# IKEA BAHRAIN

Bahrain

## Building Type

Big Box Retail
42,620 $m^2$ of Retail space
85,500 $m^2$ BUA including parking

## Project Highlights

- 5,600 KW Cooling Plant
- 52,400 L/S of conditioned fresh air
- Full BMS monitoring and control
- 4,000 gpm @ 12 bar, each fire pump duty
- 7 Nos. 11 KV / .415 KV Transformers
- 40 kVA CEBS
- 20 $m^2$/TR including fresh air load
- 34 $m^2$/TR air conditioning load

## Client Owner

IKEA KSA – Owner
BSBG Dubai - Architects


Mario Associates provided the complete MEP engineering, design services plus post contract services of review of all Contractor submission with top hi-level site supervision.

Four (4 nos) Air cooled water chiller provided the total cooling requirements.

A variable primary chilled water system provides the pumping power / energy efficiency by modulating chilled water flow to match demand.

Ventilation via dedicated fresh air handling units using the general extract to pre-cool the incoming fresh air using a total enthalpy rotary heat wheel.

A run-around heat pipe provides the 'free' reheat to the conditioned dehumidified air to ensure supply air conditions are per ASHRAE Standard 62.1

Economizer cycle provides 'free' cooling whenever so allowed by outdoor enthalpy conditions.

Cooling demand of 20 $m^2$/TR with and 34 $m^2$/TR without fresh air/ventilation load complies with high IKEA standards for sustainability.

A dedicated Storm water recovery system with treatment and reuse for irrigation is part of the sustainable storm water management complying with Government of Bahrain requirements of no run-off outside plot limits.

A condensate recovery system to, primarily, supply the irrigation requirements.

Full automation in prioritizing water use and minimizing municipal water demand/consumption.

LED lighting and smart / intelligent lighting management and flexible arrangements provide for a power demand/load less than IKEA's target for the G.C.C.