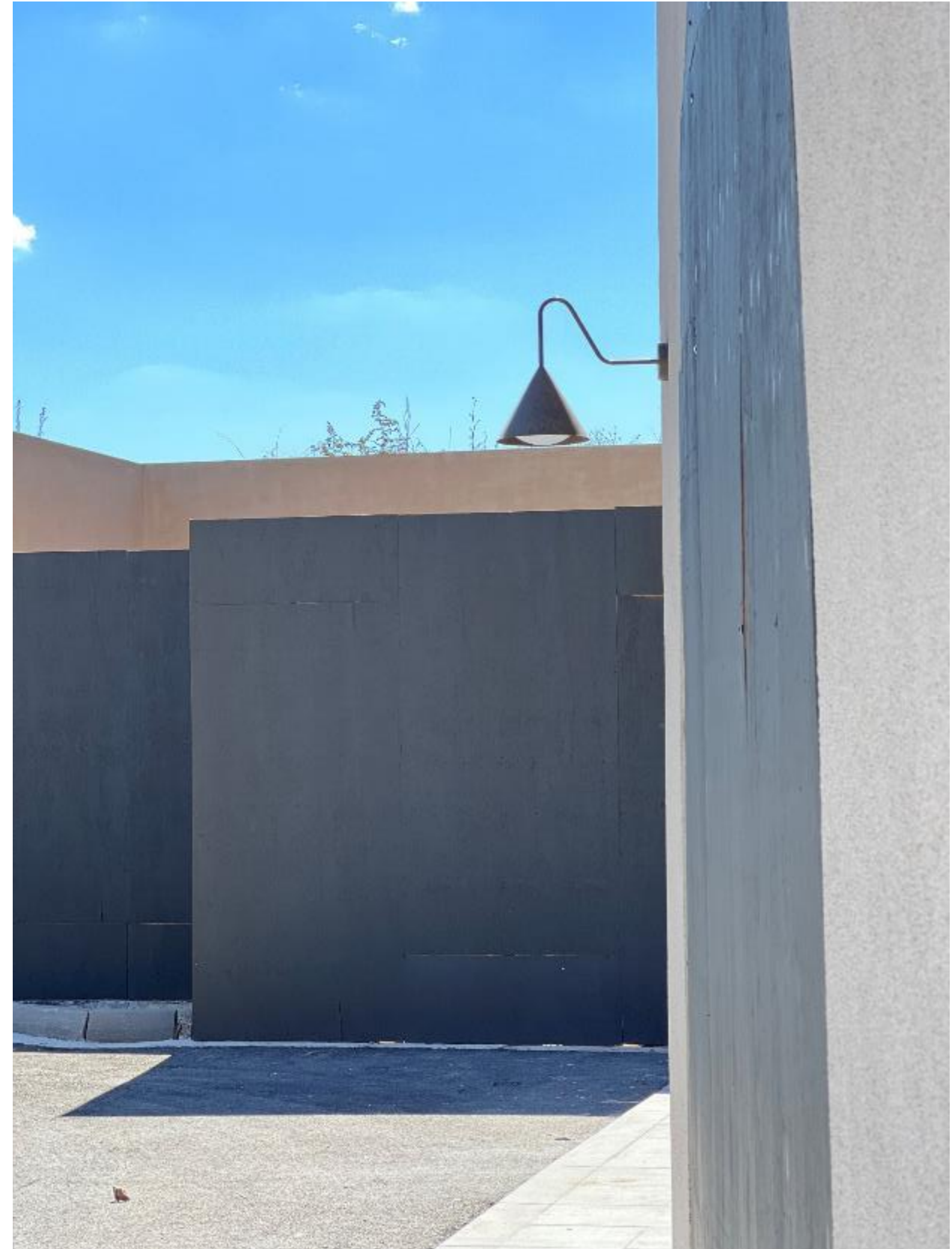
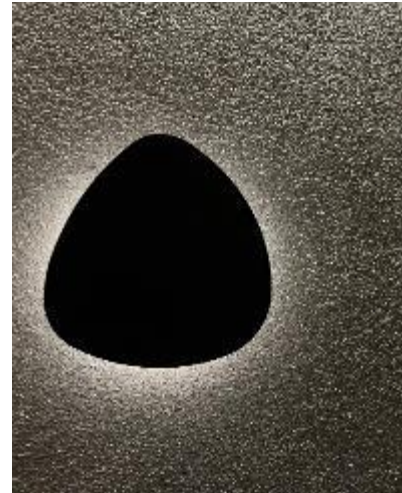
Mitsis Group Hotels





# Navarino Waterfront

Costa Navarino





# Kensho Boutique Hotel and Spa

Psarou, Mykonos





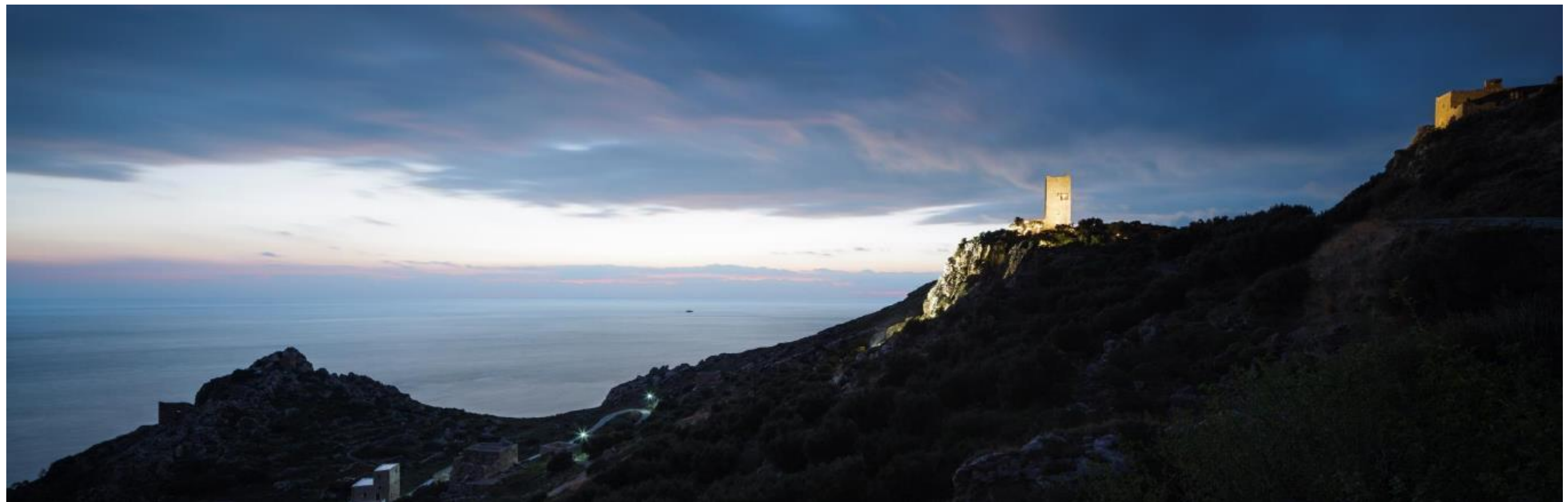
# Kensho Boutique Hotel and Spa

Ornos, Mykonos





# Tainaron Blue Hotel Mani





# Volcanic Slopes Vineyards

Winery, Santorini





# Gargaretta, Bistrot Athens





**Point a | Bar & Restaurant**  
Herodion Hotel, Athens





# Villa Koukounaria

Kefalonia





# Blue Emerald Mykonos



Private Residence in Palaio Psychiko, **Athens**

Lighting study

Complex of Private Residences in Kifissia, **Athens**

Lighting study, Material supply

Private Residence in **Mykonos Island**

Lighting study

Private Residence in **Corfu Island**

Lighting study, Material supply

Private Residence in **Paros Island**

Lighting study

Apartment in Chalandri, **Athens**

Lighting study, Material supply

Palace in **Qatar**

Lighting study

Private Residence in **Mytilini**

Material supply

Private Residence in Kefalari, **Athens**

Material supply

Flat in Petralona, **Athens**

Lighting Study, Material supply

Private Villa & Majlis at West Bay Lagoon in Doha, **Qatar**

Lighting study

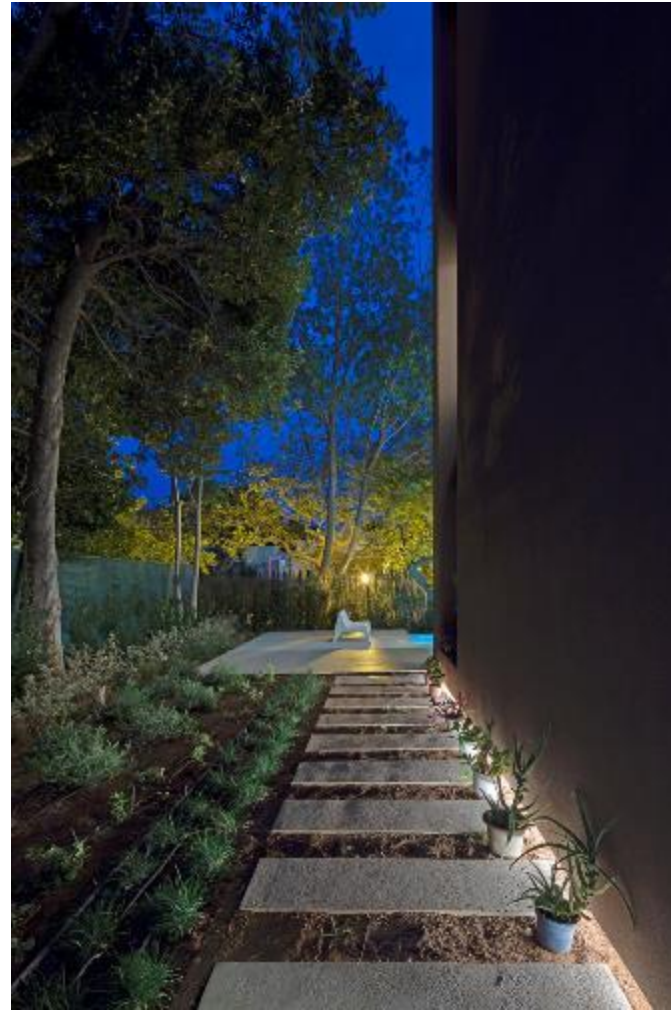


# Private Residence in Palaio Psychiko, Athens



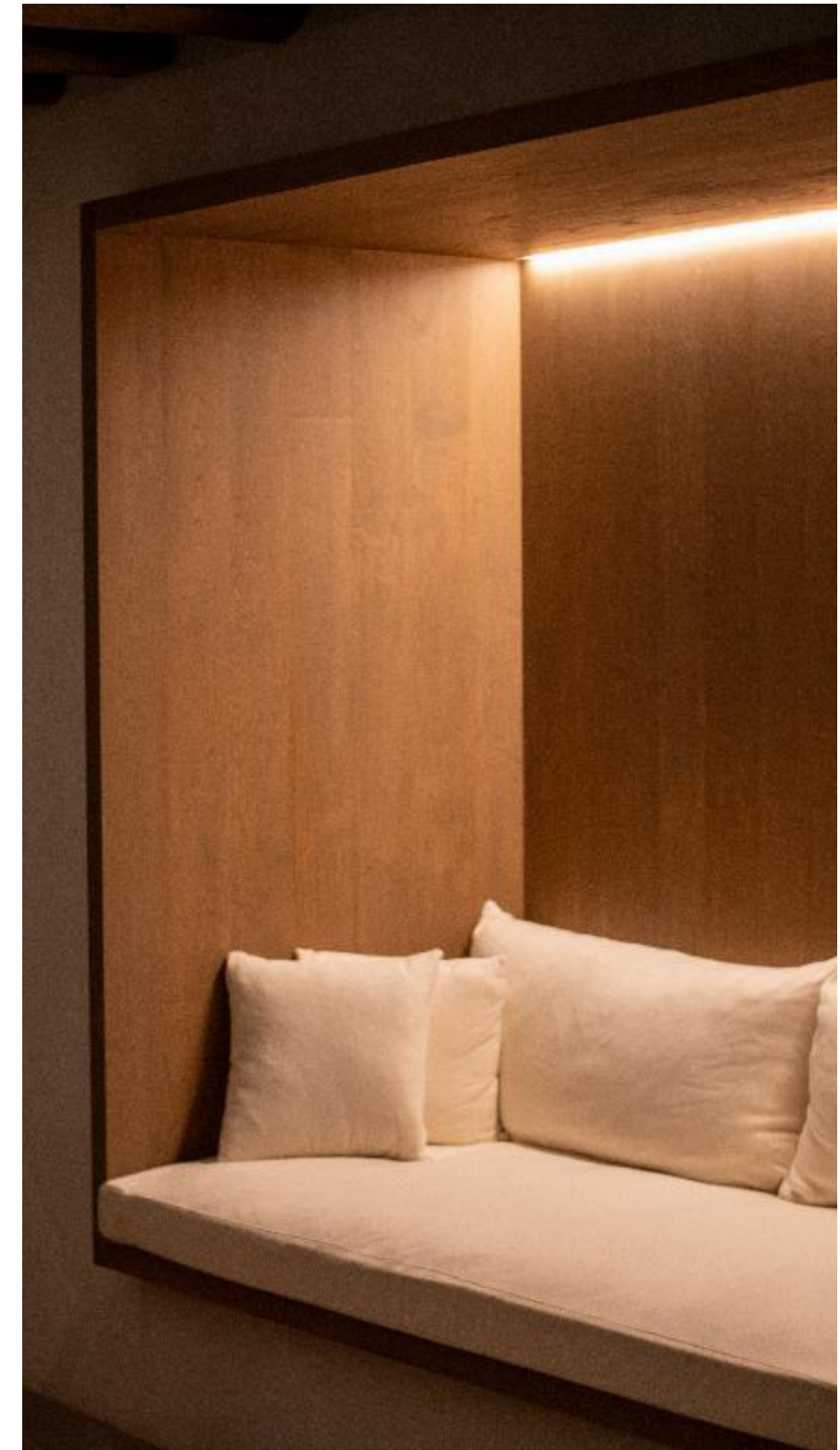


# Complex of Private Residences in Kifissia, Athens



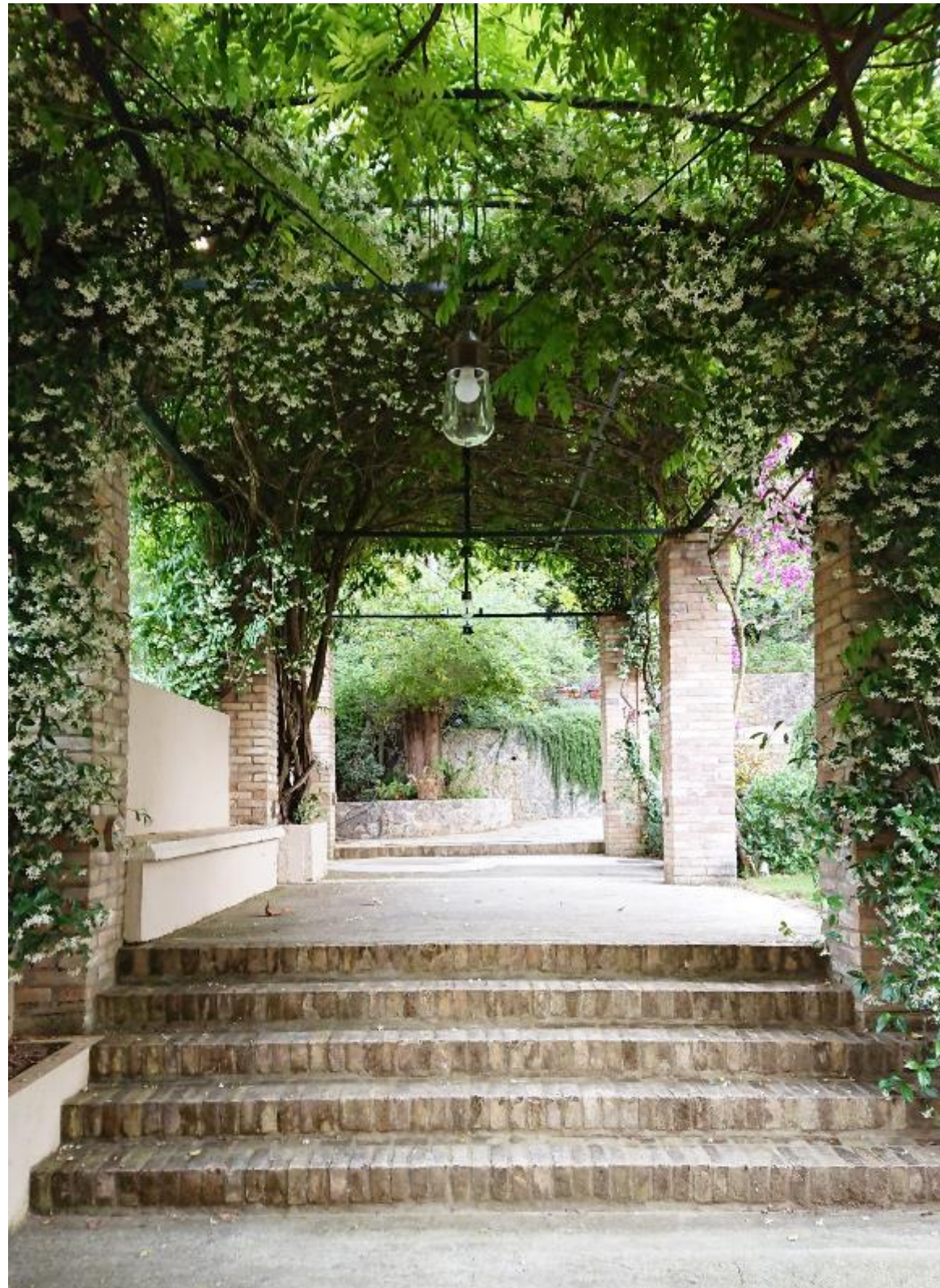


# Private Residence in Mykonos Island





# Private Residence in Corfu Island





# Private Residence in Paros Island





# Apartment in Chalandri, Athens





# Façade Lighting for a Palace in Qatar

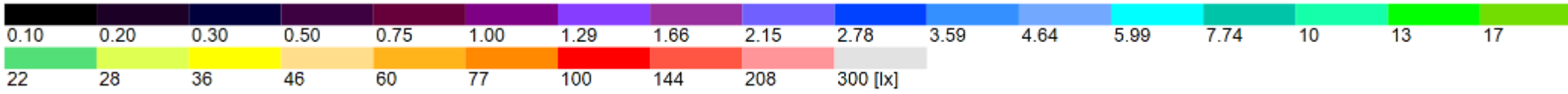
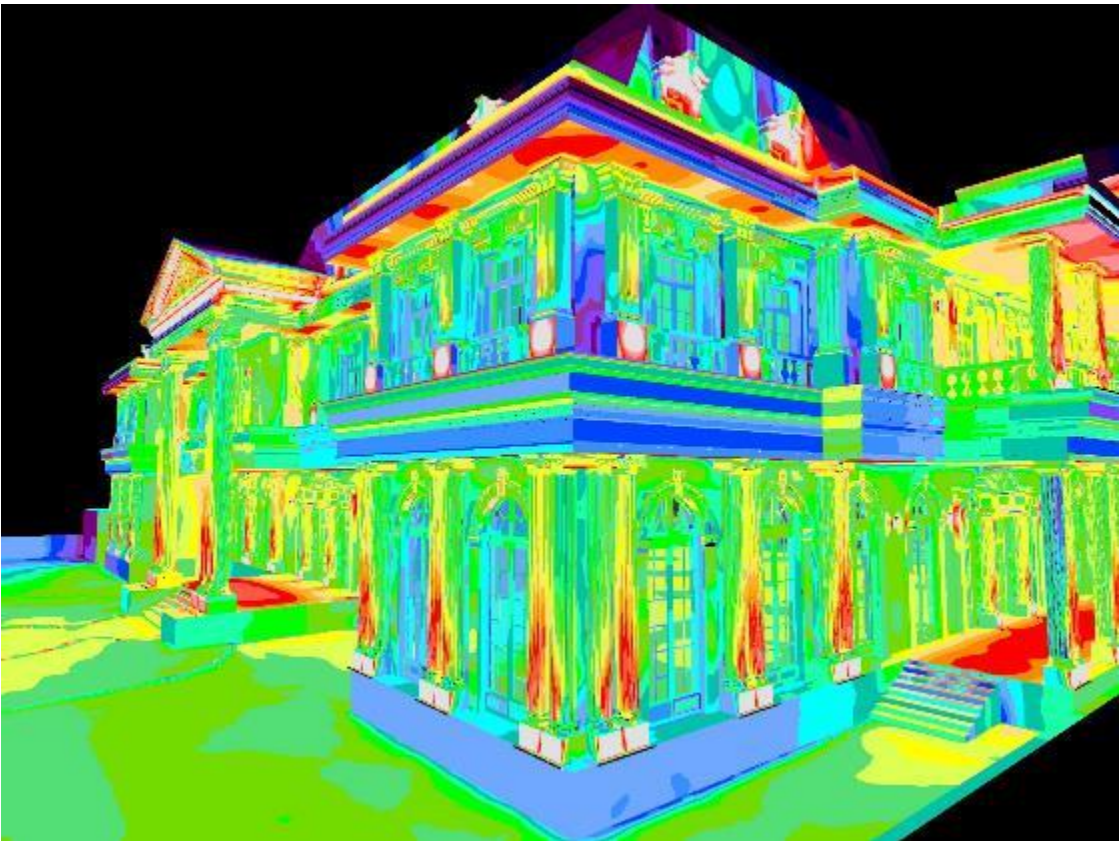
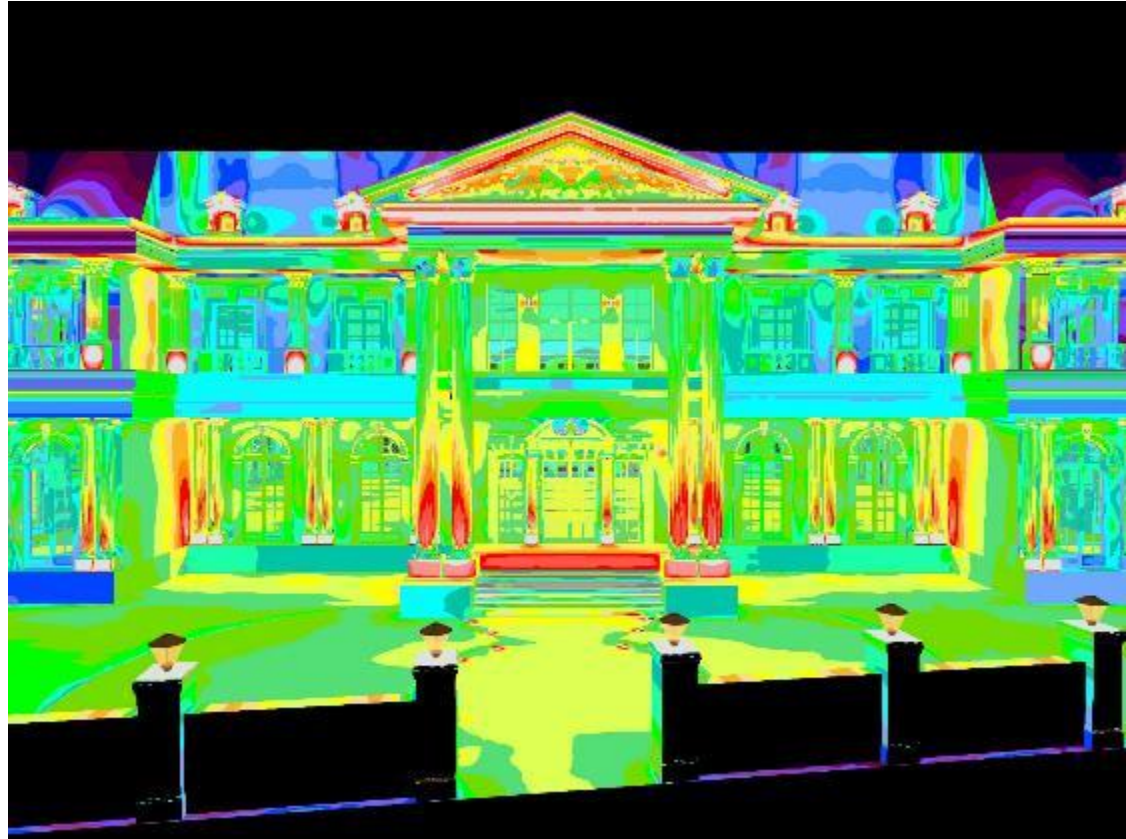
## Photometric Calculations & Renders





