

Sustainability Report 2016/17



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EXECUTIVE SUMMARY

- ◆ Our Environmental Performance
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This is the twelfth edition of the Sustainability Report published by the Hong Kong Housing Authority (HA), **Sustainable Community Fostering Harmony**. This Report highlights the annual achievements and progress of HA's sustainability performance from 1 April 2016 to 31 March 2017. This report is prepared in accordance with the internationally recognised Global Reporting Initiatives (GRI) Standards Core Option. The Executive Summary aims to provide you with an overview of our sustainability performance and achievements in 2016/17.



Our Environmental Performance

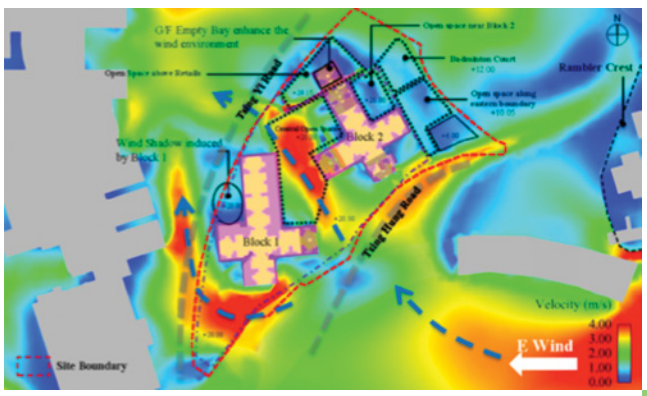
We set 42 environmental targets for 2016/17, of which 39 were fully achieved. The targets for collecting certain amounts of paper, plastic waste and used clothes for recovery were not met due to successful initiatives for reducing waste at source and other external factors, including changes in people's reading habits and a drop in the value of recycling plastic waste. We will closely monitor our progress and revisit the targets.

Our environmental performance for this year is outlined below:

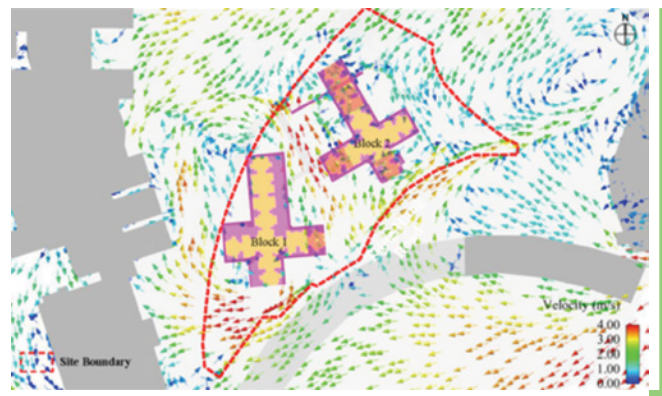
Initiatives in Planning and Construction of New Housing Estates

Conducting Micro-climate Studies

- ◆ We conduct micro-climate studies during the site planning and design stages by applying computer simulations generated from local climatic conditions-calibrated software. Taking wind pattern, natural ventilation, pollutant dispersion, natural daylight, solar heat gain and numerous other environmental factors into account, the study provides us with more comprehensive insights of the environmental impact of the projects on the surrounding area.
- ◆ In 2016/17, such micro-climate studies were carried out in 37 on-going public housing projects, together with 25 projects that underwent Air Ventilation Assessment.



▲ Air Ventilation Assessment



▲ Micro-climate studies with computer simulations

Utilising Green Materials and Products

- ◆ In order to reduce the use of cement and promote the adoption of recycled materials, we have specified the mandatory use of Ground Granulated Blast Furnace Slag (GGBS) in all our new projects to replace part of cement for precast facades and staircases.
- ◆ We have extended the Chain of Custody (COC) certification for timber from sustainable sources to doorset manufacturers and suppliers who should produce a Certificate of Registration issued by an independent certification body for compliance with the COC standard.
- ◆ To enhance the quality of building materials and components, we have implemented product certification for 11 types of building materials and services as a means of effective upstream control. We are preparing to implement certification for paint products in 2017/18.

Environmentally Friendly Construction Practices

- ◆ The Building Information Modelling (BIM) is adopted in all disciplines and aspects of planning, design and construction of new projects. As at March 2017, more than 45 projects were using the technology at various stages.
- ◆ We performed a total of 17 site potential and feasibility studies using Geographic Information Systems (GIS).

Green Building Recognition

- ◆ We require all projects to readily achieve the “Gold” rating standard in the Hong Kong Green Building Council's (HKGBC) Building Environmental Assessment Method Plus (BEAM Plus) in our contracts. During the year under review, we registered seven new projects with the HKGBC for assessment and rating under the BEAM Plus assessment scheme.
- ◆ The Fat Tseung Street West Development, which is scheduled to be completed in 2020, was awarded Platinum, the highest rating, in the BEAM Plus Neighbourhood Pilot-testing Project, with the project forming part of a vibrant community after other public housing developments in the area of Cheung Sha Wan are built.
- ◆ We received the highest honour in the Green Building Leadership category of the Green Building Awards 2016 – a biennial prestigious industry award for building-related projects and organisations with outstanding performance and contributions in sustainability.

Promoting Electric Vehicles (EV)

- ◆ We include EV charging facilities for private cars in the design of the covered car parks in all the new estates. As at the end of the year, we have provided private car parking spaces with EV charging facilities in seven new development projects.



▲ EV charging facilities

Estate Ecology

- ◆ We target at having no less than 20% of the new estate area allocated for greening and 30% for sites over two hectares. The tree planting ratio is set to be one tree or more for every 15 flats.
- ◆ During the year, we continued to engage our tenants to green four new housing estates through the “Action Seedling” programme.
- ◆ Green treatment has been carried out in four projects with formed slopes, including Shui Chuen O Estate, So Uk Estate Phase 1, Po Heung Estate and Ching Chun Court.



▲ Action Seedling programme



▲ Green treatment to slopes at Shui Chuen O Estate

Risk Assessment

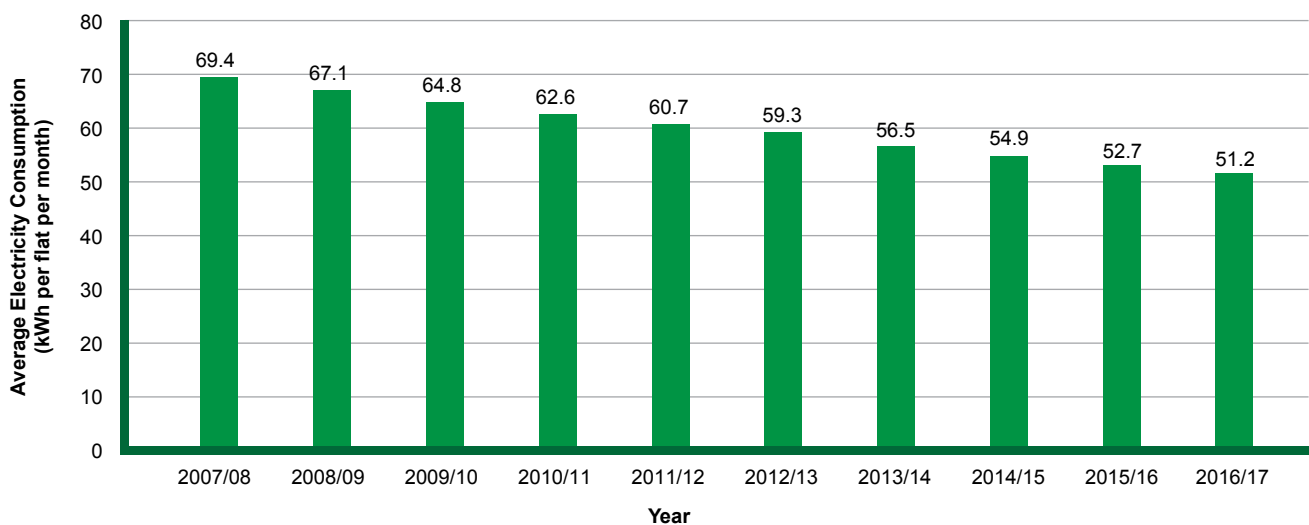
- ◆ A risk assessment following the guidelines of the International Standard ISO 31000 has been carried out on about 2,300 building materials used in architectural, building services, structural, civil engineering, geotechnical engineering and landscaping works.

Initiatives in Existing Housing Estates

Energy Consumption

- ◆ Electricity consumption in the estates' communal areas in 2016/17 was 51.2 kWh per flat per month. This represents a 3.0% decrease compared to the consumption in 2015/16.

Electricity Consumption in the Public Areas of Estates



- ◆ We have joined the Energy Saving Charter by the government to monitor and reduce electricity consumption.
- ◆ One hundred and seven old lifts were replaced in 2016/17 under our Lift Modernisation Programme (LMP). Compared with the old models, the new ones can generally save more than 30% of energy consumption.

Waste Management

- ◆ In 2016/17, we collected about 26,652 tonnes of waste paper, 1,362 tonnes of plastic bottles, 1,339 tonnes of aluminium cans and 901 tonnes of used clothes for recycling in our estates.
- ◆ With the waste reduction initiatives, in 2016/17, the average domestic waste production of our residents was 0.55 kg / person / day.

Greening and Tree Management

- ◆ A total of 20 estates had undergone landscape improvement work.
- ◆ To promote residents' awareness and participation in the greening of housing estates, community garden programmes were organised in 10 estates.
- ◆ We have recruited Estate Tree Ambassadors (ETAs) in our estates to support our work on tree management and preservation. As at March 2017, 710 people were engaged as ETAs. We organised three refresher and training courses during the year to equip them with the latest knowledge.
- ◆ We developed a new Enterprise Tree Management System for effective tree risk assessment and management of over 102,000 trees in all housing estates.

Organising Green Activities

- ◆ In 2016/17, we concluded the "Green Delight in Estates" (GDE) Phase 9 and commenced GDE Phase 10. Themed "Waste Reduction Begins with Waste Audit", echoing the Government's current waste management policy, a range of in-depth environmental education activities have been organised for residents in 33 estates to raise our residents' awareness of waste reduction and recycling, and encourage them to conserve resources in their daily routine.
- ◆ In 2016/17, the Estate Management Advisory Committee (EMAC) organised tree planting days in 10 estates and greening activities for residents in 20 estates.
- ◆ To encourage our shop tenants to implement green measures for the improvement of the overall environmental performance, we have signed up the retail facilities in 20 shopping centres or estates to join the Hong Kong Green Shop Alliance.

Initiatives in Office at work

- ◆ In 2016/17, our office premises consumed 34,850,777 kWh of electricity. Compared with the baseline data in 2013/14, consumption decreased by 5.4%.
- ◆ In 2016/17, we consumed 134,477 reams of paper which represents a 1.8% decrease from the baseline data in 2013/14.
- ◆ In 2016/17, Housing Authority Headquarters used 11,316 cubic metres of water – a 26.0% reduction compared with the consumption in 2007/08.
- ◆ In recognition of our outstanding performance in green purchasing and green management, under the Hong Kong Green Award 2016, we were commended with Platinum Awards in the categories of Green Purchasing (Large Corporation) and Green Management (Corporate); Corporate Green Governance Award (Corporate Vision and Stakeholder Engagement) and Outstanding Sustained Performance 7 Years+ Recognition.



- ▲ We obtained a number of awards under the Hong Kong Green Award 2016



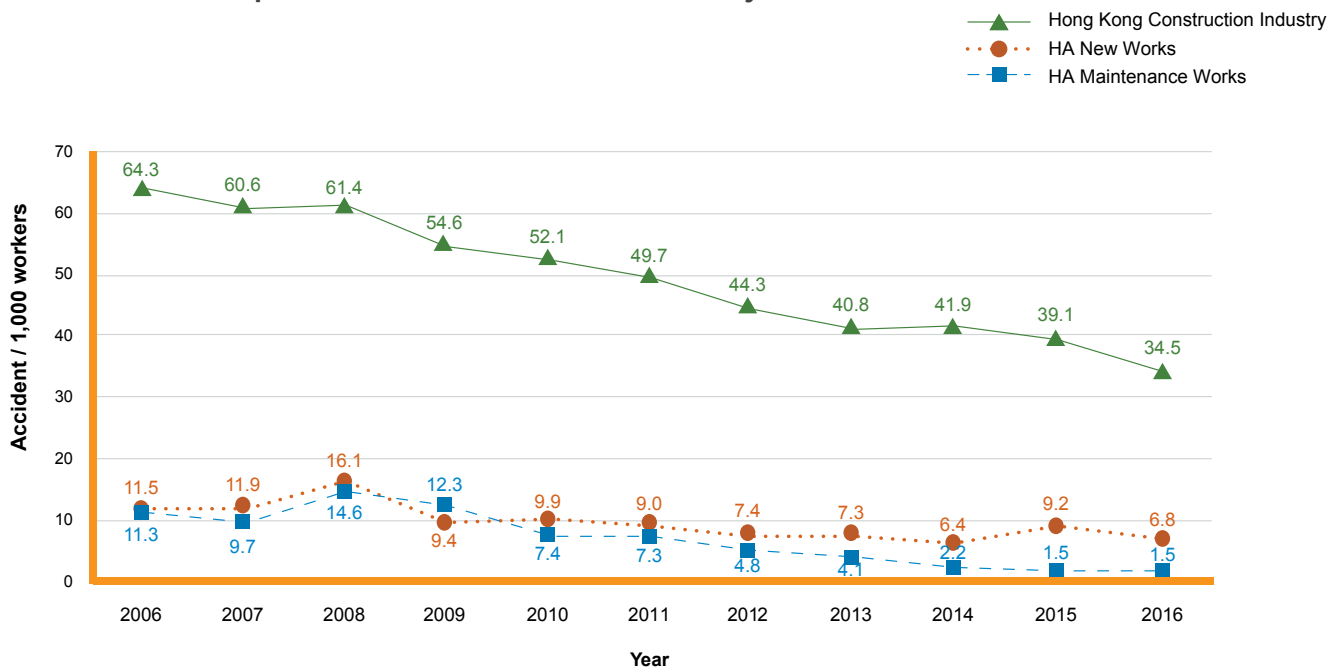
Our Social Performance

We set 19 social targets for 2016/17 and all these targets were fully achieved. Our social performance during the year is highlighted below:

Overview

- ◆ The Housing Department (HD) was awarded the “10 years plus Caring Organisation Logo” by the Hong Kong Council of Social Service in 2016/17.
- ◆ Across all our construction sites, the accident rate was 6.8 per 1,000 workers for new works contracts and 1.5 per 1,000 workers for maintenance contracts.; both figures were well below Hong Kong’s average industry accident rate of 34.5 per 1,000 workers, based on the 2016 statistical data from the Labour Department.

