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HEAT EXCHANGE COILS

HEAT PIPES

ENERGY RECOVERY WHEELS

PROTECTIVE COATINGS

**Oasis Coils & Coatings**

# MISSION, VISION & VALUES



## Mission Statement

The corporate mission of Oasis Coils is to provide customers globally in the HVAC, OEM, replacement and industrial markets with high quality heat transfer products that consistently exceed their expectations. Our vision to be the industrial leader rests on our philosophy of personal service and timely performance. We have the reputation for engineering excellence, product quality and a strong commitment to customer service. We deliver our products on time, at an economical price, including an unbeatable warranty. Every original equipment manufacturer, landlord, building facilities engineer and contractor is a customer at Oasis Coils.



# FOUNDER'S MESSAGE



**Abdullah M. Al Shirawi**  
Chairman



**Mohan G. Valrani**  
Sr. Vice Chairman

Oasis Investment Company, the holding company for the Al Shirawi Group of Companies, was founded on the basis of pure business passion. From the very start, we embedded a sense of pragmatism in the culture of the group. It is this pragmatism that has not only seen us through the most difficult of times but also allowed us to achieve greater success during times of economic growth.

Our journey from a trading house to an industrial complex and then on to a conglomerate comprising of trading, industrial, distribution, contracting and service industries has been with its fair share of trials and tribulations but we can honestly say that today, our 8,500 employees are richer in experience than their counterparts.

The foundations of our group are rock solid. These foundations, for all our companies, have been cast in the United Arab Emirates but today all our companies look at the world as their marketplace. In this age of globalization, we continue to grow at breathtaking speed.

Speed is a virtue that we stand by at all times. The successful induction of our next generation into the business has allowed us to retain the advantages of remaining a family concern but at the same time enabled us to act with speed in the hiring of top grade professionals.

Our group has been built on the premise of sheer hard work. We have progressed this far by believing in our values and never shying away from putting in the effort needed to grow our business. Our values: Excellence, Transparency, Compassion, Honesty, Empowerment and Discipline are inculcated in every one of our employees.

For us, the journey has been a long one but we see it as just the beginning of bigger things to come. Our next generation is now fully equipped to take the Group forward and to unimaginable heights.

We want everyone who deals with us to see, understand and experience that we provide high-quality solutions – and to reap the full benefits of working with a company where innovation, unrivalled quality and the pursuit of excellence are day-to-day realities.

# AL SHIRAWI GROUP

## Our Businesses



## CEO'S MESSAGE



“ A dedicated team of professionals works towards achieving a sole purpose: to cater to the requirements of all companies, both small and large, in the area of manufacturing and coating of coils. ”

Oasis Coils and Coatings - (OCC) is a technology driven company and a specialist in the manufacturing and coating of HVAC Coils. Our expertise in the manufacturing and coating of coils enables us to offer quality coils at impressive prices. A dedicated team of professionals works towards achieving a sole purpose: to cater to the requirements of all companies, both small and large, in the area of manufacturing and coating of coils. We have the means, resources and expertise to design a custom-made solution for your application.

OCC manufactures all types and sizes of finned tube coils for a broad range of industrial applications and recently invested in a dedicated coil coating facility in Dubai Industrial City. For the first time in the UAE, HVAC coils can now be coated in a dip tank. The facility is a significant investment in the coating of coils and unprecedented in the region.

### Quality is our Strength

Oasis Coils and Coatings serves from its fully integrated, state-of-the-art coil manufacturing and coating facility. The core processes of our organisation are well controlled through stringent quality control and quality assurance procedures in order to deliver the best results to our customers. OCC imports raw materials from around the globe and from some of the largest mills in the world. With the use of high quality raw materials, modern computer controlled machinery, and the input of highly skilled technicians, OCC's customers are guaranteed to be the recipient of the superior quality coils.

