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CORPORATE PROFILE

Transforming Business Practices into Value Creation
Introduction

We are an established and leading utilities and environmental engineering service provider in Malaysia. We possess the financial strength and the necessary skills and experience in ensuring the success of all the projects we undertake. We are able to offer total solutions on design and build basis and ensure seamless integration and interfacing of the various components and facilities of the projects. Our extensive procurement network and technological alliances enhance the cost effectiveness of our solutions.

Corporate Snapshot

Year of incorporation: 1986
Authorized Capital: 115,000,000
Paid up Capital: 17,000,000
Chief Executive officer: Leong Yew Weng

Qualifications


Certification to ISO 9001 reaffirms our commitment to deliver quality services in project management and engineering solutions to our clients.

Other relevant industrial qualifications include

I) Construction Industry Development Board (CIDB) Grade 7
II) Pusat Khidmat Kontraktor (PKK) Class A
III) SPAN Class C & D
IV) Pengurusan Aset Air Berhad (PAAB)
V) Indah Water Konsortium (IWK)
Our Core Business

There are 4 key sectors that form the backbone of our business:

**Water**

I) Water Treatment
We deliver innovative water treatment solutions to municipalities and industries using conventional, proprietary or even membrane technologies treating various surface and underground sources.

II) Flood Mitigation
We undertake comprehensive and integrated flood mitigation schemes to protect the townships from flooding caused by storm water.

**Wastewater**

I) Municipal Sewage Treatment
We combine cost effectiveness with appropriate technologies in our comprehensive solutions to meet stringent environmental discharge standard.

II) Industrial Wastewater Treatment
We are able to offer a wide range of engineering solutions for industrial clients with unique requirements and wastewater streams.

**Solid Waste**

We provide integrated management services from collection to disposal of solid waste. Currently we are also involved in concessions of sanitary landfill development, management and operation.

**Infrastructure Development**

We design and build industrial facilities ranging from tank farms, warehouses, to waste-to-energy facilities. Depending on the client’s need, we can tailor-make our solutions to cover all the civil, mechanical and electrical engineering aspects seamlessly.

Flood Mitigation
- Upgrade drainage system
- Slope revetment
- Elevation of bridges
- Pump house
- Detention pond

Water Treatment
- Potable
- Power Plant
- Paper Mill
- Petrochemical Complex
- Agriculture
- Resorts

Waste Water Treatment
- Chemical
- Food
- Rubber
- Oil Slope
- Metal

CWM's Industrial Expertise

Solid Waste Disposal
- Sanitary landfill
- Transfer Station
- 3R's (Reduce, Reuse, Recycle)
- Incineration
- Landfill gas power generation

Municipal Sewage Treatment
- Centralised sewage treatment plants for domestic sewage
- Sludge treatment incl. anaerobic digestion
- Operation and maintenance

Solid Waste Collection
- Domestic Waste
- Commercial Waste
- Light industrial Waste
- Market Waste
- Street / Public Cleansing Waste
- Construction Waste
- Condemned Food Waste
Major References

1. Sg. Selangor Water Treatment Plant Phase 2
   (950,000 m³/day)
2. Kerteh Integrated Petrol-Chemical Complex Water Treatment Plant
   (230,000 m³/day)
3. Bkt. Pancor Potable Water Treatment Plant using Ultra Filtration Membranes
   (5,000 m³/day)
4. Sg. Semenyih Sludge Treatment Plant
   (375 m³/hour @ 4% concentration)
5. Sg. Semenyih Chemical Plants
   (640,000 m³/day)
6. Rasa (67 ml Service Reservoirs + 72 km Pipelines) and Bukit Badong
   (1,880 mm dia. x 17 km Pipeline + 178,000 m³/day Pump Station)
   Bulk Water Transfer Schemes
7. Kepala Batas Flood Mitigation Scheme designed for up to 100 years
   Flood Return Period
8. Bayan Baru Sewage Treatment Plant (200,000 P.E.)
   - Construction and 3-year Operations & Maintenance
9. Jelutong Sewage Treatment Plant (800,000 P.E.) on Design and Build basis
   - Largest SBR plant in the world
10. Sewage Treatment Plants Phase 2, Package 2 funded by Japan Bank for International Cooperation (JBIC)
    - Juru (150,000 P.E.) Sewage Treatment Plant
    - Sg. Nyoir (150,000 P.E.) Sewage Treatment Plant
    - Kangar (30,000 P.E.) Sewage Treatment Plant
    - Kotar Setar (300,000 P.E.) Centralised Sludge Treatment Plant
Alliances & Partnership