# Façade Lighting for a Palace in Qatar

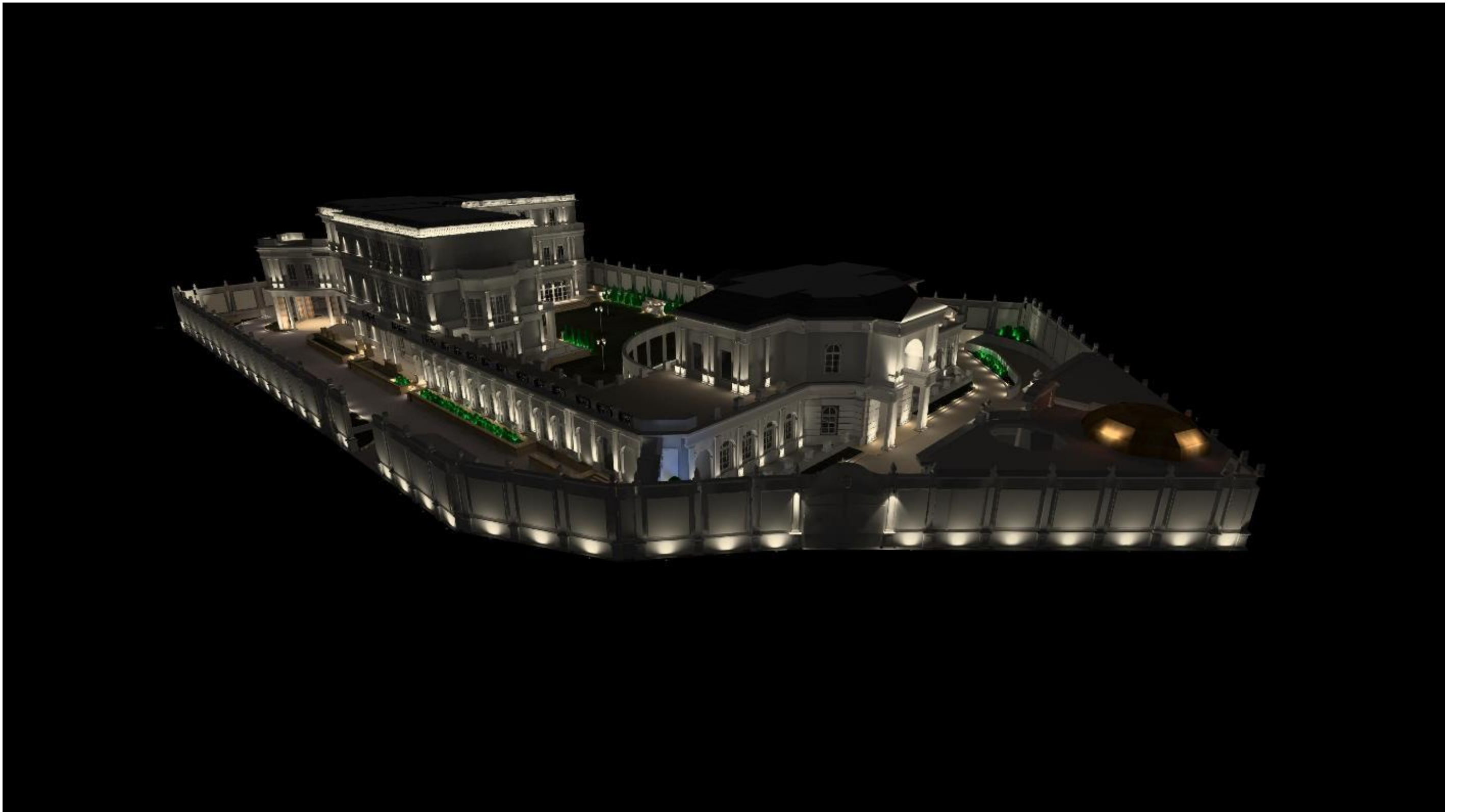
## Photometric Calculations & Renders





# Private Villa & Majlis at West Bay Lagoon in Qatar

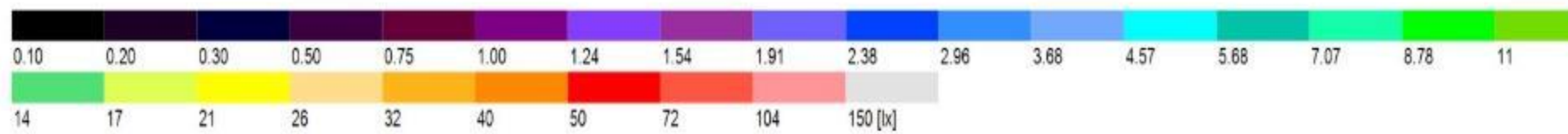
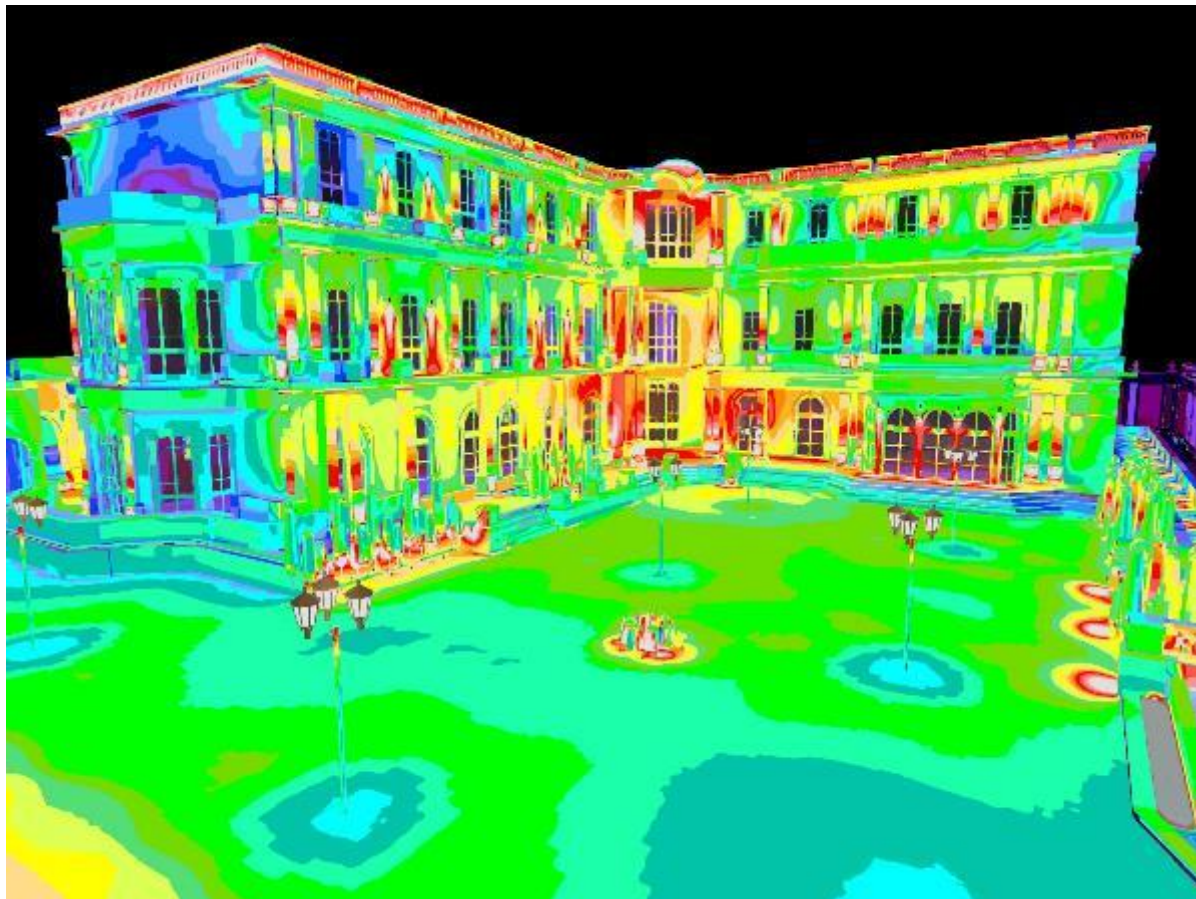
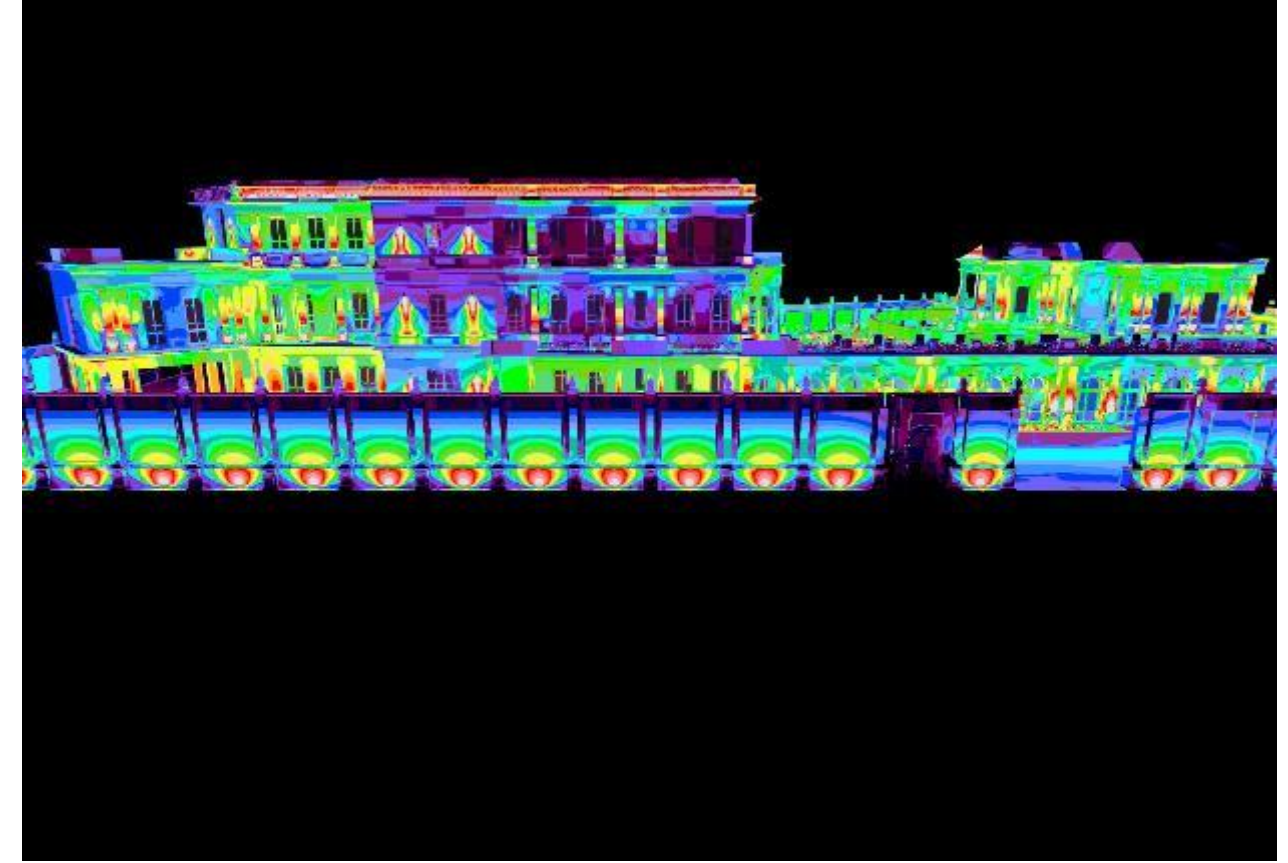
## Photometric Calculations & Renders





# Private Villa & Majlis at West Bay Lagoon in Qatar

## Photometric Calculations & Renders





# Private Residence in Mytilini





**Plaisio Computers** chain store

Registering existing equipment and energy saving study, supervision of installation

**Hondos Center** chain store

Registering existing equipment and energy saving study, supervision of installation

**LHTO** chain store for baby's

Registering existing equipment and energy saving study, supervision of installation

**Praktiker**

Registering existing equipment and energy saving study

Super Market **Carrefour**

Savings study, facade lighting

Super Market **Bazaar** (Athens, Crete)

Lighting Study, supervision of installation

Jewelry Shop **S.M.Arten**, in Systagma (Athens)

Lighting Study, Material Supply, supervision of installation



**S.M.Arten**  
Jewelry Shop in Syntagma, Athens





# Plaisio Computers

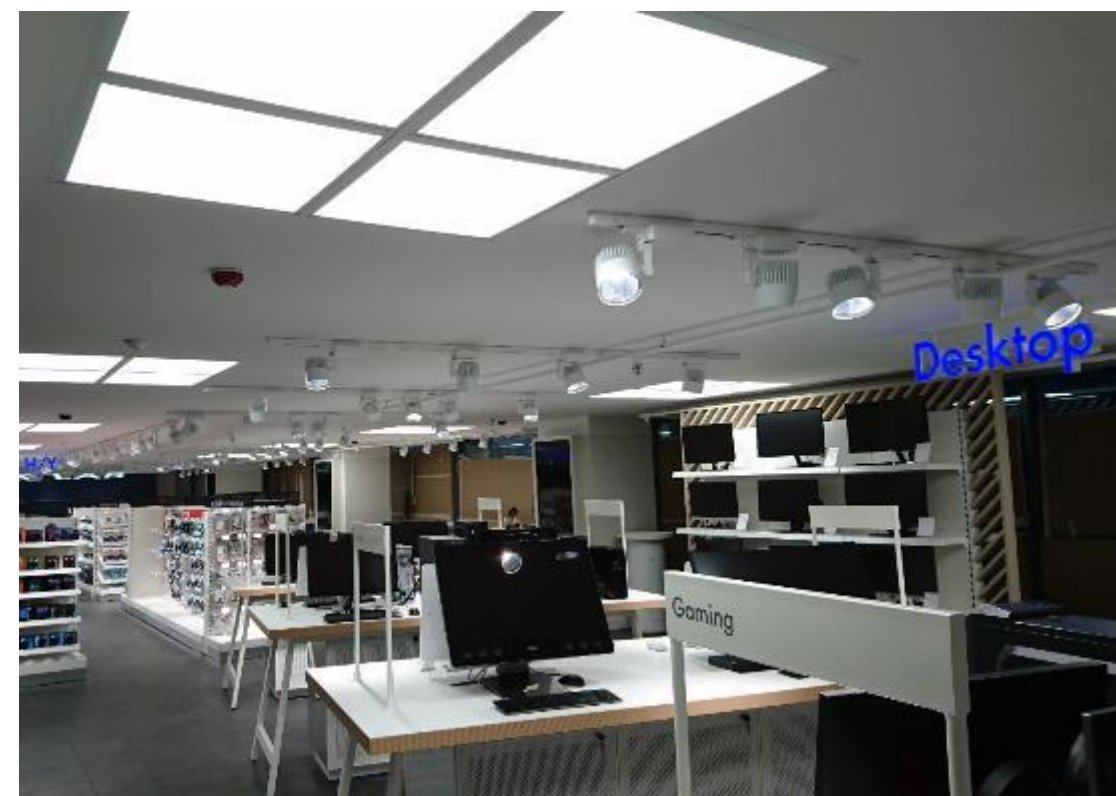
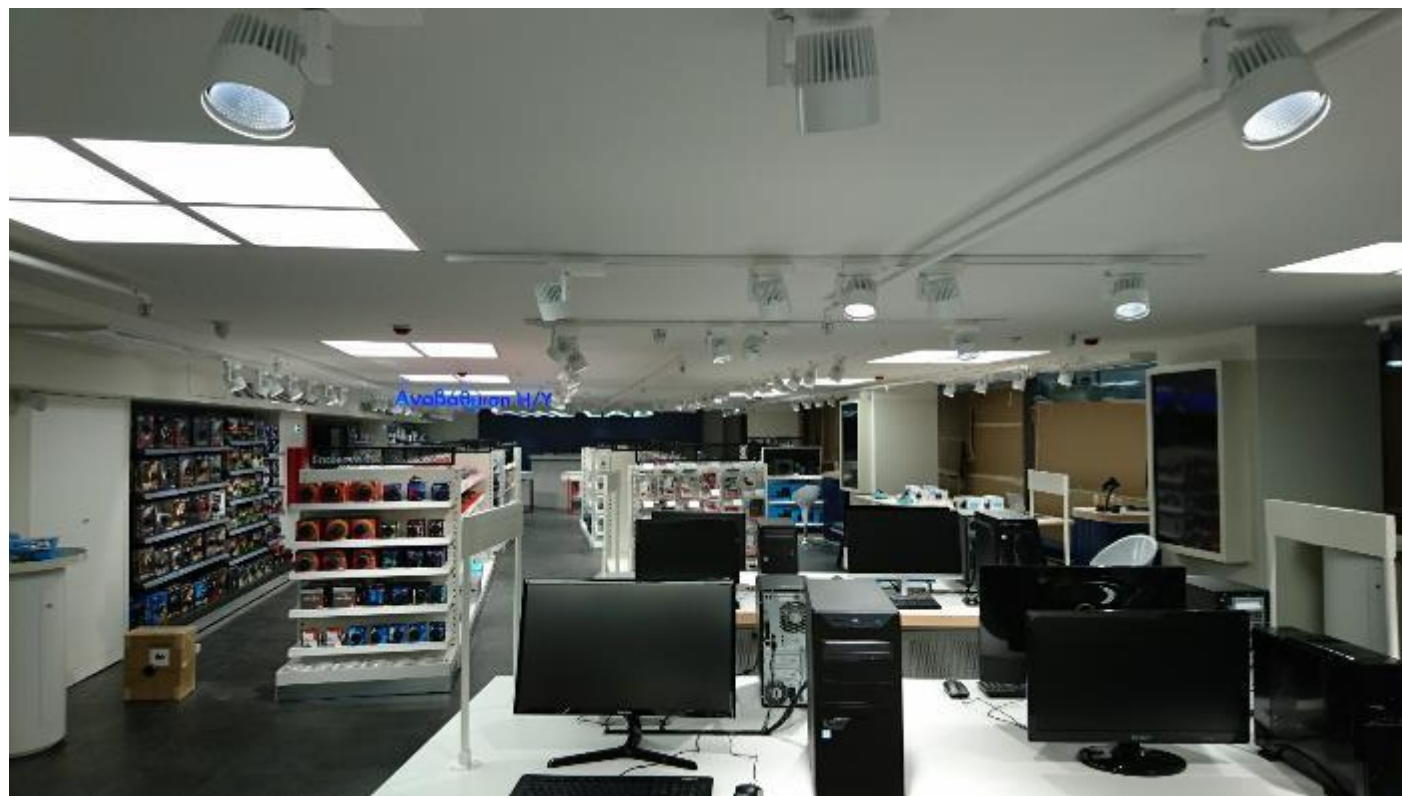
Dafni, Athens





