About this Report

Scope of the Report

We are delighted to introduce the Sustainability Report 2006 of Architectural Services Department (ArchSD), the Government of the Hong Kong Special Administrative Region (HKSAR). It is our third consecutive annual sustainability report which gives details on our triple bottom line accomplishments between 1 January 2005 and 31 December 2005. This online report presents an overview of our performance in the past year and illustrates how we have worked to uphold our mission and values, as well as our performance in addressing our economic, social and environmental responsibilities.

The formulation of this report content is a joint effort of the Integrated Management Committee comprising ArchSD staff in various divisions and functions. Data are presented as absolute figures and, for priority issues, normalised into comparable terms where appropriate and practicable. Quantitative data are presented for all our six branches, excluding data from contractors and suppliers, unless otherwise stated. Qualitative information covers all our direct activities unless otherwise stated. Financial data is recorded according to financial year ended 31 March 2006 . All monetary values are in Hong Kong Dollar.

The Report follows the Global Reporting Initiative (GRI) G3 Guidelines (published in October 2006) and the Sector Supplement for Public Agencies (published in March 2005). A GRI Content Index is provided to facilitate referencing.

Message from Our Director

Dear Readers,

We are pleased to present our Sustainability Report 2006 to you. Since 2003, we decided to report not only on our environmental performance, but also on our social and economic performance following the Global Reporting Initiative 2002 Guidelines. We continue to move forward in our quest to foster sustainable development and promote information transparency as a public agency. This year we adopt the newly published G3 Guidelines on sustainability reporting.

After a successful year in 2004, we put ourselves up to more new challenges, focusing on the social aspects of sustainability to clearly define our role in the Hong Kong community. Three fundamental aspects we emphasised the most in 2005 were Universal Accessibility, Research and Development, and Health and Safety, all of which embraced our stakeholders to some degree.

In addition to social consideration, we continued to integrate sustainability principles into our operations. This year, we were delighted to receive recognition for our contribution and accomplishment in sustainable design and construction. This included the receipt of four awards from the Hong Kong Institute of Architects, amongst which were the Medal of the Year for the Hong Kong Wetland Park and Special Architectural Award in Heritage Conservation for the Hong Kong Heritage Discovery Centre. The research report on Universal Accessibility was also accepted as a library collection by the Library of the China National School of Administration. You will see in this Report that we continue to engage in the environmental, social and economic responsibilities associated with our activities.

Our Sustainability Report is a sincere assessment of how we are functioning as a government department in achieving on these aspects. I am pleased to announce that we have achieved our objectives set for 2005. We shall continue our momentum and propel the sustainable initiatives with innovative sustainable designs and solutions. We shall partner with our stakeholders to scale new heights within the resources available to us.

If you have any views on this report, you are most welcomed to share them with us by using the Feedback Form attached.

Yue Chi Hang, JP
Director of Architectural Services

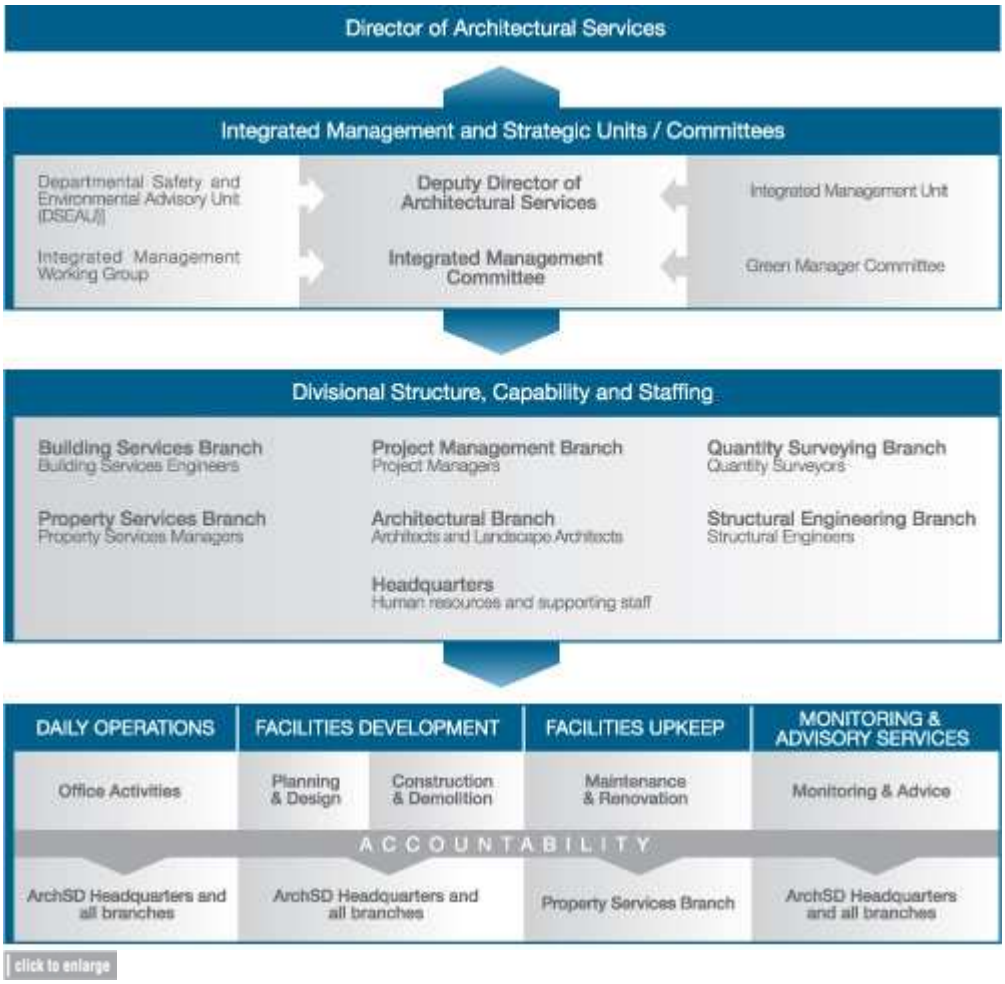
About ArchSD

Programmes of Services

ArchSD Headquarters is located in Queensway, Hong Kong, and we provide three main areas of service:

Monitoring and advisory services	To provide technical advice to the Government and quasi-government organisations and to oversee sub-vented and joint venture projects
Facilities development	To provide efficient, cost-effective and timely architectural and project management services for the design and construction of government buildings, except for public housing
Facilities upkeep	To provide efficient and cost-effective project management services for the maintenance and refurbishment of buildings and facilities

Organisational Profile



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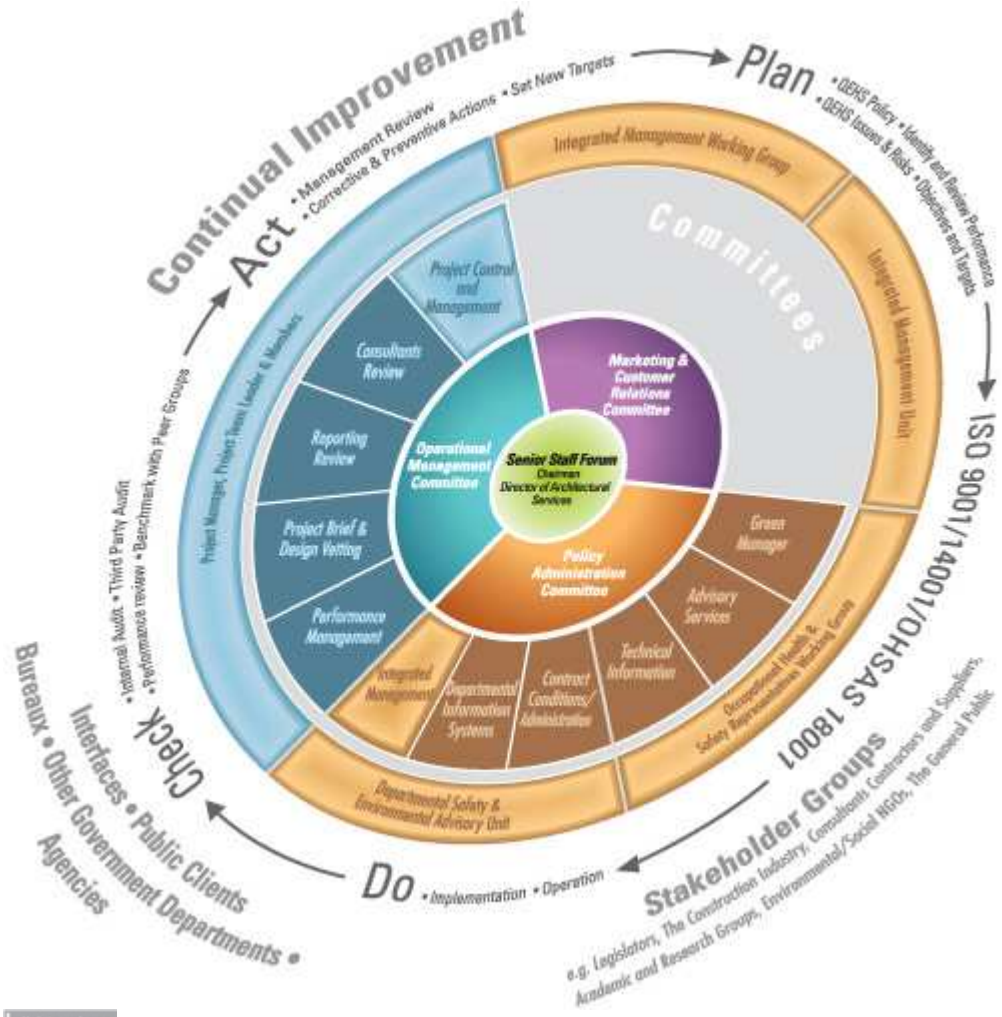
Governance Structure

Our Integrated Management System is the cornerstone for the streamlined operation and management of ArchSD, which has

incorporated the principles and policies adopted by ArchSD, and other requirements stipulated in ISO 9001, ISO 14001 and OHSAS 18001. This System is overseen by the Integrated Management Committee which takes the lead to appraise the results of the internal and external management system audits, progress of taking corrective / preventive actions on identified non-conformities, client feedback, and achievements in quality, environmental, health and safety objectives and targets. In addition, the Committee formulates and sets new goals for the following year with reference to the findings of the assessment.



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Our Vision and Values

Vision, Mission , Core Values

Our vision

To maintain our position as the leading practice for procuring and maintaining community facilities

Our mission

To provide services in a professional manner

Our core values

- Cost and time efficient project delivery
- High professional quality standards
- Responsible practices and sound environmental, health and safety performance

Quality, Environmental, Health & Safety Policy

To plan, design, procure, maintain property and advise professionally.

Architectural Services Department, when offering our Clients a comprehensive range of multi-disciplinary professional and technical services for public buildings and facilities, is committed to:

- Fulfil the agreed requirements of our Clients to the highest professional standards;
- Deliver our services in an environmentally responsible manner by implementing conservation of energy, preventing pollution and reducing the consumption of natural resources;
- Manage our health and safety risks to ensure a safe and healthy environment for our staff, our contractors and other people who may be affected by our work;
- Comply with all relevant legislations and other requirements, and wherever practicable, to achieve standards beyond those that are legally required.
- Provide adequate resources and training to all staff and provide appropriate training to persons working for or on behalf of ArchSD, to continually improve our quality, environmental, health and safety performance and effectiveness; and
- Promote our principles of quality, environmental sustainability, health and safety to our partners in work, the construction industry and the general public.

Yue Chi Hang, JP
Director of Architectural Services

Our Priorities

Universal Accessibility

Building an Accessible Environment

As a department responsible for the design and procurement of various types of public buildings and open spaces in Hong Kong, we play an important role in shaping our built environment. The way the environment is designed can have a significant impact on people's lives. In recent years, we have seen more people with different disabilities participating in various social and cultural activities. There is a higher public expectation and a growing demand for a more sustainable and accessible built environment in which people with diverse needs and lifestyles can all be satisfied.

In terms of accessibility, the department adopts a holistic approach in meeting the needs of all sectors of the society, including those with different abilities, the young and the elderly. We also strive to take the lead in raising public awareness on this issue through active promotion and through setting examples.

Universal accessibility is a design approach based on the notion of "inclusion". The design has to include and take into consideration the needs of the widest possible spectrum of users in the community, regardless of age and ability, such that everyone may access facilities and information safely and independently

Design solutions are derived from an understanding of the needs and lifestyles of the potential users and drawing ideas from close interaction with them

Design of New Projects

Accessibility is a key factor in building for the public and our colleagues are mindful of this aspect from the early design stages. The barrier free provisions in our new projects often surpass the minimum statutory requirements. With the recent review of the Design Manual: Barrier Free Access 1997 by the Buildings Department, our colleagues have taken the initiative to incorporate the latest design requirements from the revised draft manual where appropriate. Our holistic design approach demonstrates that accommodating the needs of users with different abilities and good architecture go hand in hand.