Participation in Worldwide Landfills and Jana Landfills Concessions
Through a joint venture, CWM introduced the concept of sanitary landfill in the state of Selangor. We were involved in establishing, operating, maintaining and managing the Air Hitam (3,000 ton/day) and Jeram (1,500 ton/day) sanitary landfills for a concession period of 25 years since 1995. The Air Hitam Landfill had on December 2006 achieved full capacity, and is currently generating 2 MW of electricity using landfill gas, a 15-year partnership program with TNB.

Participation in Konsortium ABASS for Sg. Semenyih Water Supply Scheme Privatisation
In 2001, CWM was involved in the 30-year privatisation of the Sg. Semenyih Water Supply Scheme. Scope of responsibilities includes operations, maintenance and management of the entire water supply scheme in return for selling treated water to the State Government at predetermined rates. The investment was divested to one of the joint venture partners of the scheme in 2006.

Strategic Alliance with SUEZ Group in Solid Waste Management
We have established strategic alliance with SUEZ Group (based in France) to leverage on technology and knowledge in the area of waste collection and disposal management. Today, with a fully localised operation of over 1000 employees, 180 trucks and an annual turnover of more than RM30 million, we deliver systematic waste collection and disposal services to the municipalities and industries which are located in the northern and central parts of Malaysia.

Participation in Water Supply and Sewage Treatment Concessions in China
Together with Veolia Water, CWM was involved in securing the 100,000 m³/day Beijing Lugouqiao Sewage Treatment Plant Concession in 2003 (20-year, RMB201 million) through international bidding and the 520,000 m³/day Hohhot (Inner Mongolia) Water Supply Concession in 2005 (30-year, RMB536 million) through asset acquisition scheme.

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Earth’s freshwater is only 0.3%. We create more
Introduction

With the upsurge in economic growth in the recent years, come new challenges to the environment. The demand for potable water is always on the rise from industries and municipalities, in addition to meeting the growing needs for the future.

For years, CWM has established itself as the leading specialist in the field of water treatment. Dedicated to delivering the best technologies and sound solutions, both the public and the private sectors have engaged CWM in numerous water treatment projects from surface to underground sources, and also to address specific environmental problems.

CWM had delivered its services and solutions to predominant industries illustrated below:

- Municipal Water Supply Schemes
- Power Plant & Petrochemical Industries
- Pulp and Paper Industries
- Food and Beverage Industries
- Hotel and Resort Industries
- Electronic and Metal Industries
- Flood Mitigation
Major Projects

Water Treatment Plants

The 30+ water treatment plants commissioned by CWM are among the largest projects throughout Peninsular Malaysia. In some cases CWM collaborates with international partners to tap into the global community of professionals for their insight and technology that are vital to meet our client’s requirements and financial goals.

