

# **Role of Government in Sustainable Construction**

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Chairman, Ladies and Gentlemen,

It is my pleasure to share with you today the current policies and strategies adopted by the Architectural Services Department, one of the Works Department under the HKSAR Government, in seeking sustainability in construction.

The content of my presentation covers the following sections. First, I would like to describe the current sustainability challenges we face in Hong Kong and the long term vision set by the HKSAR Government in response to these challenges. Next, I shall deal with the question of 'what part do we play as the Government Architect responsible for the procurement and maintenance of all community facilities?' I shall illustrate this by describing the works we've done throughout the different stages of construction. And finally I shall talk about our way forward, the approach that we'll adopt to achieve continuous improvement in sustaining a prosperous, healthy and environmentally friendly development for Hong Kong.

## **Challenges: Long Term Goals**

The phenomenal economic and financial growth in the past decades has brought considerable environmental challenges such as the scarcity of habitable land, air and noise pollution, and waste disposal problems. In recent years, there has been a growing appreciation by the community that treating the symptoms rather than the causes of problems is simply not sufficient. In 1999, The Chief Executive's Policy Address noted that 'in order for Hong Kong to become one of the world's great cities, there is the need to integrate sustainability considerations into every government policy and practice'.

Construction is one of the major pillars of Hong Kong's economy and approximately 9% of our workforce is employed by the construction industry. There are, however, numerous shortcomings in the industry. Construction activities are dangerous and polluting, and the built products are seldom defects-free. There has been a tendency to award contracts to the lowest bidder and many contractors, having cut their costs and profits to the minimum, have little interest in enhancing their long-term competitiveness, and no choice but to adopt a short-term view on business development. In Jan 2001, the Construction Industry Review Committee submitted a report entitled 'Construct for Excellence', and it called for a major culture change in the construction industry; that is, adopting a sustainable approach to construction.

## **Role of ArchSD in Sustainable Construction**

What is our role in 'Sustainable Construction'? Being the works agent for Government facilities development and maintenance, we lead by example, through implementing sustainable concepts in design, and sustainable construction practices on site. However, since

the majority of our works are outsourced to the private sector, we promote these issues by requiring our consultants and contractors to follow suit and implement sustainable design and site practices, and we organize incentive schemes such as the Sustainable Design Award Scheme and the Green Contractor Award Scheme to encourage our partners in work to practice sustainable construction. As active members in various advisory committees for sustainability, environment and health matters, we also act as Advisor to the Government on environmental sustainability in property planning and development.

In the following sections, I shall set out how we see the full procurement of a building, from inception through to adaptive re-use when initial clients move on, and new users are to be found, and describe in further detail the strategies the Department has adopted to seek sustainability.

### **Sustainable Construction (Design Stage)**

The Architectural Services Department is fully committed to adopt innovative sustainable designs that consider the integration and compatibility of the project with the peripheral environment, and the conservation and efficient use of land, energy and material resources.

We promote environmental sustainability through the incorporation of such principles into our building specifications. For example, we have published the revised 'General Specification for Air-Conditioning' adopting the 'Overall Energy Approach' in 2001. Furthermore, we have adopted the green procurement principle and incorporated specifications of environmentally friendly building materials in our recent revision of the 'General Specification for Buildings'. The draft document has already reached its final stage of drafting and is now put up in our website for collecting feedback from our stakeholders.

### **Sustainable Construction (Tender Stage)**

The strategies used in project procurement could also contribute to the sustainable development of the construction industry.

For example, to encourage contractors to take a long-term view and to seek improvement in their performance continuously, the Government has now, since November 2002, abolished the practice of awarding to the lowest bidder and adopted the formula approach in assessing tenders. This formula approach will take into account not only the tender price but also the tenderer's past performance, including their performance in quality, programme, safety and environmental management categories. The tender with the highest combined price and performance score would be recommended for acceptance.

The principles and advantages of 'Design and Build' are quite well known, but now we have adopted a more novel procurement strategy, known as the 'PPP' or 'Public Private Partnership', which goes one step further than the 'design and build' approach by requiring the private partner to 'finance and operate' in addition to the 'design and construction' of the project. In Hong Kong, there has been a tendency for the contractor to finish the project in the cheapest and fastest way, an approach that often compromises quality and leaves the owners with high recurrent maintenance and operational costs. The 'PPP' approach would

motivate the private partner to design and construct the building to a high standard, and to focus more on the operational efficiency, aiming for an overall reduction in the life-cycle cost.

