

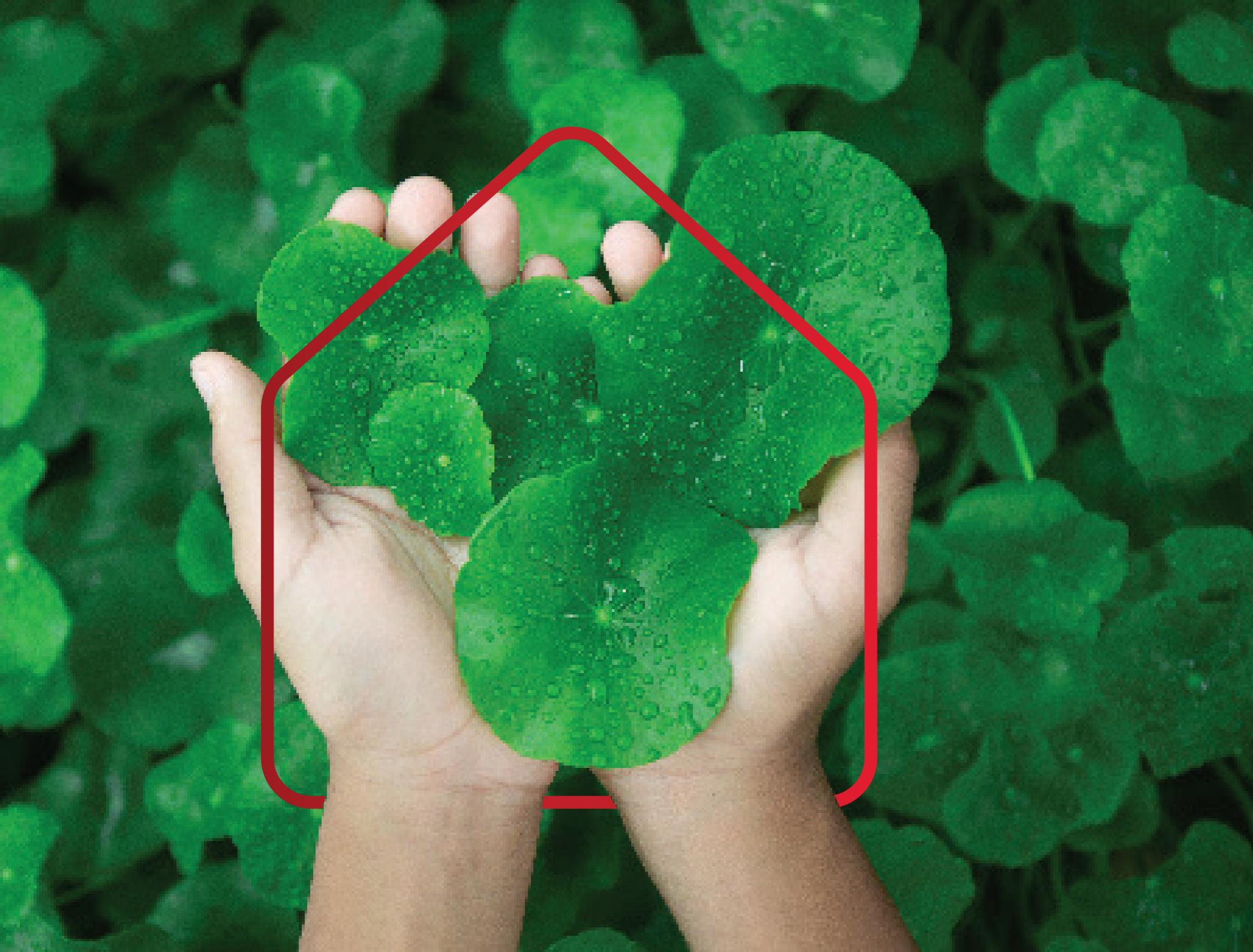


ARISTON

The home of sustainable comfort

Welcome to a world
of sustainable comfort.

**Project
Reference
Book**



Introduction to case studies featured.

Ariston Middle East delivers social and economic benefits to the contracting industry in the Middle East through sustainable solutions for water heating. The following case studies demonstrate how Ariston Middle East leverage its research and innovation to offer excellent social and economic benefit to clients across the spectrum.



BUILDING DATA

Type of application: big residential complex

Number of buildings: 8

Number of apartments: 350

Number of small size (3 users) apartments: 99

Number of medium size (4 users) apartments: 214

Number of big size (5 users) apartments: 37

PLANT TECHNICAL DATA

Feeding category: solar - electric

Heat production technology:
solar collectors- electrical storage water heater

Solar system power: 208 kW

Number of solar collector: 118

Number of cylinders capacity 120L: 99

Number of cylinders capacity 160L: 214

Number of cylinders capacity 200L: 37

Cylinder electric kit power: 2,2 kW

Energy coverage of the solar system: 40%

Faubourgs d'Anfa, Casablanca.