Provision of conspicuous external tactile guide paths for people with visual impairment to various destinations, and access ramps at building entrances

Glazed roof above the school playground creates an airy area for multi-functional activities. It does not only function as a focal point of the building, but also facilitates the access to all parts of the building

Access paths with specially designed architectural features that integrate art, light and sound aim to stimulate the users' senses and to enhance the overall travel experience

Existing Government Facilities

The Department is continuously improving the accessibility in existing government facilities to meet the various needs of different user groups. Our Property Services Branch liaises very closely with relevant government committees on formulating a program for upgrading works. The facilities that are identified to be refurbished are upgraded to current barrier free design standards, or even to the standards in the revised draft manual where possible.

Upgraded barrier free provisions include a disabled lift, tactile warning strips, proper handrails, and signage with the international symbol for the disabled

Addition of ramps for accessing the stage, various levels of the amphitheatre, and surrounding park facilities

Tactile guide path leads to a renovated public service counter that has a lower counter top with knee space for the access of wheelchair users

Making a Difference for the Stakeholders

Beside construction projects, we provide expert professional advice to other government bodies and we also participate in many advisory committees. Through our active involvement with other government authorities, as well as direct engagement with various stakeholders, we help formulate policies that safeguard the interests of many users with different abilities. For example, our contributions in Buildings Department's Advisory Committee on Barrier Free Access and their Steering Committee on review of the current Design Manual for Barrier Free Access 1997 have a significant impact on the provision of barrier free requirements in private developments. In addition, our professional advice on building accessibility issues in the Rehabilitation Advisory Committee – Sub-committee on Access (RAC-SCA) headed by the Health, Welfare and Food Bureau greatly assisted the enhancement of the welfare of people with disabilities in our community.

Research and Development

Our comprehensive research study on universal accessibility published in 2004 has been a useful source of reference on accessibility issues. The full report of the award-winning research is available on our webpage at http://www.archsd.gov.hk/english/knowledge_sharing/ua/univ_access.htm for knowledge sharing.

Research study: Universal Accessibility – Best Practices and Guidelines


A photo gallery containing over 160 examples illustrating the best practices of the respective areas of study is included for quick reference


The research study was awarded the HKIA Annual Awards 2004 – Special Architectural Award – Architectural Research

The research team has now embarked on the second stage of the study, which will concentrate on external areas, open spaces, and green spaces. In the past, the main focus was on the accessibility in the building design, with much less effort given to the design of external spaces. Given Hong Kong's hilly terrain and multi-level connections, designing accessible external areas that cater for various users is essential and equally important. The team will explore new design approaches to improve accessibility in those areas, taking into consideration the needs of the widest spectrum of users.

Achievements and Promotion

The Department has received a number of praises and awards over the years for our efforts in building accessible facilities and for our role in promoting accessibility. The following table presents a timeline of our advancements and achievements in this area:

Year	ArchSD's Advancements/Achievements in Accessibility
1989	Design Award for Building and Open Space – Most Accessible to Disabled Persons in Hong Kong **Urban Council Sheung Wan Complex**
1994	Design Award for Building and Open Space – Most Accessible to Disabled Persons in Hong Kong **Hong Kong Museum of Art**
1997	Establishment of a barrier free access improvement program for existing government buildings with the Rehabilitation Advisory Committee – Sub-committee on Access (RAC-SCA)
1999	Establishment of an annual joint inspection of barrier free access provision in new government buildings with the RAC-SCA


Urban Council Sheung Wan Complex (1989)


Margaret Trench Red Cross School (2004)

2001	Commendation letter from the RAC-SCA Participation in the "Inclusion by Design" World Congress – Montreal, Canada
2004	Presentation on the impact of the built environment on persons with disabilities in The 11th International Society for Prosthetics and Orthotics World Congress – Hong Kong, China Presentation of a paper on universal accessibility in the "Designing for the 21st Century III" - International Conference on Universal Design – Rio de Janeiro, Brazil HKIA Annual Awards 2004 – Accessibility **Margaret Trench Red Cross School** HKIA Annual Awards 2004 – Special Architectural Award – Architectural Research Universal Accessibility – Best Practices and Guidelines
2005	HKIA Annual Awards 2005 – Special Architectural Award – Heritage **The Hong Kong Heritage Discovery Centre at Kowloon Park** Presentation of a paper on universal accessibility in the "Network of Asia-Pacific Schools and Institutes of Public Administration and Governance Annual Conference – Beijing, China" Appreciation certificate from the Library of the China National School of Administration in acceptance of the research study "Universal Accessibility – Best Practices and Guidelines" into their library collection

The Hong Kong Heritage Discovery Centre at Kowloon Park (2005)

Network of Asia-Pacific Schools and Institutes of People Administration and Governance Annual Conference in Beijing, China

Long-Term Targets

We are committed to our goal of taking the lead in promoting universal accessibility design and we will build on the success that we have achieved in this area so far. It is our objective, through our various efforts, to initiate innovative designs and improve the built environment for all sectors of the community.

Objectives	Targets	Achievements	Future Goals
To enhance staff's awareness on Universal Accessibility in building design	To promulgate study report "Universal Accessibility - Best Practices and Guidelines"	Completion of study report in 2004. Uploading the study report on ArchSD webpage in 2005 for knowledge sharing. Presentations to staff in 2005.	To complete and publish Part II of the study report on Universal Accessibility for external areas, open spaces and green spaces. To promulgate the study report to colleagues through

			knowledge sharing and seminars. To implement Universal Accessibility design concepts and best practices in new works projects. To continue improving accessibility in existing government facilities.
To promote awareness on Universal Accessibility to external parties	To present Universal Accessibility to professional bodies, construction industry, educational institutions, and other government departments	Presentations in 2005 were given to the members of Hong Kong Institute of Architects; and American Institute of Architects; Hong Kong Institute of Landscape Architects; the Real Estate Developers Association of Hong Kong – Construction Subcommittee; Planning Department; and Hong Kong Housing Society, and the Housing & Development Board of Singapore. Distribution of CD-ROM and research study summary to various stakeholders.	To continue: • taking the lead in promoting Universal Accessibility by conducting seminars and presentations to relevant external parties, and • participating in local and international conferences to keep abreast of the latest developments and technologies.

Our Priorities

Research & Development

Research & Development of Sustainable Design and Environment

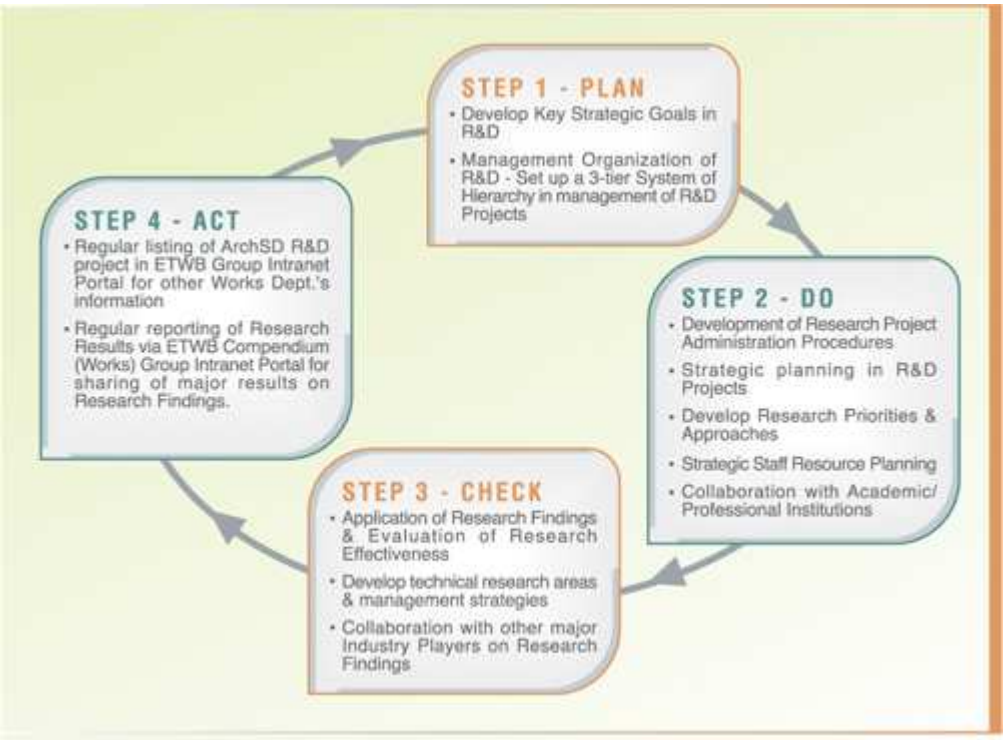
Our commitment towards Research & Development (R&D) had been further strengthened in Year 2005, especially in the areas relating to Sustainable Design and Environment for the betterment of Hong Kong. Our current advancement in R&D can be summarised under various perspectives as discussed in the coming sections.

Strengthening R&D as a Response to Our New Roles and Objectives in the Re-Engineering Programme

Under our new roles and objectives, we have strengthened our R&D to cater for the following strategic needs. These include catering our new roles and objectives; to support our Department's role as a Government Agent, the architectural corporate advisor of Government & Building Authority in Government projects; and to enhance our role as market-leader and promoter of best-practices and standards in the construction industry.

Establishing a PLAN-DO-CHECK-ACT Cycle for Quality Management in R&D Projects/Tasks

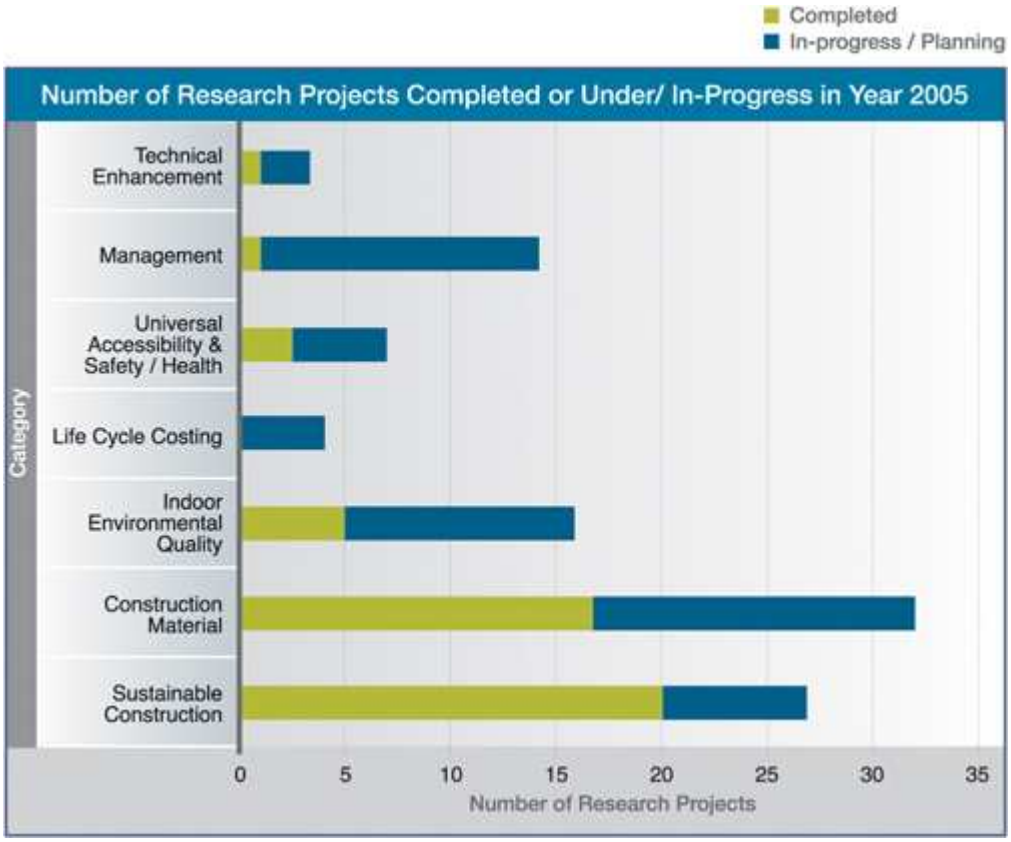
By the end of 2005, we have started to consider incorporating the use of a "Plan-Do-Check-Act" cycle of continual quality improvement in the planning and delivery of R&D projects. This is illustrated in the following diagram.



