

PROJECT CLEAN AIR CHARTER PHASE II

Certification Scheme for Clean Air Charter

Final Report

For

Gammon Construction Ltd.



Prepared by



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1. INTRODUCTION

Gammon Construction Limited (GCL), a construction and engineering service company, is headquartered in Hong Kong and runs operation spanning in Mainland China, Macau and Singapore. The Hong Kong office is located at 28/F Devon House, Taikoo Place, 979 King's Road. GCL has two sizeable steel fabrication workshops, one at Gammon Technology Park in Tseung Kwan O, Hong Kong and the other one at Pristine Workshop in Dongguan, China. There are around 2,000 full time staffs and GCL has been awarded ISO9001, ISO14001 and OHSAS18001 certifications and publishes sustainability report for 5 successive years.

GCL is one of the approved suppliers of materials and specialist contractors for public works in the category of structural steelwork, with expertise in bored-piling for foundations, composite steel columns for building superstructures, steel footbridges and moulds for precast construction.

This report outlines the findings of the Business Environment Council (BEC) from a walk-through inspection and interview with a representative from GCL, Ms. Angela Cogman and Ms. Erica Lam.

GCL has been elected to participate voluntarily in the certification scheme as part of a pilot program under phase II of the Project Clean Air jointly organised by the Hong Kong General Chamber of Commerce, the Business Environment Council and the Business Coalition on the Environment.

Based on the initial pre-audit telephone discussion with Ms. Angela Cogman and Ms. Erica Lam of GCL, it was determined that GCL fits into the Group C category which has comprehensive management systems and air emissions reduction programmes in place according to the commitments of Clean Air Charter.

The audit visit was led by Mr. Benny Au on 13th December 2007 and subsequent information provided. The purpose of this audit was to report GCL's implementation of the Clean Air Charter observed during the meeting and the subsequent material submitted for demonstration purpose.

2. OBSERVATIONS AND COMPLIANCE

Based on the site meeting, company programmes and practices on reducing air emission were reviewed. In general, a systematic structure on addressing the Clean Air Charter has been implemented with the followings:

- Company policy has been established with emphasis on exploring innovative design and construction techniques to prevent pollution or afford better protection to the environment.
- GCL achieved ISO 14001 with in-house working group led by top management and comprising representatives from different departments.
- Environmental objectives and targets are determined annually. After the endorsement of the Clean Air Charter in September 2005, GCL extensively reviewed current operations that generated air emission and have identified energy key performance indicators (KPI) with 5% reduction target as effort to fulfil the Clean Air Charter commitments.

Regarding the six commitments of the Clean Air Charter, the table below summarizing the GCL's achievements:

Commitment	Action done
<p>1) Operate to a recognized world class standard, or the standards established by the Hong Kong / Guangdong governments on emissions of air pollutants, even if it is not a requirement to do so here. (Relevant to industrial operations, power plants and business with direct emissions)</p>	<ul style="list-style-type: none"> • GCL has achieved ISO9001, ISO14001 and OHSAS18000 certifications for various operations. • Action plan with targets addressing air pollution control is established by an in-house working group which led by top management. • GCL arranges all qualified and strategic plants to join in the QPME (Quality Powered Mechanical Equipment) scheme – a voluntary environmental improvement measure initiated by EPD.
<p>2) Use continuous emissions monitors (CEMs) at significant sources, e.g. large and medium plants. (Relevant to large / medium industrial operations and power plants)</p>	<ul style="list-style-type: none"> • GCL monitors air pollutant emitted from its operation by regularly undertaking environmental audit at sites with significant air emission generated to assure the regulatory compliance. One of the examples is HKU project, a 24-hour TSP (Total Suspended Particulates) concentration monitoring has been carried out by independent environmental consultant and the result showed that the TSP concentration is far from limit level. • The major air pollutants emitted from the operation at the Dongguan Pristine Metal Works plant are of organic in nature (Benzene, Toluene and xylene) and were treated with activated carbon filtration system before discharge. • Indoor air quality within the pristine plant in Dongguan is also closely monitored to ensure the dust concentration does not exceed the limit level, water spraying system is implemented to further reduce dust level. The air pollutants emitted are of organic in nature, and they were treated with activated carbon filtration system