/ The opportunity

The Faubourgs d'Anfa residential complex is located in the new district of Casa Anfa, a green oasis in the heart of the CIL area, Casablanca's financial, shopping and cultural centre. It is composed by 8 buildings for a total of 350 apartments of different sizes that can accommodate from 3 to 5 people. The project was devised and designed in line with extremely strict environmental principles (choice of materials, energy consumption, waste management, etc.). For this reason, also for the production of domestic hot water, the choice fell on the use of **renewable energy sources**.

/ The challenge

This consisted in the creation of a forced circulation solar system (one for each building) for the production of domestic hot water for all the apartments. The system had to be centralized but each apartment must have its own cylinder installed inside. Finally, an electric storage water heater was required for hot water needed in the common areas of the buildings.

/ Approach

For the construction of the solar system, the solar collectors ZELIOS XP 2.5-1V associated with storage cylinders BCH were selected. The solar collectors were installed on the roof and directly connected to the cylinders placed inside each apartment. The capacity of the BCH cylinders was selected accordingly to the size of the apartments: BCH 120 L for small size apartments (3



/ Installed products



500 STAB 750
THER TR

Floor standing electrical storage water heater.

- / Capacity: 500l
- / Power: 6kW
- / Heating time ($\Delta T=45^{\circ}\text{C}$): 3,50 h,min
- / Maximum temperature: 90°C
- / Maximum operating pressure: 6 bar



CYLINDER BCH

Single coil multiposition vertical cylinder for domestic hot water.

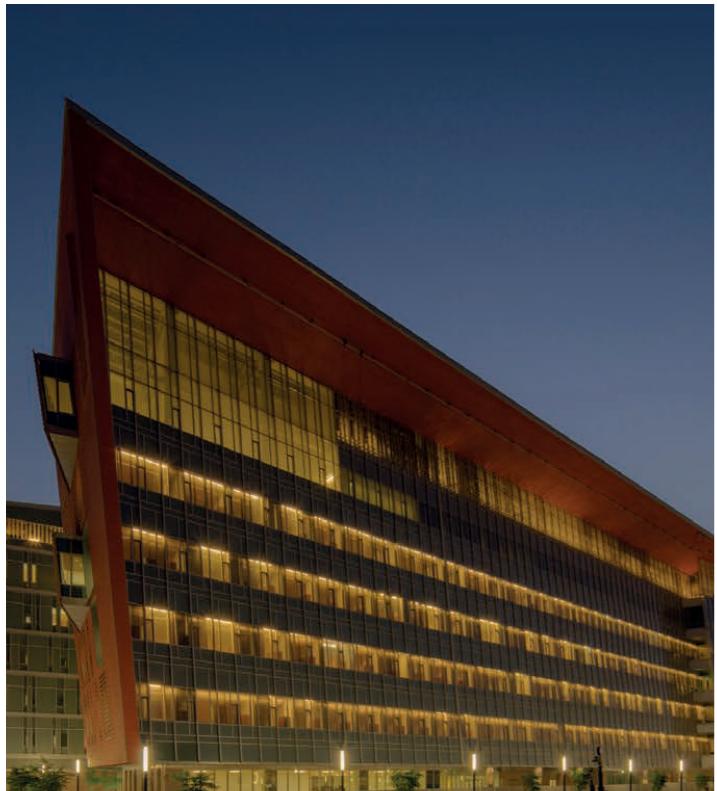
- / Titanium enameled steel boiler
- / Maximum operating pressure: 7 bar
- / maximum temperature: 90°C
- / Capacity: 120l, 160l and 200l
- / Coil surface for capacity 120l: 0,5 m²
- / Coil surface for capacity 160l: 0,7 m²
- / Coil surface for capacity 200l: 1 m²



ZELIOS XP 2.5-1 V

High efficiency flat solar collector for forced circulation, solar Keymark certified.

- / Gross surface: 2,53 m²
- / Aperture surface: 2,26 m²
- / Absorbent surface: 2,24 m²
- / Optical efficiency: 81%
- / Temp. stagnation: 198°C



Kuwait City, Kuwait.

/ The opportunity

Kuwait City is home to one of the most prestigious universities in Kuwait. It is a national pioneering university with outstanding qualifications in higher education and scientific research consisting of several buildings, classrooms and accommodation. It is a real university city. The request was to provide a system able to supply hot water for the use in public washrooms, for students and staff daily usage, in addition to cafeterias and laboratories hot water demand.

It was about 14.500 l per day of hot water stored at 60°C with a total annual energy consumption of around 246.160 kWh.

/ The challenge

The challenge was to provide an Electrical storage water heating system to cover the hot water demand while occupying the minimum space required.