Key Categories for Completed or In-Progress/Planning Research Projects

At present, the key objectives/categories of R&D projects are summarised as follows, with items number 1-4 giving our highest priorities and resources commitment:

1. Sustainable Construction;
2. Construction Material;
3. Indoor Environmental Quality (IEQ);
4. Life Cycle Costing;
5. Universal Accessibility & Safety and Health;
6. Management (issues, data, risk management and general specification updating);
7. Technical Enhancement.



Our R&D projects have also been prioritised according to the needs of the projects, clients and the industry etc.. Currently, both top-down approach and bottom-up approach are adopted for the strategic planning of the R&D projects. Also, the need and nature of the research projects, the technology development and the policy directive will be considered.

The topics of our R&D projects are diversified and are classified into various focus areas, and the following are selected examples of our completed research studies in 2005:

1. Sustainable Construction - Photo-catalytic coatings; Sustainable Building Study for Glass & Curtain Wall Façade; Improving the Sustainability Process at the Hong Kong Science Park Phase 1;
2. Construction Materials - Metal Surface Treatment Process; Tactile Tiles; New Data-Base on Building Materials & Systems;
3. Indoor Environmental Quality - VOC paints; Emission from Carpets; Classroom Acoustics in Hong Kong: Guidelines for a Triangular Learning Environment;
4. Universal Accessibility & Safety/Health - Universal Accessibility; Study on Comparison between Bamboo & Metal Scaffolding;
5. Life Cycle Costing - Life Cycle Costing, Research Study on Minor Maintenance Work on Government Quarters.

Major R&D Achievements for ArchSD in Year 2005 or Under-Planning include:

1. Collaboration with other Government Departments, Bureau;
2. Collaboration with other Global, World-Wide Organisations relating to the Building Industry;
3. Beneficial to the Public & Building Industry;
4. Enhancement of Best Practices & Statutory Requirements;
5. Collaboration with other Academic /Professional Institutions on Research - Related Projects & Tasks.

Our Priorities

Health & Safety

Health and Safety is one of the ArchSD prime concerns. We have not only taken account of the fact that health and safety is a shared responsibility within our Department and our staff but also that it is of concern to our contractors and the community at large.

Site Safety

Our experience in site safety is conveyed to our project staff, contractors and consultants through site safety and environmental talks and timely dissemination of information such as directives of Environment, Transport and Works Bureau, advisory notes and reference of Lands Department, ovitrap indices of Food, Environment and Health Department, our lessons learnt, and our keynotes etc.. Our aim is to allow all project team members participating in our building sites to be kept abreast of the latest site safety information so that they can introduce this information to other site personnel to enhance their safety awareness and continuously improve the overall working environment on site. Furthermore, we post up the site safety information on our website acting as a convenient channel for easy reference and information retrieval by our project team members.

In September 2005, we organised a joint workshop with an institute on 'Working-at-height' . The objective of the workshop was to present the findings of a study conducted by the institute and to promote site safety to our consultants and contractors.

Experience sharing with Arch SD active consultants and contractors

Site Safety Inspection

Lifting arrangement to take down a beam of large span in a demolition project

A "Construction Design and Management" (CDM) system for building construction has been introduced to further enhance our site safety management. The CDM system encourages the identification of hazards and impacts during the design stage, particularly safety, environmental protection, buildability and maintainability that may be encountered during the construction, and subsequent maintenance and eventual demolition of the project.

To promote this new concept, we take the initiative to prepare common hazards registers for structural works and building services

works. This information is shared with our project team members, consultants and contractors, and their valuable comments have contributed to the continual enhancement of the common hazards registers.

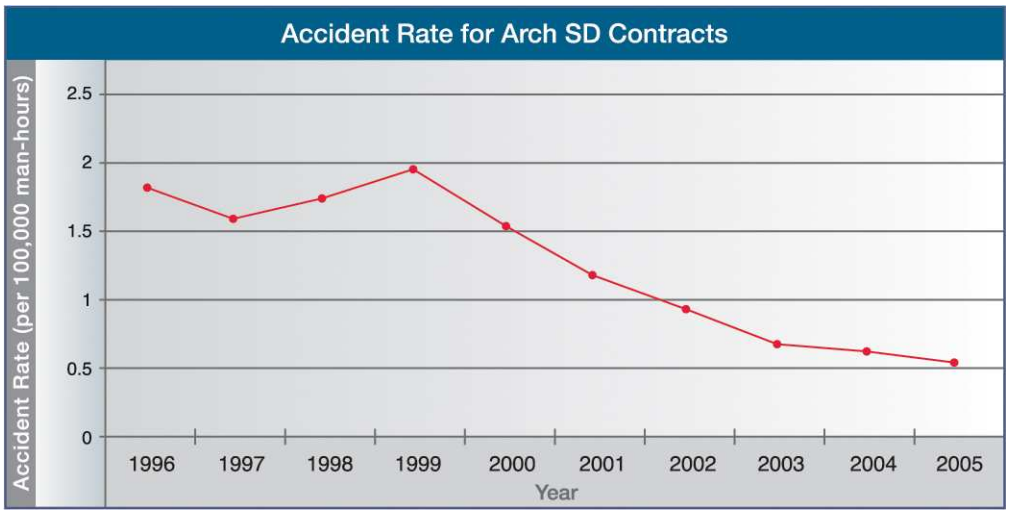
Safety Advice on use of A-Ladder

Morning Assembly in Site Safety Cycle

Hazard Identification Activity in Site Safety Cycle

Accident Prevention

Over the past 10 years, our accident rate has dropped from 1.88 reportable accidents per 100,000 man-hours worked in 1996 to 0.61 in 2005. It has decreased by about 67% and the trend remains downwards. We are still not complacent with this result. We will continue our effort to formulate effective strategic measures and coordinate with our consultants and contractors for continual improvement.



For major incident, we arrange an independent assessment review to find out the causes and to provide recommendations on effective precautionary measures for the purpose of preventing recurrence of a similar incident. We prepare our lessons learnt with reader-friendly illustrative diagram for simple and effective comprehension by the reader. We also share our findings with our consultants and contractors as well as other works departments. To formulate effective site safety measures, we review the relevant lessons learnt periodically and discuss with the concerned project team members and contractors, as and when appropriate.

Reader-friendly illustrative diagram for Lessons learnt

Site mosquito control by spraying pesticide periodically

Mosquito Control

Since 2003, we have prepared a sample tool-box talk on mosquito control to facilitate our contractors to arranging appropriate site safety training regarding anti-mosquito breeding for site personnel. We review and update the sample tool-box talk annually to keep abreast of the latest mosquito-borne diseases prevailing in Hong Kong . More information on our works to control mosquito is presented in Social Performance – Mosquito Control Section.

Considerate Contractors Site Award Scheme 2005

To enhance the site safety and environmental performance of our contractors, we encourage them to join the Considerate Contractors Site Award Scheme organised by the Environment, Transport and Works Bureau. The scheme is aimed at motivating the contractors to take initiatives in formulating new measures on site safety and environmental protection to address their current site conditions. The Environment, Transport and Works Bureau panel of judges not only assess the participants on their site management, environmental consciousness, safety, but also give due consideration of specific measures adopted to minimise the impact of construction work on the public.

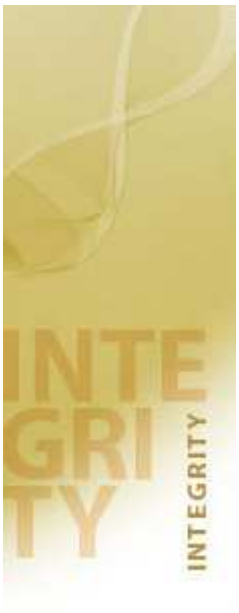
In 2005, four ArchSD contractors won the Considerate Contractors Site Awards with one getting the Bronze Award. Also, three ArchSD contractors won the Outstanding Waste Management Performance Grand Awards with one getting the Gold Award. This category emphasised innovativeness and effectiveness of the waste management strategies.

CCSAS 2005 Award Ceremony

Occupational Health and Safety

In addition to site safety, we also pay attention to occupational health and safety issues at our workplaces. In 2005, our Occupational Health and Safety Management System (OHSMS) was developed to systematically manage our OHS issues. Detailed information is discussed under Social Performance – Occupational Health and Safety.

We see, we act and we care. We will continuously join hands with our staff, partners and various stakeholders to promote health and safety, and provide a better working environment and due consideration for the public in the vicinity of our construction sites.



Economic Performance

Our Role in the Economy

Economic aspect of the triple bottom line reporting allow us to demonstrate how we apply public funds for public use and contribute to Hong Kong's overall economic development. In fiscal year 2005/06, we continued our efforts to control our expenditure to HK$1,366.9 million, down 2.4% from the previous fiscal year. The following table shows the breakdown in the expenditure and financial provisions of our Department. This information is drawn from the Controlling Officer Report of the 2006-07 Estimates of the Government of the Hong Kong Special Administrative Region. Further information on our economic performance is also available at www.budget.gov.hk .

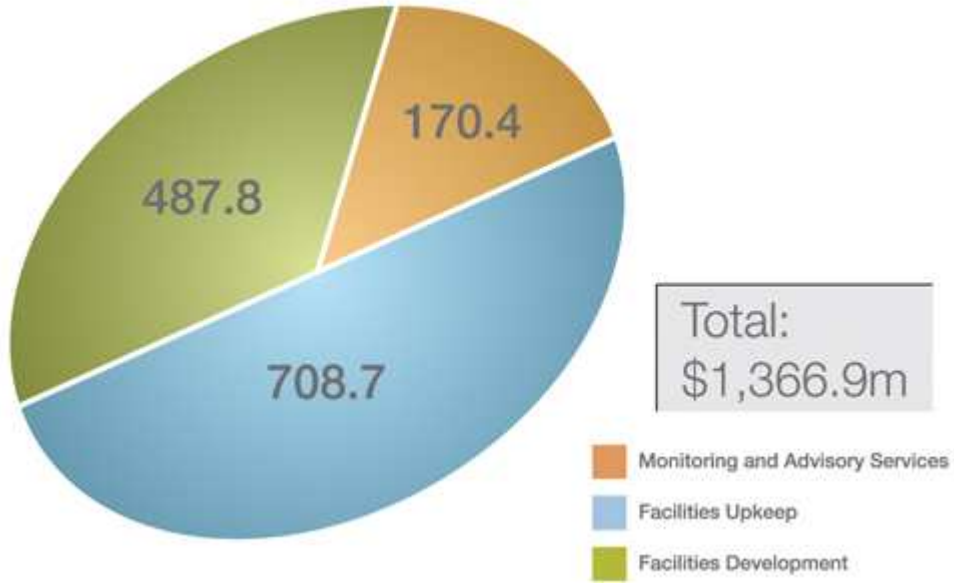
Departmental Expenditure 2005-2006

	2005-2006 Revised ($ million)
Personal salaries and allowances	823.807
Personnel related expenses	0.75
Departmental expenses	66.687
Other charges	475.633
Total	**1,366.9**

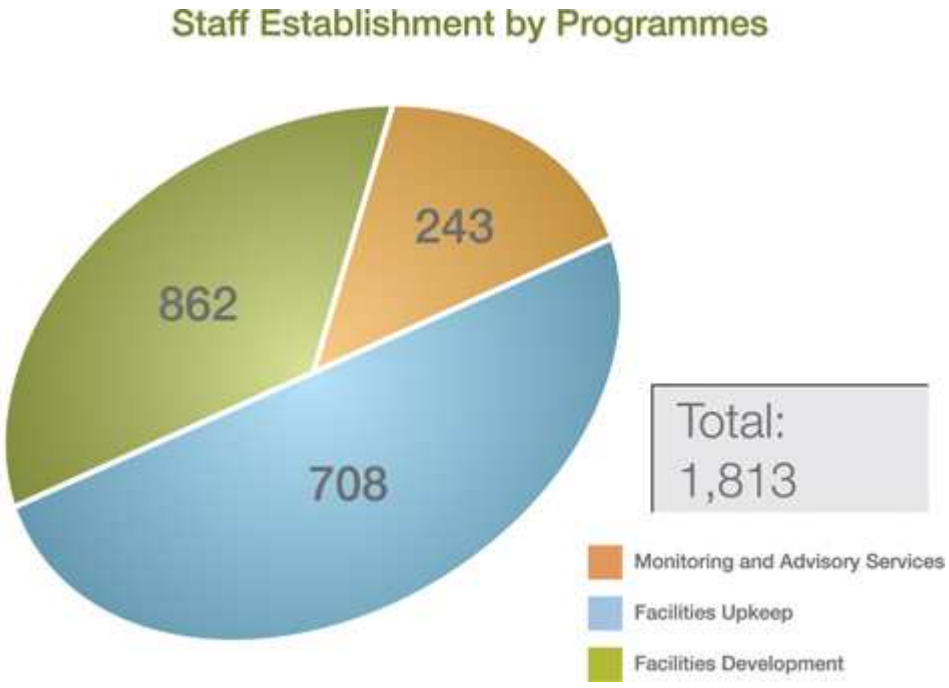
Note: Total departmental expenditure in 2004-05 was HK$1,400.8 million, and hence, a saving of 2.4% was achieved.