### You can count on OCC

All coils built are pressure tested, purged and leak tested with dry nitrogen, then openings are sealed and then protected with the best coil coating available in the market. Our stringent quality control team checks the coil at every stage of production thereby ensuring consistency of quality each time you purchase from us.

Navin M. Valrani  
CEO

**WE SERVE THE WORLD FROM DUBAI**



OCC Factory, Al Quoz, Dubai



OCC Coating Plant, Dubai Industrial City



# RAW MATERIALS



## Copper Tube Roll

### Types of Copper Tube

- 3/8" OD - Plain
- 3/8" OD - Inner Grooved
- 1/2" OD - Plain
- 1/2" OD - Inner Grooved
- 5/8" OD - Plain



## Aluminium Fin Roll



## Precoated Aluminium Fin Roll



## Copper Fin Roll



We at OCC serve the globe with the highest quality coils and related products. We constantly evaluate our raw materials and other components to ensure the quality of our end products. We source our raw materials from trusted vendors like METUBE and ALCOM.

Rigid technical analysis is conducted on the raw materials to guarantee their long term performance.

# FINS

Copper Fin



Precoated Fin

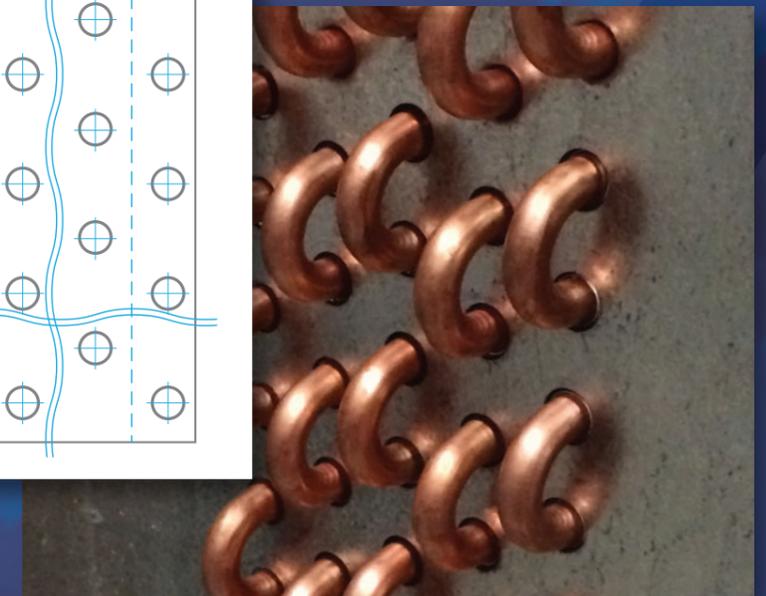
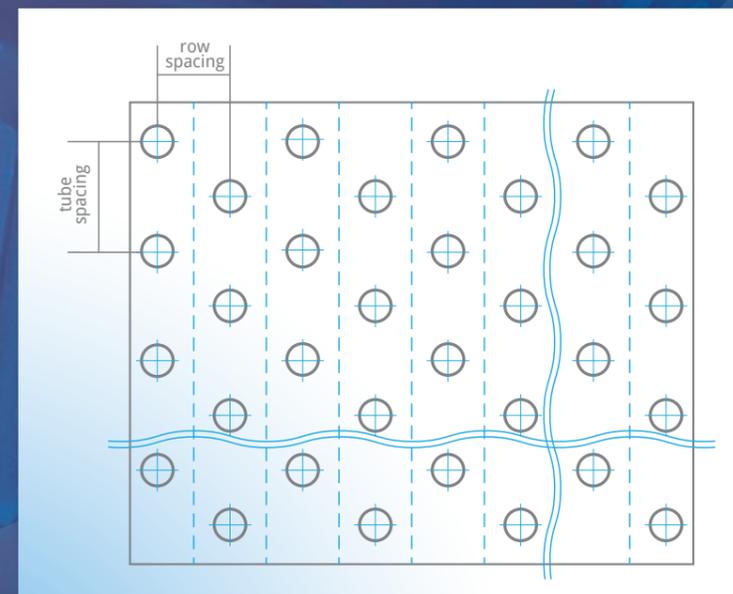