Accident Rate Compared to Local Construction Industry



- ◆ Our efforts in protecting our valuable workforce were recognised when we were presented the Safety Leadership Awards - Gold Award (Client-Developer Category) by the Construction Industry Council and the Lighthouse Club in March 2016.

Initiatives in Planning and Construction of New Housing Estates

Safety

- ◆ In April 2016, the HA held a Site Safety Seminar for New Works Capital Works Contracts to boost safety awareness on construction sites.
- ◆ The HA Occupational Injury and Disease Surveillance System was fully implemented in May 2016, enabling contractors to file web-based accident and incident reports.
- ◆ Over 600 participants, including contractors, property management agents, cleaning and security service providers, and HA works and estate management staff, participated in the annual Site Safety Forum, which was co-organised by the HA and the Occupational Safety and Health Council in July 2016.

Staff Training

- ◆ The HD established the Development and Construction Division Academy in April 2016, with the aim of building a knowledge-based community through providing timely, continuous and comprehensive training packages to personnel engaged in public housing development and construction.



▲ The opening ceremony of the Development and Construction Division Academy

Community Engagement

- ◆ To engage the community in the planning, design, construction, and flat intake process, we conducted resident surveys in five newly completed estates in 2016/17 to obtain community feedback. We also held post-completion review workshops for four projects.
- ◆ A wide range of elderly-friendly designs have been introduced in recent years to ensure the needs of elderly tenants are addressed. For example, corridors, flat entrances, and kitchen and bathroom doors have all been widened for easier wheelchair access, and materials that are safer for users, such as non-slippery floor tiles, have been introduced.

Initiatives in Existing Housing Estates

Facility Upkeep

- ◆ We have closely monitored the overall sustainability performance of 78 distinctive PRH blocks in 10 estates, and maintained their enrolment in the Hong Kong Quality Assurance Agency's (HKQAA's) Sustainable Building Index.
- ◆ Construction of eight lifts in six PRH estates was completed in 2016/17, while construction of a further five lifts in three PRH estates is still in progress.
- ◆ The Lift and Escalator Safety Campaign for 2016/17 incorporated a range of colourful educational posters and escalator safety stand boards. Lift and escalator safety messages were regularly broadcast on the radio, and a safety video starring popular local celebrity Maria Cordero (widely and affectionately known as "Fat Mum") shown on the Housing Channel.

Support to Tenants

- ◆ The EMACs held 450 community building functions to promote neighbourliness in 2016/17.
- ◆ The cumulative number of households benefitting from the Harmonious Family policies was 44,150.
- ◆ During the year, the HA also offered rehousing assistance to around 40 households affected by the clearance of squatter housing by the Lands Department and similar removals of illegal rooftop structures by the Buildings Department.

Initiatives in Office at Work

Safety and Healthy Work Environment

- ◆ During the year, around 9,600 staff members attended 230 seminars on topics such as construction site safety, arboriculture safety, safety awareness, first aid, stress and crisis management, working in confined spaces, using display screen equipment and handling potentially violent customers.
- ◆ Phase 2 and Phase 3 of the Development and Construction Site Mobile System (DCSMS) app are underway to widen the application of our app to cover inspections in areas such as structural work, offering easy access to documents such as approved method statements and samples, and better integrating the Occupational Injury and Disease Surveillance System into DCSMS.

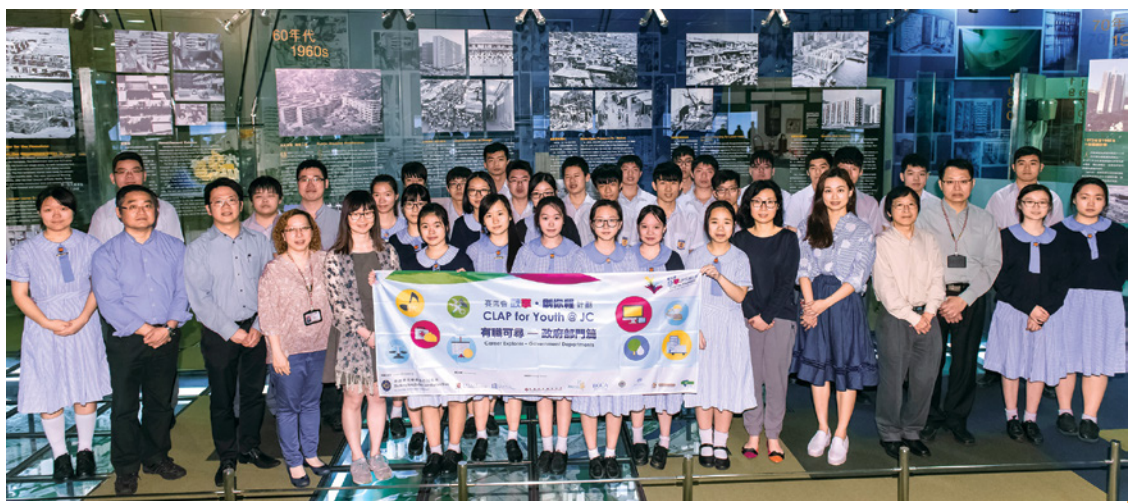
Knowledge Exchange

- ◆ During the year, more than 12,000 people visited the HA Exhibition Centre in 2016/17, among whom about 16 percent were guests (including government officials) from the Mainland or abroad.



▲ The HA Exhibition Centre promotes HA's work with audio-visual facilities

- ◆ 30 site visits to public rental housing (PRH) were organised for visitors from abroad, six visits were organised for local interest groups.
- ◆ The HA has been a continuous participant in the “Conference of the Housing and Urban Public Corporations in Asia” to exchange professional knowledge with international experts; experiences and ideas on “Disaster Prevention and Recovery” and “Community Building for Sustainable Management of Apartment Complex” were exchanged this year.
- ◆ Continuous support was given to “Clap for Youth”, a programme funded by the Hong Kong Jockey Club Charities Trust which helps youngsters to develop life planning skills and identify their career interests.



- ▲ We supported the CLAP for Youth programme by introducing HA career prospects to students



Our Economic Performance

The HA set four economic performance targets for 2016/17 and all these targets were fully achieved. Our economic performance in this year is highlighted below:

Financial Performance

- ◆ As at 31 March 2017, the HA's funds available for investment stood at HK\$48.9 billion.
- ◆ During the year, the recurrent expenditure of the HA was HK\$16,950 million, which was HK\$501 million higher than that of 2015/16.

Initiatives in Planning and Construction of New Housing Estates

Planning and Design

- ◆ In 2016/17, we completed 11,300 new PRH units and 3,000 subsidised sales flats.
- ◆ The HA continue to deploy advanced information technologies to improve the design and construction process of new housing developments, including Development and Construction Site Mobile System (DCSMS), Radio Frequency Identification (RFID), Building Information Modelling (BIM), Geographic Information System (GIS) and Housing Construction Management Enterprise System (HOMES).
- ◆ To improve cost effectiveness and productivity, we have adopted "Lean Design and Construction" in new projects, and applied innovative construction methods to save resources.



▲ Shui Chuen O Estate

Optimising the Use of Resources

- ◆ During the year, the HA continued to maintain the list of contractors, sub-contractors and service providers under our pre-qualification requirements and a two-envelope tendering system where applicable.
- ◆ To address the labour shortage, we monitor and review the requirement for Trade Tested Workers and the application of the streamlined Supplementary Labour Scheme (SLS) in new work and maintenance contracts.

Initiatives in Existing Housing Estates

Optimising the Allocation of Housing Resources

- ◆ In 2016/17, approximately 26,520 PRH flats were allocated to general applicants (i.e., family and elderly one-person applicants) and non-elderly one-person applicants under the Quota and Points System (QPS).
- ◆ In 2016/17, the HA completed one Territory-wide Overcrowding Relief (TWOR) exercise and one Living Space Improvement Transfer Scheme (LSITS) exercise and around 1,700 households were rehoused under the two schemes.

Maximising Resource Efficiency

- ◆ In 2016/17, the HA commenced the Total Maintenance Scheme (TMS) for over 13 estates during the year. All PRH estates received our Responsive In-flat Maintenance Services (RIMS).
- ◆ To prolong the useful life of aged estates, the HA continued to implement the Comprehensive Structural Investigation Programme (CSIP) and Estate Improvement Programme (EIP) for older estates as scheduled.

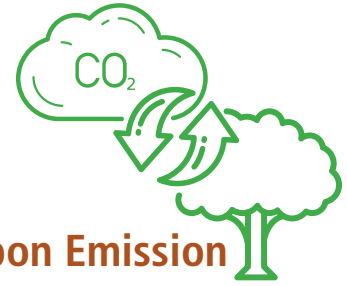
Initiatives in Office at Work

- ◆ The HA has actively adopted the use of the latest information technology and obtained accreditation in three main areas, namely: application software development and maintenance; IT Services Management; and Information Security Management.
- ◆ To further enhance efficiency and productivity, the Independent Checking Unit (ICU) also reviewed and enhanced its information technology systems serving the HA construction projects and properties, including the Housing electronic Plan Submission System (HePlan) for professionals to make submissions and the Housing electronic Building Record Online System (HeBROS) for the public to view and purchase building records.
- ◆ In July 2016, the HA launched a new automated document approval system to support the handling of collection, consolidation, review and approval of External Document Impact Assessments and approval of Quality Documentation for the Estate Management Division.



BEAM Assessed Projects

7 projects registered and
9 projects assessed by BEAM Plus



Carbon Emission Estimation

Amount of CO₂ saved equivalent to **86,000 trees** planted



Zero Irrigation System Planter

21 projects with in-situ ZIS planter provision are under construction. Anticipated **4,906,330** litres of water will be saved annually

Trees
1,592 trees planted



Slope Greening
28 slopes



Modular Design/ Precasting & Prefabrication

Cost **40%** less than private sector



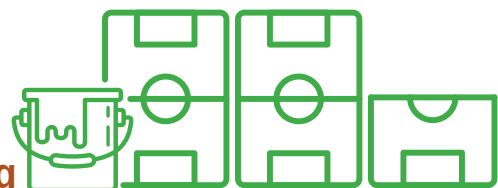
Construction Waste

30% less than private sector



Use of Recycled Material

5,720 tonnes of GGBS used, equivalent to **380** trucks



Plastering

2,860,000m² of plaster saved, equivalent to **446** standard football pitches

MESSAGE FROM THE CHAIRMAN



I am pleased to present the Hong Kong Housing Authority's (HA's) twelfth Sustainability Report. "Sustainable Community Fostering Harmony" is this year's theme. The report presents our continuous efforts to create a better community. We support local and international sustainability agendas and implement a variety of environmental, social and economic initiatives. By stocktaking works done this year, the HA reviews actions taken and projects long-term objectives.

To the HA, the essence of a sustainable community is to enable living in a caring and inclusive environment. Public housing estates embrace not only a living place but also our relentless devotion to creating a quality environment for our tenants and the general public. We believe providing quality housing helps improve social harmony and stability within the community.

In 2016/17, we completed 11,300 public rental housing units and 3,000 subsidised sales flats. Through implementing green building practices proactively, we have achieved Gold ratings or above under the BEAM Plus for New Buildings, and received quite a number of industry accolades. We were delighted to be honoured in the Green Building Leadership category of the Green Building Awards 2016. Together with ISO 14001 Environmental Management System and ISO 50001 Energy Management System certification for all our estates, this honour affirms our outstanding performance and contribution in the aspect of sustainability.

"Caring" is one of the core values of the HA, and we always give our stakeholders high priority. This year, we successfully incorporated neighbourhood-friendly planning, sustainable and innovative building design, and active community engagement into our Subsidised Sale Flats Development at Fat Tseung Street West. The involvement of stakeholders has given us the opportunity to refine the design in response to local residents' concerns, and to enhance the accessibility and infrastructure of the neighbourhood. The Fat Tseung Street West Development was awarded the highest rating, Platinum, in the BEAM Plus Neighbourhood Pilot-testing Project by the Hong Kong Green Building Council. It has set an example of our approach to bringing harmony to the community through sustainability practices.