Commitment	Action done
	<p>before discharge.</p> <ul style="list-style-type: none"> GCL conducts energy and fuel consumption monitoring for each of its business units and identified indicators to track the company's environmental performance, though it failed meeting electricity reduction targets in 2007.
<p>3) Publish information on energy and fuel use, as well as total emissions of air pollutants annually and timely, if emissions are significant.</p>	<ul style="list-style-type: none"> GCL publishes Sustainability Report for 5 consecutive years which monitors the company's environmental impacts. GCL's environmental policy and performance are also available in company website with information on energy and fuel consumption. An 18% reduction in diesel consumption per unit of turnover was achieved in 2007 and that contributed to the reduction of 38% in the overall carbon footprint. In terms of overall energy management, in 2007 GCL achieved a 23,000 tonne reduction in total carbon emission as compared to the reduction of 11,000 tonne in 2006.
<p>4) Undertake to adopt energy-efficient measures in their operations.</p>	<ul style="list-style-type: none"> In order to reduce the dark smoke emission from derrick barges, GCL carries out trial installations of refined diesel pump into the engine of derrick barge and the monitoring shown that it lead to better control of diesel supply into the engine and have a more complete combustion of the fuel. With this installation, the efficiency of the engine is enhanced and thus reduces dark smoke emission. Green site offices – GCL conducted a site-based comparative study of power consumption between a conventional yellow container office and one painted with reflective white paint. The findings indicate that a 35% energy reduction is achieved with reflective white paint, additional 10% reduction with added roof, 15% energy saving with A/C unit of Grade 1 energy label, and up to 10% electricity saving with blind shading.
	<ul style="list-style-type: none"> Tackling climate change through innovation – more than 570 “windmills” have been installed at Gammon Technology Park to provide wind generated energy for lighting.
<p>5) Identify and encourage business-relevant measures to be taken on days when air pollution is high.</p>	<ul style="list-style-type: none"> GCL treats compliance as the minimum acceptable performance standard and continually seek to improve. The company will continually engage with stakeholders to find ways in which it can add value to the quality of life of

Commitment	Action done
	<p>those affected by its operations.</p> <ul style="list-style-type: none"> GCL would consider minimizing air pollutants generation during days with high pollution index, such as temporarily shut down of engines and generators as much as possible.
<p>6) Share air quality expertise in business with others.</p>	<ul style="list-style-type: none"> GCL's annual Sustainability Report provides a full account of the company's performance on direct air emission reduction programmes and energy saving initiatives. "Sustainability Report 2006: Dialogue for Change" received a commendation at the ACCA Hong Kong Awards for Sustainability Reporting 2007. GCL publishes "The Record", a bi-annual publication, to communicate the company's latest trends on sustainability and award recognition with the stakeholders. The winning project of GCL internal innovation competition 2007 has been honored in the "2007 Hong Kong Awards for Industries: Technological Achievement Award" for enhancing sustainability including energy and carbon emission improvement. GCL regularly conducts presentation and seminars to the general public on Gammon's approach to green roof and energy saving. GCL produced pocket-sized reminder capturing the 7-7-7 Care-for-Air Guideline which provides practical tips on improving air quality at home, at work and during travel.



3. CONCLUSION

As a consequence of Gammon Construction Limited.'s current drives and commitment towards reduction on air emission and energy effectiveness, high standards of management and practices have already been integrated into the daily operation and construction propose. These are sufficient to comply with the Clean Air Charter requirement which means that the overall environmental performance is moving towards a sustainable direction. Congratulation!