Aluminium Fin

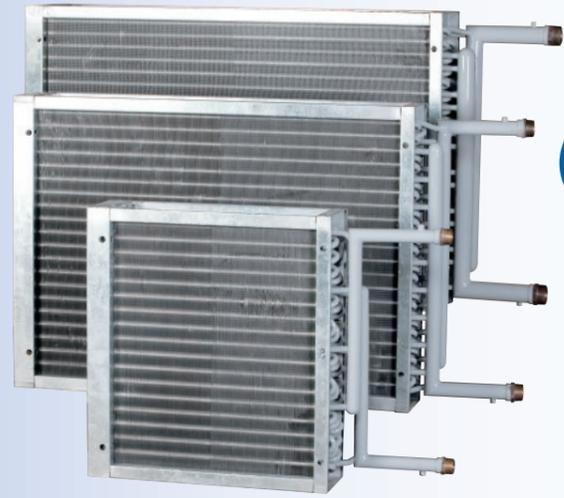


## COIL GEOMETRY

| Tube Dia | Fin Surface                      | Fin Pattern              | Tube Spacing (inch) | Row Spacing (inch) | FPI     |
|----------|----------------------------------|--------------------------|---------------------|--------------------|---------|
| 3/8" OD  | Corrugated fin with Rippled edge | Triangular 1.000"x0.750" | 1.000"              | 0.750"             | 8 to 24 |
| 3/8" OD  | Corrugated fin with Rippled edge | Triangular 1.000"x0.866" | 1.000"              | 0.866"             | 8 to 24 |
| 1/2" OD  | Corrugated fin with Rippled edge | Triangular 1.250"x1.082" | 1.250"              | 1.082"             | 8 to 16 |
| 5/8" OD  | Corrugated fin with Rippled edge | Triangular 1.50"x1.299"  | 1.50"               | 1.299"             | 8 to 16 |
| 5/8" OD  | Corrugated fin with Rippled edge | Triangular 2.36"x1.181"  | 2.36"               | 1.181"             | 8 to 16 |

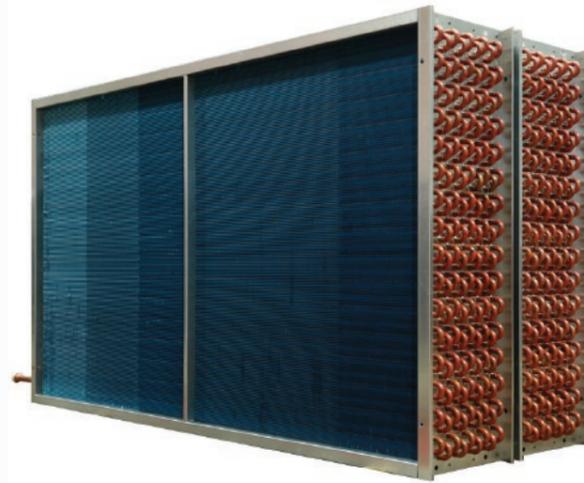


# PRODUCTS



## Air Handling Unit (AHU) Coils

- Chilled water coils
- Direct expansion (dx) coils



Standard coils are manufactured with copper tubes and aluminium fins.

Hydrophilic aluminium, copper fins are available with an additional option of anti-corrosive coating, like Heresite and bronz Glow from USA.

All coils are provided with copper headers.

All AHU and FCU coils are provided with brass threaded male adaptors and connectors.