Financial Provision by Programme 2005-06 (HK$ million)

Financial Provision by Programmes 2005-06 (HK$ million)



Staff Establishment by Programme as at 31 March 2006



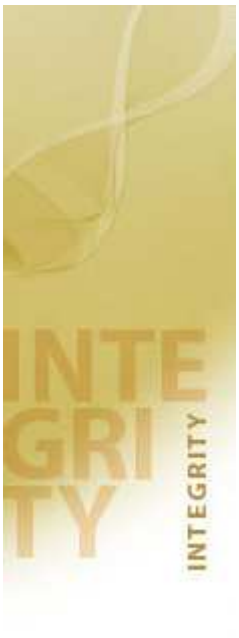
Our male to female staff ratio is 1:0.3 as at end of 2005.

Changes in Staff Establishment

	Number of staff establishment as at March 31 each year
2004	1,981
2005	1,887

2006	1,813

Economic Performance



Sustainability Criteria for Financial Commitments

Our expenditure, similar to most of the government departments in Hong Kong , is drawn from public funds. Our budget is reviewed annually and justified by our adherence to selective criteria in developing projects and which have taken into consideration sustainability issues. These criteria include consideration of introducing public consultation before commencement of public works, community issues, and environmental implications such as the implementation of a waste management plan for construction and demolition waste, mitigating measures in the event of environmental impacts, as well as the potential for job creation. Once prepared, the budget is then submitted to the Legislative Council for final approval before any funds can be obtained.

A total of 17 consultancy projects were issued in 2005 which helped to create 39 consultancy positions. The expenses on building-related projects undertaken or monitored by the department were $11.1 billion, whereas the expenditure on routine maintenance and minor alteration works was $1.8 billion.

Economic Performance

Long-Term Targets and Achievement

Objectives	Targets	Measurement	Achievements in 2005
Improve the quality of our services and project delivery	To ensure timely delivery of at least 80% of capital projects.	Measured the number of projects that have been completed on schedule in terms of percentage.	92.3% (36 out of 39) of the projects met the target.
	To monitor and ensure the expenditure on Public Works Programme (PWP) projects remains within a range of 5% under-spending and of 10% over-spending of the budgeted amount.	Measured the under-spending or overspending in terms of percentage in the financial year 2005-06.	Actual expenditure was $6,492M with an under-spending of 4% when compared to the target expenditure of $6,763M.
	To harness the resources in the private sector through outsourcing public projects.	Measured the value of capital works projects outsourced to private sector in terms of percentage.	82% value of capital works projects were outsourced.

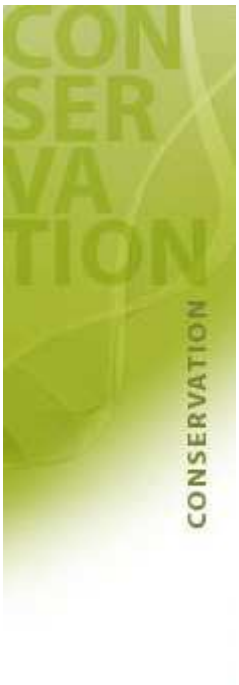
Environmental Performance

Energy Use

We understand that efficient energy use is the key for developing a sustainable future. In order to minimise the consumption of energy in buildings constructed by our department, we have endeavoured to enhance on building design, e.g. reduce OTTV, create green roof design, etc. and to optimise the utilisation of renewable energy and energy saving devices, such as variable speed drives for motors, high-efficiency and heat recovery chillers, heat exchanger, heat wheels, cooling towers for air-conditioning installation, energy-saving fluorescent tubes and occupancy sensors for lighting installation. Our effort has been reflected in the favourable comments from building users upon occupation of the buildings.

Our long-term targets / achievements in optimising efficient energy consumption are listed below:

Objectives	Targets	Measurement	Achievem 2005
Energy conservation	To achieve OTTV standard of not	In terms of number and %	100% of p achieved C



Environmental Performance

Greening Our Supply Chain

Besides the in-house projects, we invite our working partners-consultants and contractors to tender for the public building contracts. They involve in the design and construction of works like building, piling, interior design, building services installation and quantity surveying, etc. For every stage of a building's life-cycle - from the design, construction, and maintenance to demolition, our works cause inconvenience to the community and induce environmental impacts through dust, noise and water pollution, and waste generation. Through the provision of appropriate training and guidance, tendering process and in monitoring of the performance, we work together with our partners to ensure full compliance with the environmental requirements.

Sustainability in Government Tenders

We encourage our project teams and consultants to explore every opportunity to adopt sustainable design features by setting a list of sustainable design principles, such as sustainable planning, preservation of existing heritage and habitats, energy conservation, waste management, use of materials, operation and maintenance, etc.

Sustainable Procurement

We continue to follow the General Specification for Building (2003 Edition), which laid down a comprehensive list of procurement conditions, such as:

- Restriction of use of hardwood;
- Use of timber from certified sustainable forests;
- Use of low VOC paint;
- Use of recycled aggregate in concrete; and
- Use of environmentally friendly carpet.

Monitoring and Evaluation of Supply Chain

Close monitoring of our service suppliers is an essential process to ensure good quality of our product and services. Our contractors and consultants are reviewed on a quarterly basis beginning with the project commission.


Meeting with Site Management Personnel

Environmental performance such as air, water, noise, and waste pollution, is one of the key factors in the review. The results of the review will be considered when assessing their ability of taking up future tenders. Service suppliers with serious non-compliance (i.e. two consecutive poor

ratings) will be temporarily suspended from bidding future projects.

Contractor Performance Reports 2005

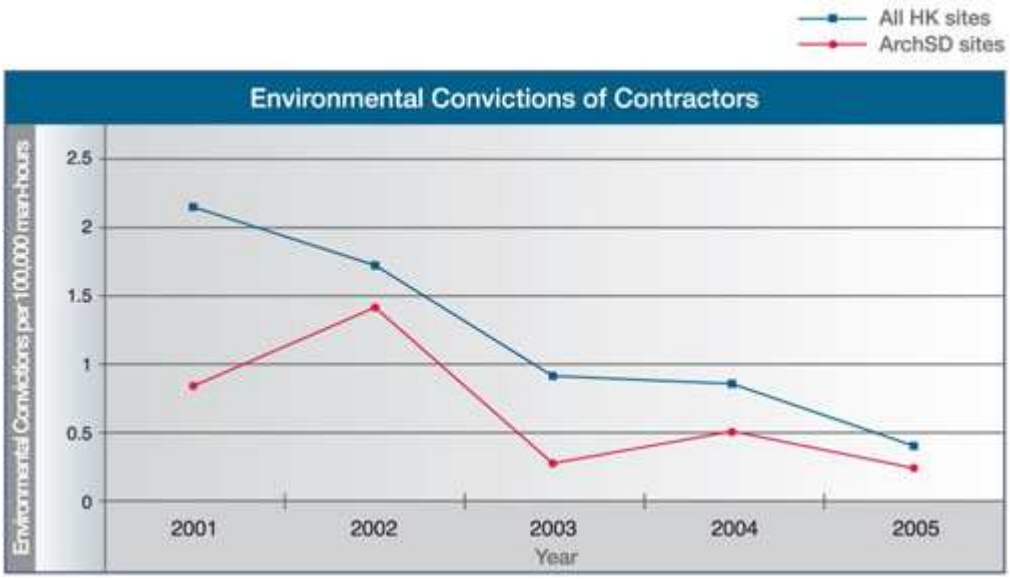
	Total no. of reports	Very good (%)	Satisfactory (%)	Poor (%)	Not applicable (%)
2005 Q1	248	0	93.15	6.45	0.4
2005 Q2	249	0	95.58	4.02	0
2005 Q3	243	0	91.35	7.82	0.01
2005 Q4	242	0	95.45	4.54	0

Remarks: The performance reports are for Building Contractors only.

Environmental Offences

The level of environmental convictions by contractors on our construction sites is consistently lower than the average in all Hong Kong sites. This shows the success of our effort to raise the environmental standard of the supply chain in the contract requirements and to raise the environmental awareness of the contractors through training.

Environmental Convictions of Contractors



Green Contractor Award

ArchSD's Green Contractor Award Scheme has started since 2001. The objective of the scheme is to encourage ArchSD's contractors to pay more attention to the environmental aspects so as to achieve a higher standard and continual improvement of their environmental performance on construction sites. Through the scheme, contractors' performance on environmental protection is assessed, such as complying with the environmental legislations and other requirements, taking effective measures to reduce pollution of air,

noise, water and construction waste, etc.

The following are the winners of the 2005 Award

Gold	Leighton Contractors (Asia) Ltd.	Design and Construction of Residential Training Complex for Juveniles in Tuen Mun	
Silver	Nishimatsu Construction Co., Ltd.	Construction of Stanley Complex	
Bronze	Yau Lee Construction Co., Ltd.	Design and Construction of Joint User Building at Rock Hill Street, Kennedy Town, Hong Kong	
		Construction of Education Resource Centre cum Public Transport Interchange at Kowloon Tong, Hong Kong	
		Reprovisioning of Victoria Prison at Lai Chi Kok Reception Centre and Old Married Quarter Site	

Some of the green measures adopted by the winners.

Reducing noise pollution by the use of pneumatic concrete breaker

Vechicle exhaust gases filtration system

Water recycling facilities and automatic wheel washing system at site entrance

Fully enclosing the material hoist for dust suppression

Precast concrete road paving and reusable precast concrete hoarding were used extensively

Extensive use of precast concrete elements in the superstructure

Environmental Performance

Construction & Demolition Materials Management

Reduction of Construction and Demolition (C&D) materials continues to be the key concern of the Department. We strive to minimise C&D materials generation from the design stage. We adopt waste-saving construction methods such as considering the use of system formwork, steel formwork and prefabrication.

The requirements for the preparation of a "waste management plan" and for implementing the trip-ticket system are specified in the contract documents with their implementation monitored closely by our supervisory staff.

Firstly, the transfer of soil among sites has been successfully realised in certain construction sites owing to enthusiastic co-operation between all parties of concern. For example, about 10,150 m^3 of soil generated from the new primary school site in Area 12, Yuen Long, and the demolition and site formation works at Princess Margaret Hospital site were sent to other sites.

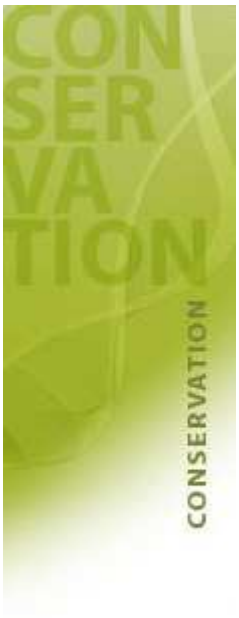
Furthermore, the trip ticket system has been improved through the adoption of a bar-coded Disposal Delivery Form for every C&D waste disposal from public work sites. Likewise, a pilot Dry Run Exercise for the Construction Waste Disposal Charging Scheme under the provisions of the Waste Disposal Ordinance enforced on 20th January 2006 was launched in July 2005. The objective of this exercise was to ensure that our contractors could accustom themselves to the new Scheme. The pilot exercise was well received by our contractors with thirteen active participants.

Waste materials generated from demolition of an existing building were sorted for recycling

Timber formwork and lumbers were sorted for future re-use

Environmental Performance

Environmental Assessment of Buildings



We encourage greener design of buildings to conserve natural resources and to minimise potential adverse impacts to the environment. We adopt the Hong Kong Building Environmental Assessment Method (HK-BEAM), a comprehensive environmental assessment of building, which includes a review for the design, construction and management of a building, can act as a benchmarking tool for these environmentally friendly buildings, to benchmark the environmental performance of our buildings.

In 2005, six of our projects were being assessed. Three were given a provisional "Platinum" rating afther the initial assessment.

Environmental Performance

Environmental Awareness Promotion

We engage with our working partners, other government departments, the general public as well as our internal staff to put forth the emphasis of environmental protection.

Good communication with neighbours

Public areas are cleaned regularly and damaged road is repaired

Our activities in 2005 included:

- Arranging Awareness Training on Integrated Management System for all our internal staff and representatives of our consultants and contractors;
- Preparing and completing a number of papers for local, regional and international events related to sustainable development. A selected list is presented in the table below.