We strive for continuity of green management from the planning to operational stages of each estate. As a highlight, riding on the success of attaining the Grand Award in the 2012 Quality Building Award, our efforts in Lam Tin Estate were further recognised by the 2016 Hong Kong Environmental Excellence Awards with the Gold Award for Property Management (Residential). In this estate, a community farm is provided for tenants to plant fruit and vegetables. Yard waste is recycled as compost for on-site gardening. Some of our security guards act as Green Ambassadors sharing environmental messages with residents. The honour attained in the case of Lam Tin Estate not only recognises our environmental achievements, but also affirms the collaborative spirit of the HA and our service providers in nourishing the social coherence in our estates.

We recognise the pivotal role community plays in bringing about sustainability. Hence, we have engaged tenants, schools and organisations in the vicinity of newly completed estates to participate in the Action Seedling campaign to boost their awareness of greening in new estates. In existing estates, we have initiated various environmental campaigns to engage our tenants. “Green Delight in Estates” and “Let’s Join Hands to Reduce Waste in Our Estates” are two major educational programmes launched in our estates to promote waste reduction and green living practices.

People are the most important assets of an organisation. As we have many new recruits in recent years, knowledge transfer is a key means to maintain service quality. To uphold our quality of work and meet the challenges ahead, in April 2016, we launched the Development and Construction Division Academy apart from our long-established Training and Development Centre. The Estate and Management Division has organised “Housing Management Series” and the “Wisdom of Housing Management”, etc. The aim is to build a knowledge-based community through the provision of timely, continuous and comprehensive training to our staff. We hope that all new members of the HA can learn from experienced personnel through such training.

I am thankful for the concerted efforts of our colleagues and the continuous support of our stakeholders in safeguarding the sustainability of our public housing development. With enthusiasm, hard work and dedication, let us continue to excel in creating sustainable and harmonious communities in Hong Kong.

Chan Fan, Frank
Chairman, The Hong Kong Housing Authority
March 2018



ABOUT THIS REPORT

This is the twelfth edition of the Sustainability Report published by the Hong Kong Housing Authority (HA), ***Sustainable Community Fostering Harmony***. This Report highlights the HA's major sustainability commitments and performance in terms of environmental, social and economic sustainability, from the perspectives of the HA's governance structures, management approaches, operations, and activities and sustainability initiatives. It also summarises HA's performance and future plans to maintain and provide local public housing programmes in a sustainable manner for Hong Kong.

Report Scope

This Report highlights the annual achievements and progress of the HA's sustainability performance from 1 April 2016 to 31 March 2017 (unless otherwise mentioned in the Report). It makes reference to the HA's sustainability objectives and targets regarding the planning and construction of new housing developments, the management and maintenance of the existing public rental housing estates, and the operation of our own office.

This Report covers all of the HA's activities and operations with no specific limitations to the reporting scope. Data and statistics presented as absolute figures have been normalised into comparable terms as far as practicable.

Criteria

This Report has been prepared in accordance with the [Global Reporting Initiative \(GRI\) Sustainability Reporting Standard](#) Core option. The [GRI Content Index](#) at the end of the report illustrates how all the sections in this Report are linked to the relevant GRI indicators.

To ensure our sustainability work is in accordance with the expectations of our stakeholders, it is critical to take their opinions into consideration. We regularly engage with our internal and external stakeholder groups such as staff and tenants through surveys. With reference to the stakeholder engagement results, the material aspects and the respective boundaries are covered in this Report.

We welcome stakeholders' comments on our operations, activities, sustainability performance and reporting process. [A feedback form](#) is enclosed in this Report to collect readers' valuable views and comments for our continuous improvement.

Assurance

To assure the completeness, accuracy, reliability and creditability of our Report, we have engaged an independent party to verify the claims and data quoted in the Report. The [Verification Statement](#), with the verifier's opinions and views on the Report, is presented in a later chapter.

What's New

During the reporting period, there was no significant change in the size, structure, scope of work and ownership of the HA. There were no joint ventures or subsidiaries operated by the HA.

ABOUT THE HONG KONG HOUSING AUTHORITY

The Hong Kong Housing Authority (HA), established in April 1973 under the Housing Ordinance (Chapter 283), is a statutory body responsible for supporting the Transport and Housing Bureau in the development and implementation of the local public housing programme. The Housing Department (HD) acts as an executive arm.





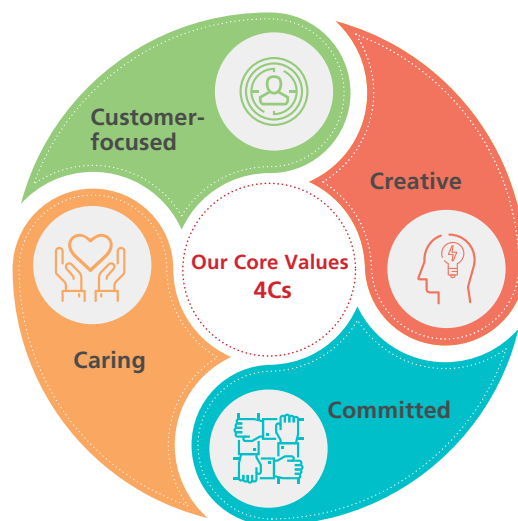
Our Vision, Mission and Core Values

Our Vision

To provide affordable rental housing to low-income families with housing needs, and to help low-to-middle-income families gain access to subsidised home ownership.

Our Mission

- ◆ To provide affordable quality housing, management, maintenance and other housing related services to meet the needs of our customers in a proactive and caring manner;
- ◆ To provide an age-friendly and barrier-free estate environment to address the needs of residents of different ages and physical ability;
- ◆ To ensure cost-effective and rational use of public resources in service delivery and allocation of housing assistance in an open and equitable manner; and
- ◆ To maintain a competent, dedicated and performance-oriented team.



Our Core Values

In providing quality public housing that is safe, affordable, people-oriented and environmentally friendly, we believe in incorporating sustainability considerations in the planning and implementation of our housing development and management programme. For instance, we strive to optimise our available resources for public housing production, to reduce energy consumption in the daily operation of the public rental housing, and to enhance construction safety to protect the well-being of our business partners and the general public.

We have clearly defined our strategies and priorities from the point of view of sustainability, details of which are highlighted below:

Our Strategy for Sustainable Housing

It is our mission to achieve sustainable development in public housing, which balances the environment with social and economic needs to attain healthy living, sustainable construction and enhancement of the total urban environment.

Our Priorities for Environmental Sustainability

The HA is committed to properly managing and reducing the consumption of resources in our daily operations, especially in relation to waste reduction and energy use. We are also committed to introducing environmentally friendly methods to further reduce the overall environmental impacts of our planning, development, management and maintenance operations.

Our Priorities for Social Sustainability

Corporate Social Responsibility has become an integral part of our corporate policy and daily work. The HA prioritises public housing for those who are in need. We are committed to providing a safe, hygienic and affordable living environment for our tenants – making public housing estates comfortable to live in. We also seek to become a role model in providing a safe and healthy working environment for our business partners, who are involved in public housing construction and management services. We attempt to enhance social cohesion, foster the well-being of society as a whole, and encourage Social Responsibility along the supply chain.

Our Priorities for Economic Sustainability

The HA is committed to adopting cost-effective and economically viable approaches in all aspects of our public housing programme. These can be achieved through a number of measures, including optimisation of the HA's resources, preventing abuses of public housing and extension of the useful life of our existing buildings.

We always look for opportunities to enhance the sustainability performance of our public rental housing (PRH) estates. All new projects are designed to readily achieve a Gold rating under the Hong Kong Green Building Council's green building assessment scheme (the Building Environment Assessment Method Plus for New Buildings, or BEAM Plus NB). Wah Ha Estate has achieved the highest Provisional Rating, i.e. Platinum while 7 projects achieved Provisional Gold Rating this year. We have ascertained the building sustainability performance of our existing PRH estates by registering with the Hong Kong Quality Assurance Agency Sustainable Building Index (SBI) Scheme since 2012. This year, we have maintained ten estates, containing the majority of housing blocks representing the high standard of the HA's block designs, for enrolment in the SBI Scheme. We successfully obtained the SBI Verified Mark for all these estates in May 2017.



Our Role and Services

The HA plans, designs, builds, manages and maintains different types of public housing, including rental housing estates and interim housing estates. In addition, the HA owns and manages some flattened factories and ancillary commercial and other non-domestic facilities. The HA also provides subsidised sale flats to eligible persons.

The HA formulates public housing policy for the government while the HD is the executive arm in delivering our public housing programme. We also work closely with other government departments when dealing with local public housing matters.

We work hand-in-hand with local communities and green organisations to demonstrate our commitment to sustainable development. During the year, we participated in activities held by green groups and other government departments, such as the Hong Kong Flower Show, Eco Expo Asia and Green Carnival.

In addition, we have joined activities held by various professional organisations which are listed below:

- ◆ Asia Carbon Footprint Network
- ◆ Asia Pacific Network for Housing Research
- ◆ BEAM Society Limited
- ◆ British Standards Institution
- ◆ BuildingSMART Hong Kong
- ◆ Construction Industry Council
- ◆ Council on Tall Buildings & Urban Habitat
- ◆ Development Bureau
- ◆ Eastern Regional Organisation for Planning and Housing
- ◆ Environmental Campaign Committee
- ◆ Esri
- ◆ Green Council
- ◆ Hong Kong Green Building Council
- ◆ Hong Kong Joint Council for People with Disabilities
- ◆ Hong Kong Quality Assurance Agency
- ◆ International Code Council
- ◆ International Concrete Repair Institute
- ◆ International Council for Research & Innovation in Building & Construction
- ◆ Labour Department

- ◆ Leisure and Cultural Service Department
- ◆ MerComm, Inc
- ◆ Occupational Safety and Health Council
- ◆ The Hong Kong Council of Social Service
- ◆ The Hong Kong Institute of Landscape Architects
- ◆ The Hong Kong Institution of Engineers
- ◆ The Lighthouse Club
- ◆ World Green Building Council

Housing Stock and Production

As at the end of March 2017, about two million people are living in approximately 769,400 PRH units across Hong Kong.

In 2016/17, we completed construction of approximately 11,300 PRH units and around 3,000 subsidised sales flats (SSF). Of 13 projects involved, seven are PRH projects, and six are SSF.

PRH projects:

- ◆ Wah Ha Estate (Wah Yan House);
- ◆ On Tai Estate (Ming Tai House and Chi Tai House);
- ◆ On Tat Estate, Anderson Road Site D (Yan Tat House, Sin Tat House, Lai Tat House, Chi Tat House)
- ◆ On Tat Estate, Anderson Road Site E (Ching Tat House);
- ◆ Long Shin Estate (Shin Leung House, Shin Oi House and Shin Yung House);
- ◆ Shui Chuen O Estate Phase 3 (Mau Chuen House, Lam Chuen House, Shou Chuen House and Chuk Chuen House); and
- ◆ Shui Chuen O Estate Phase 4 (Sung Chuen House, Shan Chuen House and Tsun Chuen House)

SSF projects:

- ◆ Wang Fu Court;
- ◆ Ching Chun Court (Chun Hin House and Chun Ho House);
- ◆ Mei Ying Court;
- ◆ Mei Pak Court;
- ◆ Sheung Chui Court (Chui Wu House, Chui Ho House and Chui Ting House); and
- ◆ King Tai Court

In response to the pressing needs for public housing, according to the HA's Public Housing Construction Programme as at September 2017, the estimated total public housing production in the five-year period from 2017/18 to 2021/22 is about 96,800 flats, comprising around 73,300 PRH units and around 23,400 subsidised sale flats.



Infrastructure

In 2016/17, we have awarded eight foundation contracts and eight new building contracts. We always look for opportunities to create user and environmentally friendly public housing for residents and also to engage with society along our sustainable development journey. We therefore include associated infrastructure facilities such as footbridges, landscape areas, car parks, public transport interchanges, community facilities, social welfare facilities, educational facilities and commercial facilities as far as practicable when planning, designing and developing our public housing. These facilities are located in, or adjacent to, one or more public housing developments, in order to provide a connected and sustainable living environment for our tenants and the community.

Commercial Properties

In 2016/17, we completed 1,900 square metres of retail facilities and 520 car parking spaces. As at the end of March 2017, our total non-domestic stock included approximately:

- ◆ around 230,000 square metres of commercial and retail space
- ◆ around 29,500 car parking spaces
- ◆ around 202,100 square metres of factory premises
- ◆ around 2,152,300 square metres of community, education and welfare facilities
- ◆ around 413,200 square metres of other space, used for miscellaneous purposes



Human Resources

Staff Resources

We regularly review and update our labour plan and human resources management policy, which serve as guidelines and a framework for staff-related matters. As at the end of March 2017, we had 9,260 staff, including 8,611 civil servants and 649 contract staff, representing a slight increase of 1.6% from the previous year.

