**For discussion on**
**14 December 2009**

# LEGISLATIVE COUNCIL

## PANEL ON DEVELOPMENT AND PANEL ON ENVIRONMENTAL AFFAIRS

## Green Buildings

## PURPOSE

This paper provides an account on the Government's initiatives and efforts in promoting green buildings.

## PROMOTION OF GREEN BUILDINGS

2. Built environment directly affect the quality of life and public health in Hong Kong. Given that buildings account for 89% of our electricity consumption, enhancing environmental performance and energy efficiency of buildings would greatly contribute to the quality and sustainability of our built environment. To this end, the Government seeks to attain these two key objectives by adopting a multi-pronged approach through various means including –

(a) setting mandatory standards;
(b) government buildings to lead by example;
(c) funding support for promoting green buildings in the private and non-governmental sectors;
(d) benchmarking with international practices and promoting best practices in collaboration with professional sector; and
(e) policy measures and review through public engagement on Sustainable Built Environment.

## (I) SETTING MANDATORY STANDARDS

### Building Energy Efficiency

3. Improving building energy efficiency will help improve local air quality and alleviate the adverse effect of climate change. In line with international practices in setting mandatory standards on minimum building energy efficiency standards, the Government completed a three-month public consultation last year on the proposed mandatory implementation of the Building Energy Codes (BEC). Since the majority of views received supported the proposal, the Government pledged in the 2009-10 Policy Address to legislate for the mandatory implementation of the BEC. The Buildings Energy Efficiency Bill will be introduced into the Legislative Council on 9 December 2009. It is estimated that for new buildings, the implementation of the proposal will result in electricity saving of 2.8 billion kWh in the first decade, which will help reduce carbon dioxide emissions of 1.96 million tonnes.

4. For buildings which obtain Building Authority's consents to the commencement of building works for superstructure construction after the new legislation comes into operation, their key building service installations, including air-conditioning, electrical, lift and escalator and lighting installations should comply with the specified energy efficiency standards and requirements. Buildings which obtain such consents on or before the new legislation comes into operation are required to comply with the energy efficiency standards and requirements when they undergo major retrofitting works.

5. Owners of commercial buildings and commercial portion of composite buildings are required to conduct energy audits for the common area of their buildings once every 10 years. Audit results should be exhibited in a conspicuous position at the main entrance of the buildings.

6. Details of the legislative proposal are set out in the relevant Legislative Council Brief issued to the Legislative Council on 2 December 2009.

**Waste Management**

7. Since January 2005, the Government has launched a territory-wide programme on source separation of domestic waste (the Programme). The Programme aims to make it more convenient for residents to separate domestic waste at source by encouraging and assisting property managers and residents to set up waste separation facilities on every floor of their buildings and expanding the types of recyclables. The target is to have 80% of the population participating in the Programme by 2010. As at end October 2009, over 1 250 housing estates and residential buildings have signed up to join the programme, which covers 67% of the population.

8. The majority of existing domestic buildings in Hong Kong do not have a refuse storage room on every floor and there is often a lack of space for placing waste separation facilities. To address the situation, amendments have been made to the Building (Refuse Storage and Material Recovery Chambers and Refuse Chutes) Regulations. From 1 December 2008 onwards, all new domestic buildings and domestic part of new composite buildings are required to provide a refuse storage and material recovery room on every building floor to facilitate residents to participate in waste recovery.

**(II) GOVERNMENT BUILDINGS TO LEAD BY EXAMPLES**

9. The Government is committed to leading by example in promoting green buildings. In 2005, the then Environment, Transport and Works Bureau issued a technical circular requiring all new Government buildings as well as major retrofitting and renovation projects to comply with BEC and to incorporate energy efficient features and renewable energy technologies into their design where appropriate. Since then, we have implemented more than 340 energy efficiency upgrading projects in existing government facilities, with annual electricity saving of more than 40 million kWh to be achieved which is about 1.6% of the overall electricity consumption of Government

buildings and facilities[1].