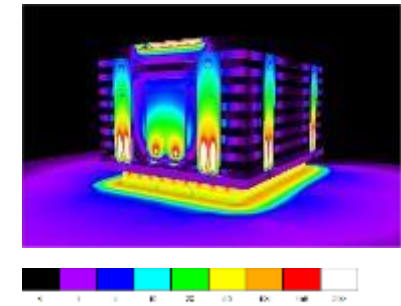
# Plaisio Computers Superstore

Ag.Paraskevi





# Hondos Center Omonoia Sq., Athens





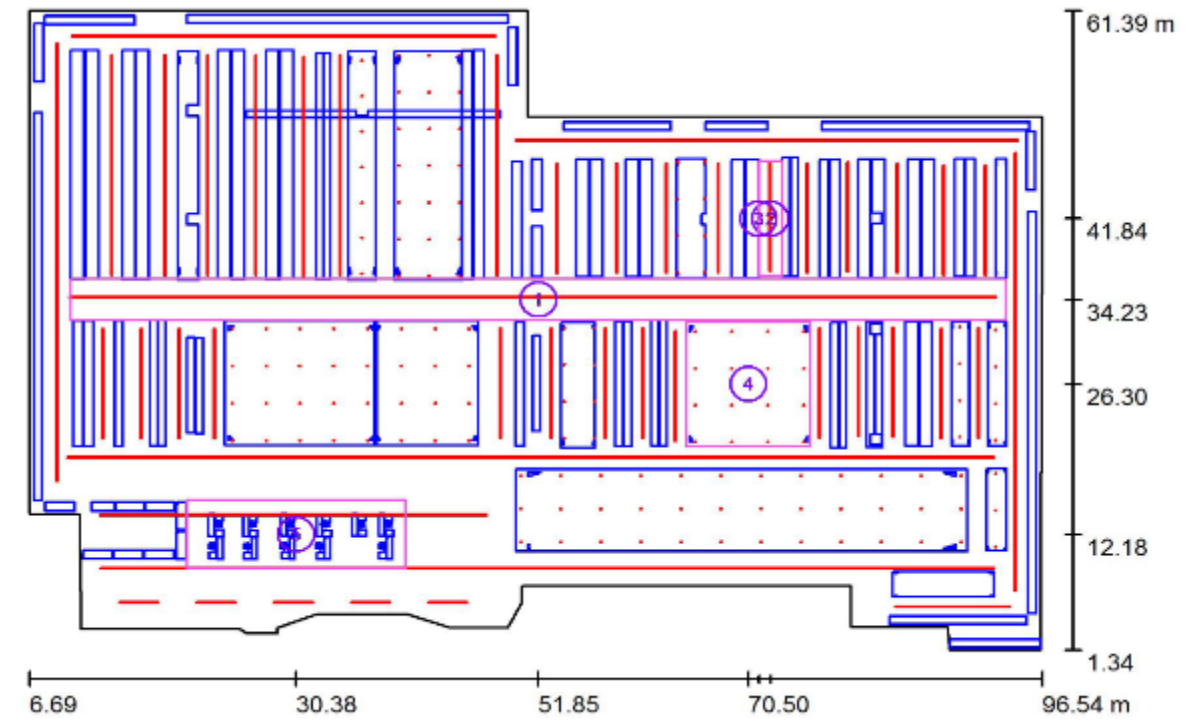
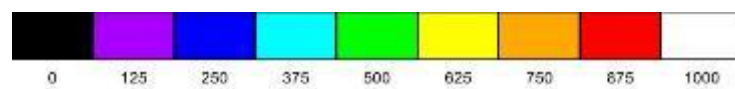
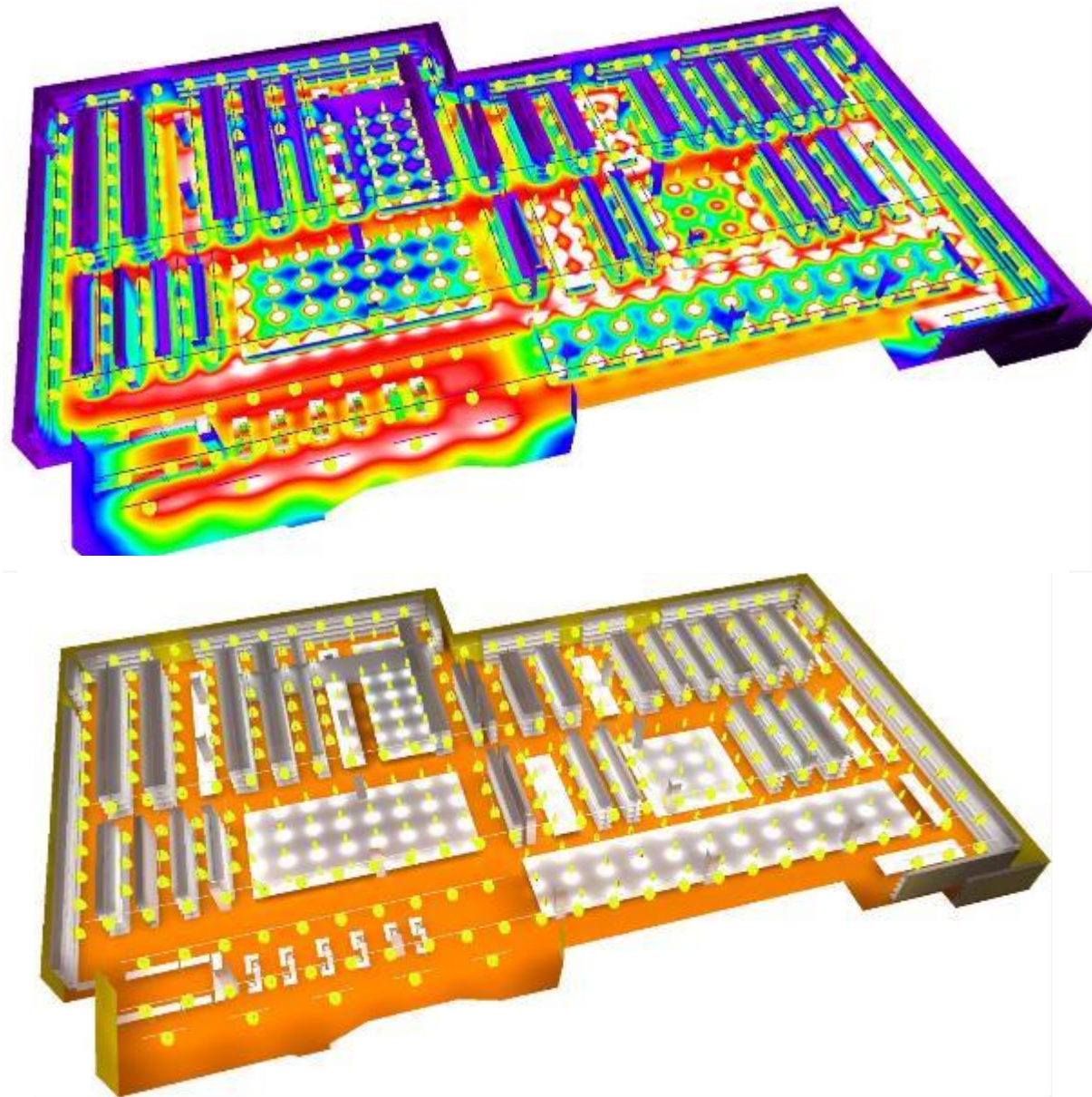
# LHTO Baby store











### Calculation Surface List

No.	Designation	Type	Grid	$E_{av}$ [lx]	$E_{min}$ [lx]	$E_{max}$ [lx]	$u0$	$E_{min} / E_{max}$
1	Κεντρικός Διάδρομος	perpendicular	128 x 64	929	562	1560	0.605	0.361
2	Ενδεικτικός Μικρός Διάδρομος	perpendicular	8 x 32	773	641	825	0.829	0.777
3	Κάθετη επιφάνεια - Ραφιέρες	perpendicular	16 x 32	414	177	557	0.428	0.319
4	Open Spaces	perpendicular	64 x 64	753	251	2177	0.333	0.115
5	Χώρος Ταμείων	perpendicular	128 x 128	789	205	1050	0.260	0.195

### Summary of Results

Type	Quantity	Average [lx]	Min [lx]	Max [lx]	$u0$	$E_{min} / E_{max}$
perpendicular	5	829	177	2177	0.21	0.08



**Barilla Hellas** Pasta industry – Thiva, Volos

Registering existing installation and energy saving study

**E.I.Papadopoulos SA** Biscuit Industry – Athens

Registering existing installation and energy saving study

Logistics company facilities **Kuhne Nagel** – Thessaloniki

Registering existing installation and energy saving study

**Athenian Brewery** Facilities – Athens, Patra, Thessaloniki

Registering existing installation and energy saving study

**Kotroni** Plastics – Naupaktos

Energy-saving lighting study

**G.Dimitriou** Facilities/Warehouses – Aspropirgos

Energy-saving lighting study

**Gulf Agency Company** (Qatar)

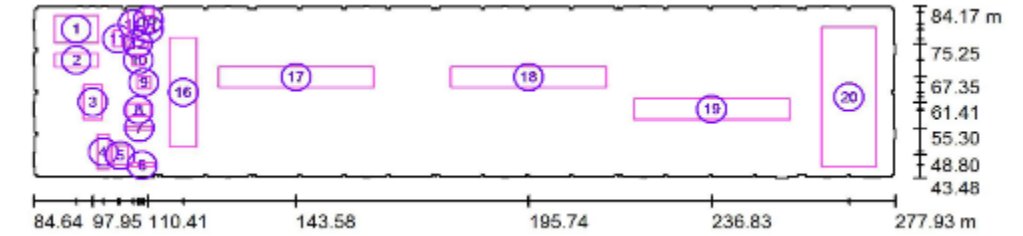
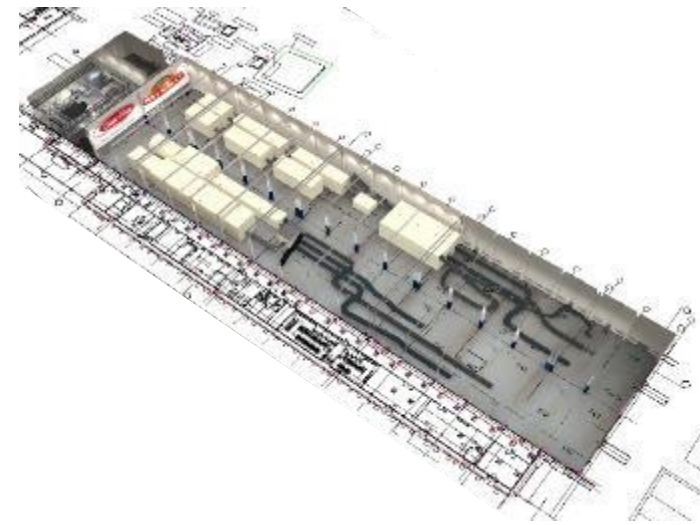
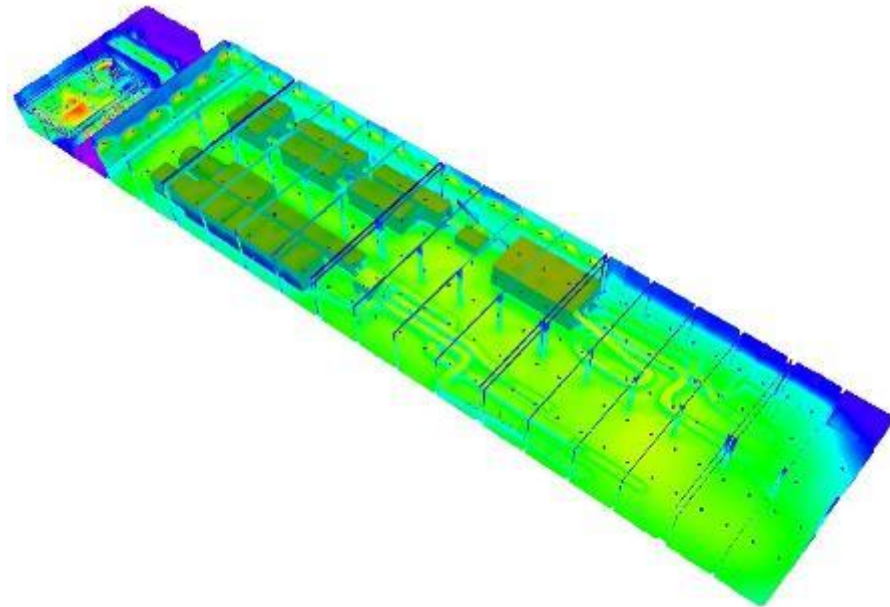
Lighting Study and Supply of Lighting Fixtures for warehouse

**FTC Qatar W.L.L** (Qatar)

Lighting Study and Supply of Lighting Fixtures for showroom



# Barilla Production Line

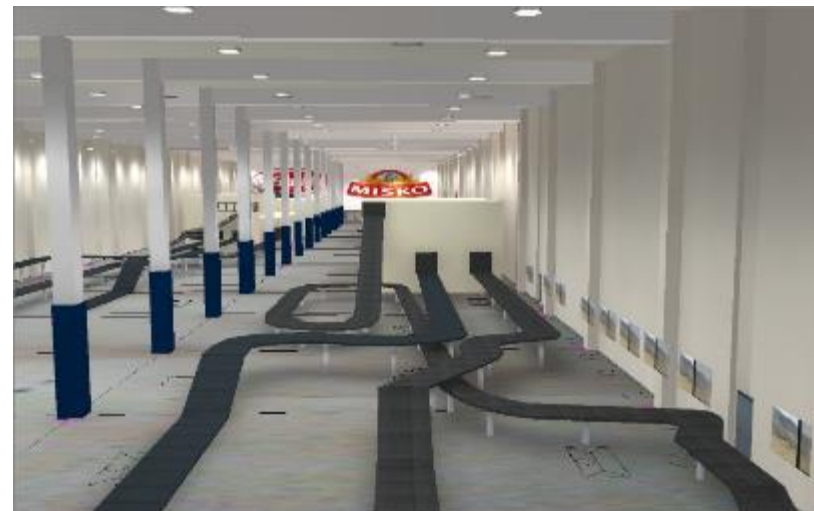
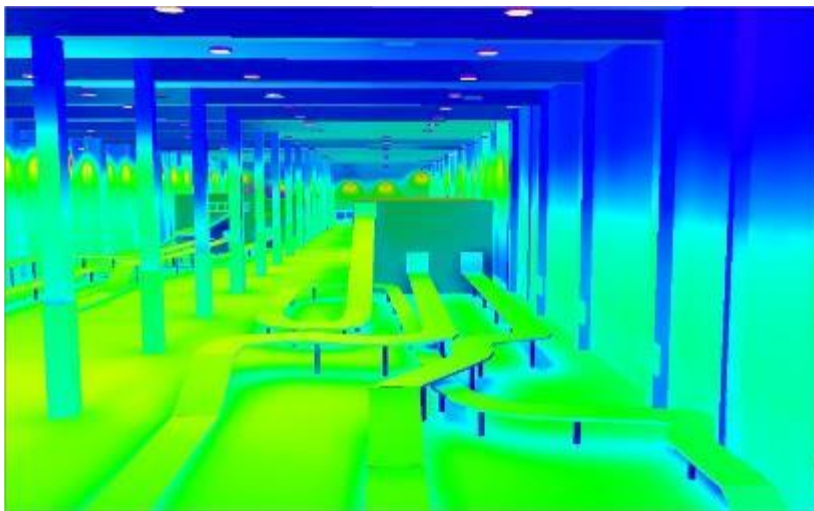


### Calculation Surface List

No.	Designation	Type	Grid	$E_{av}$ [lx]	$E_{min}$ [lx]	$E_{max}$ [lx]	$u0$	$E_{min} / E_{max}$
1	Calculation Surface 1 SUBSTATION	perpendicular	32 x 32	79	18	322	0.234	0.057
2	Calculation Surface 2 COMPRESSOR	perpendicular	16 x 8	257	234	281	0.911	0.833
3	Calculation Surface 3 BOILER MACHINERY	perpendicular	8 x 16	285	117	416	0.412	0.282
4	Calculation Surface 4 BOILER-MACHINERY	perpendicular	4 x 8	177	157	208	0.891	0.757
5	Calculation Surface 5 WASHING MACHINE	perpendicular	4 x 4	1.29	1.29	1.29	1.000	1.000
6	Calculation Surface 6 WASHING MACHINE	perpendicular	8 x 2	0.98	0.98	0.98	1.000	1.000
7	Calculation Surface 7 PUMPS AND FILTERS	perpendicular	8 x 2	6.26	6.26	6.26	1.000	1.000
8	Calculation Surface 8 EGG ROOM	perpendicular	16 x 8	386	297	477	0.768	0.622
9	Calculation Surface 9 CONTROL ROOM	perpendicular	8 x 8	472	275	629	0.583	0.437
10	Calculation Surface 10 CONTROL ROOM	perpendicular	8 x 8	561	328	682	0.584	0.481
11	Calculation Surface 11 STAIRS	perpendicular	4 x 8	256	134	361	0.522	0.370
12	Calculation Surface 12 CORRIDOR	perpendicular	8 x 4	336	268	420	0.798	0.638
13	Calculation Surface 13 OFFICE	perpendicular	4 x 4	393	233	615	0.594	0.380
14	Calculation Surface 14 OFFICE HALL	perpendicular	8 x 16	440	268	577	0.609	0.465
15	Calculation Surface 13 OFFICE	perpendicular	8 x 8	430	325	517	0.756	0.630
16	Calculation Surface 14 PRODUCTION AREA	perpendicular	8 x 32	363	267	400	0.737	0.669
17	Calculation Surface 15 PRODUCTION AREA	perpendicular	32 x 8	321	243	376	0.757	0.647
18	Calculation Surface 16 PACKING AREA	perpendicular	32 x 8	398	298	426	0.748	0.701
19	Calculation Surface 17 PACKING AREA	perpendicular	32 x 8	406	356	455	0.877	0.782
20	Calculation Surface 18 PACKING AREA	perpendicular	16 x 32	270	111	385	0.411	0.288

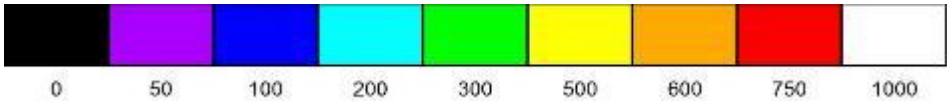
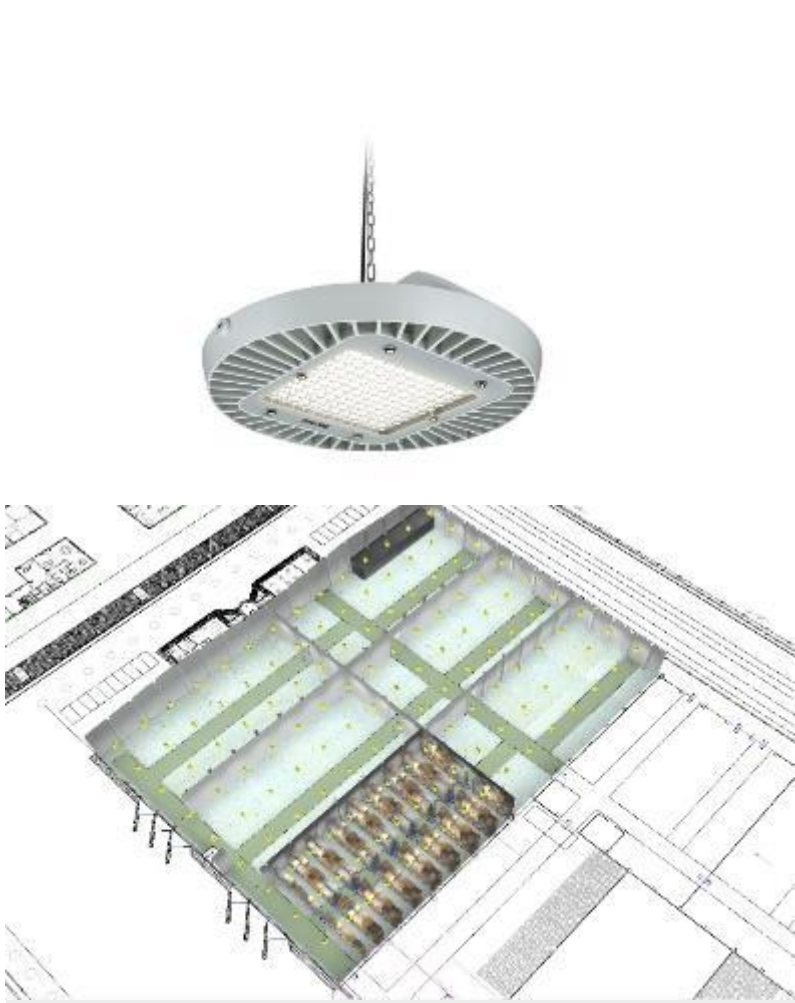
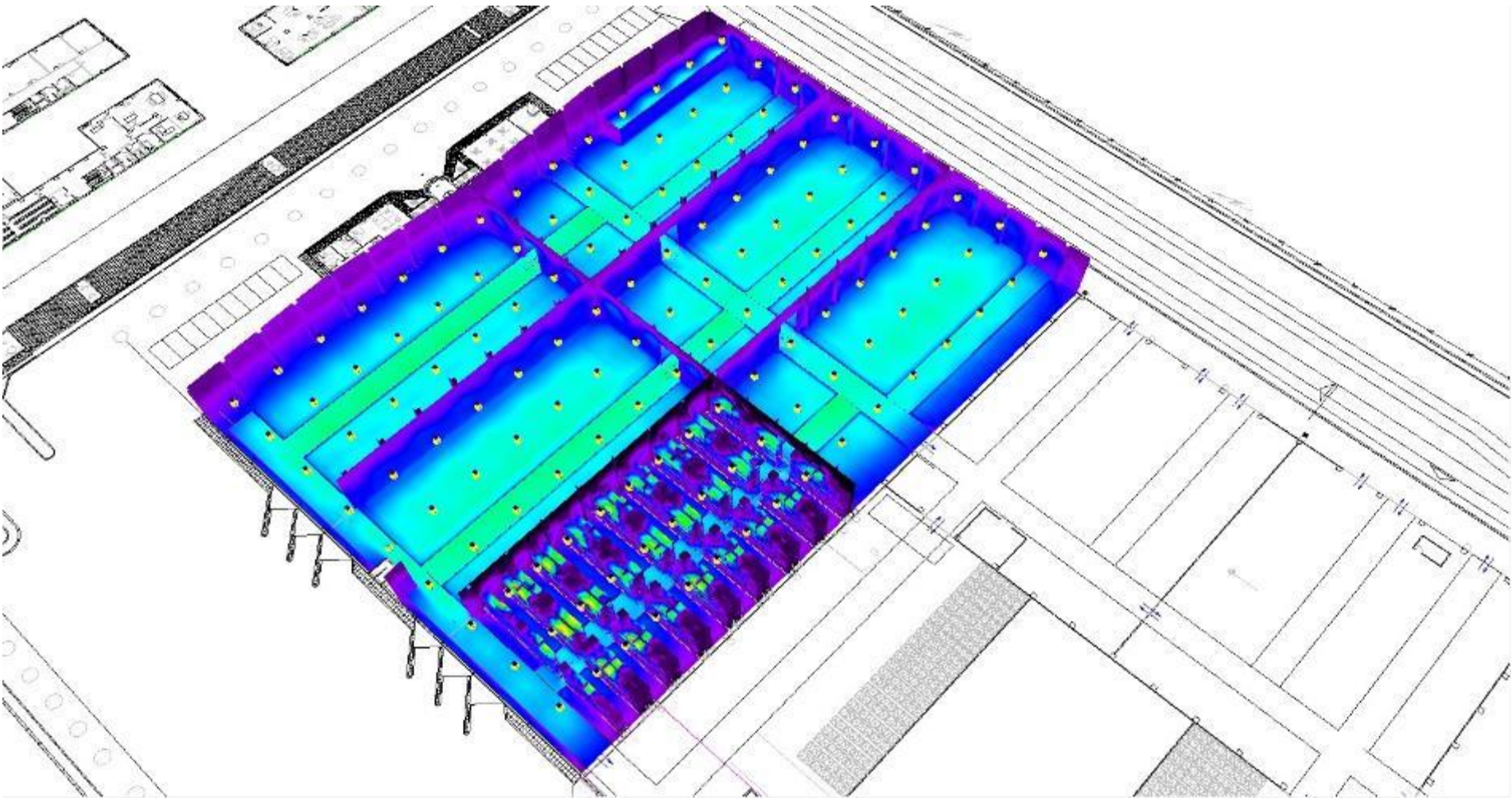
### Summary of Results