Total Workforce (as at 31 March 2017)

Total number of staff		9,260
Breakdown by employment type	Civil servants:	8,611
	Contract staff:	649
Breakdown by role	Directorate staff:	61
	Professional staff:	896
	General staff:	5,131
	Site staff:	1,860
	Technical staff:	1,312
Breakdown by employment contract	Full-time:	9,260
	Part-time:	-
Breakdown by gender	Male:	5,834
	Female:	3,426
Breakdown by age	Age 20-29:	829
	Age 30-39:	2,053
	Age 40-49:	2,400
	Age 50-59:	3,770
	Age 60 or above:	208

New Employee Hires and Employee Turnover

	Male	Female
New employee hires ^[1]		
Age 29 or below:	202	93
Age 30-39:	94	59
Age 40-49:	39	17
Age 50-59:	9	8
Age 60 or above:	9	0
Employee turnover ^[2]		
Age 29 or below:	30	21
Age 30-39:	43	21
Age 40-49:	20	16
Age 50-59:	72	65
Age 60 or above:	176	51

Notes:

^[1] The above figures involve staff (position as at 31.3.2017) with their first appointment date falling within the period of 1.4.2016 to 31.3.2017.

^[2] The figures include staff transferred out of the Department from 1.4.2016 to 31.3.2017.

Training and Development

At the HA, our employees are our most precious resource. We are committed to offering opportunities and clear career development paths to our employees. Throughout the reporting year, we arranged 1,018 training courses, involving a total of 36,513 training days.

Training Hours Breakdown

	No. of staff	No. of staff attended training	Training hours received (hours)	Training hours per staff (hours)
By Strength				
Directorate Staff	61	56	1,759	28.8
Professional and Technical Staff	2,208	2,167	77,526	35.1
General and Site Staff	6,991	6,208	172,153	24.6
By Gender				
Male	5,834	5,458	168,515	28.9
Female	3,426	2,973	82,923	24.2
Training Regarding Human Rights				
Training on policies and procedures concerning aspects of human rights	9,260	475	2,128	0.2

Development and Construction Division (DCD) Academy

In order to meet an increase in public housing production targets while maintaining high service quality, we have recently established the DCD Academy. The DCD Academy is a knowledge-based community providing timely, continuous and comprehensive training packages to personnel engaged in public housing development and construction, including in-house staff and external participants. The DCD Academy provides a caring and motivating environment for our employees. We bring out the best in our people through identifying and investing in targeted knowledge and skills regarding public housing development and construction. The DCD Academy not only facilitates essential skill transfers, but also enables fulfilling careers and strong team spirit within the HA.

The Deputy Director of Housing (Development and Construction), Ms. Ada Fung, officially announced the opening of the DCD Academy on 26 April 2016. The first lecture, conducted on the same day, was well received by over 200 participants, who had been recruited for professional, technical or site-level roles in the past three years.

Health and Safety

Injury

Number of staff injury cases ^[3]	23
Staff sick leave granted for injury ^[4]	945.5

Notes:

^[3] The definition of staff injury cases is reported cases of occupational injuries, under the Employee's Compensation Ordinance, resulting in death or incapacity for work over 3 days.

^[4] The number includes injury-on-duty sick leave days granted to staff in 2016/17 only. Their sick leave extended to 2017/18 was excluded.

In 2016/17, we employed around 670 new staff to fill civil service and HA contract posts and converted seven contract staff posts into civil service positions. We have adopted regular employment terms and offer continuous contracts to our contract staff to enhance their job security and sense of belonging in order to retain professionals of high calibre.

With the difference in employment conditions between civil service and contract staff, we have, since 2008, used the Multi-faceted Manpower Strategy to resolve relevant management and staff issues. The strategy enables us to adjust staffing intake to suit our business operations and to offer staff benefits including clear promotion and career opportunities and greater job security.

Staff Appointment, Remuneration and Benefits

The HA abides by the requirements stipulated in the Basic Law for our staff appointments. With reference to Article 99 of the Basic Law, new recruits to the Civil Service on or after 1 July 1997 must be permanent local residents. All senior officers in the HD (at D2 rank and above) are permanent Hong Kong residents. They are civil servants and their appointments are governed by the Civil Service Regulations and subject to the approval of the Public Service Commission.

Our staff's remuneration follows either the civil service pay scales or contract pay bands, which will be adjusted annually according to staff performance and the respective annual pay adjustments, depending on the terms of employment and job grades. We use a stringent 3-tier performance appraisal system to ensure a fair and comprehensive review of our staff's performance. In general, civil servants may have one increment annually in their respective rank scales and contract staff may also receive an annual, one-off, performance-based merit payment.

Employees in the HA have access to a range of benefits and wellbeing initiatives with respect to their rank levels and terms of employment. These benefits include medical and dental treatment, housing benefits, annual leave, retirement benefits, passage and education allowances.

Staff Integrity

Driven by our responsibility and shared values, the HA works in a spirit of compliance with ethical principles and applicable laws and regulations. Internally, we maintain high standards of staff integrity and conduct when planning and managing the territory-wide public housing programme. We require all our staff to adhere to the Government and departmental guidelines including those provided by Civil Service Bureau and our departmental staff circulars. To help employees put these principles into practice, relevant documents lay out the internal guidelines and requirements for the declaration of private investments, avoidance of conflict of interest, and acceptance of advantages and benefits.

Internal circulars are issued to stipulate procedures to deal with attempted bribery, allegations of corruption and referrals to the Independent Commission Against Corruption. To assure staff integrity and enhance awareness, we have provided anti-corruption briefings for all new recruits as part of their induction programme and integrity reinforcement seminars for existing staff. In 2016/17, a total of 2,068 staff attended various anti-corruption courses. As a government body, we are fully committed to complying with all anti-corruption legislation. During the year, no cases of conviction in relation to corruption in the HD were recorded.



Human Rights

We believe all people are equally entitled to human rights without discrimination. We therefore provide equal opportunities and fair treatment in terms of remuneration, fringe benefits, promotion and compensation for all our staff without discriminating on the basis of an individual's gender, ethnic group, age or disability. We comply with all employment-related legislation. Child labour and forced labour are strictly prohibited from all our operations.

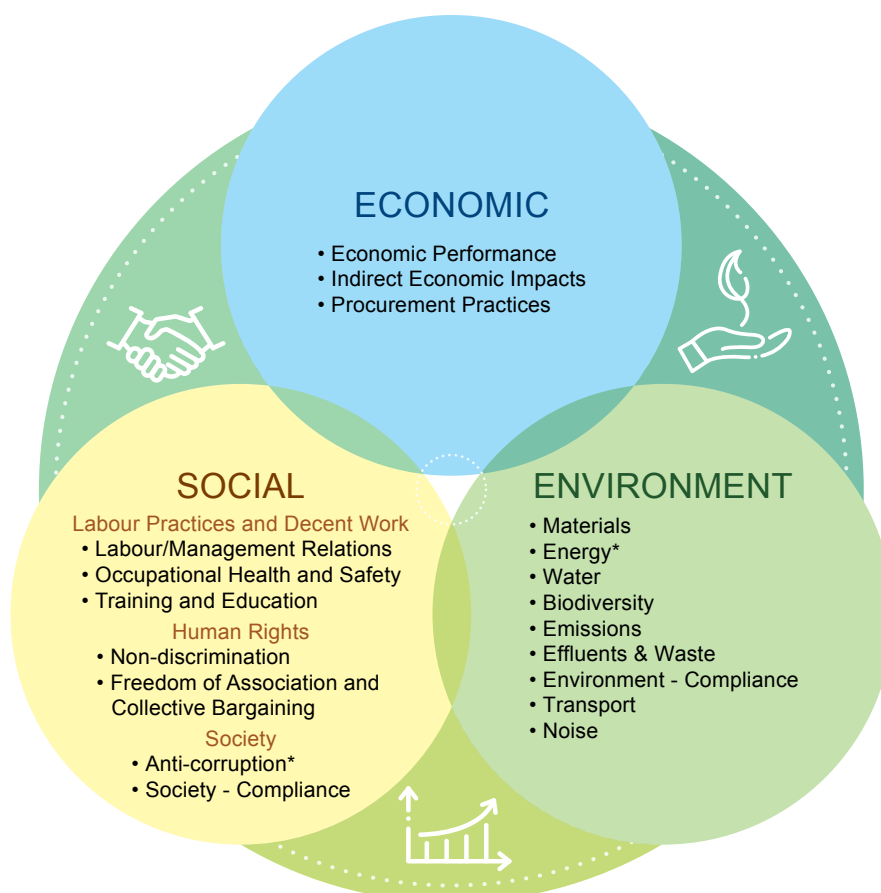
Our people are fundamental to the HA's effective operation. We maintain close relationships and open communication channels between management and staff to foster a dynamic and committed workforce. Our staff can join staff associations and working groups if they wish. In 2016/17, there were a total of 33 staff associations or working groups and five Departmental Consultative Committees in the HD. In addition to our monthly publication "Housing Dimensions" and our periodic publication "Development and Construction Division (DCD) Newsletter", we have maintained various effective communication channels with staff to exchange views and enhance transparency on departmental initiatives of mutual concern.



Significant Material Aspects

Our activities mainly involve building construction, estate management and maintenance. Each activity will have an impact on the community in the aspects of environment, health, safety and society. To tackle the potential risks arising from our daily operations through avoidance, minimisation, management and control, we have adopted a systematic “plan-do-check-act” approach and have introduced a series of initiatives to achieve sustainability in terms of environmental, social and economic aspects. In addition, our senior management has frequently reviewed public and stakeholders’ concerns through internal management meetings and customer satisfaction surveys to address the ever-changing housing needs of our clients.

Based on our daily operation, we have identified a list of stakeholders who may be interested in our sustainability performance. Through our regular stakeholder engagement exercises, we gain an understanding of the issues that matter most to our people, partners, suppliers, regulators, and community and that impact the environment. Taking tenants, which are one of our key stakeholder groups, as an example, we engage with them through meetings and surveys to collect their views and feedback on our sustainability initiatives and performance during the year. This helps us identify the list of material aspects and their respective boundaries covered in this report. Taking the further step of managing the energy consumption of our piling and building contractors, we have collected information on their energy consumption in the course of project delivery. Their energy consumption figures are also disclosed. A list of our material aspects and the reporting boundaries is depicted below:



* The performance of HA's contractors in the areas of “Anti-corruption” and “Energy” have also been covered in this report.

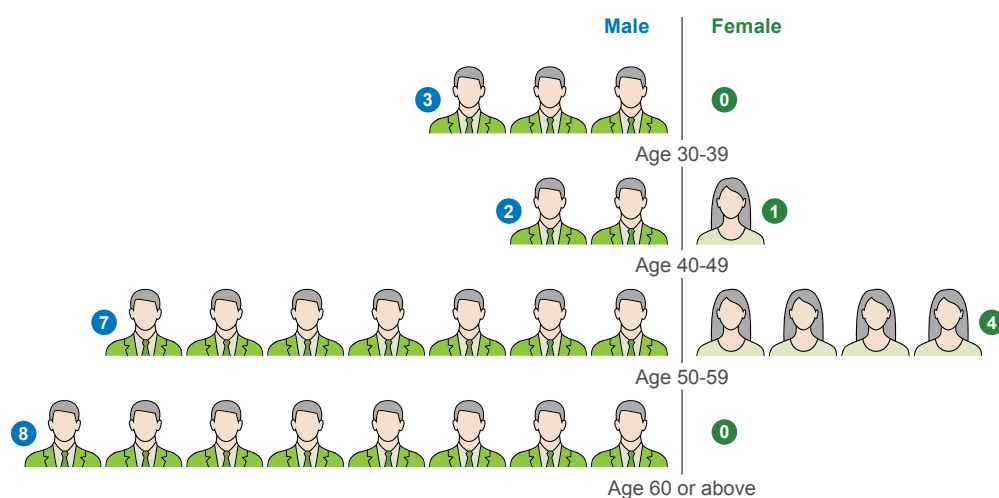


Governance Structure and Management

Our Governance Structure and Management

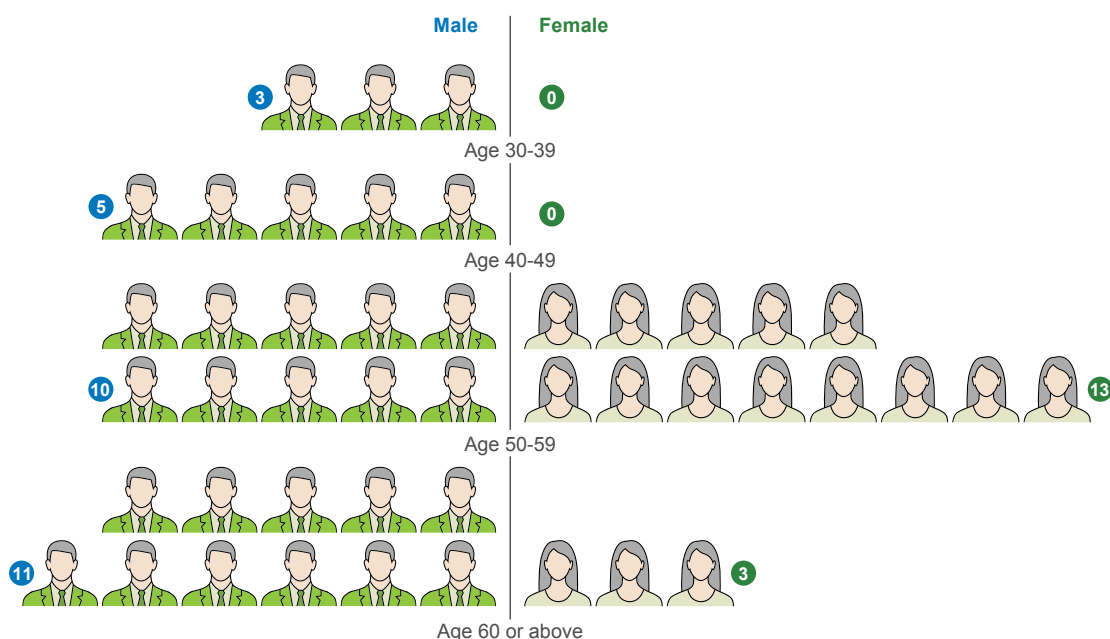
Apart from the Chairman and Vice-chairman, the HA has two official members and 25 non-official members. Appointments are made by the Chief Executive. All non-official members are appointed on an individual basis. The Secretary for Transport and Housing assumes the office of Chairman of the HA, while the Director of Housing assumes that of Vice-chairman.