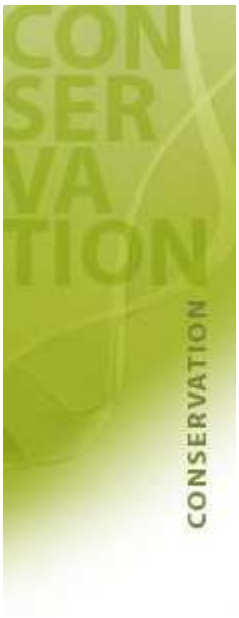
List of Selected Papers Completed in 2005

Paper Topic	Presented in Conference/ Seminar/ Workshops
Sustainable Building, Hong Kong Wetland Park	Contesting in the 2005 Environmental Paper Award jointly organised by Hong Kong Institution of Engineers (HKIE) Environmental Division and Hong Kong Construction Association in March 2005 and was awarded the 1st Runner Up Prize
Improving the Sustainability Process at the Hong Kong Science Park , Phase I	Conference on Sustainable Building South-East Asia, presented in April 2005 at Kuala Lumpur, Malaysia
Heritage Conservation - Towards an Integrated Architectural Approach	Shanghai & Hong Kong Conference on Urban Renewal & Heritage Conservation presented in June 2005 at Hong Kong
Review of Ammonia Chillers for Air-conditioning Application in Hong Kong Office Buildings	Hubei & Hong Kong Joint Symposium 2005, presented in July 2005 at Hubei, China
Building Harmony, Hong Kong Wetland Park	World Sustainable Building Conference presented in September 2005 at Tokyo, Japan
Enhancing Energy Efficiency in Electrical Infrastructure in Government Buildings	HKIE Electrical Division Annual Symposium, October 2005 at Hong Kong
EMSD Headquarters – A	Beijing-Hong Kong Municipal Construction and

Case of Revitalised Building	Management Seminar of the Ninth Beijing-Hong Kong Forum on Economic Co-operation presented in November 2005 at Beijing, China

Environmental Performance

Resource for Environmental Protection

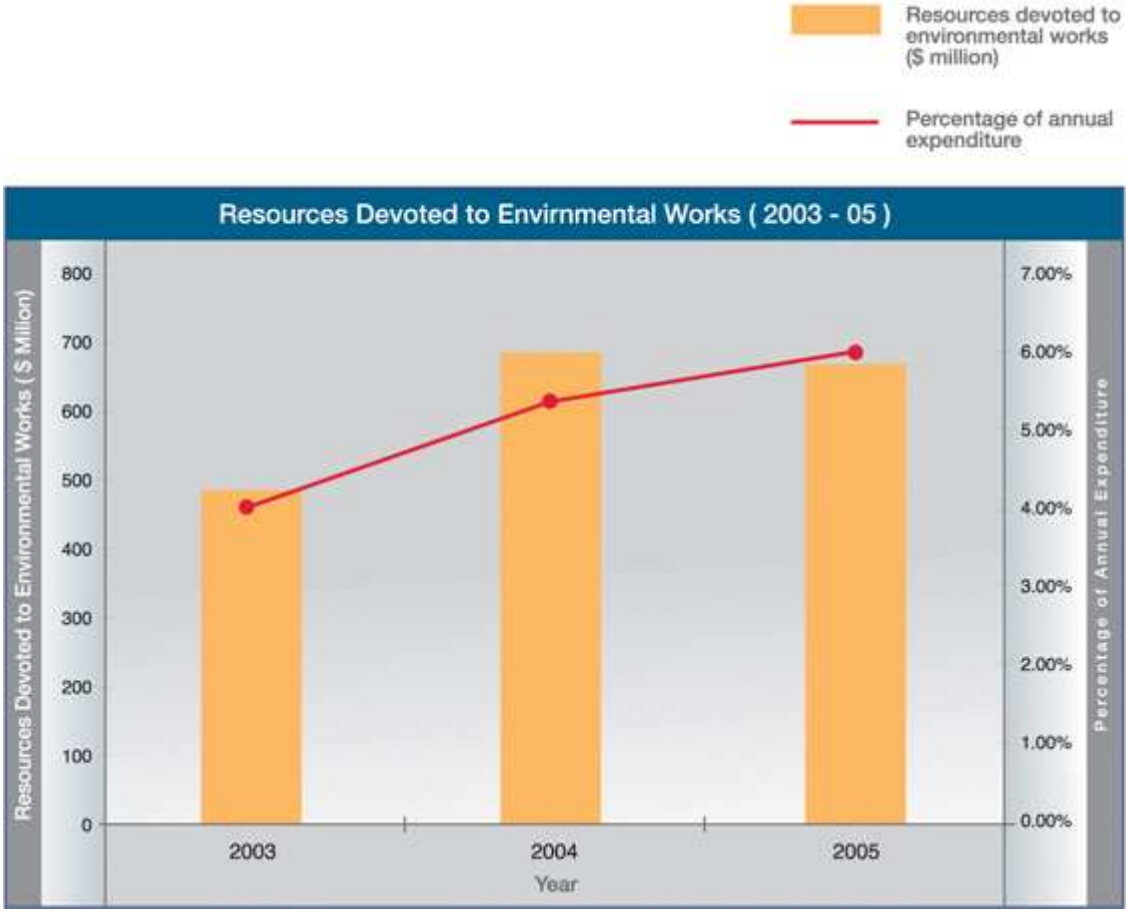


A considerable portion of our expenditure is devoted to environmental protection. For the purpose of environmental accounting, we have categorised our works in the four environmental concerns listed below as environmental costs:

- Constructing environmental projects including these natures : Air and water pollution control, noise mitigation measures, waste water treatment and disposal, and asbestos abatement works;
- Environmental review and impact assessment for projects;
- Resources spent for environmental-related works associated with project acitvities; and
- Maintaining an environmental management system in accordance with ISO 14001 and housekeeping activities.

We strive to provide the public with a sustainable built environment and will continue to invest steadily in developing environmentally sound solutions for our projects.

Resources Devoted to Environmental Works (2003-05)



Resources Devoted to Environmental Works in 2005

Activities	Value ($ million)
Constructing Environmental Projects including these natures : Air and water pollution control, noise mitigation measures, waste water treatment and disposal, and asbestos abatement works	508.8
Environmental review and impact assessment for projects	3.15
Resources spent for environmental related works associated with project activities	149.1
Maintaining an Environmental Management System in accordance with ISO14001 and housekeeping activities	3.06
Total	**664.1**

Architectural Services Department

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Environmental Performance

Long-Term Targets and Achievement

Objectives	Targets	Measurement	Achieve 20
Water conservation	To install water-saving devices in 45% of sanitary appliances in new buildings	Measured in terms of number and percentage of fittings with water-saving devices	2,384 out (69.44%) fittings wit saving dev
To promote environmental awareness	To organise / arrange staff participation in training related to environmental issues	Measured in terms of number of functions / seminars	24 in-hous seminars w organised and 43 ext functions w attended b
	To provide general technical advice on environmental protection measures	Measured in terms of number of advices given to other departments / organisations	1,218 num environme advices we
To improve visual and air	To achieve 60% of new projects to	Measured in terms of number and	18 out of 2 (85.71%)

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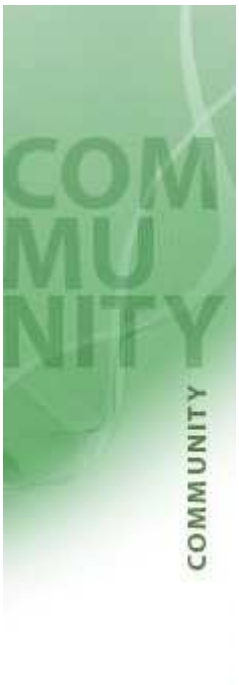


Social Performance

Stakeholder Engagement

As a responsible Government department, we are accountable to the public at large and value their input to improve the quality of our services. We engage with our stakeholders through regular Client Satisfaction Surveys and through our participation with external committees and international associations. Our stakeholders include:

- Government and related public organisations;
- Legislators;
- Construction and industry partners;
- Suppliers, consultants, and contractors;
- Academic and research groups;
- Public building users, including physically challenged groups;
- Environmental groups;
- General public; and
- International interested parties.

Client Satisfaction Survey

Since 2002, we have been collecting feedback from our clients through quarterly Client Satisfaction Surveys in regards to aspects on aesthetics, conscientious use of buildings materials and recycled resources, energy conservation as well as the greening of indoor and outdoor environment.

In 2005, to further explore the useful comments from the survey, we revised the questionnaires to cater for the needs and concerns of two different stakeholders: Building End-users & Planning Team of our client, respectively.

We are very pleased with the result of over 90% of the returned feedback rated our Overall Performance as "Satisfied" and almost

half the feedback rated as "Very Satisfied". We understand there is room for us to further improve the "Not so Satisfied" areas identified during the surveys.

Repair Call Centre

In order to deliver our services promptly, we have set up a Repair Call Centre to handle the requests received by telephone calls from end users of government properties, who need mostly quick and timely repairing works. Additionally, we arrange appointments for the end-users with the repair work contractors reliably and swiftly by a fully automated process. This process is operated by computer hardware and software which establishes the follow-up procedures required to ensure the quality of works delivered by contractors. In 2005, we processed over 300,000 cases of request using this system.

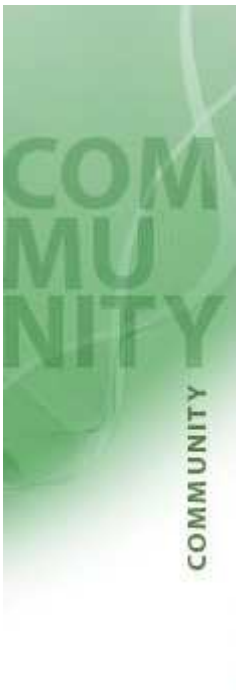
Engaging International Association

Communication with local and international building professionals provides our staff various opportunities to keep pace with the international development in construction. Since 1994, we have been a member of the International Council for Research and Innovation in Building and Construction (CIB) which is an international network offering a cross-disciplinary platform for collaboration to improve built environment.

In September 2005, we presented on the Hong Kong Wetland Park project in the World Sustainable Building Conference in Tokyo as part of the international green building conference series organised by CIB. With more than 1,700 participants from over 80 countries and regions, the conference placed it in the top rank of international organisations addressing sustainability issues.

Universal Accessibility

Our Priorities - Universal Accessibility



Social Performance

Occupational Health & Safety

Workforce is the most important asset of an organisation. We take the initiative to develop and implement a Health and Safety Management System in accordance with the requirements of an internationally recognised standard, OHSAS 18001 (Occupational Health and Safety Assessment Series). A Task Force was established to formulate the documentation and implementation of Occupational Health and Safety (OHS) with the consideration of subsequent OHSAS 18001 certification and with the integration of the existing internal quality and environmental systems, including risk assessments, safety rules, lessons learnt, tips on OHS etc.. With the objective of continual improvement on OHS, several targets are established to monitor the achievement, e.g. Minimising Accident Rates, Safety Promotion, Enhancing Occupational Safety and Health within the Workplaces, and Safety Training.

With regard to the OHS for the staff at workplace, risk assessment reports are prepared for various common hazardous areas concerning the following major aspects:

- Office Activities
- Site Activities
- Supportive Activities in APB Centre
- Supportive Activities for Specific Maintenance Works

Safety Rules for Site Inspection are developed on reasonably and practicably basis to address certain specific tasks.


Safe and healthy working environment

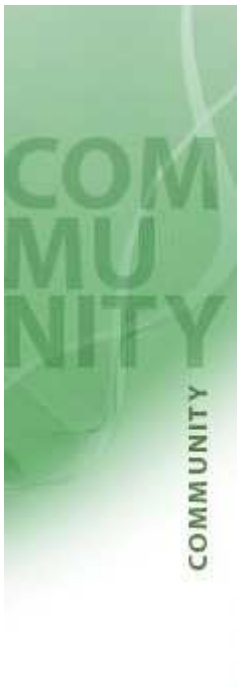

Awareness training on Integrated Management System

Staff are provided with sufficient Personal Protective Equipment (PPE), such as safety helmets, safety shoes and mouth masks etc. to protect themselves against common hazards at work.

The department has arranged eleven sessions of Awareness Training on Integrated Management System for individual staff to enhance their understanding of the requirements and benefits of implementing the OHSAS 18001 within the department to promote the awareness of staff's OHS at workplace.

Construction Safety

Our Priorities – Health and Safety



Social Performance

Employee Training

We provide training to our staff of all grades every year. In 2005, we sponsored 1,255 of our staff members to enrol into some 180 different training courses in various field.