Type	Quantity	Average [lx]	Min [lx]	Max [lx]	$u0$	$E_{min} / E_{max}$
perpendicular	20	313	0.98	682	0.00	0.00





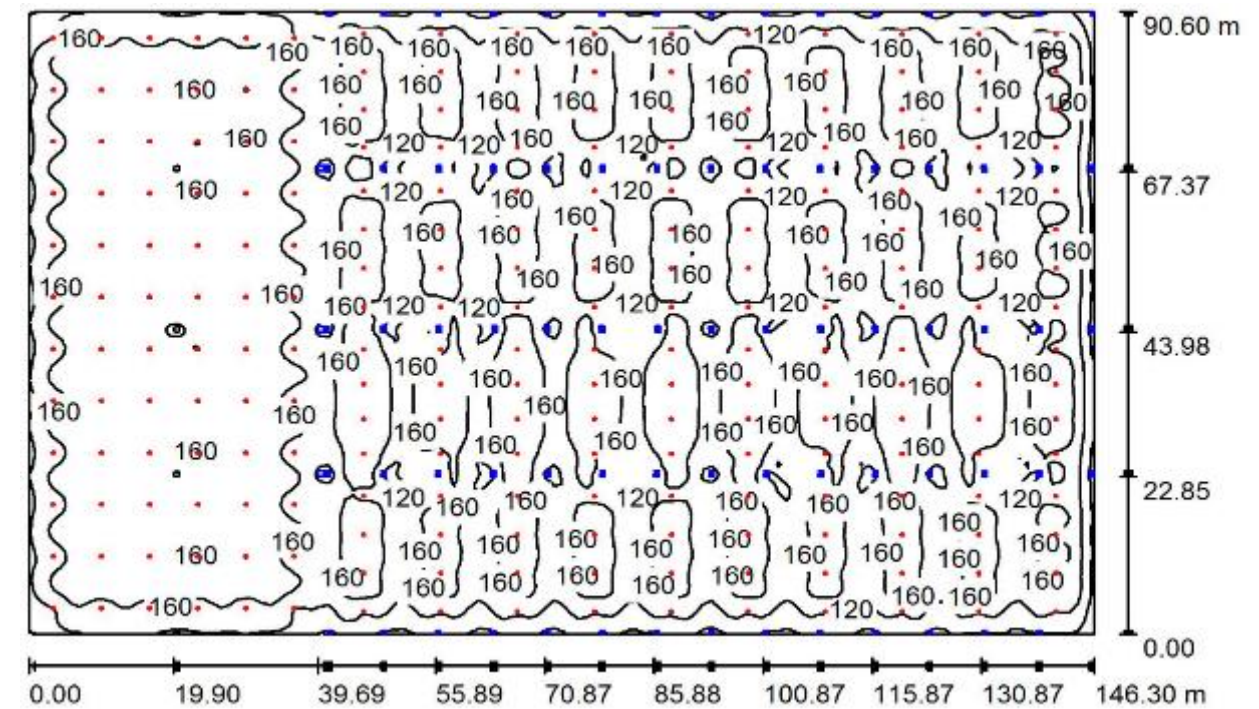
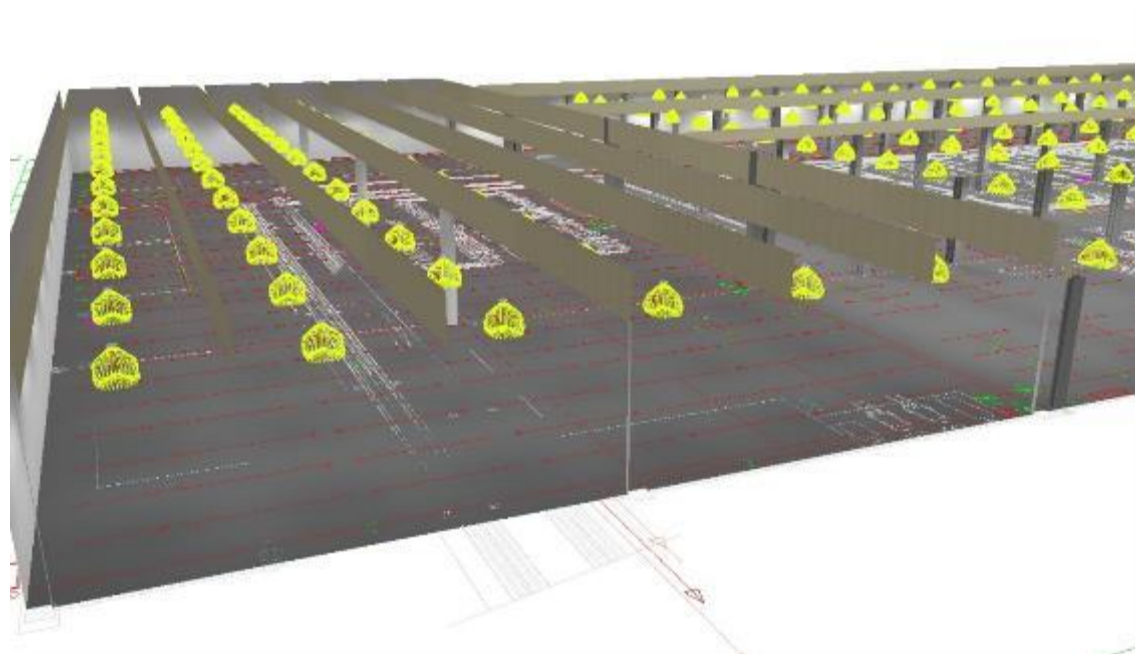
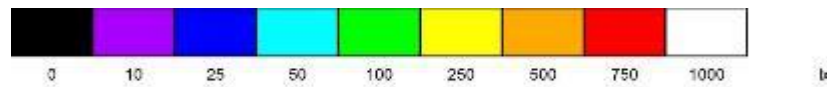
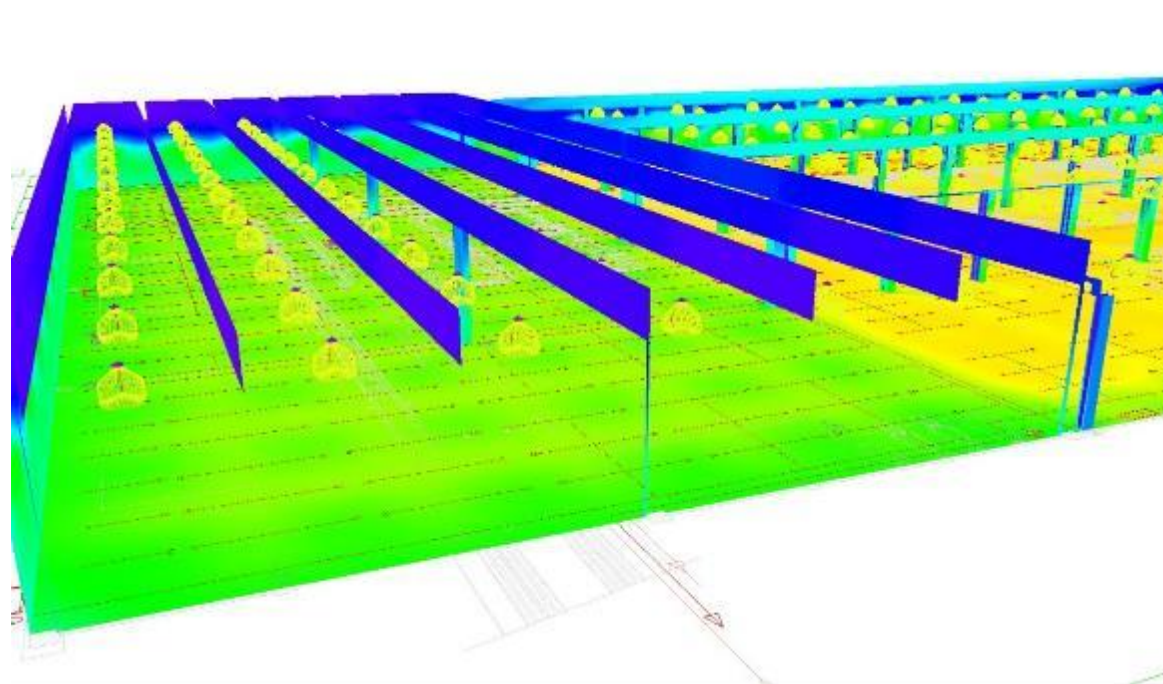
# Kuehne+Nagel Warehouses



<b>2014</b>													
<b>Περιβαλλοντικοί Δείκτες</b>	<b>ΣΥΝΟΛΑ</b>	<b>ΙΑΝΟΥΑΡΙΟΣ</b>	<b>ΦΕΒΡΟΥΑΡΙΟΣ</b>	<b>ΜΑΡΤΙΟΣ</b>	<b>ΑΠΡΙΛΙΟΣ</b>	<b>ΜΑΪΟΣ</b>	<b>ΙΟΥΝΙΟΣ</b>	<b>ΙΟΥΛΙΟΣ</b>	<b>ΑΥΓΟΥΣΤΟΣ</b>	<b>ΣΕΠΤΕΜΒΡΙΟΣ</b>	<b>ΟΚΤΩΒΡΙΟΣ</b>	<b>ΝΟΕΜΒΡΙΟΣ</b>	<b>ΔΕΚΕΜΒΡΙΟΣ</b>
ΗΛΕΚΤΡΙΚΗ ΕΝΕΡΓΕΙΑ (Kwh)		87300,56	79582,96	82837,52	77483,36	78617,84	76975,6	82595,36	79654,08	76929,04	85094,88	86346	91905,04
<b>2015</b>													
ΗΛΕΚΤΡΙΚΗ ΕΝΕΡΓΕΙΑ (Kwh)		93363,68	78957,36	82590,56	74733,68	73207,68	67806,16						



# Athens Brewery



## Calculation Surface List

No.	Designation	Type	Grid	$E_{av}$ [lx]	$E_{min}$ [lx]	$E_{max}$ [lx]	$u_0$	$E_{min} / E_{max}$
1	Bottling Area	perpendicular	128 x 128	295	120	385	0.405	0.311
2	Storage Section	perpendicular	128 x 128	175	101	201	0.578	0.504

## Summary of Results

Type	Quantity	Average [lx]	Min [lx]	Max [lx]	$u_0$	$E_{min} / E_{max}$
perpendicular	2	263	101	385	0.38	0.26

Height of Room: 9.000 m, Light loss factor: 0.80

Values in Lux, Scale 1:1164

Surface	$\rho$ [%]	$E_{av}$ [lx]	$E_{min}$ [lx]	$E_{max}$ [lx]	$u_0$
Workplane	/	154	46	204	0.300
Floor	20	152	28	198	0.184
Ceilings (69)	58	25	7.48	36	/
Walls (27)	50	47	3.62	120	/

## Workplane:

Height:	0.850 m
Grid:	128 x 128 Points
Boundary Zone:	0.000 m

## Luminaire Parts List

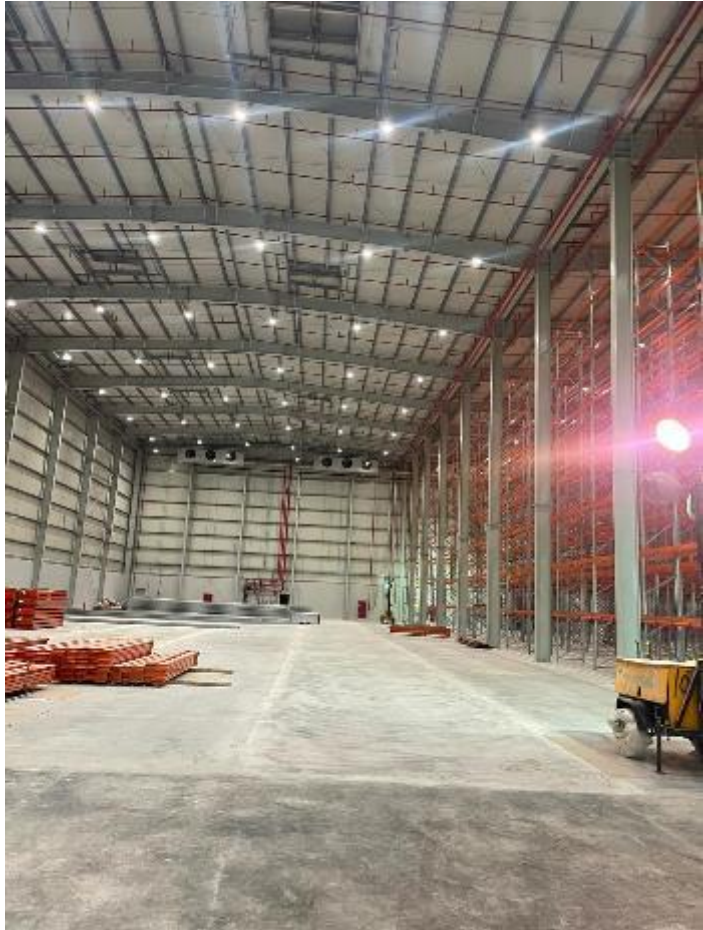
No.	Pieces	Designation (Correction Factor)	$\Phi$ (Luminaire) [lm]	$\Phi$ (Lamps) [lm]	P [W]
1	232	PHILIPS BY120P G2 1xLED105S/840 WB (1.000)	10500	10500	100.0

Total: 2436000 Total: 2436000 23200.0

Specific connected load:  $1.75 \text{ W/m}^2 = 1.14 \text{ W/m}^2/100 \text{ lx}$  (Ground area:  $13251.96 \text{ m}^2$ )