Breakdown of non-official HA members by age group and gender:



Under the HA, there are six standing committees responsible for formulating, administering and overseeing policies in specified areas including building, commercial properties, finance, strategic planning, subsidised housing and tenders. Sub-committees and ad-hoc committees are set up when necessary. Details of our governance structure and the terms of reference of the respective committees can be found on [our website](#).

Breakdown of non-official Committees and Sub-committees members by age group and gender:



The HD serves as an executive arm of the HA to assist in the implementation of housing-related policies. It is headed by the Permanent Secretary for Transport and Housing (Housing) who also assumes the office of the Director of Housing. The HD has four operating divisions, namely Strategy, Development and Construction, Estate Management and Corporate Services, all of which support the implementation of HA's policies in housing strategy, overall housing development, construction and estate management. The HD's organisation can be found on [our website](#).

The Housing Department Environmental, Health and Safety Committee (HDEHSC) is responsible for the development and formulation of policy direction on environmental, health, safety and sustainability aspects within the HD. It is further supported by the following three sub-committees to address different sustainability issues:

- ♦ The HD Environmental Sub-committee assists the HDEHSC in overseeing the progress and performance of environmental initiatives and action plans in the Department;
- ♦ The HD Occupational Safety and Health Sub-committee assists the HDEHSC in overseeing the occupational safety and health of the employees in the workplace; and
- ♦ The HD Site Safety Sub-committee assists the HDEHSC in overseeing site safety management measures for works contracts.

Our Management Approaches

Our management has established and endorsed policies in specific areas to govern our operations and define frameworks for continuous improvement in our task of taking care of a wide range of public housing programmes. Providing a clear direction on our sustainability commitment and approaches, these policies at both the departmental level and divisional level have been widely communicated to and fully supported by our staff, service providers, materials suppliers and contractors.

Policies at the Departmental Level

Environmental Policy

The HA is committed to continuously improving environmental standards in the provision of public housing and related services. To achieve this objective, we have adopted the following environmental principles:

- ♦ To promote healthy living and a green environment;
- ♦ To develop a strategic framework and implement environmental management for the promotion of sustainable development;
- ♦ To strictly comply with and fully implement all relevant environmental legislation and regulations;
- ♦ To address environmental concerns and incorporate environmental initiatives into planning and design, construction and demolition, marketing and estate management activities;
- ♦ To minimise environmental impacts (air, dust, noise, waste and water) to residents and the public from the HA's operations;
- ♦ To develop procurement policies to minimise the use of resources and achieve cost effectiveness;
- ♦ To promote environmental awareness and participation among staff, residents and contractors through education and publicity programmes; and
- ♦ To review and seek continual improvement on the implementation of an environmental management system.

Safety and Health Policy

The HA fully recognises safety and health at work as an integral part of our activities. We are dedicated to providing and maintaining a safe and healthy working environment for all of our staff.

The HA is committed to maintaining a climate of safety awareness and developing guidelines and a health and safety management system that leads to continuous improvement in occupational safety and health performance. All employees are required to assume responsibility for assuring their own safety by conforming to the policy and observing all statutory requirements and guidelines that are related to their work.

To achieve the objective of safety and health at work, the HA has adopted the principles below:

- ◆ To provide and maintain working conditions, equipment and work systems for our staff, being consistent with good practices of occupational safety and health;
- ◆ To develop a strategic framework and implement safety management system for the promotion of safety and health at work;
- ◆ To ensure compliance with all relevant health and safety legislation as the minimum requirement;
- ◆ To take appropriate measures to eliminate safety and health hazards in our operations, and where this is not reasonably practicable, to devise procedures and guidelines to reduce such hazards to an acceptable level;
- ◆ To provide staff with training and supervision as required to achieve the objective of creating a safe and healthy working environment; and
- ◆ To pursue continual improvement in occupational safety and health by regularly reviewing our performance.

The policy and overall safety management system will be regularly monitored and reviewed to ensure that the above objectives are achieved.

We work closely with partners and supply chain to achieve our strategic ambitions. We have developed an Environmentally Responsible Procurement Policy to provide guidelines regarding procurement of products and services, and that lay the foundations of our green procurement requirements. We encourage all staff members to follow the Environmentally Responsible Procurement Policy and use green products and services where practicable and economically viable.

Our supply chain mainly consists of construction contractors as well as estate management companies and associated service providers. Most of them are locally based. As part of supply chain management, we work and communicate with our contractors and material suppliers to ensure that they fully understand our sustainability requirements. We have maintained a robust and effective monitoring system to review and assess their performance and compliance status regularly.

We strictly follow the Government Procurement Agreement of the World Trade Organisation and the HA's procurement policies and instructions in the procurement process. We provide equal opportunities without prejudice to material suppliers to assure a fair, open, equitable and ethical purchasing process.

Environmentally Responsible Procurement Policy

The Environmentally Responsible Procurement Policy for contractors, suppliers and service providers is as follows:

According to the HA's Environmental Policy, the HA is committed to minimising the use of resources and achieving cost effectiveness in its operations. This policy is developed to fulfil this commitment by:

- ◆ Identifying the significant environmental impacts of materials and services in use;
- ◆ Purchasing materials, goods and services to specifications that are compliant with relevant environmental legislation, and include environmental considerations so that, if technically acceptable and economically viable, lower environmental impact goods and services are purchased;
- ◆ Assessing the environmental commitment of suppliers, contractors and service suppliers as part of the tender evaluation process, and rewarding the best environmental performers. Paying for environment to demand for higher environmental performance;
- ◆ As appropriate to the scale and/or nature of the work requiring contractors and service providers to produce project environmental management plans (EMPs) within their bids for work;
- ◆ Regularly evaluating evidence supplied by contractors and service providers towards implementation of their EMP as part of our ongoing supervision of works;
- ◆ Providing feedback, advice and facilitating training of key suppliers, contractors and service providers on environmental performance and improvement opportunities;
- ◆ Ensuring that all HA staff, HA suppliers, contractors and service providers are aware of, and act in accordance with, the HA environmental procurement policy and contribute to the HA's environmental objectives; and
- ◆ Establishing systems, targets and action plans for effective environmental procurement and regular reports on performance.

Policies at the Divisional Level

Apart from following the policies at the departmental level, individual divisions and units have pursued ISO 14001 Environmental Management System (EMS) certification to further enhance their existing green practices and continually improve environmental performance. The DCD obtained ISO 14001 EMS certification in June 2009, while the Estate Management Division (EMD) has achieved the same certification for maintenance (May 2011) and property management (July 2013) for all existing estates. The Corporate Services Division has been certified to ISO 14001 EMS for the provision of property management functions in the HA Headquarters since December 2013. The Independent Checking Unit also received ISO 14001 EMS certification in May 2014. With the EMS in place, individual divisions and units can better manage significant environmental aspects in relation to their operations, activities and services in a systematic and holistic manner.

To further enhance energy efficiency and performance in residential building design, the DCD developed and rolled out an Energy Management System (EnMS) according to the ISO 50001 standard in December 2011, and obtained external certification in June 2012. The EMD has selected Kwai Shing West Estate as a pilot site for the implementation of the ISO 50001 EnMS, and the Estate was certified in June 2013. With the experience gained at Kwai Shing West Estate, the EMD extended the ISO 50001 EnMS certification to cover all PRH estates on 2 April 2015. The energy policies of the DCD and EMD spelling out their energy management commitment are provided below.

Energy Policy of DCD

In moving towards our goal of sustainable operations in meeting customer and community expectations, the DCD recognises the importance of energy management in the provision of affordable quality housing. To this end, we affirm our commitment to:

- ◆ Continual improvement in energy performance;
- ◆ Ensure the availability of information and necessary resources to achieve objectives and targets;
- ◆ Comply with applicable legal requirements and other requirements to which we subscribe that relate to our energy use, consumption and efficiency; and
- ◆ To support the purchase of energy-efficient products and services, and the design for energy performance improvement.

Energy Policy of EMD

EMD is committed to continually improving its energy performance standards in the areas of facility management and improvement works of PRH domestic blocks. To achieve this objective, the top management of EMD affirms the following commitments:

- ◆ To regularly review and seek continual improvement in energy performance;
- ◆ To ensure the availability of information and necessary resources to achieve objectives and targets;
- ◆ To comply with applicable legal requirements and other requirements to which we subscribe, related to our energy use, consumption and efficiency;
- ◆ To provide a framework for setting and reviewing energy objectives and targets; and
- ◆ To support the purchase of energy-efficient products, services and design for energy performance improvement.

Moreover, both the DCD and EMD have adopted the divisional social responsibility policy with reference to ISO 26000 Guidance of Social Responsibility. This policy has been developed following the HA's Vision, Mission and Core Values to provide a framework for the management of divisional social issues.

Social Responsibility Policy

We recognise social responsibility as an integral part of our long-established caring values. Social responsibility is the way we have and will continue in our approaches and practices. We affirm our commitment in adopting and practising the following principles of social responsibility:

- ◆ Be accountable for our impacts on society and the environment;
- ◆ Be transparent in our decisions and activities that impact on society and the environment;
- ◆ Be ethical in terms of honesty, equity and integrity;
- ◆ Be conscious of and respect the interests of our stakeholders and respond to their expressed concerns;
- ◆ Be respectful of the rule of law and international norms of behaviour for environmental or social safeguards; and
- ◆ Be respectful and supportive of human rights with particular regard to discrimination, grievance resolution and rights at work.

ENVIRONMENTAL PERFORMANCE

- ◆ Initiatives in Planning and Construction of New Housing Estates
- ◆ Initiatives in Existing Housing Estates
- ◆ Initiatives in Office at Work
- ◆ Case Study – Environmental Excellence from Planning to Operation – Lam Tin Estate



The Hong Kong Housing Authority (HA) is committed to offering public housing estates that are of high quality and sustainable environmental performance. We actively enhance different aspects including energy efficiency, resource conservation, air quality and greening in our estates and offices.

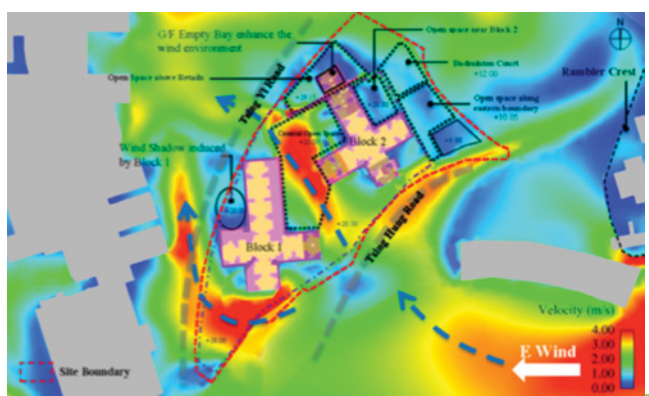


Initiatives in Planning and Construction of New Housing Estates

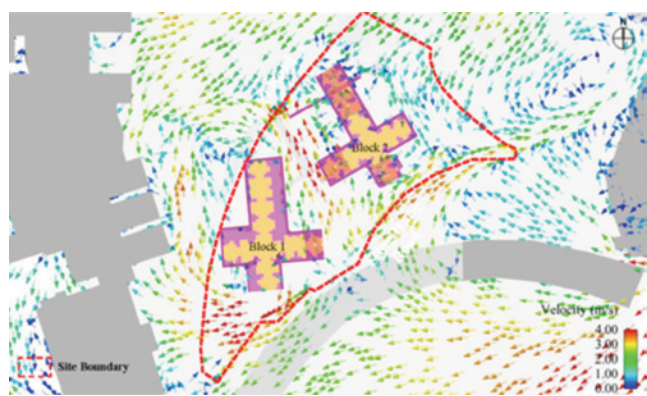
Green Design and Construction

Conducting Micro-climate Studies

We conduct micro-climate studies during the site planning and design stages by applying computer simulations generated from local climatic conditions-calibrated software. Taking wind pattern, natural ventilation, pollutant dispersion, natural daylight, solar heat gain and numerous other environmental factors into account, the study provides us with more comprehensive insights of the environmental impact of the projects on the surrounding area. During the year, such micro-climate studies were carried out in 37 on-going public housing projects, together with 25 projects that underwent Air Ventilation Assessment to create a better wind environment, facilitate natural ventilation and use of daylight, and reduce solar heat gain in housing blocks and external areas.



▲ Air Ventilation Assessment



▲ Micro-climate studies with computer simulations

Leveraging the distinctive characteristics of individual sites, we have included passive designs in our projects to enhance environmental performance and we will continue to adopt other green design elements in our development projects.