## Fan Coil Unit (FCU) Coils

- Chilled water coils
- Direct expansion (dx) coils



## Bend Coils

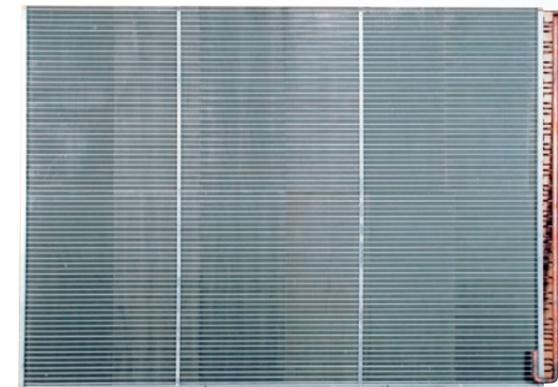
Evaporator and direct expansion coils are provided with brass distributors.

Air and drain vents made of brass are standard for water coils.

Coils of all sizes and shapes like C,G,L can be manufactured in addition to the standard straight coils.

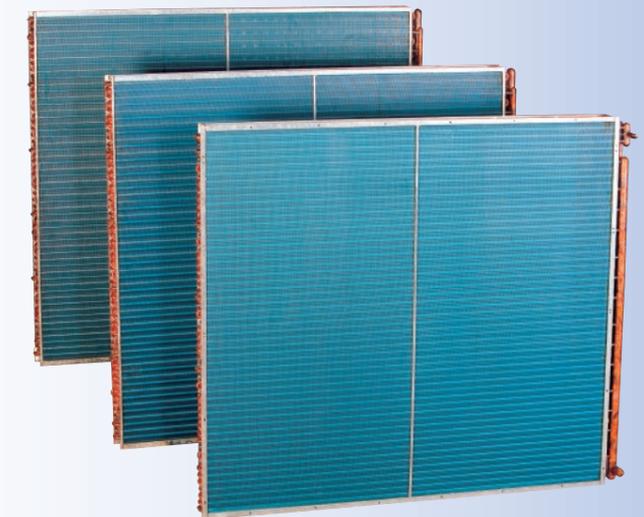
The standard casing material for all coils is galvanised iron.

Casings can also be manufactured with stainless steel and aluminium.



Plain aluminium

## Condenser Coils



Precoated

HPT Dehumidifier Heat Pipes are thermal transfer devices capable of moving large amounts of heat from the return air stream to the supply air stream of any AC system. Because heat pipes move heat with a process of vaporization and condensation, no mechanical parts or energy is needed.

HPT Dehumidifier Heat Pipes consist of two sections. The first section is placed in the incoming air stream before the AC cooling coil. When warm air passes over the first section, the liquid refrigerant vaporizes, moving heat to the second section, placed downstream from the cooling coil. Because heat has been removed from the air before entering the evaporator coil, air passing through the cooling coil drops to a lower temperature, resulting in more moisture removal. The overcooled air is then reheated to the desired temperature and a lower relative humidity by the second section, using the same heat originally absorbed by the first section.