1. Sg. Selangor Water Supply Scheme
   Phase 2 Stage 1 & 2
   Scope: Mechanical & Electrical Works
   Capacity: 950,000 m³/day
   Industry: Municipal Water Supply
   Location: Selangor, Malaysia

2. KIPC Water Treatment Plant
   Scope: Mechanical & Electrical Works
   Capacity: 230,000 m³/day
   Industry: Petrochemical Complex Water Supply
   Location: Terengganu, Malaysia

3. New Gadek Water Treatment Plant
   Scope: Mechanical & Electrical Works
   Capacity: 55,000 m³/day
   Industry: Municipal Water Supply
   Location: Melaka, Malaysia

4. Genting Sanyen Water Treatment Plant
   Scope: Design & Build
   Capacity: 40,000 m³/day
   Industry: Power Plant
   Location: Selangor, Malaysia
5. Bukit Pancor Water Treatment Plant
Scope: Design & Build
Capacity: 5,000 m³/day
Industry: Municipal Water Supply
Location: Pulau Pinang, Malaysia

6. Batu Hampar Water Treatment Plant
Scope: Mechanical & Electrical works
Capacity: 60,000 m³/day
Industry: Municipal Water Supply
Location: Negri Sembilan, Malaysia

Bulk Water Transfer Systems
The provision of services in bulk water transfer complement CWM’s portfolio as most of the water treatment plants are usually located in remote areas. CWM constructed the downstream distribution and supply system to connect the treatment plants to the local service reservoirs and maintain high level of water quality over long distance.

1. Sg. Selangor Phase 3 (Rasa) Distribution Supply System
Scope: 10 Service Reservoirs (67,000 m³) + 72 km Pipeline
Supply Capacity: 250,000 m³/day
Industry: Municipal Water Supply
Location: Selangor, Malaysia

2. Sg. Selangor Phase 3 (Bkt. Badong) Distribution Supply System
Scope: 1850mm dia. x 17 km Pipeline + 178,000 m³/day Pump Station
Supply Capacity: 400,000 m³/day
Industry: Municipal Water Supply
Location: Selangor, Malaysia
Pumping Station

Transferring of raw and treated water requires thoughtful design in pumping stations that will be able to meet industry standards. And if it is to improve and refurbish an existing plant, it means handling technical challenges, for instance, integrating new plant into existing structures and modifications of operational procedures. With technical knowledge and expertise accumulated over the years, CWM can undertake construction of pumping stations of all scales and flow rates, including future upgrading flexibility and the ease of maintenance.

1. Nusajaya Booster Pumping Station
Scope: Mechanical & Electrical Works
Supply Capacity: 50,000 m³/day
Industry: Municipal Water Supply
Location: Johor, Malaysia

2. DSS1 Pumping Station (3 stations)
Scope: Mechanical & Electrical Works
Supply Capacity: 550,000 m³/day
Industry: Municipal Water Supply
Location: Kuala Lumpur, Malaysia

3. Sg. Semenyih Yield Augmentation
Scope: Mechanical & Electrical Works
Supply capacity: 68,000 m³/day (Lake Water Transfer)
& 82,000 m³/day (Dam Water Transfer)
Industry: Municipal Water Supply
Location: Selangor, Malaysia

4. Sg. Selangor Phase 3 (Bkt. Badong) Booster Pumping Stations
Supply Scope: Construction Works
Capacity: 178,000 m³/day (Bukit Tadun)
& 158,000 m³/day (New Jelutong)
Industry: Municipal Water Supply
Location: Selangor, Malaysia
Sg. Semenyih Water Supply Scheme Privatisation

Through a consortium, CWM was involved in this 30-year privatisation project. The scope involves the operations, maintenance and management of the entire water supply scheme in exchange for selling treated water to the Selangor State Government at predetermined rates. The said investment has since been divested in 2006.

Scope: Operations & Maintenance, Capital Works & Asset Replacement
Capacity: 545,000 m³/day
Industry: Municipal Water Supply
Location: Selangor, Malaysia

Hohhot Water Supply Scheme

Together with Veolia Water, CWM was involved in securing the Hohhot Water Supply Scheme in Inner Mongolia with 30-year concession through asset acquisition. This RMB536 million scheme involves 9 groundwater plants and 1 surface water plant with total supply capacity of 520,000 m³/day and supply treated water to the urban area of Hohhot, the capital city of Inner Mongolia with a population of more than 1 million.