Our training is divided into two main categories: Leadership and Management, and Professional & Vocational Skill training. There were a total of 24 attendees and 1,552.5 training hours for the Leadership and Management training, and 1,231 attendees and 10,017.8 training hours for the Professional & Vocational Skills training in 2005.

Social Performance

Mosquito Control

ArchSD urged all project officers, including consultants, to manage the mosquito control effectively at construction sites and SIMAR (Systematic Identification of Maintenance Responsibilities of Slopes) slopes. Additionally, Routine Inspection Checklists have been developed to facilitate routine site inspections on mosquito control by site supervisory staff.

Following the our practices in 2004, ArchSD continued conducting the same independent audit checks in 2005 in order to verify the effectiveness of anti-mosquito measures adopted under the prevailing site conditions provided by the contractors.

Removal of blockage at surface channel on site

Fogging spray at site hoarding area

Inspection of manhole by ArchSD staff

Slope inspection by ArchSD staff

Larvicides spray at surface drainage on slope

Mosquito repellent for site personnel

Red Imported Fire Ants

Regarding the controls for spreading Red Imported Fire Ants (RIFA) in Hong Kong , ArchSD has established a reporting system to ETWB for the eradication of RIFA at construction site. We have also prepared the "*Particular Specifications for Treatment Services on Red Imported Fire Ants*" to tackle RIFA in ArchSD projects, in particular for those with landscaped area. We also collaborate closely with the specialists employed in the pest industry.

Numerous RIFA mounds found in landscaped area

Social Performance

Community Work

Members of our Voluntary Services Team continued to contribute their service to the community actively. They refurbished homes of singleton elderly who could not afford to hire contractors, held parties for the disabled to share the joy of special occasions, and teaching Tai Chi to low-income groups as a recreational and health improvement programme.

A Mid-Autumn Festival party for the elderly

Other than the members of the Voluntary Services Team, our staff have actively participated in many other charity activities. They participated and gave generously on several occasions during the year : blood donations, Community Chest Skip Lunch Day, Dress Casual Day, Po Leung Kuk Lunar New Year Charity Walk, Golfathon for charity, and the most trying "TrailWalker" programme organised by Oxfam, amounting well over $100,000 in 2005.

ArchSD colleagues supported the Po Leung Kuk Lunar New Year Charity Walk

Trailwalkers 2005, an annual charity fund-raising event organised by Oxfam

In November, a team of 20 colleagues led by our Deputy Director had participated in the Civil Service Occupational Safety and Health Day. The event was organised by Civil Service Bureau jointly with Labour Department, Occupational Safety and Health Council (OSHC) and Radio Television Hong Kong to promote the awareness in the civil service of the importance of OSH in the workplace.

Later in early December, 40 colleagues led by the Deputy Director took part in the "Zero Waste Walk" which was one of the "kick-off" activities for the Hong Kong Environmental Protection Festival 2005. The objective of this festival was to promote environmental protection message to the general public and the event was hosted by the Environmental Campaign Committee.

Our Deputy Director and colleagues participated in the Civil Service Occupational Safety and Health Day

ArchSD colleagues in the "Zero Waste Walk"

Community Work Award

In March 2005, a plaque was presented by the Tung Wah Group of Hospitals to ArchSD to acknowledge the contribution made by our Voluntary Services Team.

In May, we received many votes of appreciation from various organisations - Gold Award Certificate for Volunteer Service from the Volunteer Movement, and a thank-you card received from Hong Kong Red Cross Blood Transfusion Service. The Hong Kong Community Chest expressed their appreciation of our contribution in the Corporate and Employee Contribution Programme 2004-2005 through acknowledgement advertisement in the newspaper.

The Yu Mak Yuen Integrated Services Centre's brochure publicised free Tai Chi lessons by our Voluntary Services Team's

Same year September, the Department was awarded by Tung Wah Group of Hospitals during the "Corporate Social Responsibility Recognition Ceremony" for recognition of the contributions of our voluntary services.

In November, our Director and Voluntary Service Team attended an inauguration ceremony for a project which aimed to help the elderly in Wong Tai Sin and Kowloon City Districts to repair minor damages and provide small-scale refurbishment for their homes. The project was co-jointly organised by the Tung Wah Group of Hospitals, Sik Sik Yuen, the Electrical and Mechanical Services Department, China Light & Power, Construction Industry Training Authority, the Hong Kong Career Development Association and the ArchSD.

Award to ArchSD by Tung Wah Group of Hospitals in the "Corporate Social Responsibility Recognition Ceremony"

Our Director and the Voluntary Service Team at a kick-off ceremony of a project to help the elderly in Wong Tai Sin and Kowloon City District

Community Work in 2005

Total number of voluntary work hours carried out by our staff	1,194 hours
Number of active Voluntary Service Team members	47 out of 1,887 total number of staff
Number of staff received commendation for voluntary service	14

Social Performance

Social Achievements

Civil Service Award

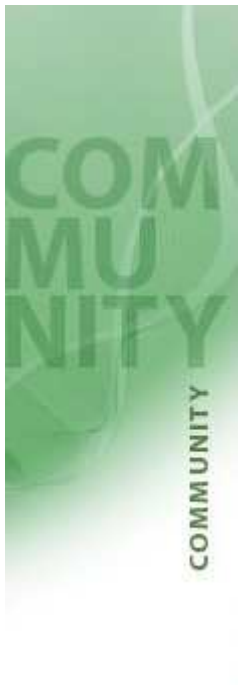
We are pleased that an architect from the Department was one of the 74 civil servants in Hong Kong awarded as the Secretary for the Civil Service's Commendation Award in September 2005.

Technical Paper Award

Three of our professionals wrote a joint paper concerning the Hong Kong Wetland Park project and won First Runner-Up Prize in the Hong Kong Institution of Engineers 2005 Environmental Paper Award Competition.

Three ArchSD professionals receiving a 1st Runner Up Prize in the HKIE 2005 Environmental Paper Award

Social Performance



Indoor Air Quality

Indoor air quality (IAQ) has been given increasingly higher emphasis by our stakeholders, particularly the general members of public. We strive for sound integrated building designs for achieving good indoor air quality and adopt the IAQ level of "Good Class" as an acceptable minimum reference.

Furthermore, we have tightened the contract requirements of our contractors who are required to conduct IAQ measurements to verify the design value. Upon occupation, we persuade our client to participate in the voluntary "IAQ Certification Scheme for Offices and Public Places" annually to ensure IAQ is maintained at the certified level.

Social Performance

Long-Term Targets and Achievement

Objectives	Targets	Measurement	Achievement in 2005
Minimising the accident rate in ArchSD contracts	Accident rate in ArchSD contracts should be less than 27 reportable accidents per 1,000 workers per year	Number of accidents per 1,000 workers	21 reportable accidents per 1,000 workers
Strengthening the health and safety knowledge for project staff with external training	At least 65% of site supervisory staff would have attended safety courses on "Basic Accident Prevention (IGS)" and "Occupational Safety & Health Management (OSHM)"	Measured by the number staff attended	For IGS, 69% (276 out of 400) For OSHM, 64% (256 out of 400)
Upkeeping the safety and health awareness of professional, technical and site supervisory staff, consultants and contractors with in-house briefing	At least 4 no. in-house workshops on safety and health should be organised	Measured in terms of number of workshops	3 in-house workshops were organised and 11 awareness training sessions were conducted
To improve the quality of our service	To achieve 90% of the completed projects with at least Satisfactory Level or above on the overall performance in Client Satisfaction Survey	Measured the number of projects achieved at Satisfied Level in terms of percentage	92% (11 out of 12) of project achieved Satisfied Level or above

Our Sustainable Practices

Case Study One – Hong Kong Wetland Park

The Hong Kong Wetland Park occupies 61-hectares of land and is located on the north-eastern edge of Tin Shui Wai in the New Territories in Hong Kong. The Park is envisaged as a prime example of harmony of human and nature, of environmental practice and sustainable development. It is unique to Hong Kong , which seeks to serve different purposes, such as conservation, tourism, education and recreation, all with equal importance.

Special features are incorporated in the design of the buildings to cater for the purpose of integrating man-made structures with the natural environment in the park. These unique features include landscaped roof, timber cladding and multiple layers of shades. The Visitor Centre with a footprint of approximately 10,000 square metre provides integral facilities to visitors, including three major Galleries, Resource Centre, Office, Café, Shop, Play area and Toilets. The Satellite Building and three Bird Hides are located in the outdoor area. Each facility serves unique functions for conveying wetland messages.

There are ten fundamental green concepts embedded in the development which are summarised as follows:

1.	Low Overall Thermal Transfer Value (OTTV)
	• The Green Roof and the orientation of the building allow the Visitor Centre envelope to achieve energy efficiency performance of approximately OTTV 16W/m^2.
2.	Geothermal Heat Pump Air-conditioning System
	• A Geothermal Heat Pump Air-conditioning System is installed at the Visitor Centre. It utilises the mass earth of the park for heat exchange to keep the park environment quiet and undisturbed. This system is energy efficient and environmentally friendly. • Approximately 468 units of 32mm-diameter flow and return high-density polyethylene (HDPE) pipes are buried underground at 50m deep and embedded in bentonite clay and cement grouting for heat exchange with the constant underground temperature. This system is capable of providing approximately 390 tonnes of air-conditioning per day. • This method eliminates the use of visible and noisy heat dissipation air-conditioning equipment, reduces external louvers, and precludes direct heat dumping into the environment which is particularly favourable and suitable for the environment of wetland park.
3.	Natural Lighting / Ventilation and Renewable Energy
	• Skylights are installed at the Atrium (north light) and external toilets to allow the use of natural light. External artificial lighting is minimised to reduce power consumption. • Natural ventilation is implemented by means of elevated windows at the Satellite Building. • Other energy efficient and saving features adopted in the Building

	Services design include photovoltaic panels for oscillating fans in Bird Hides, T5 fluorescent tubes with electronic ballasts, occupancy sensors for office lightings, CO_2 sensors for fresh air supply, wind sensors for toilet ventilation, photo sensors for the lighting system in the Atrium, rain sensors for the automatic irrigation system, the Variable Voltage Variable Frequency (VVVF) drive for the lift installation and the variable speed drive for condensing water pumps etc..
	
4.	Ramp Access
	• Circulation ramps are built throughout G/F and 1/F galleries at the Visitor Centre to facilitate the access of disabled visitors and minimise the use of mechanical lifts.
5.	Minimised Water Consumption
	• Low capacity, 6-litre water closets are used to reduce water consumption for toilet flushing. • The design of the Satellite Building is tailored for collecting rainwater as flushing water. • Recycling of lake water for a water feature cuts down water consumption.
6.	Recycled Brick Wall and Fenders
	• Recycled Chinese bricks are used for building a brick wall on the south face of the Visitor Centre and the Ticket Office to minimise the effects of solar gain to the building. • Timber fenders are re-used in the freshwater marshes to serve as resting posts for habitats.
7.	Shading by Timber Screens
	• Sustainable timber from identified renewable sources is used throughout the whole project as vertical and horizontal louvers to provide shading for the buildings and external landscaping work.
	
8.	Recycled Aggregates and PFA
	• A total of 15,300 tonnes of recycled aggregates/rock fill are used as sub-base, hardcore and fill materials in the development together with 5,600 tonnes of recycled coarse aggregates in the structural concrete. • The majority of the recycled aggregates are generated from a nearby

	recycling plant. 75% of the total amount of structural concrete used by volume contains recycled aggregates or PFA as partial cement replacement.
9.	Re-use of Existing Materials
	• Existing materials used at the Phase 1 and Phase 2 site, such as recycled granite paving, was originally from the wall of the Hong Kong Police Headquarters, Chinese bricks were recycled from the demolished old houses in a Chinese Village, and oyster shells were sourced from the nearby Lau Fan Shan oyster farm. • The existing Phase 1 Visitor Centre has been converted into a new Ticket Office, some of the aluminium wetland habitat sculptures will be relocated to Phase 2 site. Also all existing trees and many other plants from the Phase 1 site are preserved within the Phase 1 site or transplanted to the Phase 2 site.
10.	Soft Landscape Species
	• Native plant species, which require less maintenance and irrigation, are used extensively in landscaping work.

Our Sustainable Practices

Case Study Two – New Territories South Regional Police Headquarters (NTS RPH)

The Project involved the construction of a 16-storey office-cum-operational base building for the NTS Regional Formation of Hong Kong Police. The objectives of the project not only include satisfying the User's specifications and the timing for completion, but also involve the integration of green features into the design of the building such that a healthy work environment and long-term cost-effective operation for end-Users of the NTS RPH can be achieved. The NTS RPH project is accredited with the "Platinum" standard by the HK-BEAM.