10. In April 2009, the Development Bureau and the Environment Bureau jointly promulgated a comprehensive target-based environmental performance framework for new and existing government buildings in April 2009, which sets targets in various environmental aspects, such as energy efficiency, renewable energy, indoor air quality and greenhouse gas emissions. In this connection, Architectural Services Department has developed an internal Project Environmental Design Checklist, covering a total of 17 criteria on green buildings. Details of the 17 criteria are at **Annex A**. All newly-built government buildings with construction floor areas of more than 10 000 square metres are required to be assessed by internationally or locally recognised environmental performance assessment systems, and in due course the assessment system to be developed by the Hong Kong Green Building Council (HKGBC). They must attain grades not lower than the second highest level under these assessment systems. Since 1999, 19 Government buildings (as shown at **Annex B**) have achieved the second highest rating or above under locally recognised environmental performance assessment systems. Notable examples include North Point Government Offices, Wanchai Police Headquarters Phase III, Cheung Sha Wan Government Offices, ICAC Headquarters and Stanley Municipal Services Building. More new Government buildings are to be assessed in near future.

11. For demonstration projects, we have identified a planned new school project near Choi Wan Road and Jordan Valley, and the planned Kai Tak Government Offices for demonstrating state-of-the-art energy-efficient designs and technologies. The Finance Committee of the Legislative Council had approved funding for the relevant school project in July 2009. Preparatory work is being conducted for the Kai Tak Government Offices.

12. Funding has been approved in June 2009 for the construction of District Cooling System (DCS) to provide energy-efficient air-conditioning services for buildings in the Kai Tak Development area. As a demonstration of Government's determination to reduce energy

[1] Overall annual electricity consumption of Government buildings and facilities are estimated at 2 500 million kWh.

consumption, all public developments in the region will connect to the DCS provided that their implementation programme can match the development schedule of DCS.

13. In order to maximise benefits of green buildings to premises users, the implementation of the comprehensive target-based environmental performance framework has to be complemented by the adoption of green office management. In this connection, the Government has implemented the Green Manager Scheme under which all government bureaux and departments are required to appoint Green Managers to oversee green housekeeping within their offices since 1994. Green measures in areas of waste management, energy conservation, water saving, reducing paper usage and green procurement have been introduced to increase staff consciousness and involvement in relation to environmental issues. To demonstrate the efforts made, all bureaux and departments are required to publish annual environmental reports on their environmental policies and actions taken.

14. To step up our efforts, an additional $130 million was allocated in the 2009-10 Budget to carry out works to enhance energy efficiency of government buildings and public facilities. Energy saving projects being carried out include the replacement of air-cooled chillers by water-cooled chillers with fresh water cooling towers, upgrading of chiller control system, use of more energy-efficient lighting installations and light emitting diode (LED) exit signs. Upon completion of the projects, it is estimated that annual saving of electricity cost of about $12 million[2] could be achieved which represents a return period of 10.8 years. These projects will also help reduce carbon dioxide emissions of around 8 400 tonnes. Details of key projects under this initiative are at **Annex C**.

15. We are also implementing a package of $450 million minor works projects to improve the green performance of Government buildings. Of the total $450 million, $206.5 million of them are used for implementing energy-saving projects (at **Annex D(i)**) and retrofitting of plumbing appurtenance with water saving devices in Government buildings and school (at **Annex D(ii)**). Upon completion of these

[2] Rate of electricity charge is calculated at $1/kWh.

initiatives, it is estimated that annual saving of electricity cost of about $19.3 million could be achieved which represents a return period of 10.7 years. These projects will also help reduce carbon dioxide emissions of around 13 500 tonnes. It is also estimated that an annual saving of 2 million cubic metres of fresh water, and 0.8 million cubic metres of salt water could be achieved which represent annual saving in water charge at $9.16 million[3].