Scope: Operations & Maintenance, Capital Works & Asset Replacement
Capacity: 520,000 m³/day
Industry: Municipal Water Supply
Location: Inner Mongolia, China

Flood Mitigation

Due to the increasing weather disruptions caused by global warming, tropical countries like Malaysia is committed to implement flood mitigation schemes to prevent flooding caused by storm water. Our years of experience in water transfer come in handy to secure us new projects in this potentially prospective sector.
1. Kepala Batas Flood Mitigation Scheme

This integrated scheme is designed to mitigate up to 100-year flood return and comprise upgrading of drainage systems for 6 rivers, slope revetment, elevation of bridges and the construction of a pump house integrated with flood detention pond.

Scope: Construction of Various Flood Mitigation Facilities
Capacity: Up to 100-year Flood Return Period
Industry: Drainage
Location: Pulau Pinang, Malaysia
<table>
<thead>
<tr>
<th>Plant / System</th>
<th>Engineering</th>
<th>Supply</th>
<th>Construction</th>
<th>Commission</th>
<th>Description of Works</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>- Pumping plant with nominal capacity of 950,000m³/day.</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Maximum pump capacity of 2.3m³/s with 2.9KW motor.</td>
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<td></td>
<td>- Surge protection for the pumping system.</td>
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<td></td>
<td></td>
<td>- Pumping plant pipe manifold of ø2.6m.</td>
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<td></td>
<td></td>
<td></td>
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<td></td>
<td>- Penstock 2.5m²</td>
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<td></td>
<td>- Sluice &amp; butterfly valves up to 1.5m FID.</td>
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<td></td>
<td>- Bandscreen with maximum capacity of 5m /s</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Electricity overhead cranes up to 25 tons.</td>
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<tr>
<td>Electrical</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>- Complete electrical power distribution system including switchboards, cabelling and transformer of 33kV, 11kV, 6.6kV and 415V</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Maximum transformer rating installed = 16MVA</td>
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<tr>
<td>Generator</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>- Diesel engine driven standby generator sets output rating of 5MVA to 2.5MVA.</td>
</tr>
<tr>
<td>Process</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>- 1,000m /day water treatment plant.</td>
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<td></td>
<td></td>
<td></td>
<td>- Sludge plant to treat waste water from the process plant.</td>
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<tr>
<td>Chemical</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>- For 640,000m³/day water treatment plant.</td>
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<td></td>
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<td></td>
<td>- Chemicals include alum, polyelectrolyte, chlorine, lime, fluoride. Lime silo capacity is 120 tons.</td>
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<tr>
<td>SCADA</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>- Complete system for treatment works with 6,000 I/O points.</td>
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<td>- Monitor and control plant automatic operation.</td>
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<tr>
<td>Instrumentation</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>- Complete system for treatment works.</td>
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<td></td>
<td>- Instruments include magnetic flowmeters, supervisory panels, water quality monitoring system and sampling equipment such as turbidity, pH, ammonia and chlorine residual meters</td>
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<tr>
<td>Distribution</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>- Water retaining structure up to 24ML.</td>
</tr>
<tr>
<td>&amp; Supply</td>
<td></td>
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<td></td>
<td>- Laying of 1,850m FID pipeline.</td>
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<td>- Pipe jacking across road and railway track up to 60m length.</td>
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<td></td>
<td>- Pipe crossing over rivers using steel truss up to 49m.</td>
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<td></td>
<td></td>
<td></td>
<td>- Pipe laying underneath HT power distribution and transmission cables.</td>
</tr>
</tbody>
</table>
Liquid waste flows from households and factories into rivers and seas, which then flows back to households and factories.
Introduction
Wastewater treatment (for both industrial wastewater and municipal sewage) is one of CWM’s primary services and plays a key role in promoting urban sanitation in Malaysia.