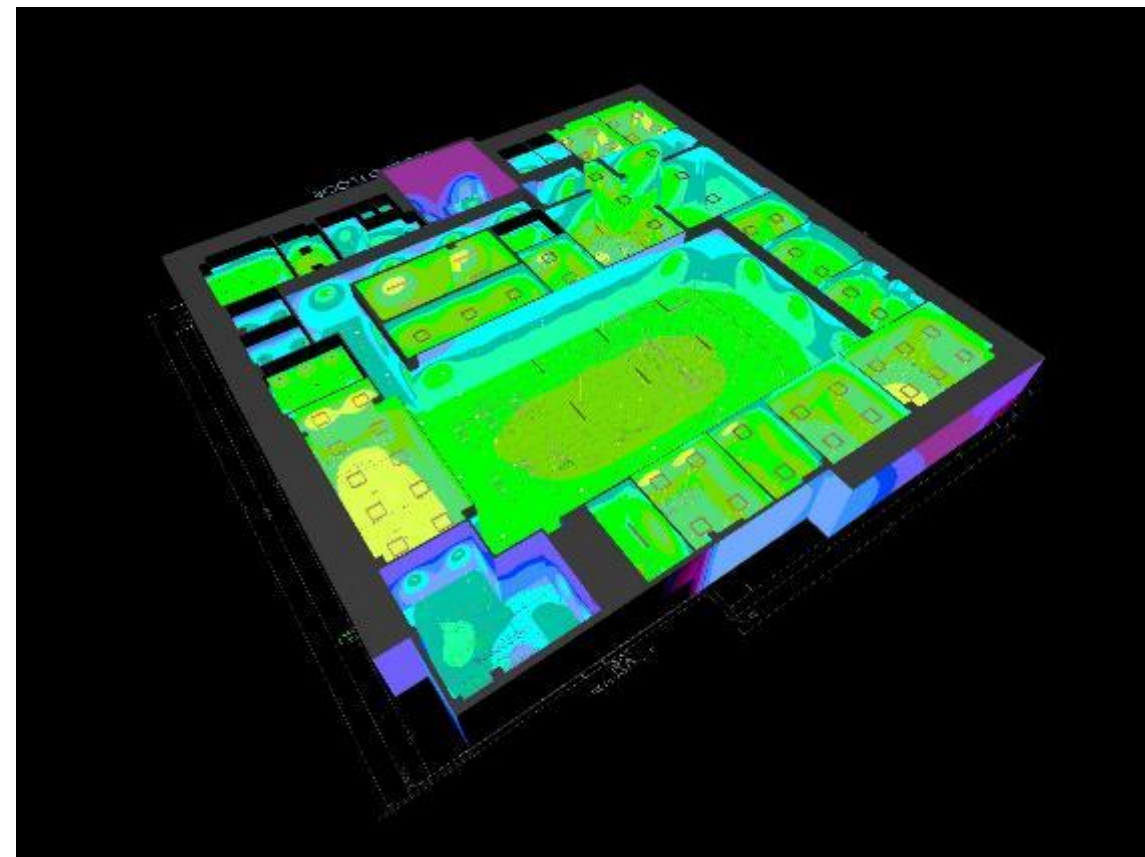
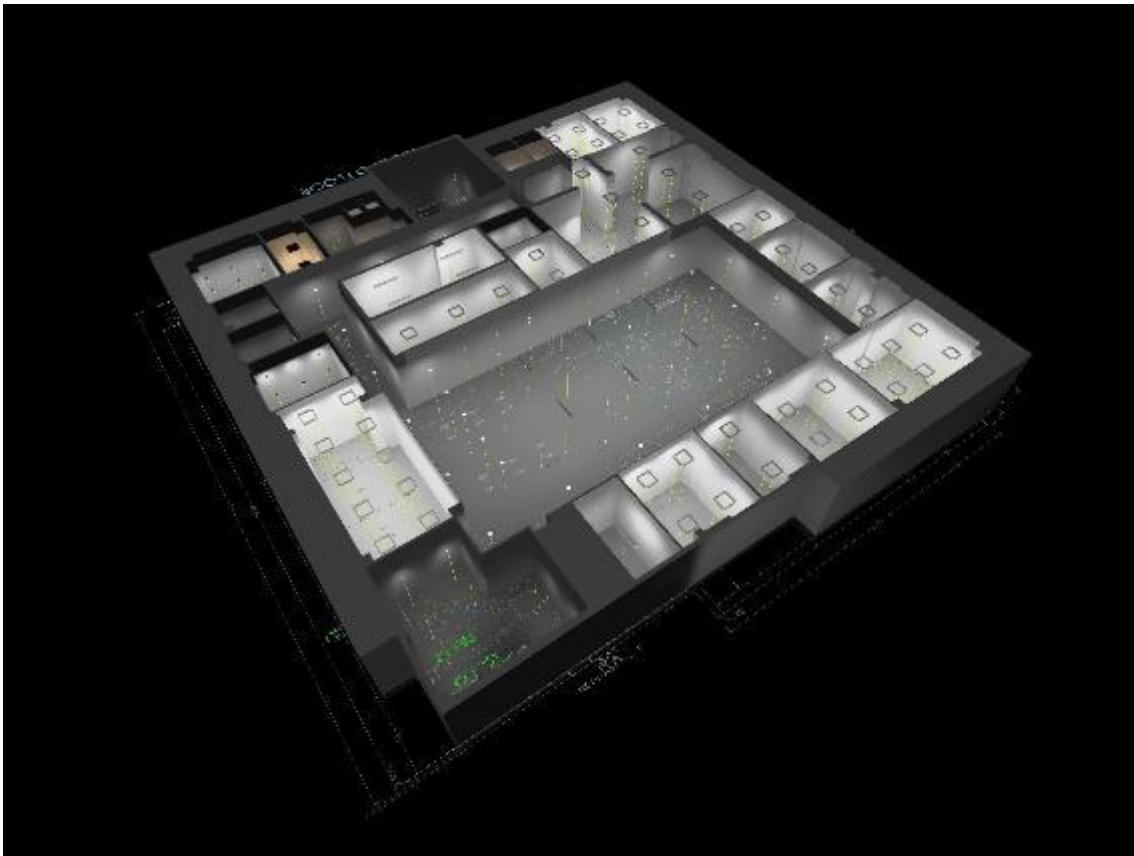
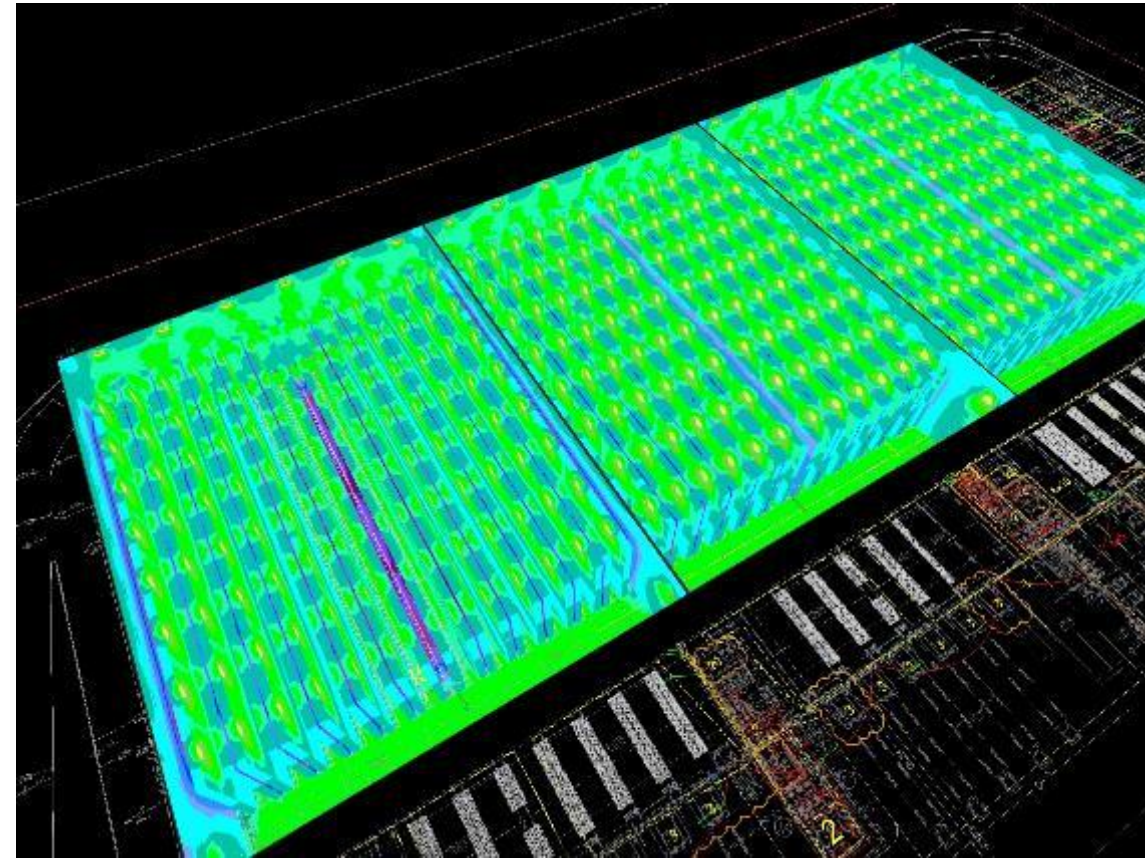
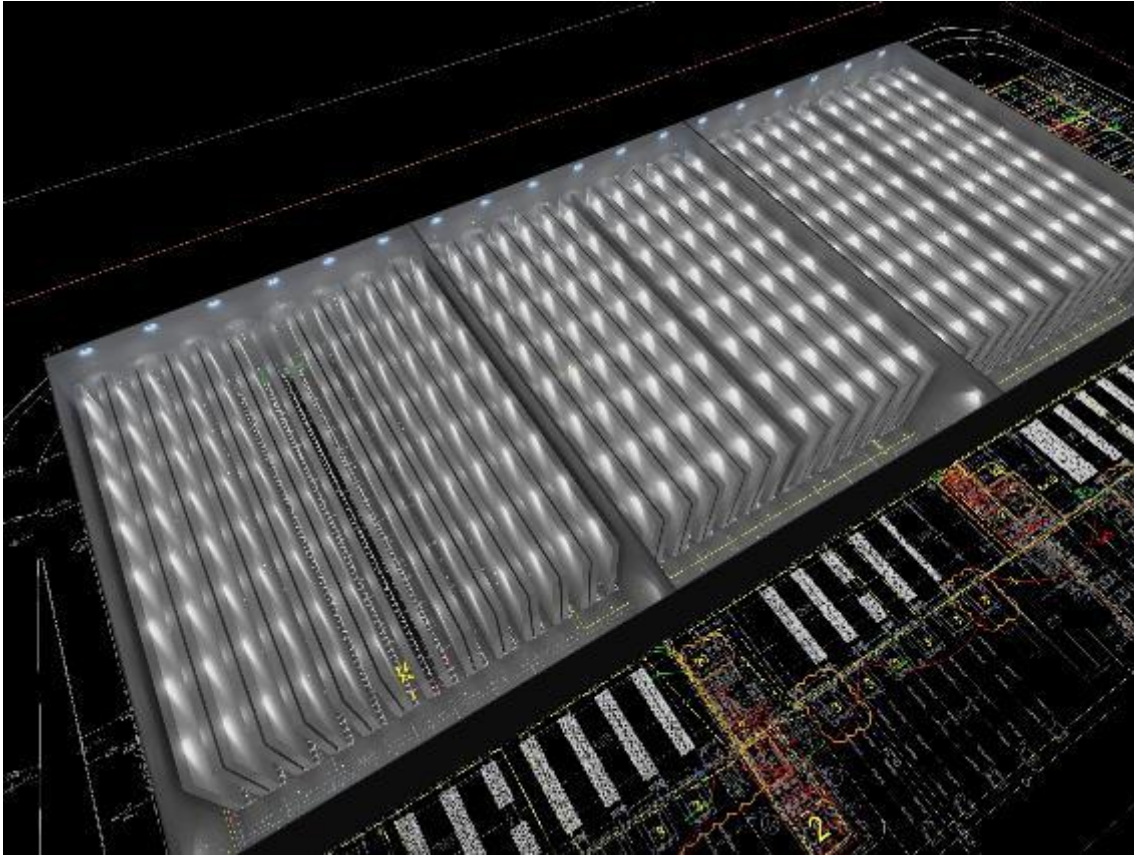


# Gulf Agency Company in Qatar Realization Photos



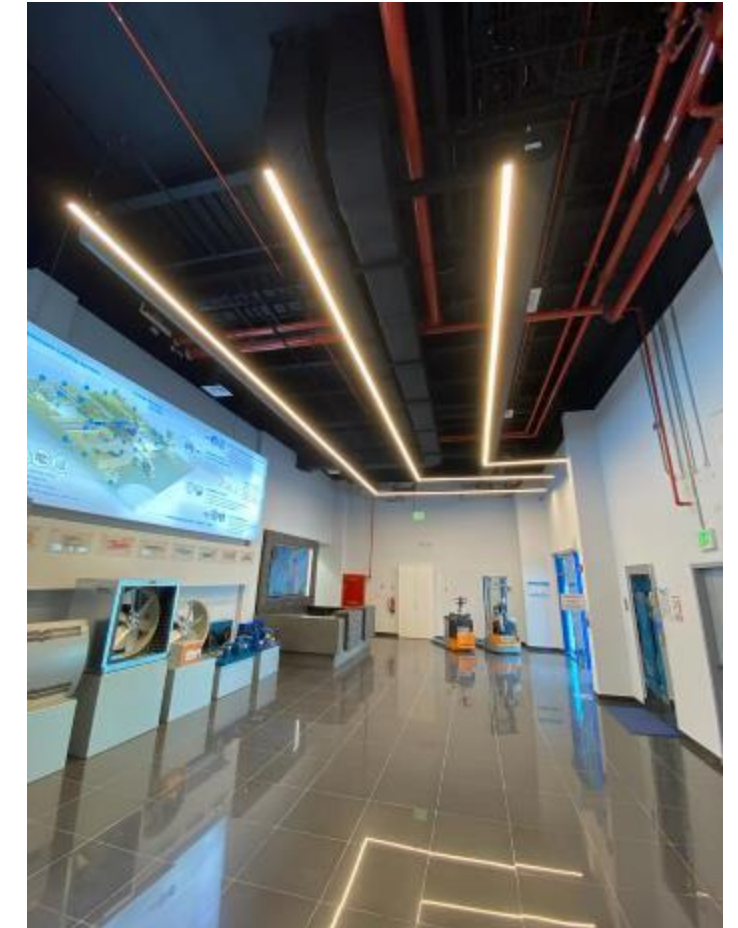


# Gulf Agency Company in Qatar Photometric Calculations & Renders





# FTC Qatar W.L.L (Showroom) in Qatar





**Athens International Airport (AIA) Apron Lighting - Spata, Athens**

Upgrade of the old Apron lighting fixtures with new technology LED floodlights

**Sports Facilities**

- Tennis Courts - **AKAM - Athletic Center Tennis Marathon**
- Tennis Courts - **Kifisia (XAN)**
- Tennis Courts - **Royal Club Chania**
- Tennis Courts - **Kalamata Club**
- Tennis Courts - **Daniilidou Club**
- Tennis Courts - **Santorini Club**

**And many more all over Greece**

Lighting Study and implementation

**Port Authority of Piraeus – OLP, Piraeus**

Implementation study for energy saving by replacing light fixtures in the Commercial, Passenger & Shipbuilding Areas

**Piraeus Container Terminal S.A. – Cosco, Piraeus**

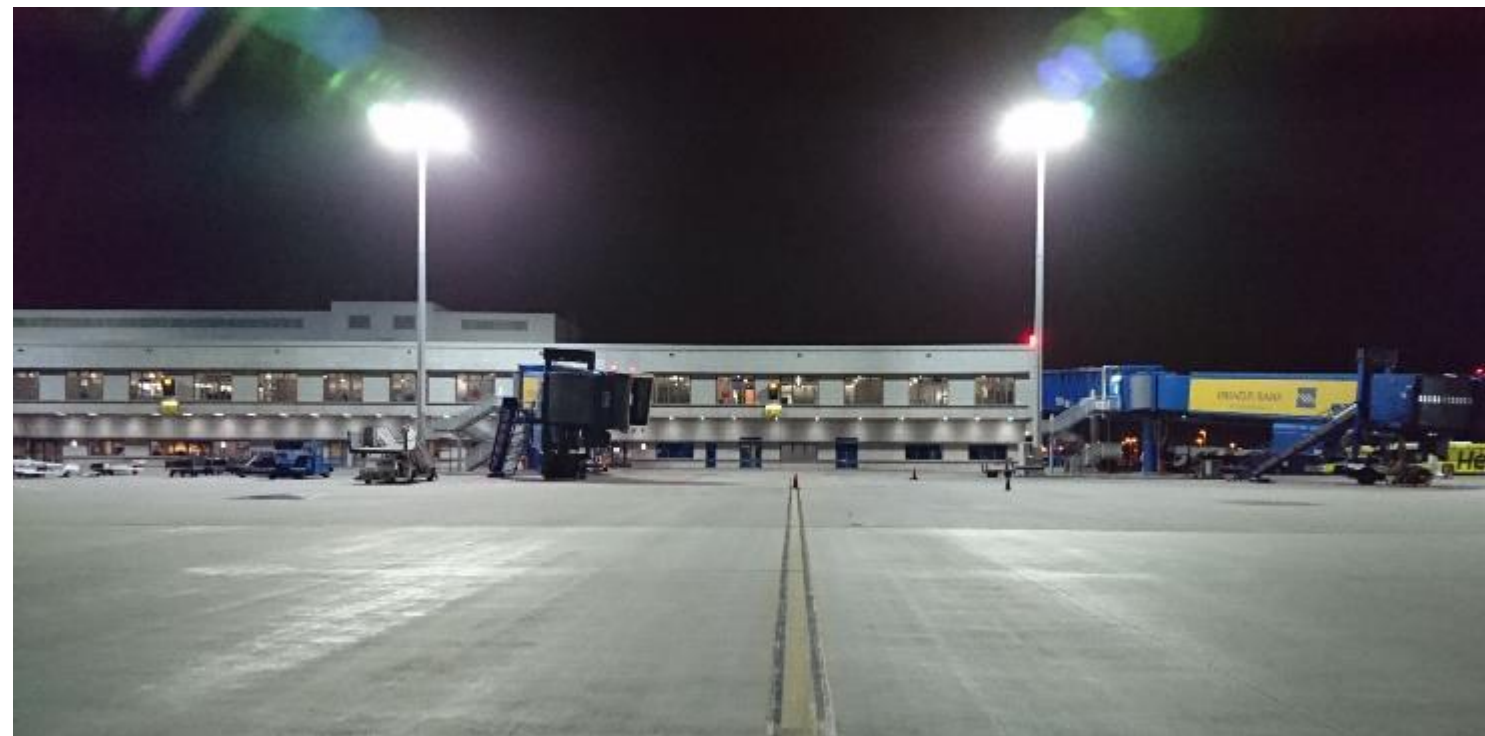
Proposal for energy saving and lighting management with photometry and overall pre-design for the commercial port of Piraeus, (Cosco).


**Port Authority of Euboea island, Euboea**

Lighting study of individual spaces



# Athens International Airport (AIA) | Apron Lighting



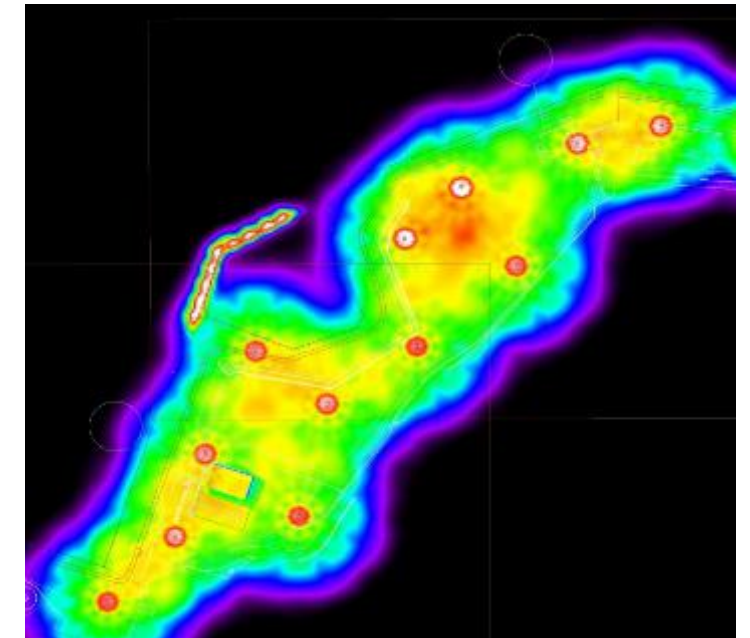
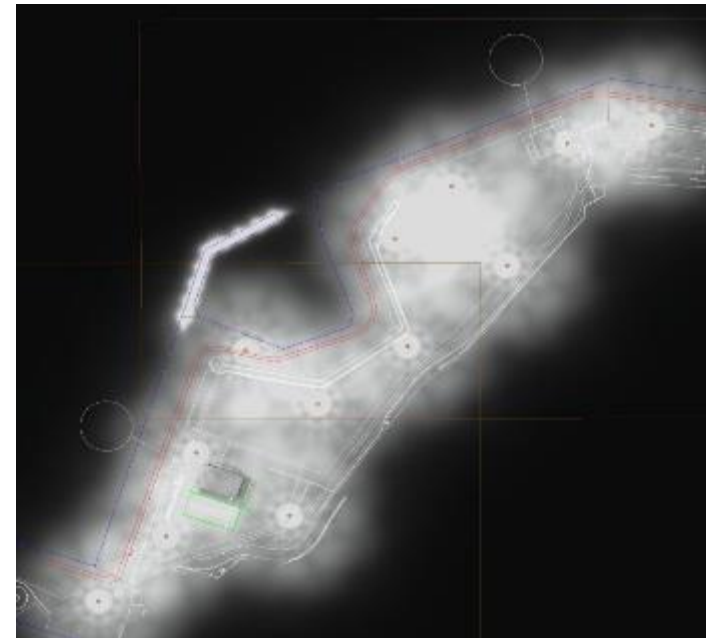
In cooperation with :  Redex

NEA  
POLIS



# Port of Piraeus

## Commercial Passenger & Shipbuilding Areas



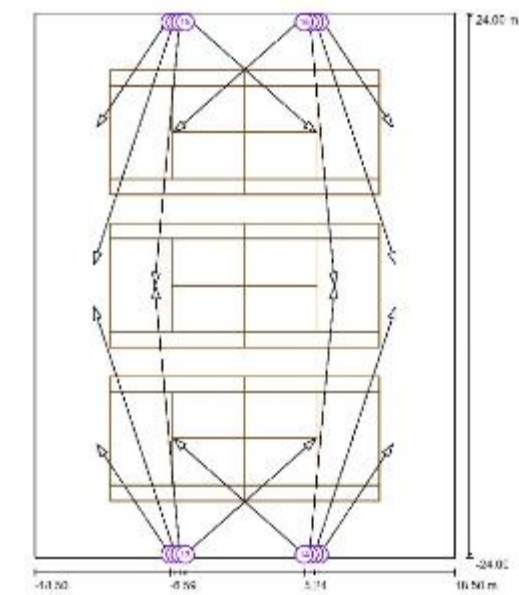
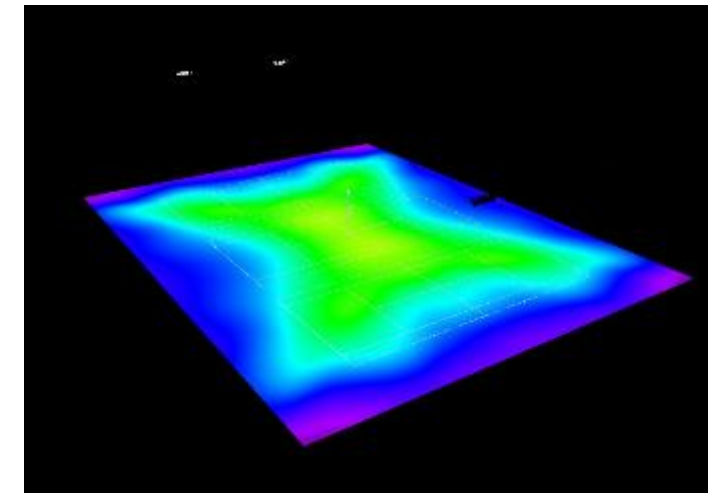
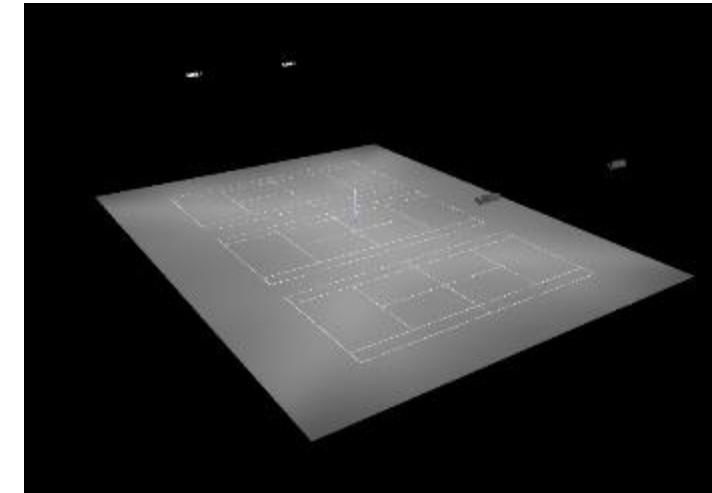
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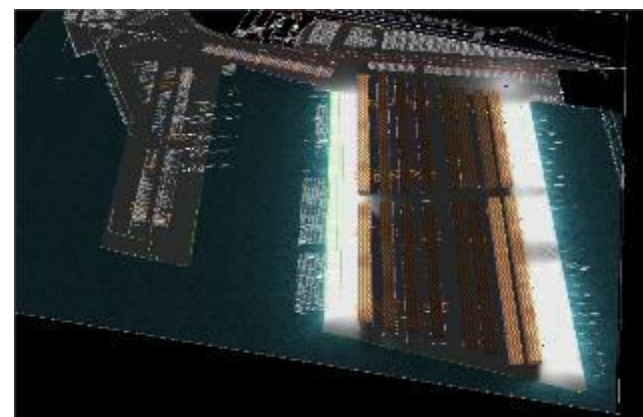
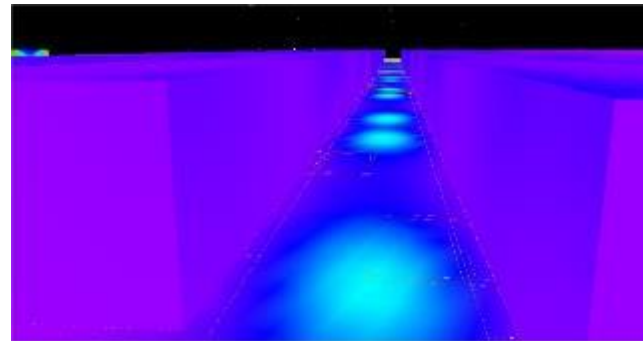
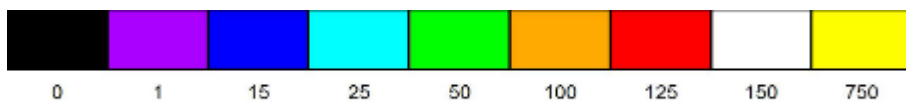
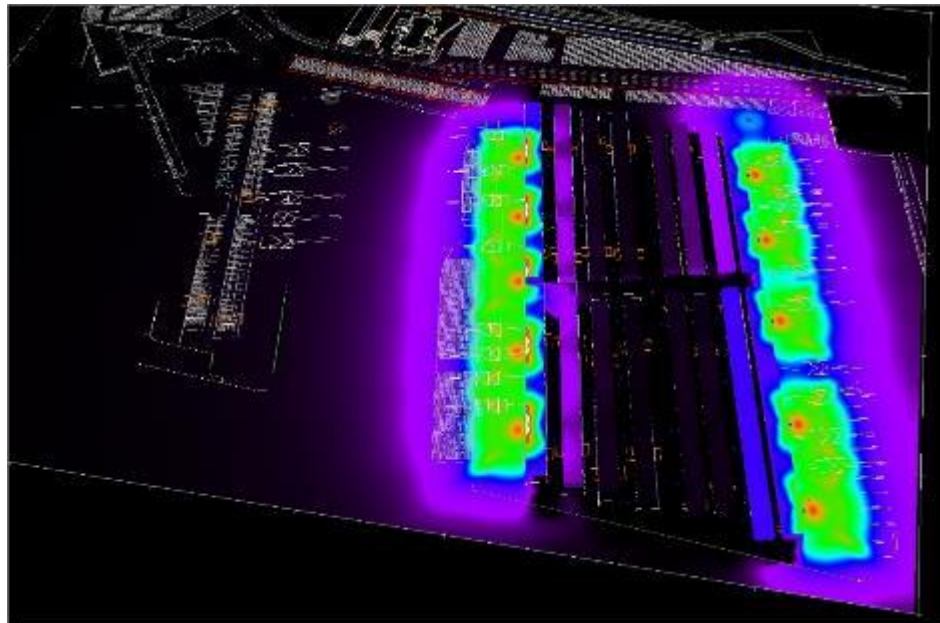