## (III) FUNDING SUPPORT FOR PROMOTING GREEN BUILDINGS IN THE PRIVATE AND NON-GOVERNMENTAL SECTORS

### Buildings Energy Efficiency Funding Schemes

16. To encourage the public to take concrete actions for this cause, the Environment and Conservation Fund (ECF) allocated $150 million to subsidise owners of residential, industrial and commercial buildings to carry out energy-cum-carbon audits, with a view to reviewing the use of energy and quantifying the greenhouse gas emissions associated with their buildings, and to identify opportunities for reductions in greenhouse gas emissions and enhancement in energy conservation. ECF also allocated $300 million to subsidise these building owners to conduct energy efficiency projects.

17. The two funding schemes have been well received by the community since its launch in April 2009. Up to November 2009, more than 900 applications have been received, involving over 6 500 buildings. Among them, 149 funding applications have been approved and the grant amounts to $30.4 million. The total electricity saving of the approved applications is estimated to be 20.8 million kWh per annum, which is equivalent to a reduction of carbon dioxide emissions by 14 600 tonnes. We will continue to promote the funding schemes.

### Support for the Non-governmental Sector

18. With the injection of $1 billion to the ECF since April 2008, the ECF has extended its scope to provide funding support for installing

[3] Rate of trade supply is calculated at $ 4.58/$m^3$.

green features in school campuses and premises of non-governmental organizations such as camp sites and elderly homes. As at October 2009, funding support for the green features of 320 premises has been approved, with a total allocation of $99.5 million. Green features that have been supported include greening, renewable energy installations and energy-efficient devices. To set an example for the community, applicants are also requested to organize educational activities or open their premises for visits by the community where appropriate.

## (IV) BENCHMARKING WITH INTERNATIONAL PRACTICES AND PROMOTING BEST PRACTICES IN COLLABORATION WITH PROFESSIONAL SECTOR

19. The success in promoting green buildings hinges largely on public and community support, including the professional sector. As such, the Government has joined efforts with different sectors of the community to launch various schemes to engage the public on carbon audit and water conservation with a view to achieving sustainable built environment whereas the HKGBC was established as a result of collaboration with professional sector.

### Carbon Audit

20. Based on internationally recognized approaches and after taking into account local emissions situation, the Government launched in July 2008 a set of carbon audit guidelines for buildings in Hong Kong. The guidelines provide a systematic and scientific approach to account for and report on the greenhouse gas emissions and removals from buildings, which further facilitate identification of areas for improvement and work to reduce emissions arising from building operations. The Government has joined efforts with different sectors of the community to encourage buildings' management to conduct carbon audits in buildings and initiate carbon reduction programmes. So far more than 130 organisations had signed up to become our "Carbon Audit・Green Partners".

### Water Conservation

21. Promoting water conservation is one of the key initiatives under

the Total Water Management (TWM) strategy. The TWM strategy aims at better preparing Hong Kong for uncertainties such as acute climate changes and low rainfall and to enhance Hong Kong's role as a good partner of other municipalities in the Pearl River Delta in promoting sustainable use of water in the light of the rapid growth of water demand in the region. It puts emphasis on containing growth of water demand through conservation.

22. Apart from launching public education and publicity programmes to promote water conservation in all sectors, the Water Supplies Department has rolled out a voluntary "Water Efficiency Labelling Scheme" (WELS) to promote awareness of the public in respect of the level of water consumption and efficiency of water-using fixtures and appliances. This will facilitate proper choices of water-efficient products by the public. WELS will be implemented in phases, with the first phase launched in September 2009 for showers for bathing. The next phase of WELS will be launched in 2010, covering taps and washing machines.