## Applications

100% Outside Air Systems

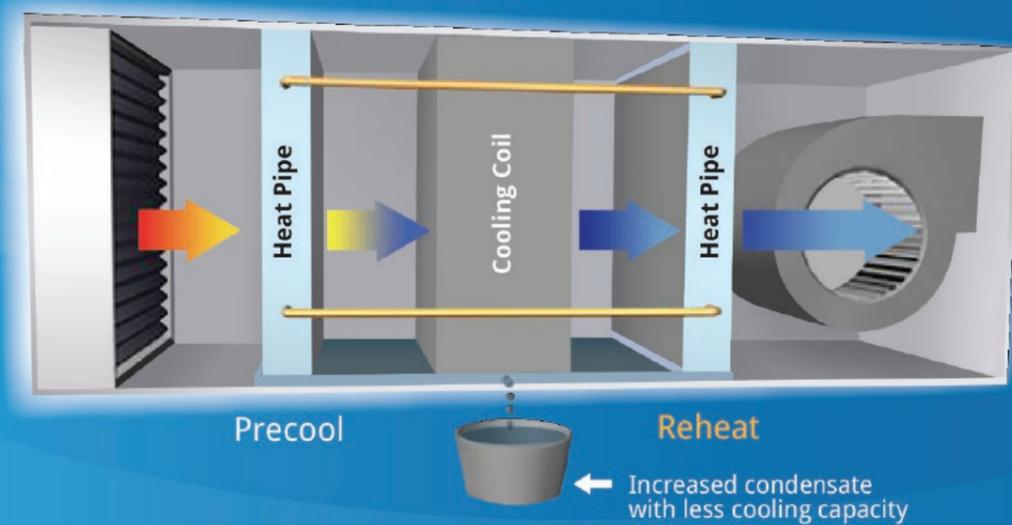
Mixed air AHUs

Replaces electric or hot water reheat

Multi-zone AHUs

Systems from 5,000 – 100,000 CFM

Chilled Water, Brine, and DX Systems

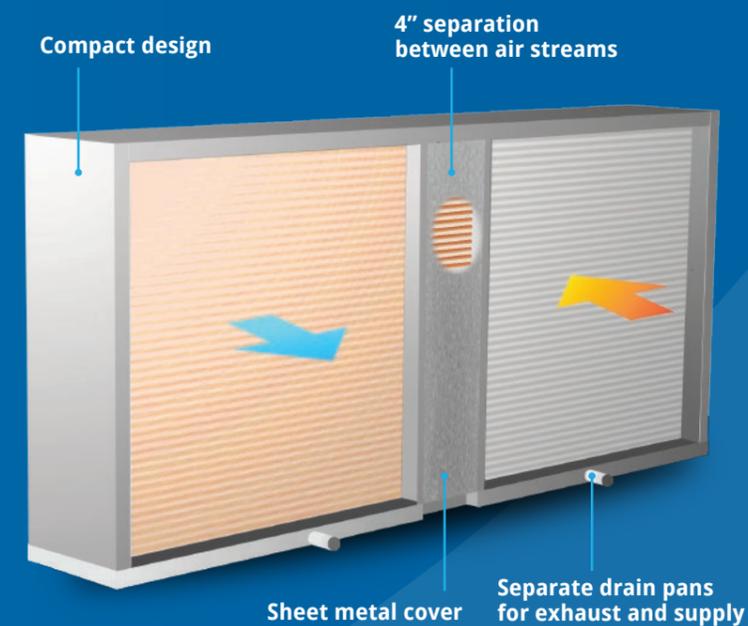


## The HRM Series utilizing Passive Heat Pipe Heat Exchangers

State of the art heat exchangers based on the Heat Loop by Heat Pipe Technology are opening doors to new applications with low air pressure drop, compact design, high effectiveness, and trouble-free static installation.

The Heat Loop is a breakthrough in multi-row heat pipe design, where the "pumping" of the working fluid is achieved not only by the differences of temperature between the two air streams, but also by the temperature differential between rows in the same air stream. The Heat Loop can transfer more mass of working fluid while using the same tubing diameter resulting in higher heat transfer capacities.

### The HRM Series with double separation wall | The no cross contamination solution



No moving parts. Years of uninterrupted energy savings

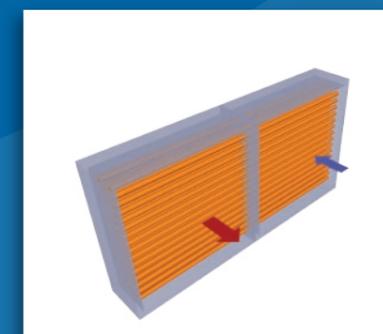
Made with high quality copper tubes for reliability and longevity

Separate liquid and vapor lines for maximum heat transfer effectiveness

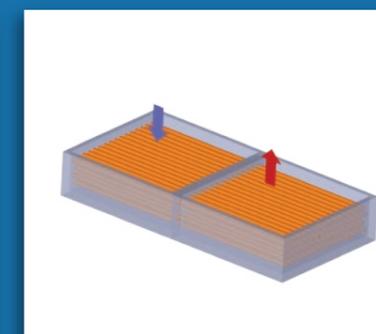
No tilting or mechanical seasonal changeover necessary