Some special features include:

1.	Sustainable Planning
	• Landscaped areas on G/F, 6/F and 13/F are planted with trees and bushes, and incorporated with other landscaping features in order to maximise the green areas within this Police development. • Less dumping due to the adoption of pre-cast structural systems. • Designated staff access near MTR station to encourage use of public transport.
	
2.	Architectural Design
	• Curtain wall system with low e-coated insulating glass unit is adopted and which is integrated with aerofoil-profiled sun-shading devices to achieve an excellent Overall Thermal Transfer Value (OTTV). Additionally, the use of non-reflective glass has added benefits of reducing solar heat gain and undesirable glare from sunlight, and maintaining high degree of visual transparency. Thermal comfort of the peripheral building occupants is further enhanced by the use of "ventilated curtain window system" and adjustable built-in blinds integrated in the curtain wall system. • Rectangular block on irregular site to maximise space efficiency. • Podium block with car parks and plant rooms are used as the noise barrier for the office lower block, which screen out traffic noise from Texaco Road North. • Short sides of offices floors facing east and west to further cut down solar heat gain. • Building block disposition to face scenic views provided by the adjacent greeneries.

	• The use of prefabricated building components to ensure material quality and workmanship during on-site installation, examples of utilisation include curtain wall system, aluminium curved roof, demountable partition system and proprietary metal doors etc..
	
3.	Energy Conservation
	• Good Overall Thermal Transfer Value (OTTV) (down to 14.69 W/m^2 for tower). • Compliance with the Code of Practice for Energy Efficiency of Air-conditioning, Lighting, Electrical and Lift and Escalator Installations. • High Coefficient of Performance (COP) and Non-standard Part Load Value (NPLV) of the chiller plant. • Use of heat recovery chiller/heat-pump as energy efficient heat source for pre-heating domestic hot water. • Use of freshwater cooling tower plant for heat rejection from the refrigeration plant. • Provision of heat wheel for waste heat reclaim and economiser control for free cooling adopted in PAUs. • The use of ventilated curtain wall window at the East & West façades of the building. • Provision of sufficient energy meters for energy auditing.
4.	Environment, Health & Hygiene

	• Adoption of natural ventilation in the car park areas with assistance of the jet fans.
	• Use of inclined laminar flow system and bag-in/ bag-out filter changing device in the indoor shooting range.
	• Air Quality
	  ○ Use of CO_2 sensors control fresh air supply.
	  ○ Use of high efficiency filter and UV sterilising light in AHUs to remove the air contaminants in outdoor air and return air.
	• Reuse of bleed-off water from the cooling tower for flushing purpose.

Our Sustainable Practices

Case Study Three – Fire Station with Ambulance Depot & Police Post at Penny's Bay, Lantau

Following the announcement of the construction of a new Theme Park on Lantau Island, the Government immediately assessed the facilities required to support the planned future developments. The Penny's Bay Police Post and Fire Station/Ambulance Depot are identified as essential facilities to support Northwest Lantau . These facilities are key to a fire-fighting mission during an event of disastrous hillside fire in the area which threaten the surrounding environment and local residents.

The complex consists of a 7-bay fire appliance building with a light and airy single-storey structure utilising photovoltaic panels as an integral element of the roof. Such an arrangement has double benefits, not only allowing the use of natural light and ventilation, but also at the same time generating renewable solar energy. Adjacent to the appliance bay are offices, barracks and ancillary accommodation that are housed inside a two-storey building with a central landscaped courtyard. A separate four-storey practice centre allows confined space, height and ladder practice. A central utility building with shared facilities such as the electrical and mechanical plants are provided for the two clients to achieve efficiency of the building services plant. The single-storey Police Post is arranged separately at the east side of the complex.

Some special features include:

1.	Architectural Design
	• Functional orientation suits the use of building integrated photovoltaic panels with the roofs to provide renewable energy; • The roof design blends in with the low-rise design to minimise visual impact, collects rainwater for reuse and provides wide overhangs to shade walls; • Use of pergolas in key areas to shade walls; • Clerestory lighting and natural ventilation are provided; and • A combined building services utility building is shared between the two facilities.
2.	Renewable energy – Innovative use of building integrated photovoltaic panels
	• Photovoltaic panels are utilised to generate electricity; • Opaque photovoltaic panels are used to form solid roofs (except appliance bay). • Double benefits from the use of building integrated photovoltaic panels as roof and solar power collectors.

	• Triple benefits for appliance bay: transparent, functions as roof and power generators. • The building integrated photovoltaic panels are designed to generate 10% of total electricity energy consumed by the complex.
	
3.	Energy Conservation and Efficiency
	• Efficient building envelope design ○ Extensive roof overhangs and sun shading devices to minimise solar heat gain ○ Target OTTV: < 15 W/m^2 ○ Actual OTTV: ■ Police Post – 10.72 W/m^2 ■ Fire Station – 12.64 W/m^2 • Energy Efficient Lighting Design ○ Reduction in artificial light usage through maximising daylight; ○ Luminaries with high intensity discharge lamps (HID) provide high lighting output and occupancy sensors to reduce energy use; and ○ Timer controls are provided for external lighting facilities. • Compliance with the Code of Practice for Energy Efficiency of Air Conditioning, Electrical and Lighting Installations.
4.	Others
	• Collection of rainwater on the roof for reuse in vehicle washing and landscape irrigation. • The use of artificial materials minimises natural resource consumption. • The use of long life and low maintenance prefabricated materials. • Maximise the use of daylight and natural ventilation.

Our Sustainable Practices

Case Study Four: The Heritage Discovery Centre

The Heritage Discovery Centre was created as a tribute to sustainable architecture in Hong Kong. Its establishment not only preserves two historical icons constructed and once owned by Whitfield Barracks in the early colonial days from being wiped out forever in our always evolving society, more importantly, it serves as an education centre for promoting local heritage to the general public and our future generations. The eco-effective elements founded on the basis of sustainable development are adopted in the design of the Centre, which reflect the harmony between the society, the economy and the environment, to convey the following clear messages:

- Humanity and nature can co-exist in harmony;
- To eliminate the concept of waste;
- To utilise the flow of indoor natural energy; to mirror the continuous conservation cycle of production, recovery and reuse; and
- to seek improvement by sharing knowledge.

Special features include:

- A courtyard planted with two old champion trees has been re-opened by removing an erected structure when the buildings were used as a History Museum. Now, these two very old champion trees are thus liberated from the previous "prison-cell" to echo their seasonal changes with other trees in Kowloon Park beyond the courtyard.
- The preserved brass gate from the former Hong Kong and Shanghai Bank Building has been now placed at the entrance of the Permanent Exhibition Gallery in the Centre.
- The original buildings are a masterpiece of integrating natural elements into the design, from site, climate and sun, to the building materials used. The northsouth alignment creates a fundamental natural cooling effect for the building. Other features adopted in the original design, including the semi-basements, pitched Chinese tiled roofs, deep colonnaded verandas on two sides, and high ceiling, allowed maximum solar heat in winters whilst lowering temperatures in summers. These natural passive heating and cooling features left from the original design have been revived.
- The spacious and bright environment inside the buildings is re-created by demolishing the existing walls beneath the arches surrounding the galleries, and applying glass covered hallways. Such design permits enjoying nature as part of the education experience for the visitors.

- Shading provided by the two mature trees in the courtyard and the aluminium screens installed at the glazed roofs further reduce solar heat gain, and the indoor thermal comfort is enhanced and fine-tuned by the use of air conditioning system with proper temperature and humidity control.
- All air conditioning plants use ozone-depleting substance free refrigerant.
- As for areas required artificial lighting, high efficiency fluorescent lamps and energy saving down-lights operated by occupancy sensors are provided to further optimise the electricity consumed.
- Batteries used for the emergency lights are made of environmental friendly materials.
- The existing electrical main panels and emergency power generators that were used by previous Museum are restored and reused.

Moving Towards The Future

Continual improvement is one of the instruments we use for improving our economic, environmental and social performance. Taking into consideration government policies and stakeholders' concerns, we identify two areas where we will place emphasis for continual improvement in the coming year.

Energy Efficiency

Efficient use of energy has been our key environmental issues in reducing resources consumption as well as controlling our indirect greenhouse gas emission to the atmosphere. Therefore, we fully support the Chief Executive's "Action Blue Sky" Campaign to reinforce the Government's determination to improve Hong Kong's air quality. Apart from enhancing our on-going energy savings initiatives at our offices and projects, we will continue to implement green roof for new government buildings and also encourage developers to incorporate green roof feature into private building design.

Health and Safety

Continuing our effort on health and safety issues from Year 2005, we will further strengthen our enthusiasm in this area, specifically on occupational health and safety of our staff. We will review the effectiveness of the health and safety management system and seek opportunities to improve the system. We target to achieve OHSAS 18001 certification in 2007.

20th Anniversary

ArchSD has been providing professional services to government departments and the public since 1986. To commemorate our 20th Anniversary, a series of events, including symposiums, site visits, publications, competitions as well as staff activities will be held by different branches of the Department to celebrate this memorable occasion. These events will be highlighted in our report for 2006.

We are committed to improving our performance in the economic, environmental and social areas. We shall continue to do so for the future of our community.

Key Figures

Environmental Performance Indicators

Resource Usage – Energy

	Units	2005	2004	2003	2002
Electricity consumed (QGO and APB Centre)	kWh/m^2	277.5	277.5	285.6	291.3
CO_2 equivalent to electricity consumption (QGO and APB Centre)	Tonnes	3,655	3,655	3,762	3,810
Building with OTTV less than 23W/m^2	% of total no. of projects	100% of 11	100% of 10	100% of 14	97% of 30
Building with OTTV less than 18W/m^2	% of total no. of projects	63.6% of 11	70% of 10	36% of 14	63% of 30
Energy saved due to energy efficient installations	GWh	84	119	108	85
Equivalent monetary savings	HK$ million	84	119	108	85

Resource Usage – Fuel

	Units	2005	2004	2003	2002
Fuel consumption by ArchSD's pool cars	Litre	24,169	Not Available	Not Available	Not Available

Resource Usage – Non-Ozone Depleting Substances

	Units	2005	2004	2003	2002
Refrigerants installed	No. of application	26	47	34	34
Fire extinguishing agents	No. of application	11	8	9	6

Resource Usage – Office Materials

	Units	2005	2004	2003	2002
Recyclable A4/A3-size paper	Reams / % of total paper purchased	12,622/ 64.2%	5,753/ 21.3%	700/ 2.8%	1,320/ 3.7%
Types of Eco-friendly office suppliers	Types	13	18	17	17

Resource Usage – Timber & Water Use

	Units	2005	2004	2003	2002
Timber Saving	Volume of Timber Saved in m^3 (Ratio Normalised [1] by Contract Value)	1,382 (0.56)	1,461 (0.46)	1,566 (0.29)	2,718 (0.36)
Water Saving	No. of Water-saving Sanitary Appliances (Ratio Normalised by Contract Value)	2,831 (1.15)	3,312 (1.29)	3,760 (0.71)	2,400 (0.34)

[1] The normalised ratio is an indication of the extent ArchSD has improved in an area after taking into account

the changes in contract value each year, so as to facilitate better comparisons over time.

Waste Management

Construction & Demolition Waste	Units	2005	2004	2003	2002
C&D waste disposed of to landfills	Tonnes	76,536	96,793 [2]	107,126	42,100
C&D materials disposed of to public fill areas	Tonnes	585,447	651,057 [3]	616,664 [3]	835,515 [3]
Recyclable Waste Collected at APB Centre					
Waste Paper	kg	4,570	6,859	5,600	5,950
Aluminium Cans	No.	254	546	1,248	Not Available
Plastic Bottles	No.	424	629	1,113	Not Available

[2] The quantity was misprinted in 2005 report, and is corrected in this year's report.

[3] C&D materials disposed of to public fill areas in 2002-2004 were recorded in m^3. To be consistent with current practices, the figures are converted into tonnes assuming that 1 m^3 of fill materials weighs 1.3 tonnes.

Social Performance Indicators

Environmental Convictions of Contractors

	Units	2005	2004	2003	2002
Convictions per 100,000 Manhours	ArchSD sites (HK sites)	0.231 (0.417)	0.515 (0.848)	0.307 (0.953)	1.432 (1.729)

Accident Rate

	Units	2005	2004	2003	2002
No. of Fatalities	ArchSD	3	1	1	4
Fatal accident rate per 100,000 Manhours	ArchSD (HK Construction Industry) [4]	0.0099 (0.012)	0.0024 (0.0072)	0.0021 (0.011)	0.01 (0.01)
No. of Non-Fatal Accidents	ArchSD	184	275	330	369
Non-Fatal Accident Rate per 100,000 Manhours	ArchSD (HK Construction Industry) [4]	0.61 (1.67)	0.66 (1.68)	0.68 (1.90)	0.94 (2.37)

[4] Accident rate figures of HK Construction Industry are obtained from Labour Department.