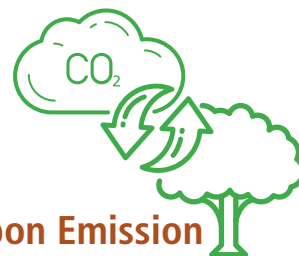


▲ Examples of passive designs in our projects: light atrium (left); wind tunnel (upper right); corridor utilising natural light (lower right)

Adopting Low Carbon Building Design

Echoing the Government's target of reducing greenhouse gas (GHG) emission intensity by 65% - 70% by 2030 using 2005 as the base year as outlined in Hong Kong's Climate Action Plan 2030+, we have adopted green building strategies during the design and construction stages to curb GHG emissions in our public housing projects.

Since 2011, in order to benchmark the GHG emission level across our projects, we have deployed Carbon Emission Estimation (CEE) at the planning and design stage of all new development projects. CEE predicts the amount of GHG emissions of a public housing block throughout its lifecycle in the form of carbon dioxide equivalent. During the year, 14 projects underwent CEE at the design stage. We will continue to implement CEE in all projects at the design stage. The level of GHG emissions of each block was benchmarked against that of the standard block of New Harmony 1 Option 6 and Kai Ching Estate. We estimate that an average of around 14% GHG emissions reduction has been achieved since implementation, compared with the construction floor area-based baseline data of New Harmony 1 Option 6 block.



Carbon Emission Estimation

Amount of CO₂ saved equivalent to **86,000 trees** planted

Utilising Green Materials and Products

In order to reduce the use of cement and promote the adoption of recycled materials, we have specified the mandatory use of Ground Granular Blast Furnace Slag (GGBS) in all our new projects to replace part of cement for precast facades and staircases. In addition, we have studied the application of GGBS in producing precast beams, precast refuse chutes and precast planks of semi-precast slabs. We will also continue to use synthetic macro-fibre reinforcement in on-grade slabs in new projects, where appropriate.

Besides concrete, we continue to conserve resources by adopting sustainable materials and resource-efficient installations. For example, we use timber from certified sustainable origins for door manufacturing. We have extended the Chain of Custody (COC) certification for timber from sustainable sources to doorset manufacturers and suppliers who should produce a Certificate of Registration issued by an independent certification body for compliance with the COC standard. Other examples include the Water Efficiency Labelling Scheme (WELS) registered plumbing fixtures, two-level lighting, grid-connected photovoltaic systems, etc. To adhere to the specified flow rate restrictions, we closely monitor the performance of mixer tap products. By consulting the Water Supplies Department on the results of the latest flow rate tests, we keep our specification in our Specification Library up-to-date.

We apply Building Environmental Assessment Method Plus (BEAM Plus) specification clauses for all new work projects, apart from the aforementioned measures. To reduce the environmental footprint of our housing blocks, we specify the use of the following materials in our contract:

- ◆ pulverised fuel ash (PFA) as cement replacement material in structural concrete with mass concrete pouring;
- ◆ recycled rock-fill in earthworks and recycled sub-base materials in roadworks;
- ◆ recycled rock cores retrieved at ground investigation work for landscape and associated external work;
- ◆ GGBS as replacement material for part of cement in concrete for the manufacturing of precast façades and precast staircases in domestic blocks;

- ◆ recycled concrete paving blocks with recycled glass aggregates and replacement of concrete paving blocks for new building and civil engineering contracts;
- ◆ marine mud excavated at site stabilised by cement treatment as useful backfilling material;
- ◆ timber from sustainable sources for temporary works; and
- ◆ modular hoarding using bolt-and-nut connections for re-use in projects.

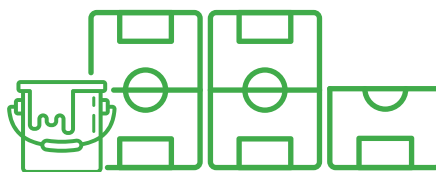
During the year under review, we registered seven new projects with the Hong Kong Green Building Council (HKGBC) for assessment and rating under the BEAM Plus assessment scheme.

To enhance the quality of building materials and components, we have implemented product certification for eleven types of building materials and services as a means of effective upstream control. We are preparing to implement certification for paint products in 2017/18.



Use of Recycled Material

5,720 tonnes GGBS used,
equivalent to **380** trucks



Plastering

2,860,000m² of plaster saved,
equivalent to **446** standard football pitches

As part of our continuous effort, we explore the incorporation of more green elements into the new project and maintenance work specifications. We have promulgated the mandatory use of B5 bio-diesel as fuel for all non-road-based construction machinery on site after consultation with the Hong Kong Construction Association and contractors. In the first quarter of 2017, we documented the Highways Department's revised specification on the use of recycled glass cullets as aggregates for precast concrete paving blocks in our General Specification for maintenance work. We conducted a trial of using manufactured sand for screeding works to verify their application for architectural finishing work at one of our projects in end of 2017.

We emphasise green procurement to make our projects more environmentally friendly. We explored the integration of HKGBC Green Building Product Labelling Scheme, Construction Industry Council (CIC) Carbon Labelling Scheme and our product certification scheme during the year. In addition, HKGBC agreed to include product certification into their Consultant Study for BEAM Plus NB Major Revision. In terms of the environmental labelling schemes, we will prepare and implement new specification clauses for their coordinated implementation. We will also monitor the development of the HKGBC Green Product Accreditation & Standards Scheme, and update our guide specifying green materials and products for maintenance and improvement work, as appropriate.



▲ Use of recycled glass cullet as aggregates for precast concrete paving blocks (top and bottom)

Other than building materials, we inject green elements into the specifications for general goods and services whenever possible. During the year, we reviewed the purchases of general goods and services, including IT equipment, in collaboration with the respective users to adopt the relevant recommendations from the Environmental Protection Department.

Environmentally Friendly Construction Practices

We mandate our construction contractors to practice green building methods which exceed the statutory requirements. Throughout the project construction phase, we ask our contractors to follow the requirements on different aspects, including site formation, demolition, foundation, superstructure building and civil engineering works, to enhance their environmental performance. For example:

- ◆ submitting and implementing environmental management plans;
- ◆ implementing ISO 9001 Quality Management System (QMS) and ISO 14001 Environmental Management System (EMS);
- ◆ requiring Building (New Works Category) and Piling Contractors to be certified ISO 50001 Energy Management System (EnMS);
- ◆ prohibiting the use of incandescent light bulbs for temporary lighting on site;
- ◆ using generators with Quality Powered Mechanical Equipment (QPME) labels;
- ◆ installing water recycling facilities;
- ◆ limiting vehicle speed on site;
- ◆ practicing hard paved construction;
- ◆ adopting precast concrete components;
- ◆ using single board hoarding;
- ◆ offering solar hot water heaters in workers' shower areas;
- ◆ providing food waste composting facilities in remote sites with canteens or catering services;
- ◆ greening on site;
- ◆ using electric vehicles (EVs) as contract cars within a specified round-trip distance; and
- ◆ recovering undamaged timber pallets for locally manufactured pavers for reuse or recycling.

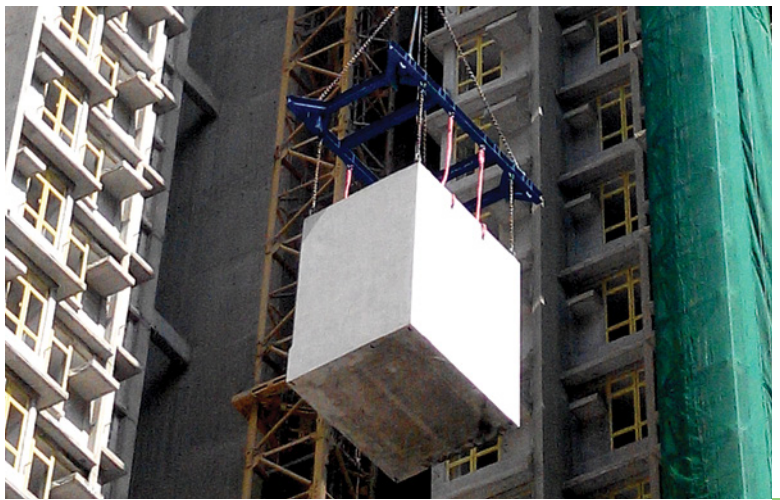
The Building Information Modelling (BIM) is adopted in all disciplines and aspects of planning, design and construction of new projects. As at March 2017, more than 45 projects were using the technology at various stages. We also performed a total of 17 site potential and feasibility studies using Geographic Information System (GIS). For the construction material delivery and waste generated from our construction sites, we utilise radio-frequency identification (RFID) for tracking.

In addition, we seek to apply innovative means which include the 5D BIM and structural soil used in Anderson Road Sites A and B Phases 1 and 2 (On Tai Estate). The former takes into account time and cost in the traditional BIM, facilitating project management. In terms of structural soil, it not only allows us to comply with the load-bearing requirements but also fosters the root growth of vegetation. The installation has been tested in laboratories with different mixes of soil, and we have piloted it in the Anderson Road project with two trees planted in structural soil.



◆ RFID for tracking delivery of building components and construction waste from construction sites

While adopting different innovative and environmentally friendly practices in our housing projects, we have developed standards for their application. We have used precast segmental roof water tanks of standardised design in suitable new projects. We have issued an instruction on “Implementation of Precast Construction at Roof of Domestic Block” in January 2018. We also continue to explore wider use of precast concrete components, including volumetric precast balconies.



▲ Precast segmental roof water tanks



▲ Volumetric precast balconies

To provide monthly information on the non-inert, recyclable construction and demolition materials generated in construction sites which are available to be collected and thus facilitate construction waste recycling, we have launched a database “Information Platform on Recyclable Non-inert Construction and Demolition Waste” for our recyclers’ reference. It can be accessed on the HA website.



▲ Information database on construction waste recycling



**Modular Design/
Precasting &
Prefabrication**

Cost **40%** less
than private sector



**Timber Saving from Use of
Large Panel Formwork
& Precast Elements**

20,000 tonnes of timber
saved, equivalent to **1,300** trucks

Handling Method	Amount Handled in New Works Projects in 2016/17 (tonnes)
Hazardous waste	
Recycled	14.5
Landfill	4.3
Non-hazardous waste	
Recycled	16,998.6
Public fill	453,589.9
Landfill	631,333.0



Transfer of C&D Materials for Reuse

2,800 trucks of C&D materials in HA sites were re-used



Construction Waste

30% less than private sector

GIS for Site Potential and Feasibility Studies

3D GIS now plays a major role in the planning and design of our estates, especially at feasibility stage. Our Architects and Planners will make more use of GIS to assist them in understanding their site and its surrounding area in a 3D environment. As we have already obtained 3D spatial data for the whole of Hong Kong from Lands Department, including 3D terrain, buildings and infrastructure, we were able to carry out visual assessment of our estates, such as ridgeline analysis, vantage point analysis, shadow analysis in site potential and feasibility studies.

Green Building Recognition

We incorporate environmentally friendly features into our projects wherever practicable, and require all projects to readily achieve the “Gold” rating standard in the HKGBC’s BEAM Plus.

The Fat Tseung Street West Development, which is scheduled to be completed in 2020, was awarded the highest platinum rating in the BEAM Plus Neighbourhood Pilot-testing Project, with the project forming part of a vibrant community after other public housing developments in the area of Cheung Sha Wan are built. More information about the social performance of this development project is available in the case study in the Social Performance section.



BEAM Assessed Projects

7 projects registered and
9 projects assessed by
BEAM Plus

Our dedication to promoting a sustainable built environment for our housing development projects has been recognised by the HKGBC and Professional Green Building Council. We received the highest honour in the Green Building Leadership category of the Green Building Awards 2016 – a biennial prestigious industry award for building-related projects and organisations with outstanding performance and contributions in sustainability.



▲ Green Building Leadership category under the Green Building Awards 2016

Green Recognition

In the Green Building Awards 2016, our Hung Fuk Estate Public Rental Housing Development at Hung Shui Kiu Area 13 won the Grand Award in the New Buildings Category (Completed Projects – Residential Building). We were also awarded the Merit Award in the Research and Planning Category for “Concrete Innovation – Application Research for Carbon Footprint Reduction” and “Research and Development of Second Generation Acoustic Balcony”. Please refer to our List of Awards and Community Recognitions for full details on our achievements.

Resource Conservation

Holistic Energy Management

Recognising the importance of an effective Energy Management System (EnMS) for improving energy performance, we have implemented EnMS in accordance with the ISO 50001 EnMS standard for our projects since 2011. Using the system, we can estimate the communal energy consumption of the completed and occupied buildings during the design stage, which allows us to identify and implement energy efficiency enhancement measures. During the year, we have applied the energy estimation approach to 14 new public housing developments.

As a means of extending our environmental commitment, we continue to require our contractors applying for admission to the HA Lists of Building (New Works Category) and Piling Contractors to be ISO 50001-certified. We also closely monitor their energy performance by collecting energy consumption data and conducting analysis.