# Sports Facilities Lighting





# Piraeus Container Terminal



## 5.3 Lighting requirements for areas, tasks and activities

Table 5.1 — General circulation areas at outdoor work places

Ref. no.	Type of area, task or activity	$E_m$ lx	$U_o$ -	$GR_L$ -	$R_o$ -	Remarks
5.1.1	Walkways exclusively for pedestrians	5	0,25	50	20	
5.1.2	Traffic areas for slowly moving vehicles (max. 10 km/h), e.g. bicycles, trucks and excavators	10	0,40	50	20	
5.1.3	Regular vehicle traffic (max. 40 km/h)	20	0,40	45	20	At shipyards and in docks, $GR_L$ may be 50
5.1.4	Pedestrian passages, vehicle turning, loading and unloading points	50	0,40	50	20	

NOTE For routes, as there are no international standards, consult the appropriate road lighting recommendations.

Table 5.4 — Canals, locks and harbours

Ref. no.	Type of area, task or activity	$E_m$ lx	$U_o$ -	$GR_L$ -	$R_o$ -	Remarks
5.4.1	Waiting quays at canals and locks	10	0,25	50	20	
5.4.2	Gangways and passages exclusively for pedestrians	10	0,25	50	20	
5.4.3	Lock control and ballasting areas	20	0,25	55	20	
5.4.4	Cargo handling, loading and unloading	30	0,25	55	20	For reading labels: $E_m = 50$ lx
5.4.5	Passenger areas in passenger harbours	50	0,40	50	20	
5.4.6	Coupling of hoses, pipes and ropes	50	0,40	50	20	
5.4.7	Dangerous part of walkways and driveways	50	0,40	45	20	

Table 5.14 — Shipyards and docks

Ref. no.	Type of area, task or activity	$E_m$ lx	$U_o$ -	$GR_L$ -	$R_o$ -	Remarks
5.14.1	General lighting of shipyard area, storage areas for prefabricated goods.	20	0,25	55	40	
5.14.2	Short term handling of large units	20	0,25	55	20	
5.14.3	Cleaning of ship hull	50	0,25	50	20	
5.14.4	Painting and welding of ship hull	100	0,40	45	60	
5.14.5	Mounting of electrical and mechanical components	200	0,50	45	60	



**Mohamed Bin Hamad Holding, The business park,** Office Building in Doha – Qatar

Lighting study

**E-FOOD Offices,** Athens

Lighting supply

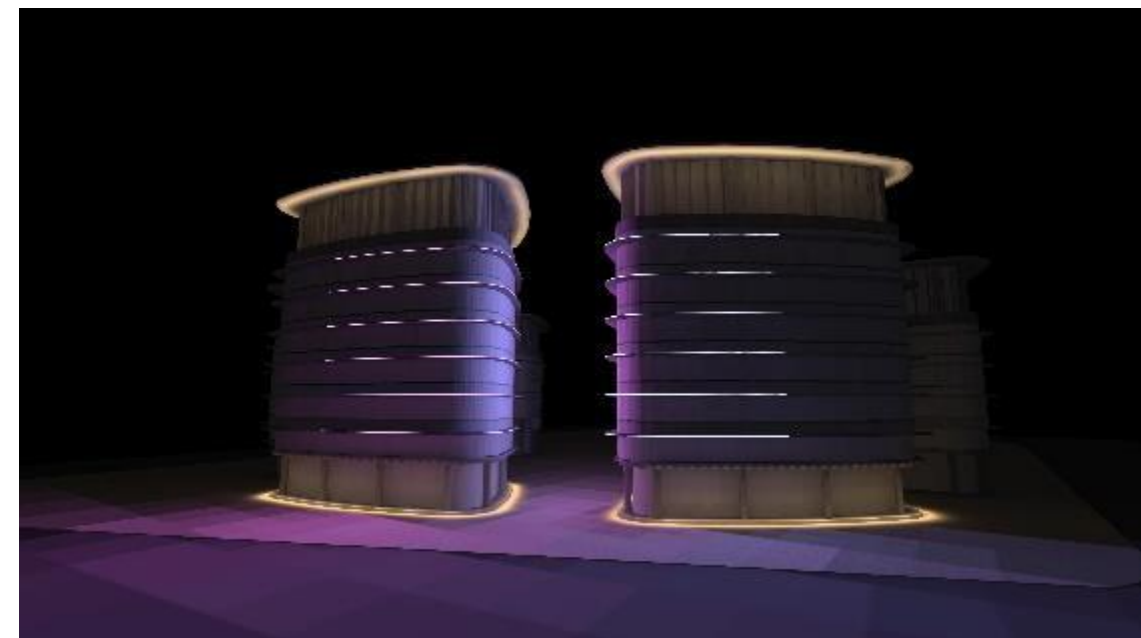
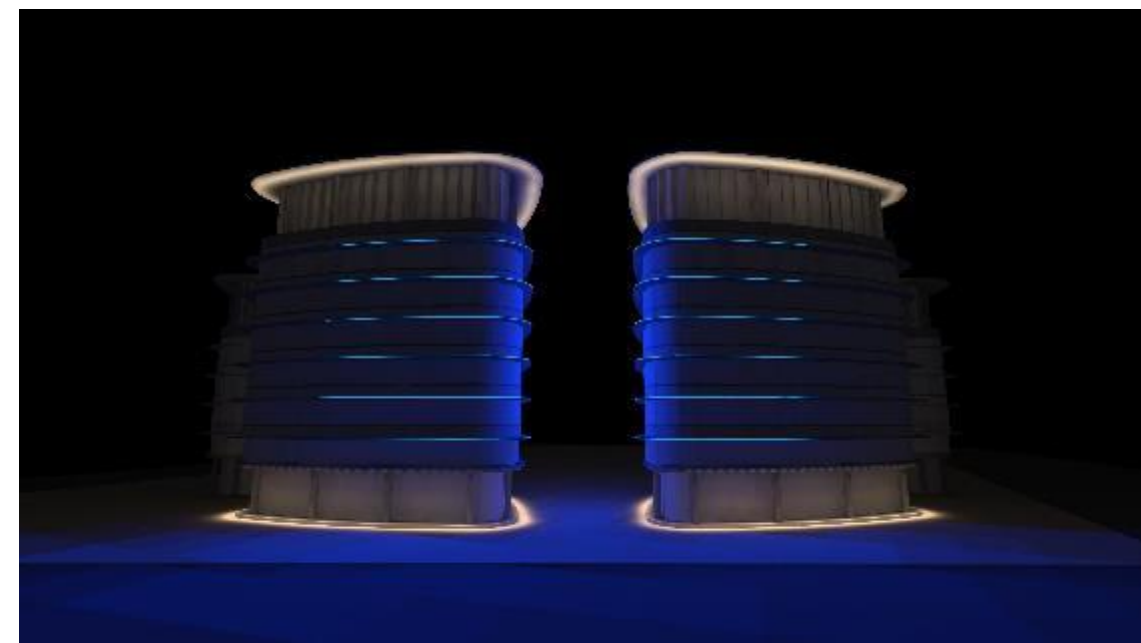
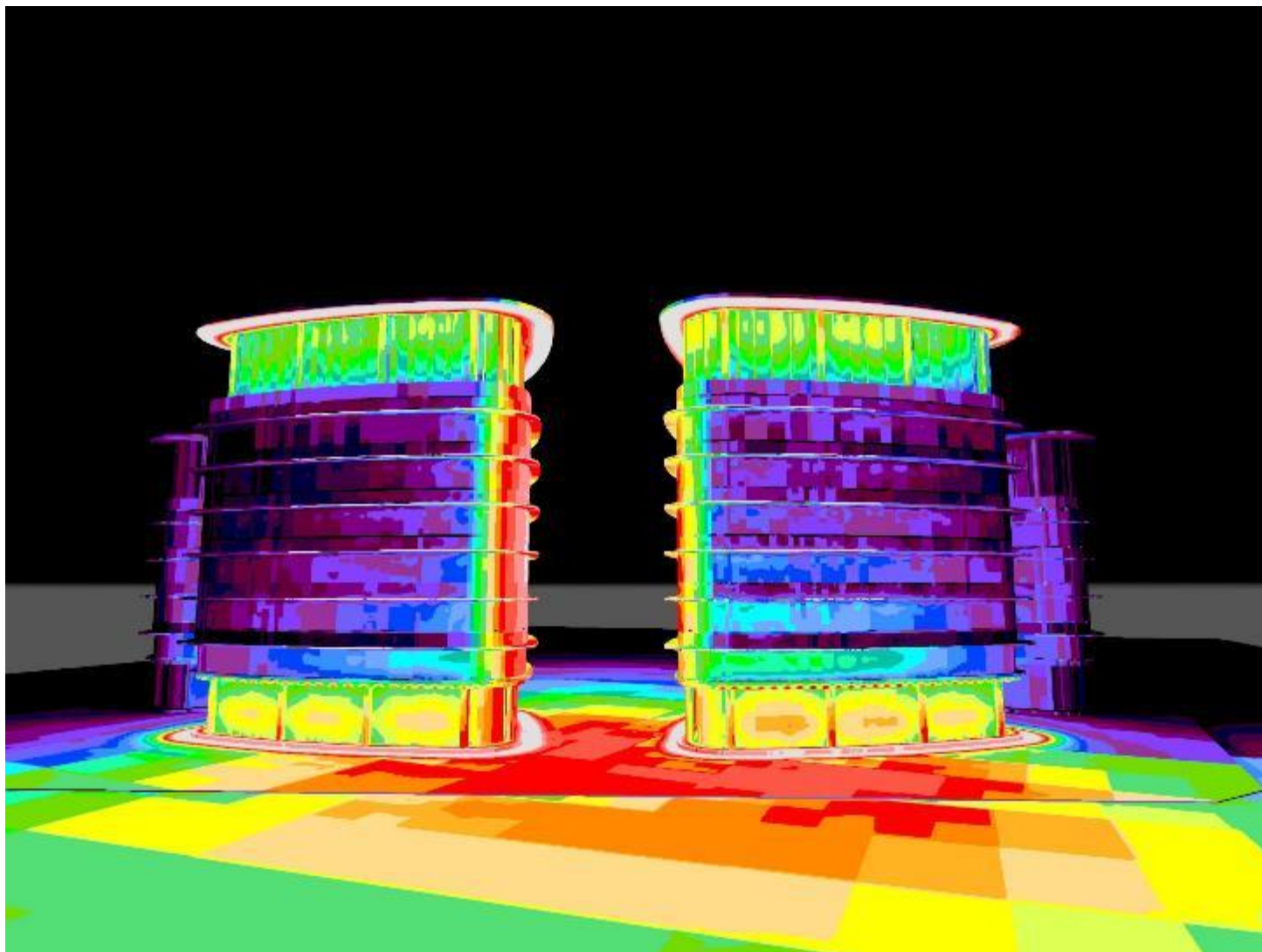
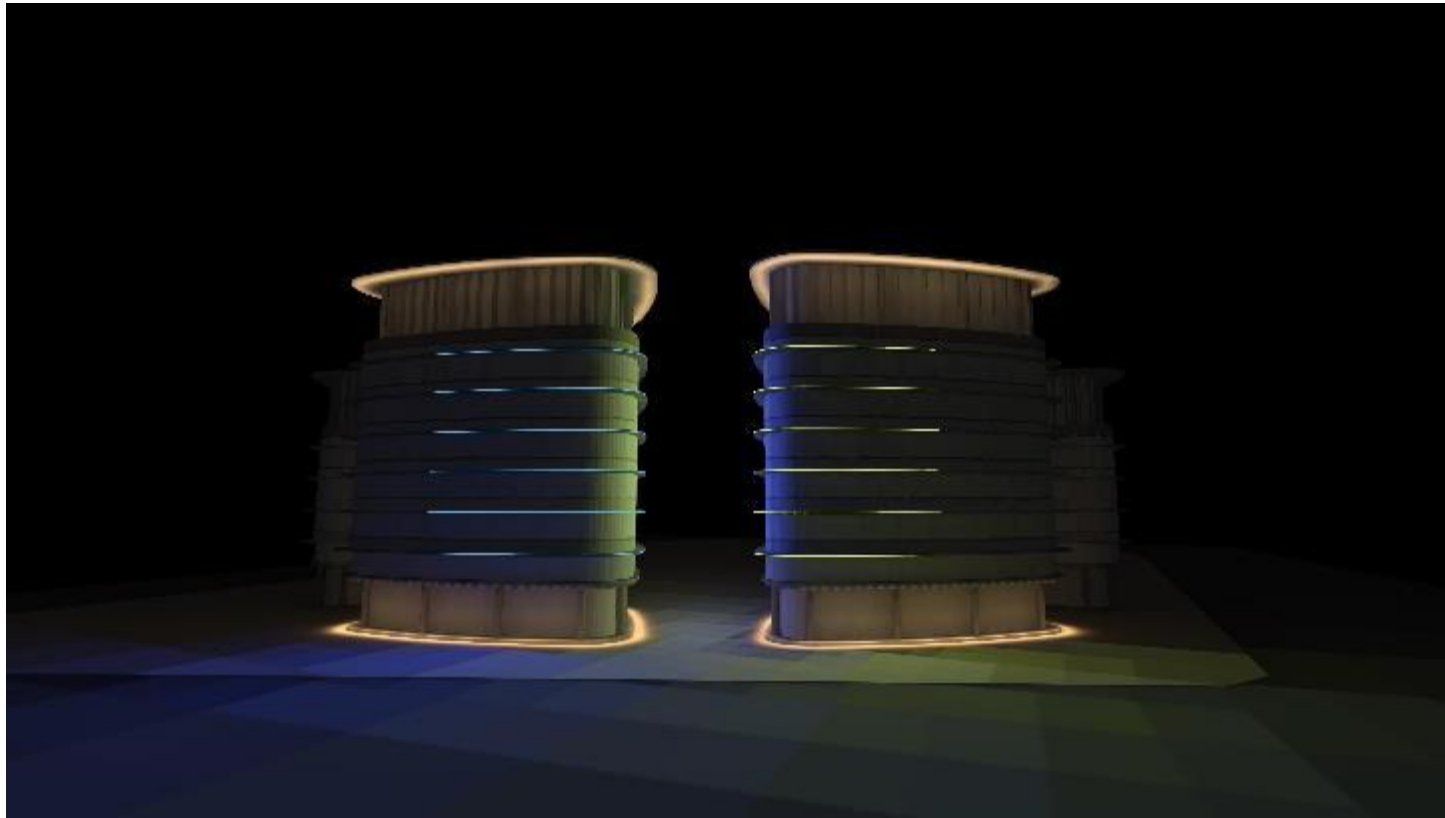
**Schneider Electric Offices,** Athens