**Collaboration with the Professional Sector**

HKGBC

23. HKGBC was inaugurated in November 2009 with four founding members, namely the Business Environment Council, BEAM Society, Professional Green Building Council (PGBC) and the Construction Industry Council (CIC). The objectives of HKGBC include -

(a) to promote the adoption of green building standards and construction of green buildings in Hong Kong for environmental protection for the benefit of the community of Hong Kong at large;

(b) to advise and make recommendations to CIC, Government and other organisations in Hong Kong on strategic matters, policies and legislative proposals that may affect or are connected with green building practices in Hong Kong;

(c) to promote good practices in relation to environmental protection connected with the building environment in Hong Kong;

(d) to encourage research activities and the use of innovative techniques for improving the environmental performance of buildings;

(e) to establish or promote the establishment of standards and guidelines for the environmental performance of buildings in Hong Kong; and

(f) to raise the awareness of the community and engendering public support for green building through educational and promotional activities.

24. HKGBC will operate on a self-financing basis, and will seek funding support from CIC in the initial years of its operation. In pursuance of its objectives, HKGBC will engage the community, industry and the Government in formulating green building practices and promoting their wider adoption, aspiring for quality and sustainability at every stage of the building life cycle.

Green Building Assessment for Hong Kong

25. The Building Environmental Assessment Method (BEAM) is a voluntary assessment system providing independently certified performance ratings for buildings in Hong Kong in order to promote the environmental sustainability of buildings. It was launched in 1996 by the BEAM Society.

26. In 2002, Buildings Department (BD) commissioned a consultancy to formulate the Comprehensive Environmental Performance Assessment Scheme (CEPAS) that aims to develop a green building assessment method for Hong Kong. In response to suggestions that BD and other industry participants should work together on a common, comprehensive assessment scheme with appropriate incentives for local uses, a working group on Building Environmental Performance Assessment Schemes was formed in 2006 to review BEAM and CEPAS. Following deliberations, the working group recommended to adopt BEAM as the integrated model subject to incorporation of the desirable

features of CEPAS and other international assessment methods.

27. In light of the above development and the need to develop an assessment method that caters for Hong Kong's unique environment, HKGBC will develop a distinctive green building assessment method for Hong Kong, taking into consideration local characteristics such as high-rise and high density environment as well as sub-tropical climate. BEAM will be progressively enhanced by adopting desirable features of other assessment systems including CEPAS.

28. For a wider adoption of its assessment method, HKGBC will launch an accreditation system, provisionally named as the BEAM Accredited Practitioner Scheme, for industry practitioners and professionals to facilitate them to participate in the BEAM certification. HKGBC will operate associated training courses and assessment, and maintain a list of BEAM Accredited Practitioner for public enquires.

## (V) POLICY MEASURES AND REVIEW THROUGH PUBLIC ENGAGEMENT ON SUSTAINABLE BUILT ENVIRONMENT

### GFA Concessions for Inclusion of Various Features in Private Buildings

29. It has been an established Government policy to facilitate and encourage the provision of various features which can enhance the livelihood of occupants and convenience of premises users in private building developments through the granting of GFA concessions. For certain GFA concessions, the Building Authority utilizes what is commonly known as the "modification" power under section 42 of the Buildings Ordinance (Cap. 123). The Building Authority uses such power to grant GFA concessions for green and amenity features (e.g. balconies, residents' clubhouses, refuge floors, etc.). However, for other items such as car parking spaces or plant rooms, the Building Authority has been explicitly empowered under regulation 23(3)(b) of the Building (Planning) Regulations to exercise discretion to disregard their areas from GFA calculation. Similarly, for the granting of bonus GFA areas for dedicated or surrendered for public passage, it is governed by regulation 22 of the same Regulations. The policy of granting GFA concessions in

support of green buildings was launched in consultation with building professionals, stakeholders as well as the Legislative Council. To recapitulate in brief, in November 2000, we briefed the then Legislative Council Panel on Planning, Lands and Works on our proposal to grant GFA concessions to encourage the provision of green and environmentally friendly features in buildings. Members were supportive of the proposal, which was later promulgated by BD through Joint Practice Notes 1 and 2 issued in 2001 and 2002 respectively.