Principle to our approach is our vision to focus and emphasise on the needs of our customers. We truly understand the industry sectors in which our clients are based on, therefore we can add value in the solutions we offer besides protecting the environment efficiently.

Major Projects

Industrial Wastewater Treatment
During the early 90’s, we have provided cost-effective wastewater treatment solutions for almost 50 companies that span across the various industries such as food, chemical, metal, oil slope and rubber industries. These companies not only depended on the solutions that we have offered, they also relied on our on-going customer service and technical expertise to manage unexpected circumstances that arise from external factors, for instance, upgrading of plant to meet new environmental regulations.
Sewage Treatment

Municipal sewage treatment, on the other hand, has undergone rapid progression to emerge as the key sector of the wastewater treatment services that we deliver. By leveraging on our in-depth process know-how, we take up the challenge of constructing and providing efficient municipal sewage treatment systems on design and build basis. To illustrate our success in charting our growth in this area, below are our involvements in the industry, both local and abroad.

1. Bayan Baru Sewage Treatment Plant

This 200,000 P.E. plant is one of the 4 centralised sewage treatment plants awarded by the Government of Malaysia through open tender after IWK was re-nationalised in year 2000. We successfully integrated the Modified Oxidation Ditch process for this plant and characterised the operations to achieve complete nutrient removal meeting standard A.

Scope: Mechanical & Electrical Works, 3-year Operation & Maintenance
Capacity: 200,000 P.E. / 45,000 m3/day
Process: Modified Oxidation Ditch
Location: Pulau Pinang, Malaysia

2. Jelutong Sewage Treatment Plant

We undertake the Process, Mechanical & Electrical Works for this plant on design and build basis. The Sequential Batch Reactor (SBR) process employed for this 800,000 P.E. plant is the largest in the world and meets Standard A requirements.

Scope: Process, Mechanical & Electrical Works
Capacity: 800,000 P.E. / 180,000 m3/day
Process: Sequential Batch Reactor
Location: Pulau Pinang, Malaysia
3. Sewage Treatment Plants Phase 2 Package 2

The Package 2 scheme under 9th Malaysian Plan comprises of 4 plants, namely Juru (150,00 P.E.), Sg. Nyoir (150,000 P.E.), Kangar (30,000 P.E.) Sewage Treatment Plants and Kota Setar (300,000 P.E.) Centralised Sludge Treatment Plant. The project is partly financed by a loan from Japan Bank for International Cooperation (JBIC)

Scope: Process, Mechanical & Electrical Works for all 4 plants
Capacity: 150,000 P.E., 150,000 P.E., 30,000 P.E., 300,000 P.E.
Process: Oxidation Ditch
Location: Pulau Pinang, Kedah, Perlis, Malaysia

4. UITM Sewage Treatment Plant

This sewage treatment plant is part of the integrated campus of the university. We are responsible for constructing the entire treatment plant on design and build basis.

Scope: Civil, Structure, Process, Mechanical & Electrical Works
Capacity: 13,500 P.E.
Process: Sequential Batch Reactor
Location: Selangor, Malaysia

5. Lugouqiao Sewage Treatment Plant

Together with Veolia Water in a consortium, CWM was involved in winning the international tender for the RMB201 million Lugouqiao Sewage Treatment Plant located in Beijing in 2003. This project in partly financed by a loan from World Bank and served as the impetus to get Beijing environmentally ready for the Olympics in 2008.

Scope: Investment, Operations & Maintenance for 20-years
Capacity: 100,000 m³/day
Process: AÔO
Location: Beijing, China
If rubbish was just papers, the solution is much simpler
Introduction

Continuous urbanisation in Malaysia and the emergence of “global villages” have promoted high volume of import-export activities in the country, which has improved the standard of living for everyone, as evidenced by the assortment of consumer products in most households. However, one of the consequences of these phenomenal progressions is the large increase in the amount of solid waste generated by both industries and individuals. Traditional methods of disposal i.e. dumping and burning are not appropriate as these methods bring adverse impacts to the environment.