Lighting Design



# Mohamed Bin Hamad Holding, The business park, Qatar

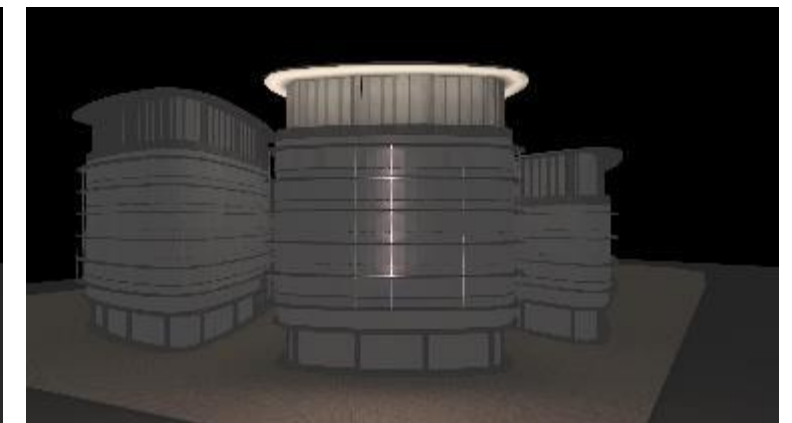
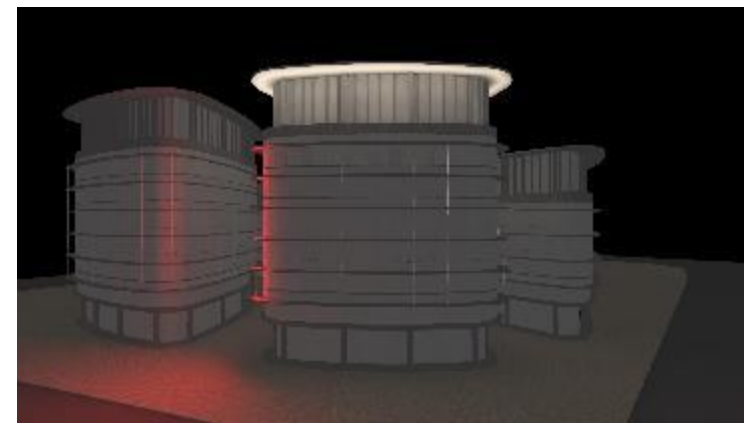
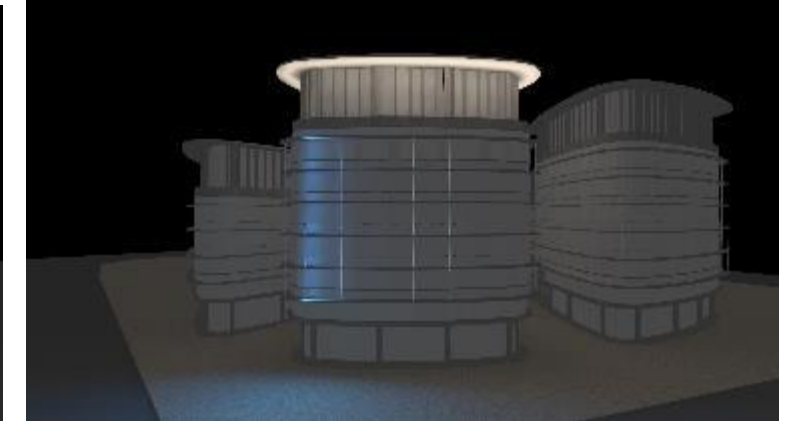
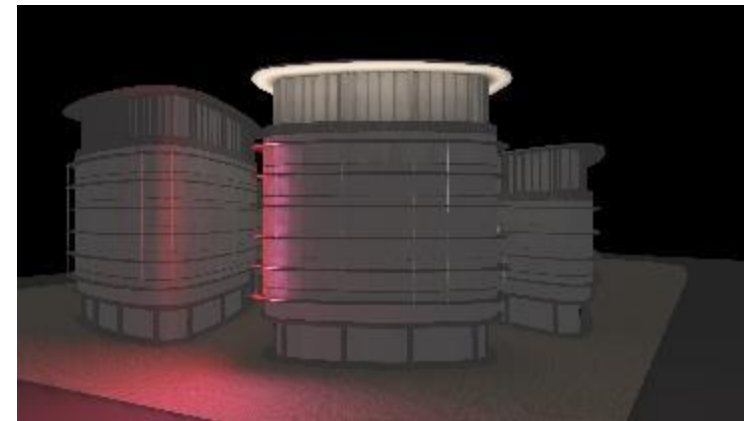
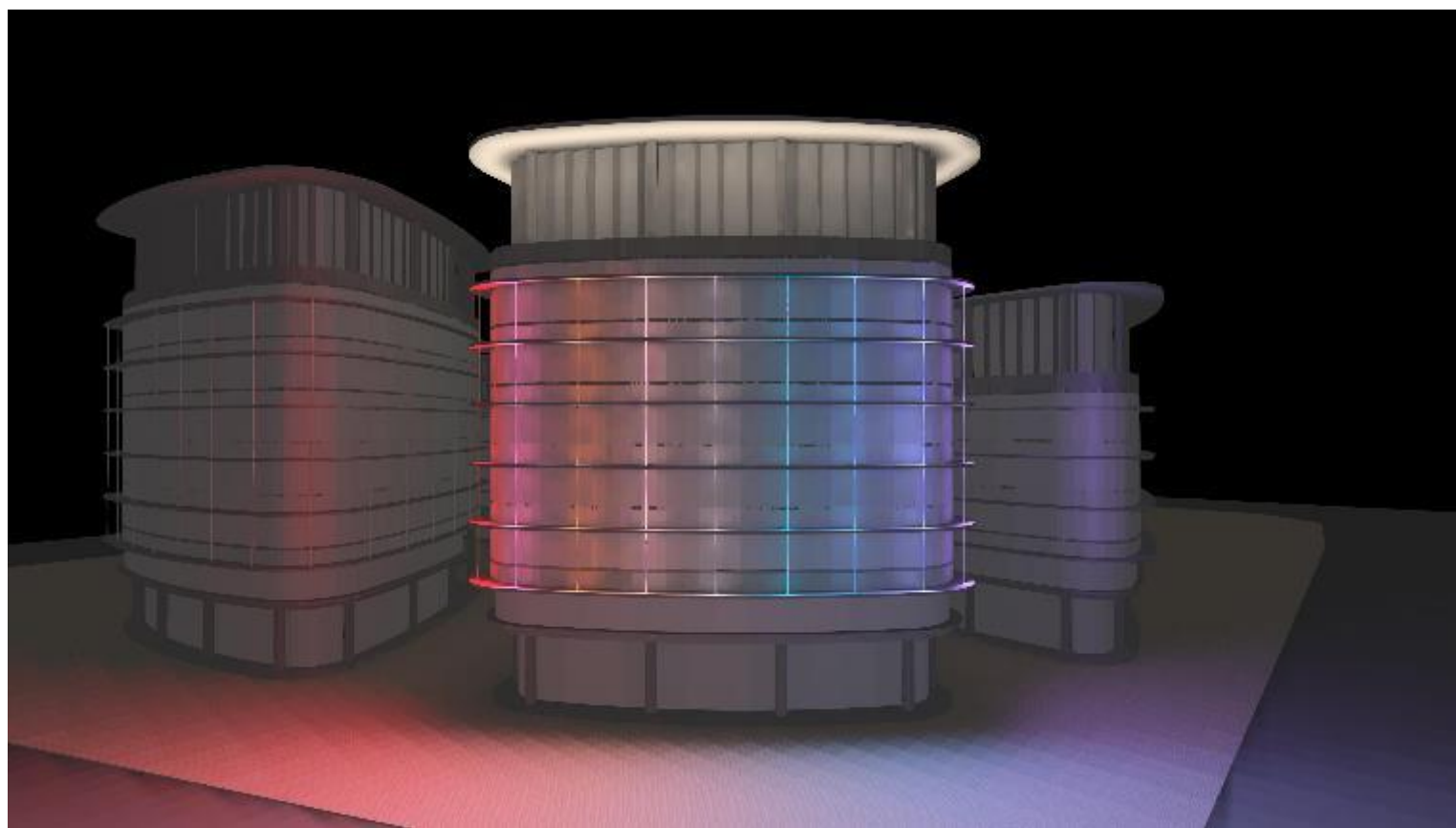
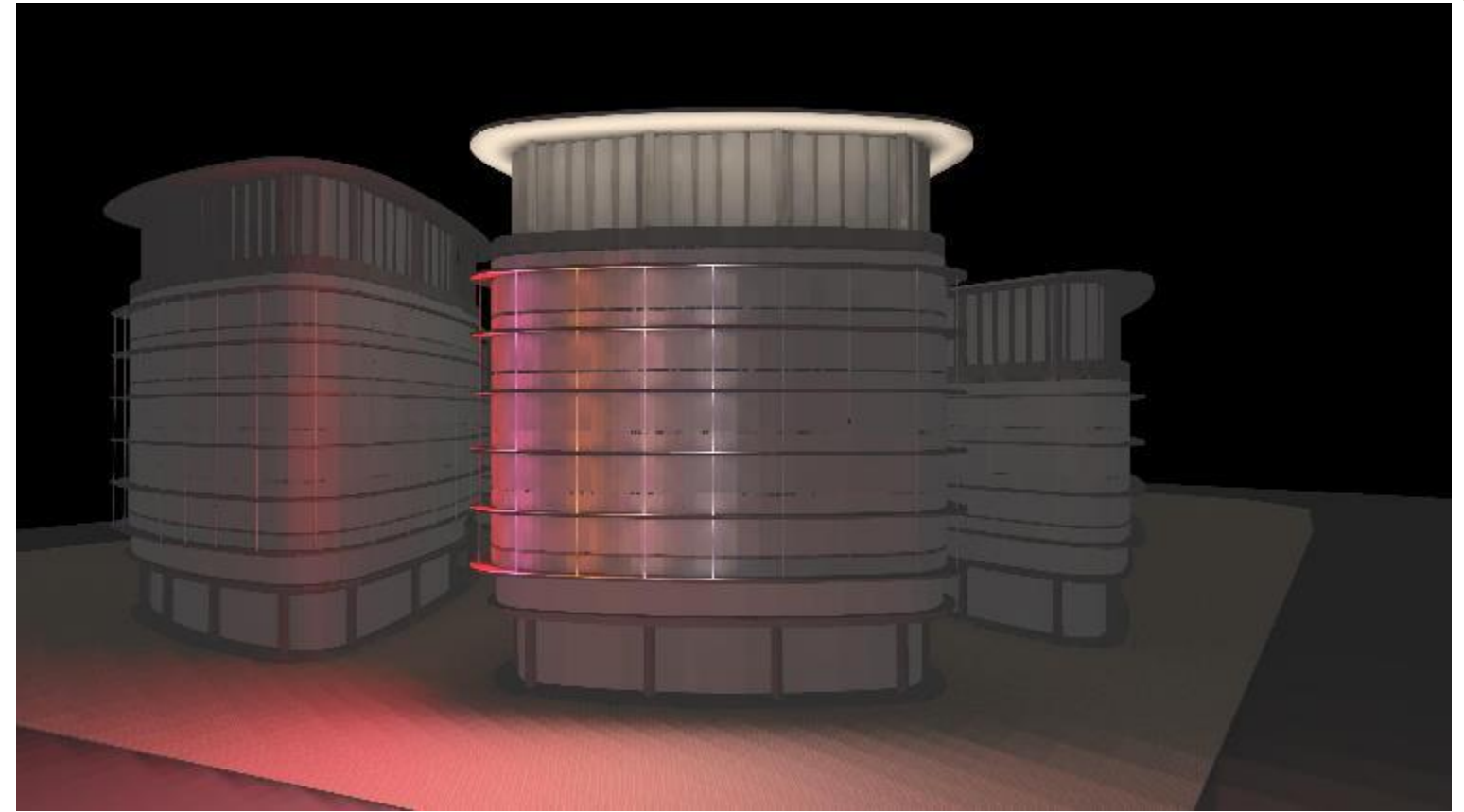
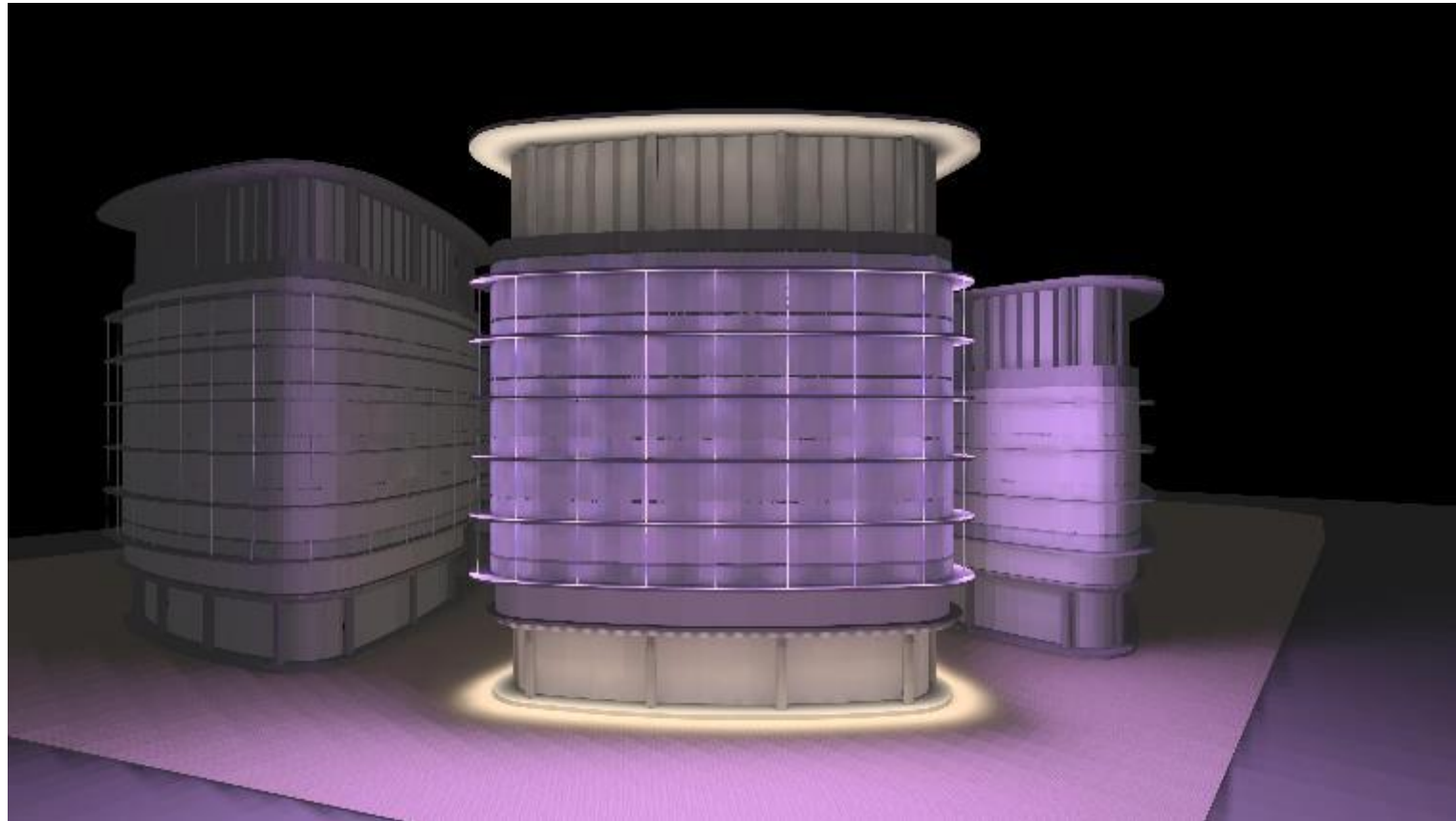
## Photometric Calculations & Renders





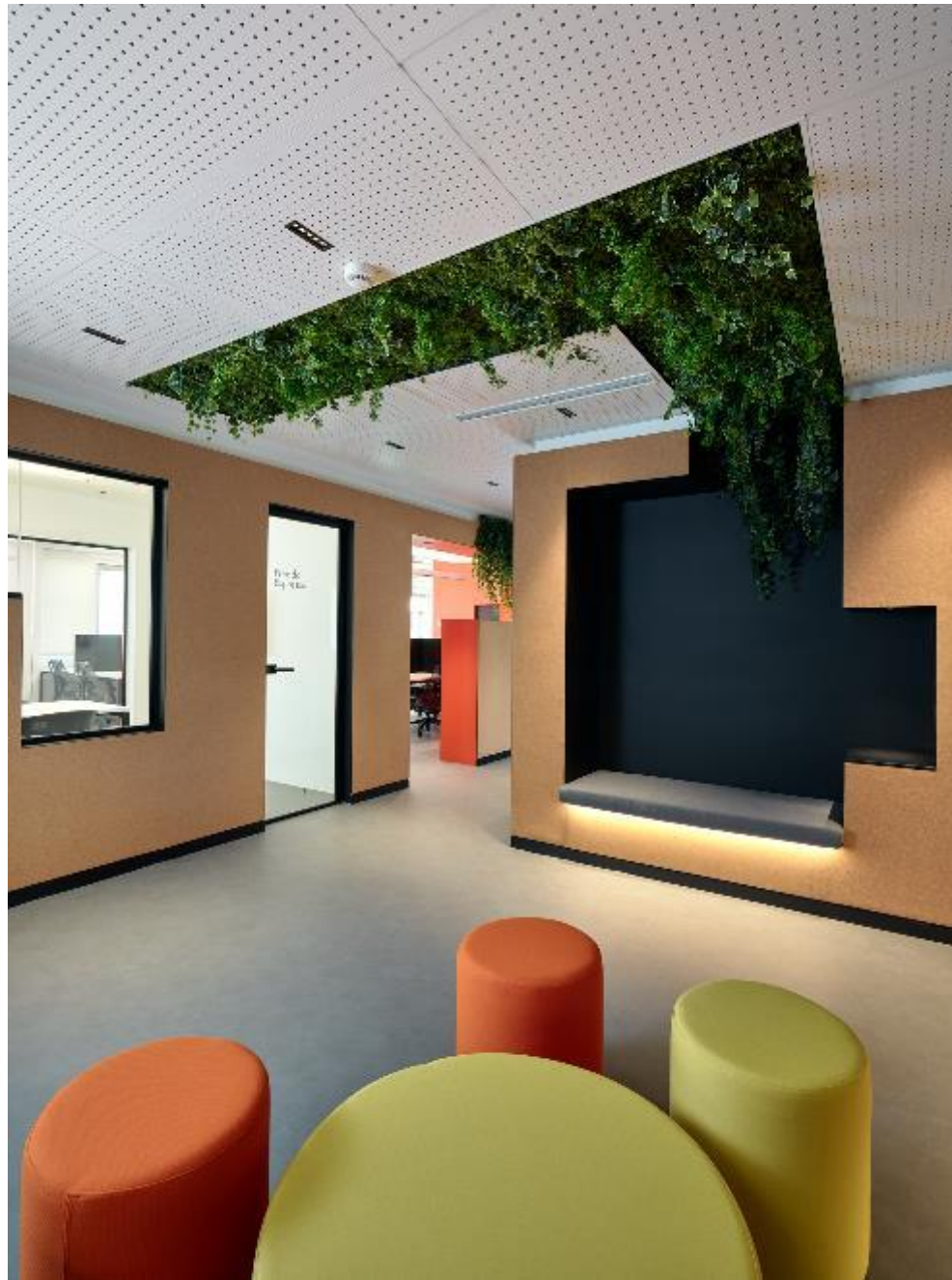
# Mohamed Bin Hamad Holding, The business park, Qatar

## Photometric Calculations & Renders





# E-FOOD Offices





# Schneider Electric Offices





## Master Lighting Plan

- Municipality of Athens
- Municipality of Zakynthos
- Municipality of Nea Ionia
- Municipality of Aliartos
- Municipality of Leivadia (city)
- Municipality of Ilioupoli
- Municipality of Tripoli (city)
- Municipality of Malevizios in Crete

## 1st Japanese Garden in Athens

### External Garden of the National Archaeological Museum

**Municipality of Athens-** 2 Dog Parks

**Municipality of Athens-** Athens Historical Triangle Commercial Center

**Municipality of Filothei - Psychiko** – Mapping and recording of lighting fixtures of the municipality

**Municipality of Chalandri** – Upgrade of lighting fixtures of commercial road

**Municipality of Peiraeus** – Coastal Front Renovation Lighting Study

**Municipality of Ilioupoli-** ‘Halikaki’ area renovation lighting study

**Municipality of Peiraeus , Pigadas Square** – Lighting study for urban bioclimatic renovation

**Municipality of Agios Dimitrios, Ag. Dimitrios Square** – Lighting study for urban bioclimatic renovation

**Municipality of Agios Dimitrios** – Lighting study of streets in ‘Mesonisiou’ area & Mall

**Municipality of Sifnos** – Lighting study of outdoor parking spaces & children’s playgrounds in ‘Apollonia’ and ‘Artemonas’

**Municipality of Siteias** – Lighting study of square in Zakri

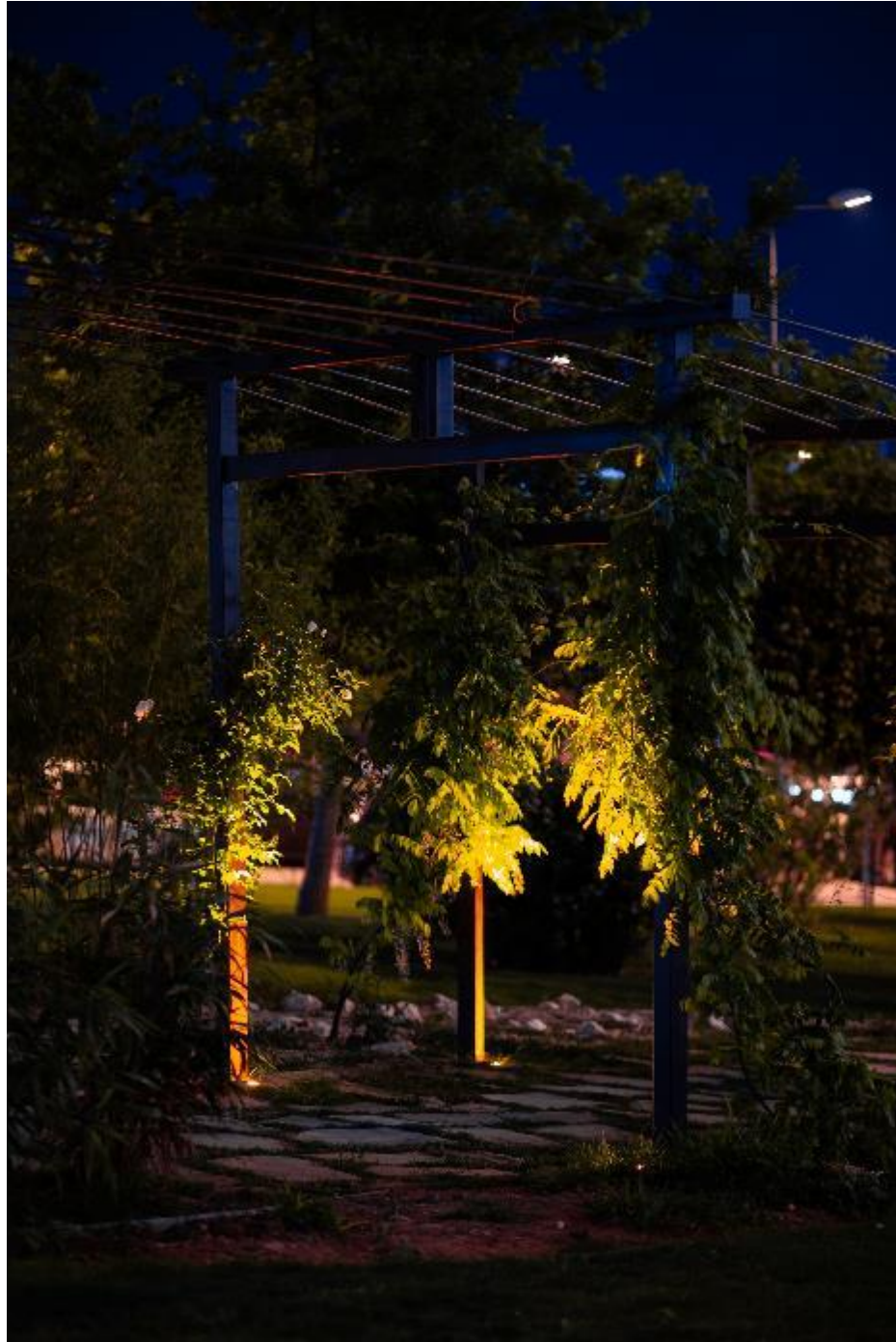
**Municipality of Xersonisos, Crete** – Upgrading Urban Lighting (Project Management)