Solid partition between air streams for no cross contamination

Most compact design



**A** Side-by-side horizontal air streams with heat pipes in a vertical plane.



**B** Side-by-side vertical air streams with heat pipes in a horizontal plane.



**C** Over-and-under horizontal air streams with heat pipes in vertical plane.

## Energy recovery for all applications with Ecovent®

The Ecovent® energy recovery wheel is derived from the original rotary heat exchanger manufactured since 1956. Its characteristics are well known and provides high energy recovery efficiency, low pressure drop and reliable technical data with undisputed operational excellence. The Ecovent® wheel is installed all over the world and has recovered a considerable amount of energy contributing not only to monetary savings but also to a greener environment.

The Econovent® rotor is trusted for all kinds of applications such as comfort- (offices, hotels, and public spaces), light industry and marine environments (cruise ships) from arctic to tropical climates. Part of the Econovent® family is also the epoxy and edge reinforced treated rotors, which are more resistant to corrosive environments such as the marine and light industry.

**Econovent® is the original rotary heat exchanger and one of the first to be awarded the Eurovent certificate.**

### QUALITY ASSURED PRODUCTION

Besides the long and vast experience of all kinds of applications, another thing making the Econovent® rotor unique is deeply rooted in the manufacturing process. During production, all rotors are carefully wound together with an extra thin aluminum foil in concurrence with a special adhesive component. In combination, this is the key to strengthen the rigidity and sustainability of the rotor, while still offering the best in class performance. Further for quality verification, prior to dispatch all rotors manufactured are undergoing a strict pressure test.

### EUROVENT CERTIFIED RANGE

Econovent® is the original rotary heat exchanger and one of the first to be awarded the Eurovent certificate, guaranteeing that the stated performance can be achieved in practice. And this applies to Econovent® — the original and able to stand up to any inspection.



## The complete and flexible Ecovent® wheel solution



**PUML**

Separate rotors can be supplied in one piece or in segments in dimensions up to 5m.



**PUR (ABCD)**

The cassette unit as standard or customised slide-in unit to fit any AHU.



**PUMO**

Cased version for installation in AHU, duct work or plant rooms

The Econovent® family represents a wide range of rotor types such as non-hygroscopic and sorption. The recent investments have resulted in the Econovent® sorption rotor now being the market leader in latent cooling. The development was done in conjunction with the sister company SEMCO Ltd. in the United States which has more than 25 years of experience in desiccant coating technology. In order to optimize the Econovent® rotor for each project it is possible to choose from several different foil spacing's and diameter sizes in steps of 10mm. The rotors can be offered in diameters up to 5.0 meters and managing airflows up to 50m<sup>3</sup>/s. The casing can be offered in different materials (galv, steel, alzn, stainless 304/316) and/or powder painted in almost any color to apply to the projects specification.

### GREAT FLEXIBILITY

The Econovent® family offers lots of flexibility in terms of casing. If intended to be integrated in an air handling unit (AHU) the PUR (A,B,C,D) is the natural choice, and if used as a stand-alone module the PUMO is selected. Both casing types offer full flexibility in terms of dimensioning, control positioning, inspection hatches and material class. The PURA is intended for top-bottom — and the PUPB for side-by-side air flows. PURC and PURD are configured as A- and B- cassettes but in split delivery versions for narrow building spaces. The PUMO full cased unit is intended for larger and divided rotors.

