



Pics: Omri Amsalem

D-led d-wash 36 LED wall washers illuminate the energy plant's PWR stack area, while IBV Batten luminaires, with turnable oval protective tubes and mirror reflectors provide facility lighting.

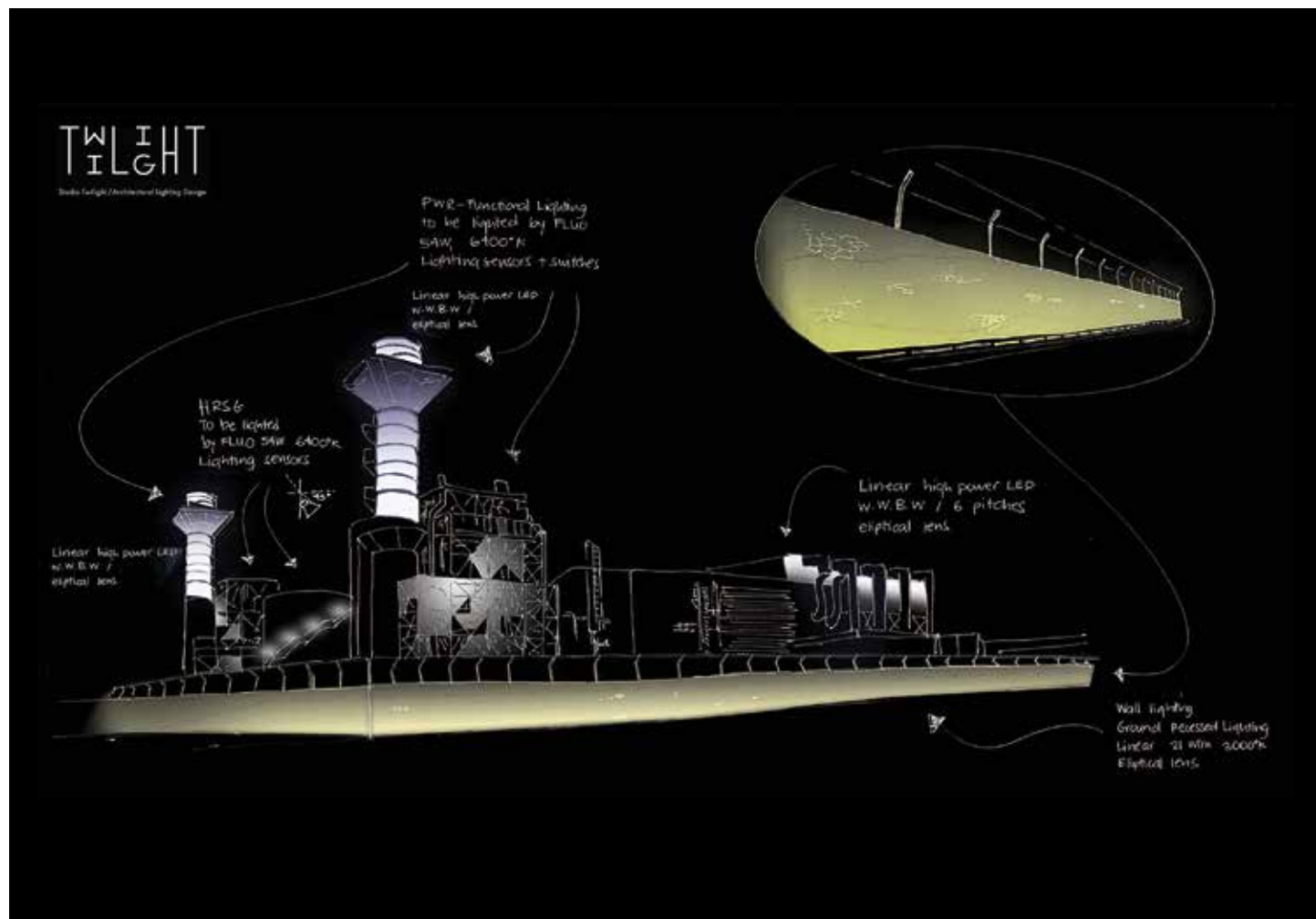
INDUSTRIAL IDENTITY

The first of its kind in Israel to employ the services of an architectural lighting design studio, Dalia Energy plant enlisted the help of Studio Twilight to develop a scheme that would create a landmark with minimum damage to nature and maximum visibility from surrounding areas.

Constructed by French multinational Alstom at an overall cost of NIS3.5 billion, Dalia Energy is Israel's first independent power station. The station runs on natural gas and generates 900MW of electricity through two turbines, each producing 450MW. It uses integrated recycling technology, which enables energy efficiency of 58% - the highest available in Israel's power market. Unlike other power stations, the Dalia Energy management sees the station as integral to the landscape and environment in which it was constructed. Sustainability, environmental quality, and aesthetics were therefore matters in which major resources were invested and, directly following that approach, in the sphere of lighting too. In 2013, Ailon Gavish, founder and CEO of architectural lighting design Studio