**Municipality of Leivadia, Erkina** – Lighting Study of riverside



# 1<sup>st</sup> Japanese Garden in Athens

Pagkrati, Athens





# External Garden of the National Archaeological Museum Athens





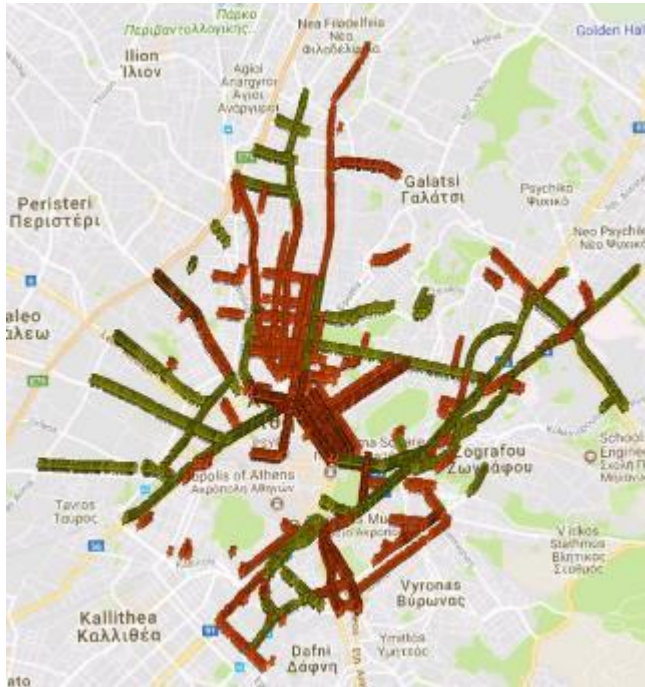
# Erkina Riverside

Leivadia

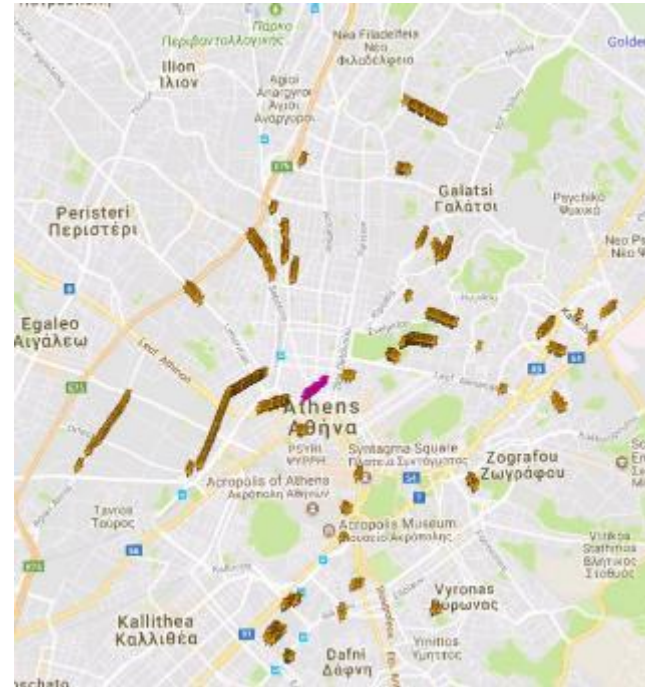




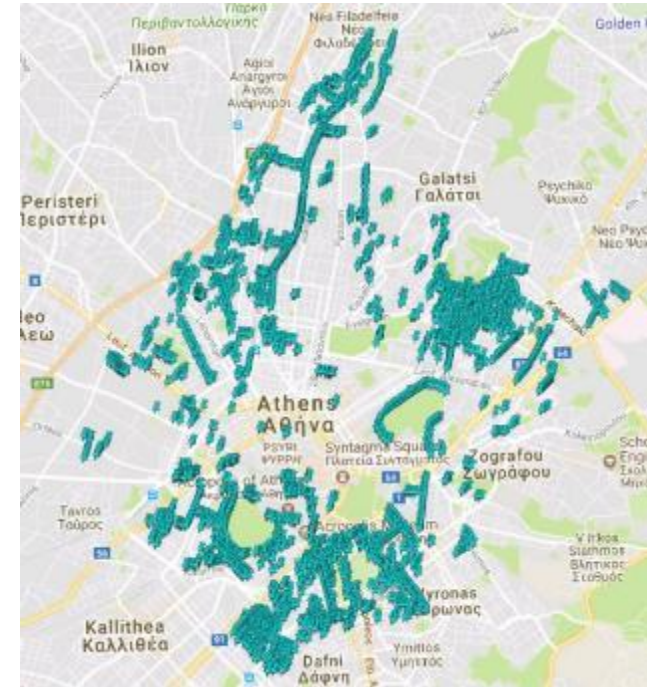
Examples of mapped and recorded lighting equipment by road type:



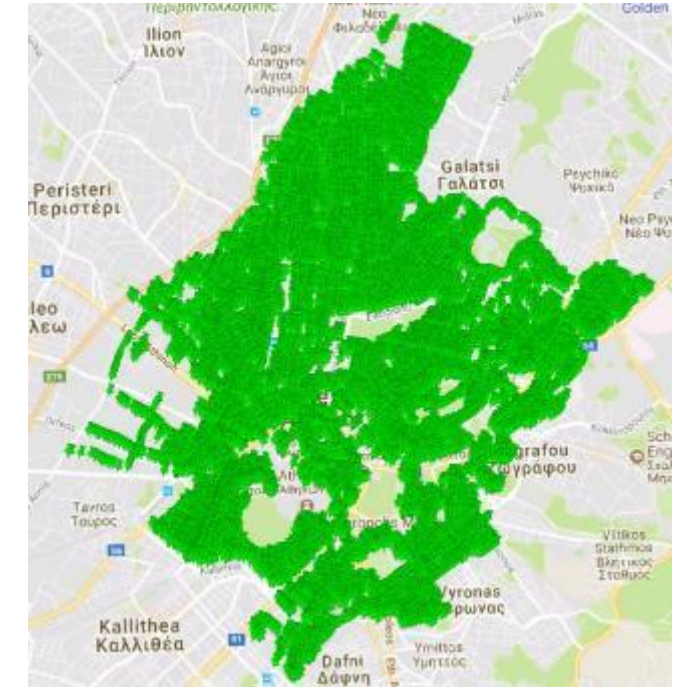
Central roads



Secondary roads



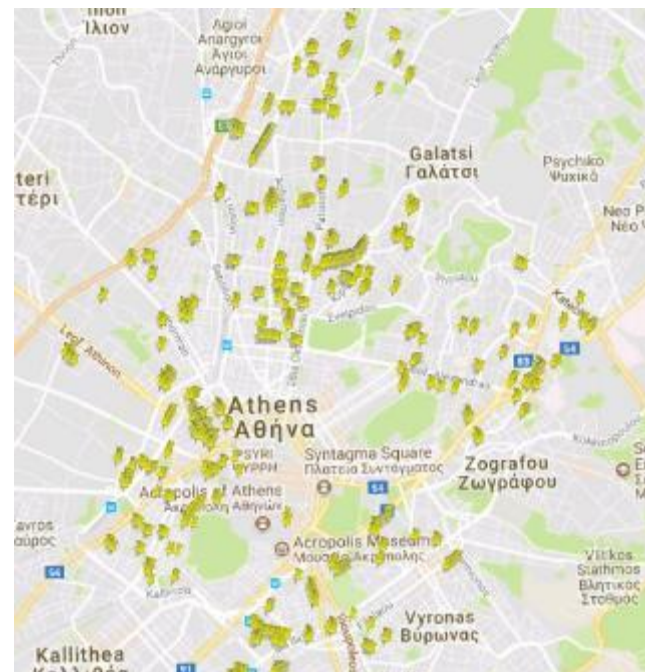
Main roads



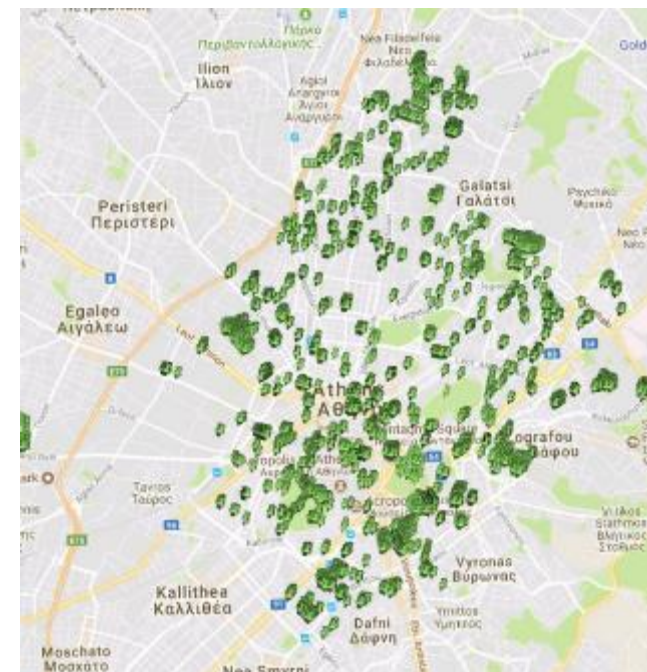
Residential pole lighting



Main sidewalks



Other sidewalks



Squares



# Master Lighting Plan

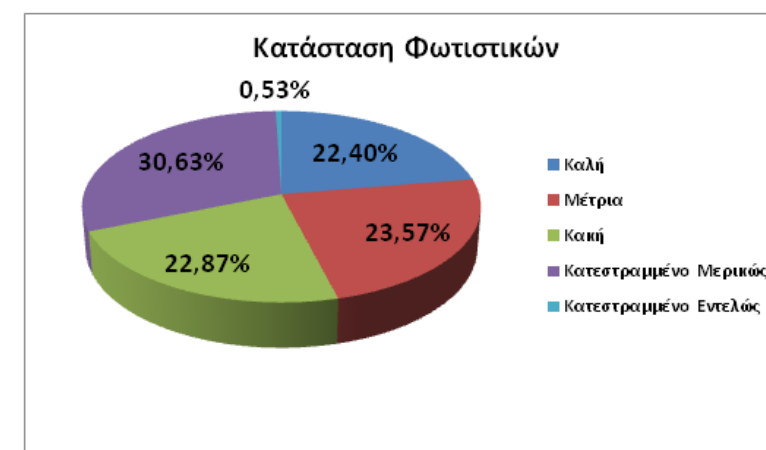
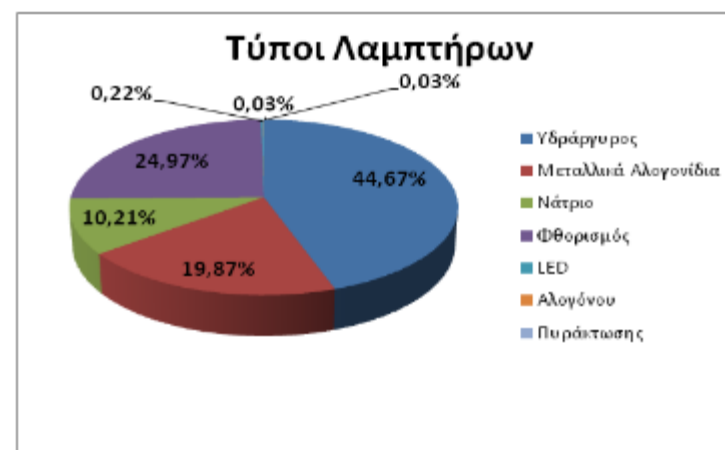
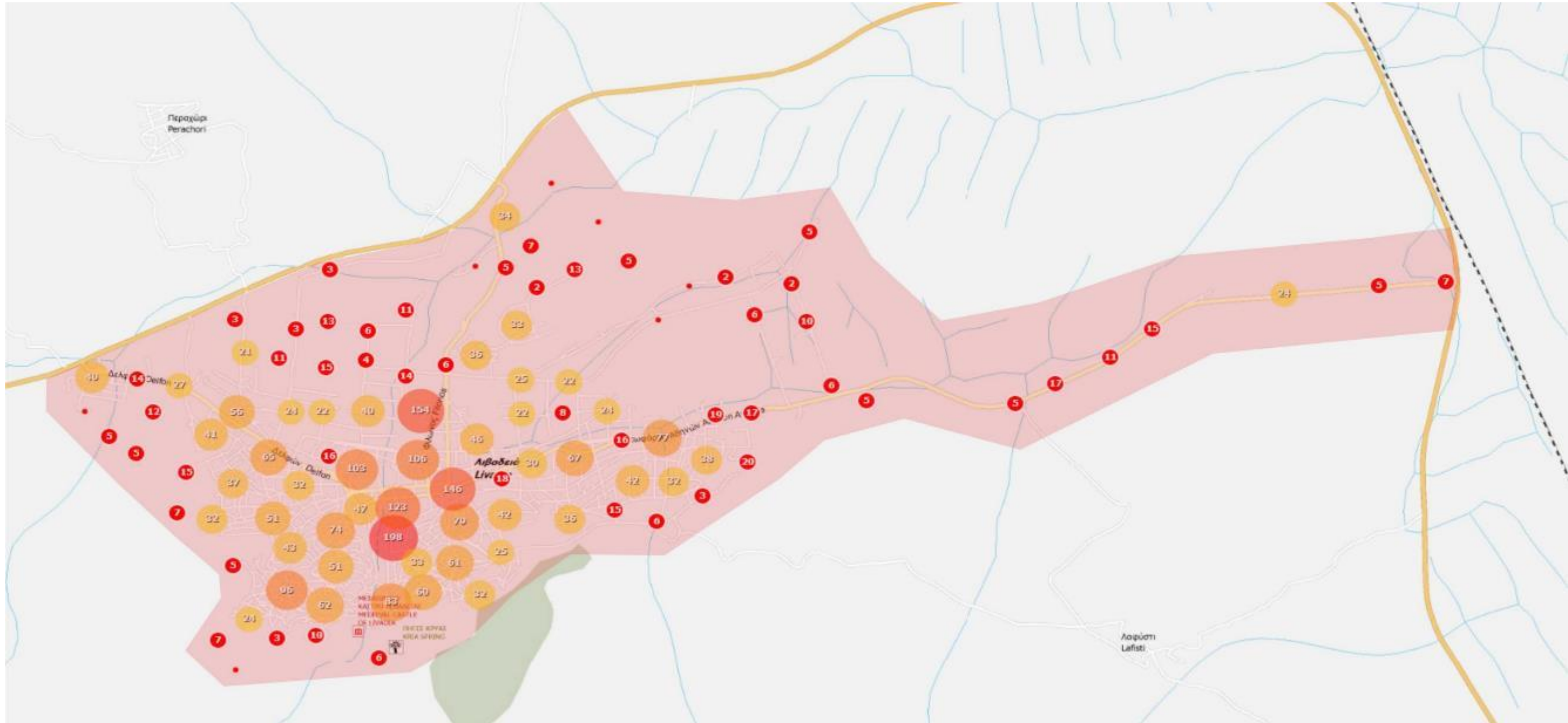
The **MASTERlightingPlan** is a carefully designed service, entirely developed by the NeaPolis team, aiming at **Upgrading Urban Lighting** on many levels. It includes a set of studies and proposals that lead to a complete lighting study at a Municipal level, with the ultimate goal of saving the greatest amount of energy possible together with other cost parameters. The studies are always in correspondence to European lighting regulations.

This is basically a **practical decision-making guide** available to the Public Authority in regards to public lighting. It is based on a general design that develops into the lighting proposals for each neighborhood of the municipality, taking into account four basic parameter: the **lighting quality**, the **aesthetic intervention**, **safety** and above all, **energy** and **resource saving**.





# Master Lighting Plan





## Methodology

**Step 1°** : Gathering and recording useful information of the total lighting equipment in the demarcated area via a digital portable system.

**Step 2°** : Evaluating the current state, drawing conclusions, recording observations and setting goals.

**Step 3°** : Developing photometries for indicative road categories to merge current state data with the set goals.

**Step 4°** : Design proposal for upgrading and replacing the existing lighting installations, as well as integrating 'smart' management systems for the total equipment so as to maximize the benefits.

**Step 5°** : Making financial calculations based on a budget for annual energy savings in money as well as the annual reduction of emissions.

**Step 6°** : Developing a study and file for funding through subsidized or non-funded projects.



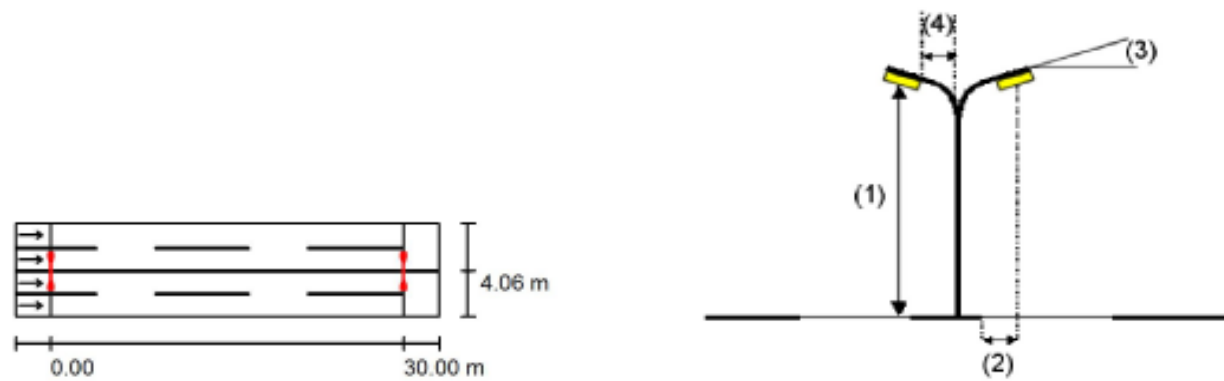
# Master Lighting Plan

## Street Profile

Roadway 2 (Width: 4.000 m, Number of lanes: 2, tarmac: R3, q0: 0.070)  
 Median 1 (Width: 0.100 m, Height: 0.000 m)  
 Roadway 1 (Width: 4.000 m, Number of lanes: 2, tarmac: R3, q0: 0.070)

Light loss factor: 0.80

## Luminaire Arrangements

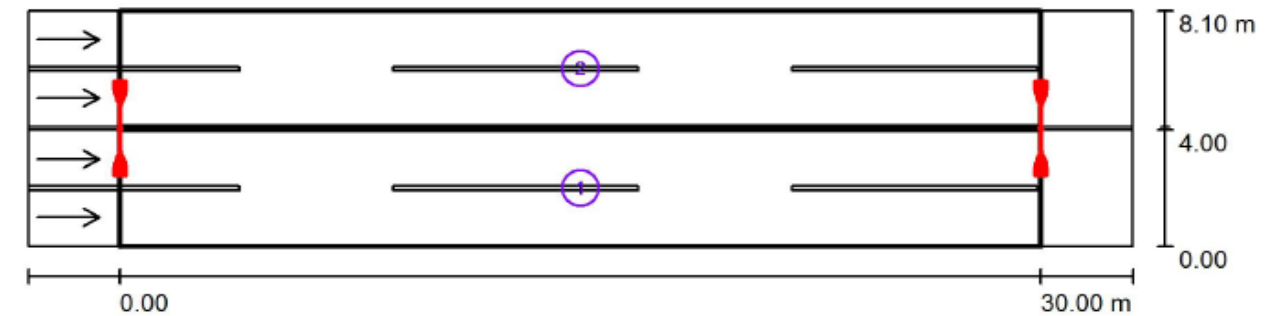
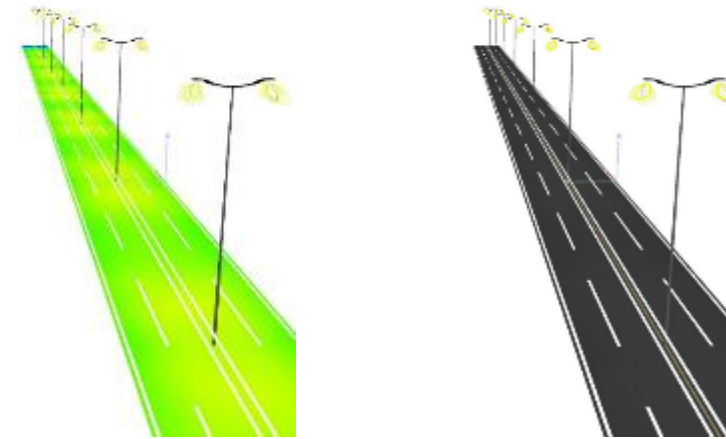


Luminaire:	IGUZZINI 6154_6161_BH36 Wow 54,4W	
Luminous flux (Luminaire):	5700 lm	Maximum luminous intensities
Luminous flux (Lamps):	5700 lm	at 70°: 490 cd/klm
Luminaire Wattage:	54.4 W	at 80°: 97 cd/klm
Arrangement:	on Median	at 90°: 0.00 cd/klm
Pole Distance:	30.000 m	Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.
Mounting Height (1):	12.000 m	No luminous intensities above 90°.
Height:	12.000 m	Arrangement complies with luminous intensity class G4.
Overhang (2):	0.442 m	Arrangement complies with glare index class D.6.
Boom Angle (3):	0.0 °	
Boom Length (4):	-0.008 m	

Selected Lighting Class: ME3c

This illumination class is based on the following traffic situation:

Parameter	Value
Typical speed of the main user	Medium (Between 30 and 60 km/h)
Main user	Motorised traffic, Slowly driving vehicles
Other permitted users	Bicyclists, Pedestrians
Excluded users	/
Illuminance conditions	B1
Link to other streets	Simple Junctions
Interchange density [number per km]	>=3
Conflict Zone	Yes
Constructions measures for traffic calming	Yes
Traffic flow of vehicles [number per day]	<7000
Degree of Navigational Difficulty	Normal
Main Weather Type	Dry



Light loss factor: 0.80

Scale 1:258

## Calculation Field List

- Valuation Field Roadway 1  
 Length: 30.000 m, Width: 4.000 m  
 Grid: 10 x 6 Points  
 Accompanying Street Elements: Roadway 1.  
 tarmac: R3, q0: 0.070  
 Selected Lighting Class: ME3c

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	1.06	0.68	0.83	5	0.93
Required values according to class:	≥ 1.00	≥ 0.40	≥ 0.50	≤ 15	≥ 0.50
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓

- Valuation Field Roadway 2  
 Length: 30.000 m, Width: 4.000 m  
 Grid: 10 x 6 Points  
 Accompanying Street Elements: Roadway 2.  
 tarmac: R3, q0: 0.070  
 Selected Lighting Class: ME3c

(All lighting performance requirements are met.)

	$L_{av}$ [cd/m <sup>2</sup> ]	U0	UI	TI [%]	SR
Calculated values:	1.06	0.68	0.83	5	0.93
Required values according to class:	≥ 1.00	≥ 0.40	≥ 0.50	≤ 15	≥ 0.50
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Contact

16-20 Zinopoulou Str.,  
11476, Athens, Greece

+30 2108137084

info@neapolist.gr

**neapolist.gr**







NEA  
POLIS