### ECOVENT® ADVANTAGES

- Econovent® sorption rotor offers best-in-class latent performance
- The Econovent® is the "original" rotor which has been developed and improved over decades and installed all over the world
- Eurovent and AHRI certified
- Wound together with adhesive for highest strength and rigidity. No integrated spokes or rods of rotors <2.5m diameter
- Low aluminum band thickness (0.05 mm) supports highest measured sensible and latent efficiencies and lowest pressure drops
- Full flexibility in sizing for all Air Handling Units
- Low rotor weight and quality bearings offers a quick and safe installation with limited operational wearing on the bearings
- Different flute heights for project optimization — 1.4, 1.55, 1.7, 2.0 and 2.6mm

# MANUFACTURING PROCESS



## Sheet Metal – Casing Work

For all casing works including endplates, side-plates, intermediate support plates etc. Our Japanese CNC machines ensure unmatched precision.

## Expansion

Coils are mechanically expanded to fins in order to ensure uniform tube to fins bonding for maximum heat transfer.



## Brazing

Coils are brazed using silver-copper brazing alloy (brazing rods) for maximum bonding.

## Finning

Properly finned coils ensures they straighten the air out as it comes in contact with the entering air side of the coil.



## Leak testing & inspection

As per standards, coils are leak tested with dry air, equivalent to  $N_2$ , with pressure of 450 psi for condenser and 300 psi for evaporator.



## Hairpin bending

Hair pin bending process eliminates the use of return bends on one side of all the coils for both 3/8" OD and 1/2" OD tubes.



## Packaging

Adequate packing with palletizing in accordance with the international shipping standards ensures that our customers receive the products in good condition.

# PROTECTIVE COATING



Coating plant (1,000 m<sup>2</sup>)



Site coating



Dip coating



Spray coating



Spray coating

**HERESITE**  
PROTECTIVE COATINGS, LLC



Oais Coils and Coatings offers corrosion protective coating like Heresite to withstand the atmospheric conditions that exist in the Middle East.

It also protects the coils against salt water oxidation and airborne pollutants. In addition, protective coatings enhance the life, durability and finish of the coils with minimum loss on heat transfer.

# REPLACEMENT COILS



## Manufacturing

With the technical expertise available at Oasis Coils and Coatings we ensure accurate built-to-fit replacement coils. All replacement coils are manufactured by following the Original Equipment Manufacturer's design.

## Delivery

Oasis Coils and Coatings has built a reputation as being the service leaders in the replacement coil business by providing additional services in to the manufacturing and supply of coils. This includes the delivery of coils to a rooftop or near to the location of the air conditioning equipment with the help of lifting equipment such as cranes and cradles.

## Installation

Oasis Coils and Coatings has dedicated professional and trained technicians who have the experience to remove old coils from existing air conditioning equipment and install newly manufactured coils. Coils for over 1,000 buildings in the UAE have been installed by the OCC team.

## Testing & Commissioning

After installation is complete and prior to the commissioning of the system, leak tests are done to ensure that the system is leak proof. The system is then commissioned in the presence of a technical supervisor or even a third party inspector when required.

## Handover

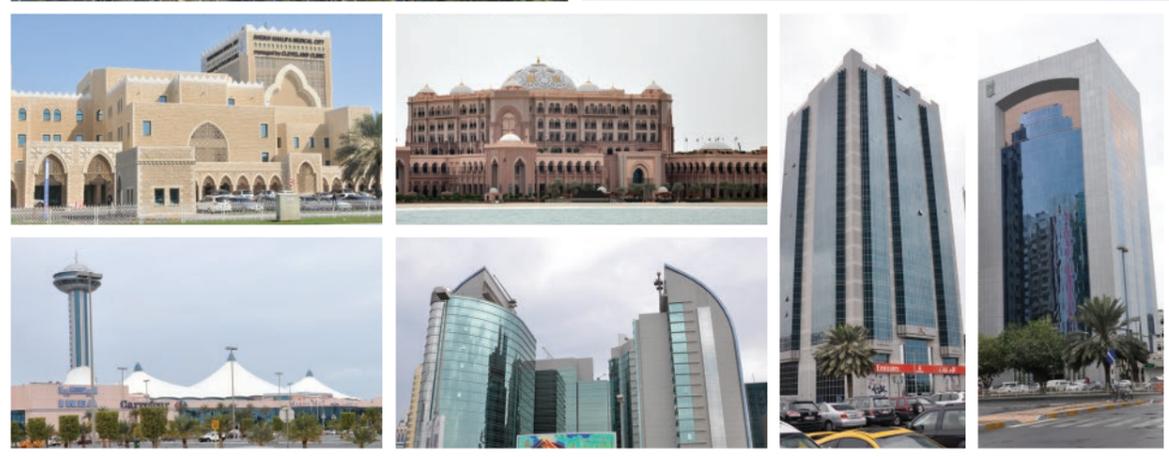
The handing over phase of an installation includes test reports, installation and commissioning reports and a warranty certificate that will enable the customer to access the OCC team around the clock.