### **Sustainable Construction (Construction Stage)**

When the contractors commence construction on site, they are required to implement environmental management to minimize pollution to our environment. The ‘pay for site cleanliness’ and ‘pay for waste management’ policy has been adopted to ensure that payment is contingent on the contractor’s meeting the stipulated requirements to a satisfactory level. The performances of our contractors in terms of environmental management are closely monitored and assessed on a quarterly basis. An adverse report in this section would have a negative effect on the contractor’s performance index, which would be taken into account when future tender bids are assessed.

The reduction of construction and demolition wastes continues to be a priority for the Department. Our ‘landfill’ and ‘public fill’ situation is becoming worrying. The requirements for ‘waste management plans’ and the implementation of the ‘trip ticket system’ are incorporated into the contract and closely monitored by our site supervisory staff. Prefabrication and low-waste technologies are not new, but are now widely encouraged.

### **Sustainable Construction (Operation Stage)**

Architectural Services Department implements a scheduled maintenance programme to all existing government facilities to extend the service life of buildings. During the maintenance or fitting-out of existing buildings, every opportunity has been taken to incorporate energy efficient installations and environmentally friendly materials to conserve energy, water and material resources. And we now have multi-disciplinary study groups, formed to evaluate and monitor the performance of various building materials with particular respect to their durability, reliability and environmental friendliness. Our experience in maintenance will be disseminated to colleagues for their application in the design of new buildings.

### **Sustainable Construction (Post-operation Stage)**

The life of a building does not necessarily end when it stops operation. Throughout the years, our Department has been actively seeking opportunities to keep them in use, by adaptive re-use, or by alteration and addition. This strategy not only saves construction time and cost, but it also has the advantage of extending the building’s life by conserving the greater part of its existing embodied energy.

In recent years, the Government has become increasingly active in inviting the private sector to re-develop historical buildings, such as the former Marine Police Headquarters in Tsim Sha Tsui, and to turn them into commercial or other viable ventures that can generate income while preserving our cultural heritage. In this respect, the Architectural Services Department plays an advisory role by offering our professional expertise and advising on the technical feasibility of the projects.

## **Commitment to Continuous Improvement**

Now we turn to the next issue ‘What should we do to achieve continuous improvement?’. Our strategies are ‘Training’ ‘Communication’ and ‘Targets’.

New knowledge related to the environmental field and the technologies addressing them is developing at a very rapid pace. Continued professional development, and training for staff members is clearly important. To equip our staff and partners in work with the necessary competence for application in work, continuous education in various forms, including the issuance of guidelines and research papers, dissemination of information in the intranet and internet, training through workshops and site visits etc. have been arranged. As can be seen from the statistics, our resources spent on environmental training have increased substantially in recent years.

We truly believe that our services to the community could only be improved by ‘Working with the Community’. Through the various channels of communication, including client satisfaction surveys, we collect our stakeholders responses, including those related to environmentally sustainability, and this provides further basis for improvements in our service.

And finally, we would, based on our Department’s environmental policy, set our own measurable targets, to improve our environmental performance. Normally, we would benchmark our performance first and gradually increase the standard of targets in the following years. For example, statistics show that our contractor’s environmental convictions have decreased significantly in recent years. Current statistics reflect that the number of environmental convictions noted in ArchSD’s sites are significantly lower than that noted in other construction sites in Hong Kong. On the other hand, the estimated savings in energy bills in completed projects have gradually increased throughout the years.

## **Joint Effort from All**

I should also mention that other departments and bureaux are undertaking numerous actions with similar objectives. For example, the setting up of a dedicated government agency (Sustainable Development Unit) and of sustainable development councils to oversee strategic sustainability issues and to co-ordinate the promotion of sustainable development; implementing statutory controls to minimize environmental nuisance caused by construction activities; providing incentives to the industry via offering bonus plot ratio and organizing Indoor Air Quality and Energy Efficiency Certification Schemes; conducting researches for the long term development of sustainable construction; and operating the re-cycled aggregate plant and the public fill banks to support Government’s sustainability policies.

Nevertheless, sustainable construction is not just the work of the Government. We need an integrated approach, with an emphasis on teamwork in order to achieve the best results. In this respect, I call upon all key players to join in, including the clients, developers, contractors, suppliers, building professionals and the general public, to bring about the necessary advancement to the construction industry, as well as to the living environment of Hong Kong.

Thank you.