30. In recent years, there have been rising public concerns over the effect of building bulk and height on the built environment. The benefits brought about by the provision of various facilities in buildings on the one hand, versus the impact of building bulk and height on the neighborhood on the other, is a matter that requires fine balancing and a clear community consensus. Against this background, a public engagement process on "Building Design to Foster a Quality and Sustainable Built Environment" was launched by the Council for Sustainable Development (SDC) from June to October 2009 to identify the preferred options to address public concerns. The process provided a platform for in-depth discussion on opportunities to improve the quality and sustainability of the built environment. It presented three major areas for public consideration –

(a) enhancement of sustainable building design;
(b) review on provision of essential, green and amenity features in buildings and GFA concessions; and
(c) energy consumption of buildings.

31. The Development Bureau briefed the Legislative Council Panel on Development on 19 December 2008 and 28 July 2009 (vide papers CB(1)396/08-09(05) and CB(1)2342/08-09(01)) on the details of its proposals and the public engagement process, including a stock-taking of the current position of the policies concerned and the various policy options to improve the quality and sustainability of the built environment. Members were invited to provide their comments to SDC during the public engagement process. The public engagement process ended on 31 October 2009. Views received are being analyzed and SDC plans to submit its report and recommendations to the Government before mid

2010.

## ADVICE SOUGHT

32. Members are invited to note the contents of this paper for information.

**Development Bureau**
**Environment Bureau**
**December 2009**

**Annex A**

## Project Environmental Design Checklist – Criteria on Green Buildings

1. Sustainable Planning
2. Ecological Impact
3. Environment Enhancement and Greening
4. Building Orientation and Envelope
5. Energy Efficiency & Conservation
6. Renewable Energy Technologies
7. Visual Impact & Visual Access
8. Noise Impact
9. Indoor Air Quality
10. Water Management
11. Waste Reduction and Management
12. Construction Waste Management
13. Green Procurement – Material Use and Specification
14. Greenhouse Gas Reduction
15. Functionality
16. Operation and Maintenance
17. Building Environmental Assessment Rating

**Annex B**

## Government Buildings which Have Achieved the Second Highest Rating or Above under BEAM Assessment

| Certified Date | Name of Building/project | Rating |
|---|---|---|
| *Existing Offices 2/96 version* | | |
| Aug 1999 | Public Record Office | Excellent |
| May 2001 | North Point Government Offices | Excellent |
| *New Offices 1/96R version* | | |
| Aug 2002 | Public Health Laboratory Centre at Nam Cheong Street | Excellent |
| Mar 2004 | Science Park – Building 4a & 4b | Excellent |
| Mar 2004 | Science Park – Building 5 | Excellent |
| Apr 2004 | Shatin Government Offices | Excellent |
| Sep 2004 | Science Park – Building 6 | Excellent |
| Sep 2004 | Science Park – Building 7 & Building 8 | Excellent |
| Sep 2004 | Science Park – Building 9 | Excellent |
| Sep 2004 | Wanchai Police Headquarters, Phase III | Excellent |
| *Existing Offices 2/96R version* | | |
| Mar 2004 | Cheung Sha Wan Government Offices | Excellent |
| *New Offices 1/96R version* | | |
| Aug 2004 | Kowloon City Magistrates | Very Good |
| Aug 2004 | Fanling Magistrates Building | Very Good |
| *New Buildings 4/03 pilot version* | | |
| Aug 2006 | NT South Police HQ | Platinum |
| *New Buildings 4/04 version* | | |
| Aug 2008 | Tsun Wen Road / Leung Shun Street Rehabilitation Complex, Tuen Mun | Gold |
| Aug 2008 | Radiotherapy Centre & | Platinum |

| | | |
|---|---|---|
| | Accident & Emergency Department, Princess Margaret Hospital | |
| Aug 2008 | Penny's Bay Fire Station, Ambulance Depot and Police Post Complex | Platinum |
| Apr 2009 | ICAC HQ | Platinum |
| July 2009 | Stanley Municipal Services Building | Platinum |

Note:

BEAM assessment method has been evolving over the years with different versions which are set out as follows:

| **BEAM Version** | **Highest Rating** | **Second Highest Rating** |
|---|---|---|
| Existing Offices 2/96 & 2/96R version | Excellent | Very Good |
| New Offices 1/96 & 1/96R version | Excellent | Very Good |
| New Residential Buildings 3/99 version | Excellent | Very Good |
| New Buildings 4/03 pilot & 4/04 version | Platinum | Gold |
| Existing Buildings 5/03 pilot & 5/04 version | Platinum | Gold |

**Annex C**

## Key projects for enhancing energy efficiency of Government Buildings and Public Facilities

| Item No. | Venue | Project Title |
|---|---|---|
| 1. | Hong Kong Observatory Headquarter | Refurbishment work with energy saving lighting |
| 2. | Prince of Wales Hospital | Replacement of air-cooled chiller with high efficiency one |
| 3. | Tuen Mun Wu Hong Clinic | Replacement of air-cooled chiller with high efficiency one |
| 4. | Tin Shui Wai Health Centre | Replacement of air-cooled chiller with high efficiency one |
| 5. | Hong Kong Science Museum | Replacement of Chiller No. 1 with high efficiency one |
| 6. | Hong Kong Science Museum | Replacement of Chiller No. 2 at Hong Kong Science Museum |
| 7. | Hong Kong Science Museum | Replacement of Chiller No. 3 & 4 at Hong Kong Science Museum |
| 8. | Various Venues in Kowloon Region | Replacement of highbay lights with induction lamps |
| 9. | Hong Kong Culture Centre | Replacement of incandescent and tungsten halogen luminaries with LED, compact fluorescent and / or metal halide luminaries at Hong Kong Culture Centre |
| 10. | Hong Kong Heritage Museum | Replacement of high efficiency chiller |

Note: Under the $ 130 million block vote, there are a total of 131 projects. The table shows a list of 10 key projects of values around $ 2 million each.

**List of projects - Energy saving initiatives for various government departments (under $450M block vote) with project costs of $2M or above**

| Item no. | Venue | Project Title |
|---|---|---|
| 1 | Customs and Excise Department office at Passenger Terminal Building | Refurbishment of air-conditioning system |
| 2 | Ngau Tau Kok MSB, Fa Yuen Street MSB, Shui Wo Street MSB, Hunghom MSB, Pei Ho Street MSB, Po On Road MSB, Kowloon City MSB, Ngau Chi Wan MSB, Kwun Chung MSB, Cheung Chau MSB | Refurbishment of Lighting system and LED Exit Signs in Various Municipal Services Buildings (MSB) in Kowloon Region |
| 3 | Leisure and Cultural Services Department Headquarters | Refurbishment of driving system in lifts |
| 4 | Yau Oi Sports Centre, Tuen Mun, NT Region | Refurbishment of chiller systems |
| 5 | GFS Headquarter | Refurbishment of air-conditioning system |
| 6 | Tseung Kwan O Sports Centre | Refurbishment of chiller system |
| 7 | Sai Wan Ho MSB, Sheung Wan MSB, Smithfield MSB, Wong Nai Chung MSB, Central Street Market, Bowrington Road Market, Quarry Bay MSB, Shek Tong Tsui MSB | Refurbishment of Lighting system and LED Exit Signs in Various Municipal Services Buildings (MSB) in Hong Kong Region |
| 8 | Osman Ramju Sadick Memorial Sports Centre | Refurbishment of chiller system |
| 9 | Tso Kung Tam Outdoor Recreation Centre | Refurbishment of chiller system |
| 10 | Cheung Sha Wan Post Office Building | Refurbishment of lift installation for energy efficiency |
| 11 | Cheung Sha Wan Wholesale Market Complex | Refurbishment of aging power factor corrector and lighting system for energy efficiency |
| 12 | China Ferry Terminal | Refurbishment of lifts and escalators for energy efficiency |
| 13 | Eastern Law Courts Building | Refurbishment of lifts by using energy efficient drives |
| 14 | Pa Sha Wan Prison | Refurbishment of lighting system for energy efficiency |
| 15 | High Court | Refurbishment of power supply system and lighting system for energy efficiency |
| 16 | Hong Kong Cultural Centre | Refurbishment of lighting system for energy efficiency |