GRI Content Index

New GRI(G3) Element ● Reported ◈ Not reported

	GRI Element	ArchSD Sustainability Report 2005	Explanation for Omissions	Remarks
1.	**Strategy and Analysis**			
1.1.	Statement from Director	●		
1.2.	**Key risk and opportunities**	●		
2.	**Profile**			
	Organizational Profile			
2.1.	Name of reporting organisation	●		
2.2.	Major products and services	●		
2.3.	Operational structure	●		
2.4.	**Location of Headquarters**	●		
2.5.	Countries of operations	●		
2.6.	Nature of ownership	●		Part of Hong Kong Government
2.7.	Markets served	●		
2.8.	Scale of organisation	●		
2.9.	Significant changes in size, structure, ownership	◈	No significant changes from last report	
2.10.	**Awards received Universal Accessibility Community Work Social Achievement**	●		ACCA's Hong Kong Awards for Sustainability Reporting 2005 - Commendation for Sustainability Reporting
3.	**Reporting Parameters**			
	Report Profile			
3.1.	Reporting period	●		
3.2.	Date of previous report	●		
3.3.		●		

	Reporting Cycle			
3.4.	Contact person	⊙		
	Report Scope and Boundary			
3.5.	**Defining report content**	⊙		
3.6.	Boundaries of the report	⊙		
3.7.	Limitations on report scope	⊙		
3.8.	Basis for reporting on JVs	◈	No joint ventures	
3.9.	**Data measurement techniques**	⊙		CO_2 Emission
3.10.	Restatements of information	⊙		C&D waste
3.11.	Significant changes in scope or measurement methods	◈	No significant changes from last report	
	GRI Content Index			
3.12.	Table for standard disclosures	⊙		
	Assurance			
3.13.	Policy on assurance	⊙		
4.	**Governance Structure and Management Systems**			
	Governance			
4.1.	Governance structure	⊙		
4.2.	**Chair / Executive Officer status**	◈	No directorships	
4.3.	**Number of member of highest governance body**	◈	No directorships	
4.4.	Mechanisms for providing recommendations	⊙		
4.5.	Link between compensation and performance	◈	No executive compensation	
4.6.	**Process to address conflict of interest**	◈	Following the requirements of Civil Service Bureau (e.g. CSB Circular No. 2/2004 - "Conflict of Interest" & CSB Circular No. 15/2002 "Acceptance of advantages offered to	ETWB is the highest governance body.

			an officer in his private capacity")	
4.7.	Define board qualification	◈	No directorships	
4.8.	Mission and value statements	●		
4.9.	Board identification of risks and opportunities	◈	Adopt risk management techniques of Environment, Transport and Works Bureau	
4.10.	**Evaluating board performance**	◈	No directorships	
	Commitments to External Initiatives			
4.11.	Precautionary principle	◈	Our operations do not constitute to serious or irreversible damage	
4.12.	External initiative endorsed	◈	Follow the charters endorsed by the Council for Sustainable Development	
4.13.	Principal memberships	●		
	Stakeholder Engagement			
4.14.	**List of stakeholder**	●		
4.15.	Basis for identification	●		
4.16.	Approaches to engagement	●		
4.17	**Key topics raised through engagement**	●		
	Public Agency Specific			
PA1	Relationship with other government departments	●		
PA2	Definition of sustainable development adopted by ArchSD	●		
PA3	Identify aspects of sustainable development policies adopted	●		
PA4	Identify the goals of sustainable development	●		
PA5	Process where the aspects and goals were set			

	Economic Environmental Social	●		
PA6	Monitoring of each goal Economic Environmental Social	●		
PA7	Role of stakeholders in PA6 Economic Environmental Social	●		
	ECONOMIC PERFORMANCE INDICATORS			
	I. Economic Performance			
EC1	**Economic profile**	●		
EC2	**Financial effect of climate change**	●		Monetary savings and CO_2 emission reduction in terms of energy conservation
EC3	**Benefit plan obligations**	◈	Following the requirements of Civil Service Bureau	
EC4	**Financial assistance from government**	◈	No subsidies	
	II. Market Presence			
EC5	**Wage comparison**	◈	No minimum wage standards but follow central government policies	
EC6	**Practices for spending on local suppliers**	◈	Following indices of ETWB on WTO's practice	
EC7	**Hiring policy – locality of senior management**	◈	Hiring based on central government policies	
	III. Indirect Economic Impacts			
EC8	Infrastructure investments	◈	Our operations do not involve with infrastructure investments	
	IV. Expenditures (Public Agency)			
PA8	Gross expenditure by type of payment	●		
PA9	Gross expenditure by financial	●		
PA10	Capital expenditure by	●		

	financial classification			
PA11	Procurement policy regarding sustainable development	⊙		
PA12	Sustainability criteria applied to financial commitments	⊙		
PA13	Linkage between procurement policy and public priorities	◈	Procurement based on central government policies	Sustainable Procurement
PA14	Percentage of total value of goods purchased registered with voluntary environmental or social labels	⊙		
	ENVIRONMENTAL PERFORMANCE INDICATORS			
	I. Materials			
EN1	Total materials used	⊙		
EN2	Percentage of recycled materials	⊙		
	II. Energy			
EN3	Direct energy consumption	⊙		
EN4	Indirect energy use	◈	No measurement mechanism in place	Calculate embodied energy of structures in ArchSD projects
EN5	**Energy saved through conservation**	⊙		
	III. Water			
EN8	Total water withdrawal by source	◈	No water meter as no need to pay for water use	
	IV. Biodiversity			
EN11	Land usage related to protected areas	◈	No measurement mechanism in place as our operations have relatively minor impact on biodiversity	
EN12	Impacts on biodiversity	◈	Our operations have no significant impact in the biodiversity of Hong Kong	
	V. Emissions, Effluents, and Waste			
EN16	Greenhouse gas emissions	⊙		

EN17	Indirect greenhouse gas emissions	◈	No measurement mechanism in place as we have captured major direct and indirect greenhouse gas emission	
EN19	Ozone-depleting substances emissions	●		We do not use any ozone-depleting substances in our refrigerants and fire extinguishing agents
EN20	NO x , SO x emissions by type.	◈	No measurement mechanism in place except at crematoriums	
EN21	Total water discharge.	◈	No measurement mechanism in place but monitored in site environment checklist	
EN22	Total waste by type and disposal method	●		Covered Construction & Demolition waste
EN23	Total number and volume of significant spills	◈	No measurement mechanism in place but included in site environment checklist	
	VII. Products and Services			
EN26	Products / services impact reduction	●		
EN27	Percentage of products reclaimed	◈	No products sold	
	VIII. Compliance			
EN28	Sanctions for non-compliance	●		
	SOCIAL PERFORMANCE INDICATORS: LABOUR PRACTICES AND DECENT WORK			
	I. Employment			
LA1	Workforce breakdown	●		
LA2	Number and rate of employee turnover	●		
	II. Labour/ Management relations			
LA4	Percentage of employees covered by collective bargaining agreements.	◈	Most employees are independently represented in internal committees	
LA5	Notice period about significant operational changes	◈	Most employees are independently represented in internal committees	
	III. Occupational Health and Safety			
LA7	Injury, lost day, absentee rates	●		
LA8	Policies on		Following the	

	serious diseases	◈	requirements of Civil Service Bureau	
	IV. Training and Education			
LA10	Hours of training per year per employee	●		
	V. Diversity and Equal Opportunity			
LA13	Composition of governance bodies and breakdown of employees	●		Overall gender ratio reported. Aiming to report senior management diversity ratio in future reports
LA14	**Ratio of basic salary of men to women by employee**	◈	No measurement mechanism in place but follow the guidelines of Civil Service Bureau	
	SOCIAL PERFORMANCE INDICATORS: HUMAN RIGHTS			
	I. Investment and Procurement Practices			
HR1	Human rights screening on significant investment	◈	Following the requirements of Hong Kong Human Rights Commission	
HR2	Human rights in procurement – evidence	◈	Following the requirements of Hong Kong Human Rights Commission	
	II. Non-discrimination			
HR4	Incidents of discrimination	◈	Following the local ordinances (eg sex discrimination ordinance, disability discrimination ordinance, family status discrimination ordinance)	
	III. Freedom of Association and Collective Bargaining			
HR5	Violations of freedom / collective bargaining	◈	Following the requirements of Civil Service Bureau	
	IV. Child Labour			
HR6	Child labour incidents	◈	Following the Laws of Hong Kong (i.e. Chapter 57B - Employment of Children Regulations)	
	V. Forced and Compulsory Labour			
HR7	Forced labour incidents	◈	Following the Laws of Hong Kong (i.e. Chapter 57C - Employment of Young Persons (Industry) Regulations)	
	SOCIAL PERFORMANCE INDICATORS: PRODUCT RESPONSIBILITY			
	I. Customer Health and Safety			
PR1	Customer health and safety	●		
	II. Products and Services Labelling			
PR3	Product / service information and	◈	Our product is building	

	labelling			
	III. Marketing Communication			
PR6	Marketing communication programme	◈	No marketing mechanism in place but follow the guidelines of Civil Service Bureau	
	V. Compliance			
PR9	**Fines and sanctions for non-compliance**	◈	No non-compliance	
	SOCIAL PERFORMANCE INDICATORS: SOCIETY			
	I. Community			
SO1	Community impact procedure & programme	●		
	II. Corruption			
SO2	**Analysis for risks related to corruption**	◈	No measurement mechanism in place but follow the guidelines of Civil Service Bureau	
SO3	**Trained employees on anti-corruption policies**	◈	No measurement mechanism in place but follow the guidelines of Civil Service Bureau	
SO4	Response to incidents of corruption	◈	Following the guidelines of Civil Service Bureau	
	III. Public Policy			
SO5	Policies for managing lobbying	◈	Following the requirements of Civil Service Bureau (e.g. CSB Circular No. 2/2004 - "Conflict of Interest" & CSB Circular No. 15/2002 "Acceptance of advantages offered to an officer in his private capacity")	
	V. Compliance			
SO8	**Fines and sanctions for non-compliance with legislations**	◈	No measurement mechanism for this indicator but monitored through supply chain management	
	SOCIAL PERFORMANCE INDICATORS: Administrative Efficiency			
	I. Administrative Efficiency			
PA15	New Indicator for Public Agency Assessment of efficiency and effectiveness of services Economic Environmental Social	●		

Verification Statement

Scope and Objectives

Hong Kong Productivity Council (HKPC) was commissioned by Architectural Services Department (ArchSD) to verify the Department's Sustainability Report 2006 (hereinafter the "Report") which covers ArchSD's economic, environmental and social performance (hereinafter "ArchSD's performance") during the calendar year of 2005. The objectives of HKPC's verification work are to:

- Assess whether the Report covers all relevant issues in relation to ArchSD's performance;
- Assess whether the selected statements and data presented in the Report are accurate;
- Assess whether the data collection and information management systems used to prepare the Report are reliable; and
- Provide recommendations for future reports.

Approach

Our verification procedures comprised a review of the Report, selection of a representative sample of statements and data and interviews with representatives from ArchSD. During the interviews, the documented supporting materials relating to the selected statements and data as well as ArchSD's management practices and sustainability initiatives were explained to and examined by our verifiers who were not involved in the development of the Report.

Results

Report Completeness

The Report presents a balanced and comprehensive overview of ArchSD's performance with respect to its core roles, responsibilities and activities. The Report presents extensive information to communicate ArchSD's commitments in achieving its economic, environmental and social objectives and targets. The Report also includes a number of case studies presenting how ArchSD addresses sustainability issues in practices.

Report Accuracy and Reliability

The selected statements and data examined during the verification process, with minor revisions for clarification purpose that were subsequently amended to HKPC's satisfaction, reflect an accurate account of ArchSD's performance. The data collection and information management systems used are generally considered to be effective and reliable.

Recommendations for Future Reports

ArchSD is commended for continually improving and reporting its performance with reference to the latest Global Reporting Initiative guidelines. We further encourage ArchSD

to consider the following in the preparation of its future reports:

- To continue involving stakeholders in the reporting process in order to understand better the stakeholders' major information needs. In responding to their information needs where appropriate, information included in the reports will be more selective and hence the reports be more focused. A summary of stakeholders' views collected and how ArchSD addresses them will add further values to the quality of reports;
- To further enhance the readability by providing reference materials and using real life examples where appropriate in presenting and elaborating technical and numerical information; and
- To provide a linkage between ArchSD's activities and initiatives in pursuing sustainable development and subsequently how its performance contributes to the sustainable development of Hong Kong .

K L Tsang
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Hong Kong Productivity Council

18 December 2006