/ Approach

The proposed solution foresaw the installation of N°10 electrical storage water heaters with different sizes. In particular, ES EXTRA 750 SF, ES EXTRA 1500 SF and ES EXTRA 2000 SF. The proposed ESWH model is equipped with high power heating elements (36 kW for each ESWH) and well insulated body assuring the availability of hot water 24 hours per day, 7 days a week.

BUILDING DATA

Type of application: public building

Hot water demand: 14.500 l/day @60°C

Total annual energy requirements: 246.160 kWh

PLANT TECHNICAL DATA

Feeding category: electricity

Heat production technology: electrical storage water heater

Power of heating element: 36 kW for each water heater

ESWH capacity 750l quantity: 2

ESWH capacity 1.500l quantity: 6

ESWH capacity 2.000l quantity: 2



/ Installed products

CYLINDER ES EXTRA

Commercial electrical storage water heater

- / Storage tank capacity: 750l, 1500l, 2000l
- / Storage tank max. operating pressure: 8 bar
- / Power of heating elements: 36 kW
- / Insulation material: Soft Polyurethane with resistant class B3
- / Insulation thickness: 100mm
- / Inspection hand hole flange D.100mm





Fakeeh Hospital, Dubai.

/ The opportunity

Fakeeh University Hospital is a hospital and medical university with a rich legacy of over four decades. Located in Dubai Silicon Oasis, Fakeeh University Hospital is a 350-bed state of the art facility equipped with cutting-edge technology and smart systems that are built to meet the unique needs of the hospital and UAE patients. The request from the hospital was to provide a system able to fulfil the hot water demand.

/ The challenge

To provide a highly efficient system to produce a high amount of hot water in a short duration.

/ Approach

Ariston Middle East proposed installing four **ES EXTRA** 5000L and four 96 KW Electrical Storage tank that provides 20.000 litres of hot water. A Commercial electrical storage water heater with a large storage tank capacity with max. **operating pressure of 8 bar and 36KW power of heating** elements this product is made of insulation material - Soft Polyurethane with resistant class B3 and a thickness of 100mm. The proposed ES model is equipped with high-power heating elements and well-insulated body assuring the **availability of hot water 24 hours per day, 7 days a week.**

BUILDING DATA

Type of application: Hospital

Number of buildings: 1

Hot water demand: 24,000 l/day at 60°C

Total annual energy requirements: 67.906 kWh

PLANT TECHNICAL DATA

Feeding category: water

Heat production technology:
water-water heat pump

Heat pump output power: 160 kW

Number of heat pumps: 4

Heat pump COP: 4,7



/ Outcome

The ES Excel system proved to be exceptionally effective in meeting the high demand for hot water quickly.

/ Installed products

CYLINDER ES EXTRA

Commercial electrical storage water heater

- / Storage tank capacity: 5000l
- / Storage tank max. operating pressure: 8 bar
- / Power of heating elements: 36 kW
- / Insulation material: Soft Polyurethane with resistant class B3
- / Insulation thickness: 100mm
- / Inspection hand hole flange D.100mm





Al Mamourah School, Dubai.

/ The opportunity

Al Mamourah an established school in Dubai is well-equipped with cutting-edge technology and smart systems that are built to meet the unique requirements of the education system. The request from the school was to set up a system to meet the hot water demand.

/ The challenge

To offer an extremely efficient solution for rapidly generating a substantial quantity of hot water within a short time span.

/ Approach

Ariston's suggested solution involved the installation of **ES Extra** electric storage water heaters. This commercial water heater comes with a huge storage tank capacity, with a maximum operating pressure of 8 bars and a **heating element power of 36kW**. Constructed with insulation material Soft Polyurethane, which boasts a resistance class of B3 and a thickness of 100mm, these ES models are equipped with robust heating elements and a highly insulated body to ensure a constant **supply of hot water, 24 hours a day, 7 days a week**.

BUILDING DATA

Type of application: Hotel chain

Number of buildings: 1

Hot water demand: 24,000 l/day at 60°C

Total annual energy requirements: 67.906 kWh

PLANT TECHNICAL DATA

Feeding category: water

Heat production technology:
water-water heat pump

Heat pump output power: 160 kW

Number of heat pumps: 4

Heat pump COP: 4,7



/ Outcome

The ES Excel system demonstrated remarkable efficiency in promptly satisfying the substantial need for hot water.

/ Installed products

CYLINDER ES EXTRA

Commercial electrical storage water heater

- / Storage tank capacity: 750l, 1500l, 2000l
- / Storage tank max. operating pressure: 8 bar
- / Power of heating elements: 36 kW
- / Insulation material: Soft Polyurethane with resistant class B3
- / Insulation thickness: 100mm
- / Inspection hand hole flange D.100mm