Energy Consumption by Construction Contractors (April 2016 – March 2017)	Gigajoule (GJ)	%
Diesel consumption for construction activities	626,816	84.6
Diesel consumption for transportation of construction waste	64,808	8.7
Electricity consumption for construction activities	42,643	5.8
Gasoline consumption for contract cars	6,720	0.9
Total	740,986	100

Renewable Energy

We strive to apply renewable energy technology in our housing developments as we are at the forefront of incorporating green features into projects. New blocks are equipped with grid-connected photovoltaic (PV) systems where appropriate to generate at least 1.5% of electricity consumed in communal areas. A total of 16 estates have been equipped with PV systems since March 2009. We also install one to two solar-powered lights in all new projects to promote the use of renewable energy and education purpose.



▲ PV panels

Promoting Electric Vehicles

In support of the Government's policy to promote the use of electric vehicles (EVs), we include EV charging facilities for private cars in the design of the covered car parks in all the new estates. As at the end of the year, we have provided private car parking spaces with EV charging facilities in seven new development projects. To incentivise the use of EVs, we offer up to two hours of free parking for EV users during charging. We also specify the provision of EVs as contract cars in our housing projects.



▲ EV charging facilities (left and right)

Energy Efficiency in Buildings

We have aligned our design of new projects with the “Guidelines on the Design and Construction Requirements for Energy Efficiency of Residential Buildings” (the Guidelines) by the Buildings Department in 2014, and will continue to improve energy efficiency and natural ventilation by designing the housing blocks according to the Guidelines. We are also in compliance with the Building Energy Codes issued by the Electrical and Mechanical Services Department (EMSD).

Since August 2015, 51 energy certificates have been obtained under the Energy Efficiency Registration Scheme for Buildings from the EMSD, illustrating our commitment to satisfying the energy efficiency requirements in various building installations.

On the other hand, we have prepared a list of application criteria and guidelines on air-conditioning systems, based on the evaluation results of three pilot systems in Yau Lai Shopping Centre, Choi Tak Shopping Centre and Domain. These facilitate the implementation of hybrid ventilation systems in suitable projects which reduce the energy use in air-conditioning and mechanical ventilation systems.



▲ Hybrid ventilation system



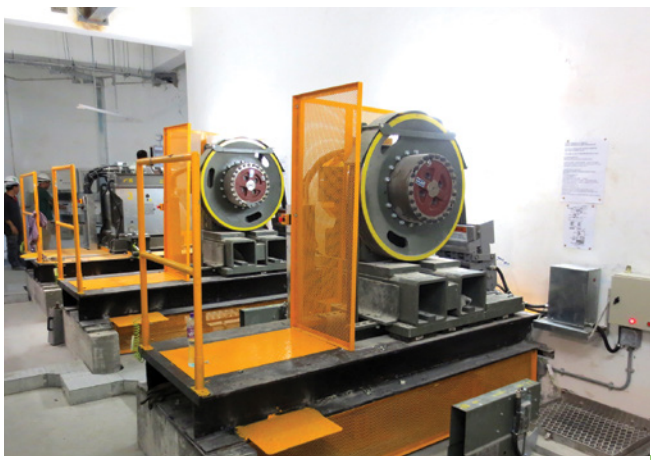
▲ Choi Tak Shopping Centre



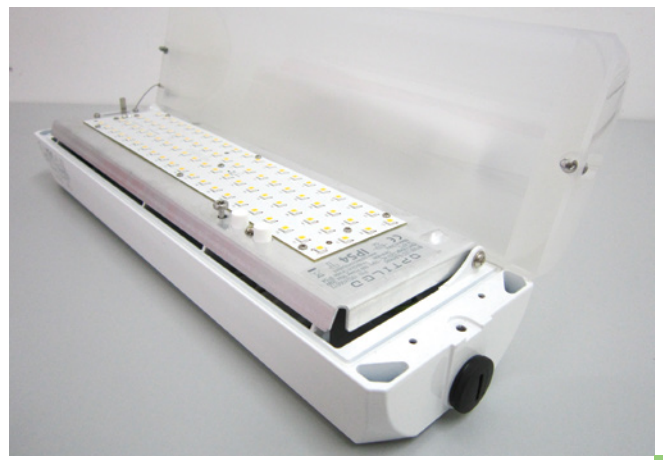
▲ Yau Lai Shopping Centre

For new lift installations, we have specified the use of regenerative power for lift motors of 18kW or above and energy-efficient gearless lift drives. We have completed the data collection and analysis for the lift system at Kai Ching Estate and Tak Long Estate, and the performance review was finalised and the result was satisfactory. In some of our projects, we have adopted permanent magnet synchronous motors (PMSM) to reduce the lifts' energy consumption. To further enhance the energy performance, we are considering expanding the adoption of regenerative power for lifts with motor rating from the current "18 kW or above" to "8 kW or above".

Since early 2016, we have adopted LED bulkhead lights as the standard lighting in communal areas of our housing blocks for all new projects under design. Two-level lighting control systems have also been deployed to meet the illumination requirements stipulated for barrier-free access in new residential projects; and to maintain energy efficient usage by adopting motion sensors and on-demand switches with timer controls to improve energy use.



▲ PMSM for lift installation



▲ LED bulkhead lights



▲ Two-level lighting control system: **before** (left) and **after** (right)

Other measures to reduce energy consumption have been explored. Our new projects generally fulfil the mandatory requirements on Residential Thermal Transfer Values promulgated in the Building Department's Practice Note.

Smart Meter

In all new housing blocks, we implement smart meter monitoring systems with monthly energy consumption information shown at the main entrance lobbies. Peer comparison data of communal and tenants' consumption of electricity, gas and fresh water has been made available to raise environmental awareness among tenants. New standard specifications have been prepared for implementation.



▲ Display of the smart meter monitoring system at main entrance lobby

Water Conservation

We have carried out a variety of water-saving initiatives in our new projects to conserve water. For example, we have implemented a Zero Irrigation System (ZIS), which makes use of Sustainable Urban Drainage System and Sub-irrigation Planting System, to reduce irrigation water consumption in suitable housing estates. At Hung Fuk Estate, we have tested the adoption of ZIS alongside a Rainwater Harvesting System and Root Zone Irrigation for better irrigation water management. ZIS in new public housing projects was proven to be effective and will be adopted in other new projects.



Twin Tank

534,000 litres of water saved for **14,300** new households



Zero Irrigation System Planter

21 projects with in-situ ZIS planter provision are under construction. Anticipated **4,906,330** litres of water will be saved annually



▲ ZIS: preparation (left) and implementation (right)

In addition, we have made use of integrated water-sensitive urban design to gather rainwater at high elevations and on vegetated slopes in Shui Chuen O Estate. The rainwater is subsequently treated by bio-retention, stored and used for watering plants.



▲ Plumbing fixtures registered under WELS



▲ ZIS: completion

As for housing flat fixtures, we have promoted the adoption of 6-litre single or dual flush water-closet suites, plumbing fixtures registered under WELS of the Water Supplies Department and other water-efficient installations.

For our new development projects, a total of 1,064,660 cubic metres of water were consumed during the year, with 69,905 cubic metres recycled.

Mitigating Environmental Impacts

Estate Ecology

We meticulously maintain the ecological value in the proximity of all our applicable housing projects through practicing balanced environmental planning and design principles. Balanced ecological planning and design principles have been applied in suitable projects and we conduct briefing and debriefing sessions and site visits for contractors. At Long Shin Estate, a plantation improvement study for the revitalisation of the existing vegetation on the slopes has been conducted jointly with the University of Hong Kong, and native saplings have been planted on site. We continue to monitor their growth. Apart from collaborating with the Development Bureau to preserve and manage trees, we are also developing guidelines and clauses which will engage our contractors through regular liaison channels.



▲ Plantation improvement study at Long Shin Estate

Our green design guidelines underpin our emphasis on greenery in our housing projects. We target at having no less than 20% of the new estate area allocated for greening and 30% for sites over two hectares. The tree planting ratio is set to be one tree or more for every 15 flats. We will closely follow up on the cost effectiveness of the greening work.

At Hung Fuk Estate, we have experimented with sustainable gardening by recycling felled trees and turning them into compost. The results have been used to develop the selection criteria for composting machines and the optimal mix of wood and garden waste for compost production. Recycling trees as mulch for landscaping work will be conducted in other appropriate projects in the future.



Trees are felled ▶



◀ Felled trees are cut and shredded into wood chips



◀ Wood chips are used as bulking agent to mix with food/garden waste and decomposed into soil conditioner

During the year, we continued to engage our tenants to green four new housing estates through the Action Seedling programme. To further promote tenant participation, we have designated planting areas in development projects for the residents to take part in gardening and planting for leisure and education.



◀ Action Seedling programme (left and bottom)



Trees
1,592 trees
planted



Slope Greening
28 slopes



To offer an aesthetically appealing environment for our residents, we actively adopt hydroseeding, planting and other measures in newly formed slopes. Green treatment has been carried out in four projects with formed slopes, including Shui Chuen O Estate, So Uk Estate Phase 1, Po Heung Estate and Ching Chun Court.



▲ Green treatment to slopes at Shui Chuen O Estate

Noise Control

A range of noise mitigation measures have been deployed to minimise noise impact on our developments. Depending on the site-specific characteristics, acoustic windows, acoustic balconies, architectural fins, noise barriers and other noise-lessening methods have been adopted to improve the living experience of our tenants.

The design of the second generation acoustic balconies which feature a sliding screen in front of the balcony door, noise absorptive material in the balcony wall and ceiling, and inclined panels along the parapet has been completed. Further mitigating the impact of traffic noise, the acoustic balconies will be included in new projects where necessary.



Noise Mitigation Measures

(Including barrier, fin, acoustic window and/or balcony etc.)

11 projects adopted



▲ Second generation acoustic balcony



▲ Vertical noise barrier

Air Quality Management

We have adopted the Development Bureau's implementation plan to phase out the use of four types of Exempted Non-Road Machinery for our contracts with estimated value greater than \$200 million which can only be waived with the contractor's justifiable substantiation. The foundation contractors have agreed to add filters to their plants and machines to reduce air pollution.

The application of bio-filtration systems has been studied in various housing estates for air pollutant reduction in car parks and roads. At Cheung Sha Wan Estate, the study has yielded encouraging results.



▲ Bio-filtration system at Cheung Sha Wan Estate

Asbestos Abatement

During the year, we completed asbestos removal work for existing buildings at new Public Housing Development Sites at Queen's Hill and Fo Tan.

Risk Assessment

A risk assessment following the guidelines of the International Standard ISO 31000 has been carried out on about 2,300 building materials used in architectural, building services, structural, civil engineering, geotechnical engineering and landscaping works. We have evaluated the risk assessment results and are developing corresponding risk treatment measures. The first batch of risk treatment measures for architectural components was rolled out in January 2017.

WSBE17 Hong Kong

With our different environmental initiatives in public housing development, we are eager to exchange green ideas with both the local and international building sector. Between 5 and 8 June 2017, we took part in the World Sustainable Built Environment Conference 2017 (WSBE17) Hong Kong jointly organised by the CIC and HKGBC.



▲ Ms Ada Fung, Deputy Director of Housing (Development and Construction), presenting at the conference



▲ Mr Lawrence Chung, Assistant Director of Housing (Project), speaking at the event

The event was part of the 2015-2017 Cycle of the reputed Sustainable Built Environment (SBE) Conference Series and was regarded as the “Olympics” for the green building industry in the world, with attendance of around 1,800 green building advocates, policy-makers, academia and industry practitioners from 57 countries and regions.

We contributed to the highly influential conference by sharing our sustainability experiences and achievements in six presentations, establishing and manning an exhibition booth to promote our green initiatives, arranging guided green-building technical visits to Hung Fuk Estate and Wah Ha Estate, which are our award-winning housing estates, and providing our stories about community engagement, studies and housing projects in the Hong Kong 2017 Report.



▲ Green-building technical visits to Hung Fuk Estate (top) and Wah Ha Estate (bottom)



Initiatives in Existing Housing Estates

Environmentally Responsible Management and Maintenance

ISO 14001 Environmental Management System (EMS)

We have incorporated EMS which is in accordance with the internationally recognised ISO 14001 standard into our housing estate management since 2010. In 2011 and 2013, ISO 14001 certifications for maintenance and property management were obtained, respectively, by all our PRH estates. An annual internal audit for maintaining ISO 14001 was completed in March 2017.

We continue to implement ISO 14001 together with ISO 9001 in the planning, design, project management, contract administration of planned Maintenance and Improvement (M&I) works to maintain continual improvement in our environmental performance. The ISO 19011 Auditing Management System is still in use for M&I works.