CWM continues to demonstrate its commitment to bring state-of-the-art waste disposal techniques by combining our strength in collection services with the operations of the first sanitary landfill in Selangor built with impregnable line system and leachate collection & treatment system, capable of handling up to 3,000 tonnes of rubbish a day from nearly 5 million of population in the Klang Valley. As the move towards privatisation in Malaysia progresses, CWM will continue to offer advanced solutions to promote proper waste management for industrial and residential communities such as landfilling, leachate treatment, transfer station, 3R (reduce, reuse, recycle), greenhouse gas power stations, incinerator etc.

Major Projects

Sanitary Landfills

1. Air Hitam Landfill

Client: Government of Selangor
Capacity: 3,000 ton/day (full as of 2006)
Size of Landfill: 6 Hectares
Location: Air Hitam, Selangor
Role: Concession Holder since 1995
Duration: 25 years
Scope: Establish, Operate, Maintain and Manage the Sanitary Landfill Site

2. Jeram Landfill

Client: Government of Selangor
Capacity: 1,500 ton/day
Size of Landfill: 75 Hectares
Location: Jeram, Selangor
Role: Concession Holder since 2007
Duration: 25 years
Scope: Establish, Operate, Maintain and Manage the Sanitary Landfill Site
3. Jana Landfill

Client: Tenaga National Berhad
Capacity: 2 MW of Electricity using Landfill Gas
Location: Air Hitam, Selangor
Role: Concession Holder
Duration: 15 years
Scope: Establish, Operate, Maintain and Manage the Landfill Gas Power Station

Solid Waste Collection

We are engaged in the collection services of solid waste for both industries and municipalities, and we rank as the leader in industrial and commercial waste collection with 25% market share.

Client: Municipalities & Private Sectors
Capacity: 1,000 ton/day
Types of waste:
- Domestic / Household Waste
- Commercial Waste
- Light Industrial Waste
- Market Waste
- Street / Public Cleansing Waste
- Construction Waste
- Condemned Food Waste
Number of Trucks: 180
Total Employees in Solid Waste Management Services: > 1000 personnel
Operation since: 1994
154165-K
INFRASTRUCTURE

We provide customised solutions
Introduction
We seek strategic partnership for infrastructure projects in line with our commitment to provide the most advanced technology and customised solutions for a variety of infrastructure facility design and construction.

Why Partner with CWM
CWM is registered with the Malaysian Construction Industry Development Board and specialises in civil, structural, mechanical and electrical engineering projects. We hold the highest qualifications in construction industries in Malaysia to undertake projects of all sizes and scales in water treatment, wastewater treatment, solid waste management and infrastructure development. Through our pool of industry experts and existing strategic alliances with local and international industry leaders, we have commissioned:

- More than 30 Water Treatment Projects
- Close to 50 Industrial Wastewater Treatment Plants
- 1,600,000 P.E. of treatment capacity for large scale Centralised Municipal Sewage Treatment Plants
- Concessions in Water, Sewage and Solid Waste Facilities both locally and abroad
- Other industrial projects, such as Tank Farms, Warehouses, etc.
- Heavy Metal Off-site Recovery Facility
- Noise Abatement Facility for Airport
- Composting System
- Waste-to-Energy Plants
- Other industrial projects, such as Tank Farms, Warehouses, etc.

Benefits to Your Business
CWM is strategically positioned with more than 20-years of track record and experiences in utility and environmental engineering and with strong financial backing from its parent company. We believe that by fostering strategic partnerships, we can provide value-added and innovative solutions for our clients with the utilisation of sophisticated and appropriate technologies. Through merged expertise and solid background as an integrated team, the concerted efforts will uncover new opportunities, both locally and globally.