Twilight, who was teaching at the time in several academic design schools, organised the first Guerrilla Lighting in Israel - a collaboration between the studio, the students and Tel Aviv city hall. One of the locations was right next to the residence of Eitan Meir - CEO of the Dalia power plant. After he saw the light show in action, he contacted the studio and enlisted its help with lighting the power plant. Twilight has been involved in various and varied projects, from private to hospitality, public and commercial spaces, urban master plans and landscape. "The Dalia power plant is the most technical mega project we have participated in," said Gavish. "It's amazing how an industrial, functional structure in such a technical project is so detailed and

that the lighting concept is being treated with serious consideration like you would expect in a hotel or urban master plan project. In fact, it's the first power plant in Israel that has employed the services of an architectural lighting design studio. We feel privileged to be part of this project for many reasons but mainly because we can actually envision how it would have looked and felt without lighting design as an integral part of the plan like in all other power plants in Israel where lighting design wasn't a planned part of the project, light pollution abounds with no regard to the surroundings." Working in close collaboration with architects Carlos Prus, Avner Drori and Uri Shitrit, the project's planning began in the preliminary stages, and engaged with every



Courtesy of Studio Twilight, design sketches show how light highlights the different areas of the architecture. Specifically, the contrast between the warmer decorative linear LED perimeter wall lighting and the cooler, more functional illumination of the plant's PWR stuck, Acc and turbine hall areas. These sketches provide an example of how lighting design can be transformed from an idea into reality and, in doing so, creating a building's identity.



Left The PWR stuck area glows at night under the power of D-led d-wash 36 LED wall washers. Top Cannon 480 power projectors from Unilamp provide overall illumination to the turbine hall area Top and Above Two angles of the Acc area show the effectiveness of D-led Resist linear LEDs, providing a cool 6,300-7,000K colour temperature to the industrial structure.

part of the station: safety and security lighting, road lighting, operational lighting in various areas, landscape lighting, office lighting, and general lighting of the entire facility - chimneys, turbines, and other parts of the station. The brief was very clear: create a landmark and monochromatic hue with minimum damage to nature and maximum visibility from specific areas within a radius of 3km. The planning and design choices were derived from management's approach to energy efficiency and respecting the environment, allied with the desire to create branding for the station. With this in mind, Twilight placed a strong

emphasis on the themes of reducing light pollution, energy efficiency and choosing top-quality fixtures. "We don't work in every project with clients who are aware of the environmental aspect, or lighting's role in branding and defining the site; here, though, there was a harmonious combination of those two aspects," said Gavish. "And since the project concerned a power station - an industrial, functional structure where usually only the operational aspect of lighting is considered - this adds to a highly successful result." To enhance energy efficiency and cut light pollution, the facility's lighting is operated

by sensors and switches that turn on only when needed. When choosing fixtures for the project, Twilight took into account precise photometric qualities - full cut-off, tilting fixtures, light sources with high light efficiency, use of LED technology, and specifying fixtures with advanced photometric lenses. "Our lighting concept was informed by several aspects; one was to differentiate the Dalia power station from the station adjacent to it, which produces high levels of light pollution and light sources - sodium lamps - that are not environmentally friendly," continued Gavish. Since Dalia Energy produces electricity



Left The surrounding wall is decorated by a warm glow from LED Linear Kalypso HYDRA HD15 linear LEDs and street and security lighting from Thorn Isaro LED road luminaires. *Below* IBV Batten luminaires provide facility lighting between two PWR stuck areas. *Bottom* An alternative angle shows D-led Resist linear LEDs illuminating the Acc area.



from natural gas, the studio tried to imbue in it the subtle blue colour of burning gas, and used W.W.B.W. LED technology - that produces a high colour temperature as well as uniform wash and fade - lighting that grows weaker as the distance from the light source grows.

In order to create a landmark, the vitality of the lighting was cardinal to both the customer and to Twilight.

“It was important to create a unified language between the power station, the context of the natural environment and light performance,” said Gavish.

Light temperature and intensity were carefully selected according to the distance

from which the studio intended people to view the project, taking into consideration two vital viewing points. One from the nearby forest and the second from the urban area west of the project, both approximately 3km away.

In order to achieve these results, the studio made a large number of mock-ups, where each time it circled the power plant at a different radius. At various remote viewing points Twilight checked that the light performance was consistent with the specifications of the brief, emphasising reduction of light pollution and glare.

As a unique project with a specific brief,





Highlighting the outer wall's stone work, LED Linear's Kalypso HYDRA HD15 linear LEDs add a decorative touch to the industrial location.

Twilight faced many challenges during the process. For example, installing the lighting fixtures for mock-ups and in the final stages of the project, working at extreme heights (30-60-metres), using a combination of several crane lifts and a skilled labour force.

"We think, in architectural lighting design, there is a dimension that is invisible to the eye but definitely felt: the dimension of time. In another time, perhaps another client, possibly other requirements and a different worldview, all would lead us to a completely different design perception of light. If we had to change something in this

project, we would give greater expression to random safety and security lighting as well as operational lighting in various areas, to maximise it and create hidden depths and layers of light that would reveal themselves from different spots around the power plant," concluded Gavish. Twilight has carefully selected and positioned luminaires to impressive effect. In doing so, it has provided an industrial project with a strong identity defined by light that is both sensitive to its environment, while remaining true to its function.

www.studiotwilight.com

PROJECT DETAILS

Dalia Energy Plant, Tel Tzafit, Israel

Client: Dalia Energies

Architects: Carlos Prus, Avner Drori and Uri Shitrit

Lighting Design: Studio Twilight

LIGHTING SPECIFIED

D-led Resist linear LEDs

D-led d-wash 36 wall washers

Unilamp Cannon 480 power projectors

Thorn Isaro LED road luminaires

LED Linear Kalypso HYDRA HD15 linear LEDs

IBV Batten luminaires with turnable oval protective tube with mirror reflector