**List of projects - Energy saving initiatives for various government departments (under $450M block vote) with project costs of $2M or above**

| Item no. | Venue | Project Title |
|---|---|---|
| 17 | Hong Kong Science Museum | Refurbishment of lifts, escalators and lighting system for energy efficiency |
| 18 | Hung Hom Municipal Services Building | Refurbishment of lift installation for energy efficiency |
| 19 | Fire Services Headquarters Building | Refurbishment of power supply system and lighting system for energy efficiency |
| 20 | Kowloon Public Library | Refurbishment of lifts and escalators for energy efficiency |
| 21 | Tsim Sha Tsui Police Station | Refurbishment of lighting system for energy efficiency |
| 22 | Leisure and Cultural Services Department Headquarters, Shatin | Refurbishment of lighting system in office/transient area for energy efficiency |
| 23 | Ma Po Ping Prison | Refurbishment of external lighting, staircase and corridor lighting installations for energy efficiency |
| 24 | Mong Kok Government Offices | Refurbishment of lighting system and power supply system for energy efficiency |
| 25 | Museum of Art | Refurbishment of lighting system for energy efficiency |
| 26 | Police Headquarters Phase 1 | Refurbishment of power supply system and lighting system for energy efficiency |
| 27 | Police Headquarters Phase 2 | Refurbishment of power supply system and lighting system for energy efficiency |
| 28 | Queensway Government Offices | Refurbishment of power supply system and lighting system for energy efficiency |
| 29 | Cheung Sha Wan Government Offices | Refurbishment of power supply system and lighting system for energy efficiency |
| 30 | Shun Lee Disciplined Services Quarters | Refurbishment of emergency lighting and automatic fire detection (AFA) systems |
| 31 | Tai Shing Street Market | Refurbishment of lift installation for energy efficiency |
| 32 | To Kwa Wan Government Offices | Refurbishment of lighting system, power supply system and fire exit signs for energy efficiency |
| 33 | Wu Chung House | Refurbishment of power supply system and lighting system for energy efficiency |

**List of projects - Retrofit plumbing appurtenance with water saving devices in government buildings and schools (under $450M block vote) with project cost over $2M**

| Item no. | Venue | Project Title |
|---|---|---|
| 1 | Kowloon East | Retrofitting plumbing appurtenance with water saving devices in government buildings and schools in Kowloon East |
| 2 | Kowloon West | Retrofitting plumbing appurtenance with water saving devices in government buildings and schools in Kowloon West |
| 3 | Hong Kong West | Retrofitting plumbing appurtenance with water saving devices in government buildings and schools in Hong Kong West |
| 4 | Hong Kong East | Retrofitting plumbing appurtenance with water saving devices in government buildings and schools in Hong Kong East |
| 5 | New Territories North | Retrofitting plumbing appurtenance with water saving devices in government buildings and schools in New Territories North |
| 6 | New Territories South | Retrofitting plumbing appurtenance with water saving devices in government buildings and schools in New Territories South |
| 7 | New Territories West | Retrofitting plumbing appurtenance with water saving devices in government buildings and schools in New Territories West |
| 8 | New Territories East | Retrofitting plumbing appurtenance with water saving devices in government buildings and schools in New Territories East |
| 9 | Lantau Island | Retrofitting plumbing appurtenance with water saving devices in government buildings and schools in Lantau Island |
| 10 | Islands | Retrofitting plumbing appurtenance with water saving devices in government buildings and schools in Islands |

Note: Under the $450 million block vote, there are a total of more than 200 projects. The table above shows a list of 43 key projects (of value of $2 million or above) pertaining to promoting green government buildings.