# PROJECT REFERENCES (Replacement Coils)

## ABU DHABI

- Sheikh Khalifa Energy Complex
- Sheikh Khalifa Medical City
- Marina Mall
- Emirates Palace
- Fouth Al Khair Mall
- Al Sawari Tower
- NBAD



## DUBAI

- Emirates Towers
- Novotel Hotel
- Crowne Plaza
- NBF Building
- Dubai Customs, Port Rashid
- Millenium Airport Hotel
- Sahara Tower



# OUR FACTORY



3,000 m<sup>2</sup> factory space



CNC - Turret punch press (Amada)



Vertical expander



Fin press line (Tridan)



Coil bending machine



Brazing furnace



End closing machine ( T Drill)



Straight tube cutting machine (Tridan)



Hair pin bender (Burr OAK)

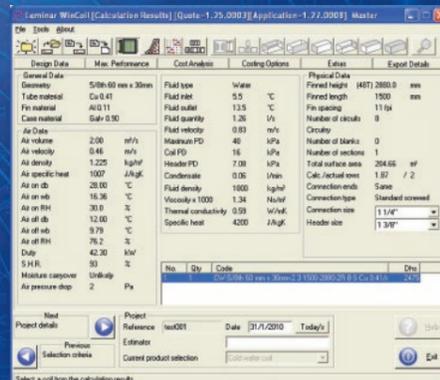


Leak testing



Anti-corrosive coating

# INFORMATION TECHNOLOGY



## HPT SelectPlus™ design software - A direct Pipeline to savings

- Access cloud-based software from anywhere, anytime.
- Generate performance reports, psychometrics and dimensional drawings.
- Calculate accurate savings predictions thanks to flexible hours of operation input.

Oasis Coils and Coatings uses state of the art coil selection software customized for its available coil geometry of which the results have been validated and tested as per AHRI standard 410 - 2001. It allows the user to configure the system with fundamental design details and heat transfer data. This includes the configuration to enable the user to make a selection as desired for Cold Water Coils, Hot Water Coils, Direct Expansion DX Coils, Steam Coils, Condenser Coils & Run around coils. All viable selections are listed to allow the operator to select the most technically and commercially suitable parameters. The design and actual rating results are simultaneously displayed to aid the operator in their decision. Full psychrometric validation and theoretical cooling curve generation are incorporated within the software. The selection DLL's can be used by third party selection software in addition to standalone versions which is provided free of cost to all valued customers of Oasis Coils and Coatings.

# CERTIFICATES

Oasis Coils and Coatings believes in ISO 9001 standard as an effective management planning tool for continuous improvement. Over the years, it has helped the company to benchmark the business processes and to meet customer, legal and regulatory requirements which is vital aspect of any business success. With top management relentless support, ISO system truly added value in terms of meeting stakeholder's requirements, reduce the risk of losses due to product or service failures, accidents and other incidents. OCC reviews its business effectiveness often to ensure company objectives and set targets are achieved as per strategic business plan which in turn will help the organic growth of the company.