Energy Conservation and Carbon Management

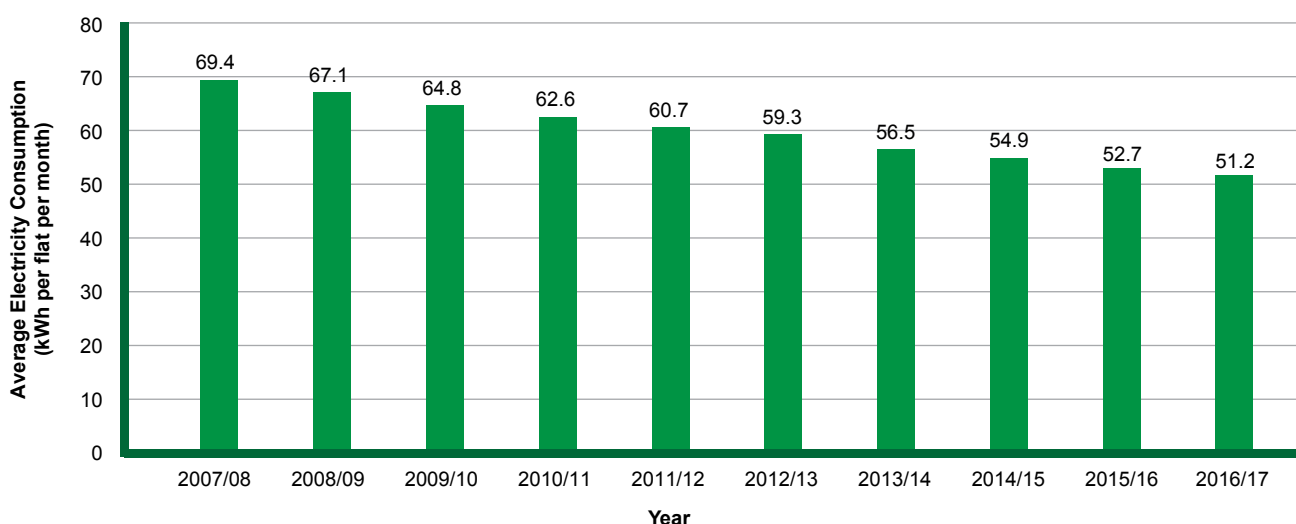
ISO 50001 Energy Management System (EnMS)

We continue to maintain the EnMS in all existing PRH estates since the award of the fully extended certification of ISO 50001 EnMS in April 2015. Nevertheless, as the 3-year validity period commenced upon the initial certification at Kwai Shing West Estate was expired in June 2016, a large scale re-certification audit was therefore required and accomplished in April 2016 and our certification for all existing PRH estates was renewed with another 3-year validity period (i.e. up to June 2019).

Overall Energy Consumption

Resulting from the effective use of EnMS, electricity consumption in the estates' communal areas in 2016/17 was 51.2 kWh per flat per month. This represents a 3.0% decrease compared to the consumption in 2015/16.

Electricity Consumption in the Public Areas of Estates



Adoption of Energy and Carbon Reduction Measures

Apart from close monitoring and periodic reviews of the energy consumption on our premises, we have deployed a wide range of energy reduction measures. One hundred and seven old lifts were replaced in 2016/17 under our Lift Modernisation Programme (LMP). Compared with the old models, the new ones can generally save more than 30% of energy consumption. Meanwhile, we provide standard EV charging facilities for monthly EV parking in existing car parks when technically feasible and on an as-needed basis. At present, 21 standard charging facilities have been installed in eight car parks. EV users can also enjoy up to two hours of free parking during charging.

We continue to manage our carbon footprint by monitoring and benchmarking the emissions of 14 typical housing block types representing the majority PRH block types in a carbon audit. With the fourth carbon audit report completed, against the baseline data in 2011/12, the overall carbon emissions of the 14 blocks in 2015/16 decreased, ranging from 1.61% to 28.42%. The findings from the carbon audit shed light on the applicable carbon reduction measures.

In addition to the above, we have put in place other energy-saving measures. For instance, the indoor temperature of the public area in our shopping centres with central air-conditioning is regulated between 24 - 26°C in summer. Some of the lightings are switched off during non-peak hours. We have also set timers for advertising panels and decorative lightings, and install oil-free chillers. Over the years, we have participated in the Government's Energy Saving Charter to show our commitment to reducing energy use.

Noise Control

As our operation may emit noise which creates nuisance for the residents and neighbours, we adhere to the statutory requirements with suitable measures to mitigate the impact. No noise abatement notice from the Government has been received since 2005/06.

Waste Management

We have launched the Source Separation of Domestic Waste Programme in all our housing estates to encourage the community to reduce waste generation and promote waste separation at source. Various video broadcasts and promotional activities have been conducted to arouse the residents' interest and encourage their involvement. Recyclable collection counters have also been set up in all housing estates to incentivise the residents with cash or household groceries in exchange for waste recycling. During the year, we collected about 26,652 tonnes of waste paper, 1,362 tonnes of plastic bottles, 1,339 tonnes of aluminium cans and 901 tonnes of used clothes for recycling in our estates.

Waste Type	Quantity of Waste Collected for Recycling (tonnes)							
	2009 /10	2010 /11	2011 /12	2012 /13	2013 /14	2014 /15	2015 /16	2016 /17
Paper	17,935	21,376	23,849	27,589	29,394	27,127	26,690	26,652
Plastic Bottles	1,218	1,427	1,584	1,929	1,812	1,983	2,223	1,362
Aluminium Cans	520	865	1,054	1,133	1,359	1,362	1,353	1,339
Used Clothes	775	844	945	998	1,053	896	867	901

We support the restaurant, supermarket and market stall tenants in practicing food waste management, including donating surplus food to non-government organisations (NGOs).

With the collaboration between NGOs or other government departments, we provide venues in our shopping centres free of charge to help carry out their waste reduction and environmental activities. For Lai See Reuse and Recycling Programme 2017, a total of 13 HA's shopping centres took part to distribute reusable red packet envelopes and collect used envelopes.

With the waste reduction initiatives, in 2016/17, the average domestic waste production of our residents was 0.55 kg per person per day. On the other hand, with our measures to reduce water wastage in our estate management, the water consumption of the common areas of the housing estates was 1,827,096 cubic metres.



▲ Lai See Reuse and Recycling Programme 2017 (left and right)

Greening and Tree Management

Greening

We continue to enhance the living environment of our housing estates through greening. A number of works have been carried out, including replacing chunam surfaces with hydroseeding for 10 slopes at nine estates and greening the rooftop of Kwai Shing West Estate, which was welcomed by the residents. We also introduced different plants which matched the local conditions when improving the landscape. A total of 20 estates have undergone landscape improvement work. To promote residents' awareness and participation in the greening of housing estates, community garden programmes were organised in 10 estates.



▲ Landscaping Improvement Programme at Hoi Lai Estate



▲ Community Garden Programme at Shum Lee Estate

Strengthening Tree Management

A new Enterprise Tree Management System (ETrMS) has been developed and deployed for effective tree risk assessment and management of over 102,000 trees on the premises of around 200 housing estates within the territory. The ETrMS serves as a database which allows us to systematically monitor the work on tree management and risk assessment via web and mobile applications. After each assessment, the findings will be saved in a comprehensive Geographic Information System (GIS). By logging the ETrMS for on-site inspection, it assists us to identify trees requiring special care immediately. Ad-hoc risk assessment and maintenance are also carried out when necessary.



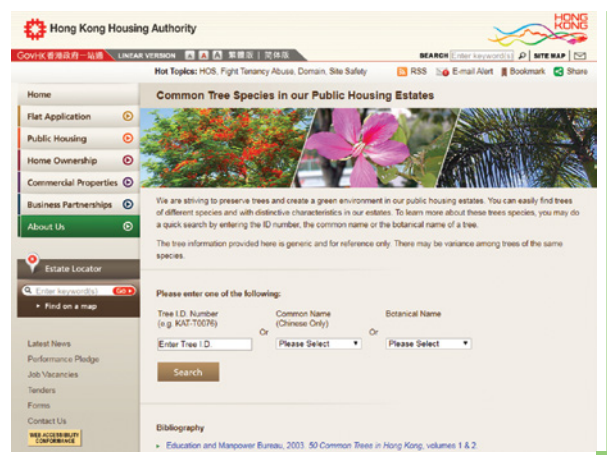
▲ ETrMS as a database on tree management and risk assessment (left and right)



▲ Refresher and training courses for ETAs (left and right)

We have recruited Estate Tree Ambassadors (ETAs) in our estates to support our work on tree management and preservation. As at March 2017, 710 people were engaged as ETAs. We organised three refresher and training courses during the year to equip them with the latest knowledge.

We organise meetings with the Development Bureau regularly to update our tree preservation and management guidelines and clauses in contracts for good practice. In addition, the public can access our mini-website for general information and the characteristics of tree species commonly found in our housing estates.



▲ Mini-website with information on common tree species

Asbestos Abatement

While asbestos can be found in some of our old housing blocks and buildings, the substance poses little to no threat to human health if left intact and undisturbed. We carry out inspections twice a year to keep track of the condition of the asbestos-containing materials in our housing estates and ensure they stay in good condition. For emergency repair of underground asbestos cement water-mains, a registered contractor specialising in asbestos handling has been appointed.

Organising Green Activities

To raise the environmental awareness of the residents in our housing estates, we have partnered with local green groups to plan and execute the “Green Delight in Estates” (GDE) – a long-term estate-wide environmental education programme – since 2005. Around 22,000 residents and students have been trained as Green Estate Ambassadors to promote green messages to other residents to build a green and healthy living environment for the community.

During the year, we concluded GDE Phase 9 and commenced GDE Phase 10. Themed “Waste Reduction Begins with Waste Audit”, echoing the Government’s current waste management policy, a range of in-depth environmental education activities have been organised for residents in 33 estates to raise our residents’ awareness of waste reduction and recycling, and encourage them to conserve resources in their daily routine. “Household Waste Audit” was the highlighted campaign for all the public housing estates. We also extended the educational programme to five shopping centres for product waste reduction, such as food waste, and to commercial tenants and residents. In the past nine phases, plastic bottle recycling campaigns, plastic bag reduction, waste separation promotion schemes, green living carnivals, talks and workshops on waste reduction, green visits, exchange of second-hand goods, quizzes and other occasions were arranged.

In collaboration with our Estate Management Advisory Committee (EMAC), we have arranged a wide variety of programmes for residents to help them to participate in our environmental work. During the year, we organised tree planting days in 10 estates and greening activities for residents in 20 estates.



▲ Launching ceremony of GDE Phase 10

Tree Planting Days
at Wo Che Estate



◀ Green Fun Day under GDE



▲ Hong Kong Green
Shop Alliance

To encourage our shop tenants to implement green measures for the improvement of the overall environmental performance, we have signed up the retail facilities in 20 shopping centres or estates to join the Hong Kong Green Shop Alliance.



Initiatives in Office at Work

Implementation of Environmental Management System

Our Corporate Services Division was certified with ISO 14001 EMS since December 2013 on the property management at the HA Headquarters (HAHQ). The same certification and ISO 9001 QMS standards were awarded to the Independent Checking Unit (ICU) in May 2014. Being the first regulatory body to receive the qualifications in relation to building control in Hong Kong marks an important point in the commitment to excellence in monitoring and management. The preparation for upgrading the QEMS of ICU to ISO 9001:2015 and ISO 14001:2015 standards and extending the scope to include two building control teams, the Mandatory Building Inspection Scheme Team and the Minor Works Team, was in progress and targeted for certification by end of 2017.

To comprehensively improve the offices' environmental performance, environmental audits are carried out. We conducted and completed environmental audits at a total of 282 sites in 2016. In the last Green Manager Report, our resource consumptions, including paper, envelope and electricity, have declined steadily, and the amount of waste paper collected has been on the rise. In addition, we provided our staff with EMS and environmental audit training for better implementation of the management approach.

Energy Saving and Carbon Management

Apart from the aforementioned EMS and environmental audits, we endeavour to reduce our energy consumption and GHG emissions at work by organising different initiatives. For instance, over the years, we have controlled the use of refrigerants, adopted motion sensors for lighting, optimised chiller system control, changed the operating hours of lifts, escalators and air-conditioning equipment.

Using the electricity consumption in 2013/14 as baseline, we target at reducing our electricity consumption by 5% from 2015/16 to 2019/20, in order to align with the Government's latest electricity saving target. Hence, we aimed to reduce consumption by 2% in 2016/17 compared to 2013/14. During the year, our office premises consumed 34,850,777 kWh of electricity. Compared with the baseline data in 2013/14, consumption decreased by 5.4%.

A carbon audit has been conducted since 2008/09 for HAHQ Block 3 and Lok Fu Customer Service Centre, and the 8th carbon audit report covering period from 1 August 2015 to 31 July 2016 for the venues has been finalised to monitor our GHG emissions (see the table below for the annual results). With our carbon management programme, the amount of emissions in our offices has remained steady in the past few years. We will continue to implement any necessary improvement measures identified through such audits.

Properties	GHG Emission Intensity (Tonnes of CO ₂ equivalent/m ²)							
	2008 /09	2009 /10	2010 /11	2011 /12	2012 /13	2013 /14	2014 /15	2015 /16
Block 3 of HAHQ	0.170	0.146	0.122	0.110	0.110	0.126	0.120	0.117
Lok Fu Customer Service Centre	0.171	0.168	0.224	0.167	0.161	0.162	0.157	0.150

Waste Management

To reduce the amount of solid waste produced by our office operation, multiple waste management initiatives have been implemented in our offices. During the year, we consumed 134,477 reams of paper which represents a 1.8% decrease from the baseline data in 2013/14. It exceeded the endorsed target for 2016/17 (i.e. 1% lower than the paper consumption in 2013/14).

The amount of waste paper collection per staff in 2016/17 was 81.6 kg, which was well beyond the collection target of 21.6 kg per staff.

To further reduce the environmental impact of paper use, all our publicity materials are required to be printed with environmentally friendly paper.

Defective mercury-containing lamps are the major hazardous materials at HA Headquarters. To dispose of them responsibly and protect the environment, all the lamps collected undergo special waste treatment.

Waste Type	Amount Handled by HAHQ in 2016/17 (tonnes)
Hazardous waste	
Recycled	3.7
Landfill	0.0
Non-hazardous waste	
Recycled	185.0
Landfill	163.8

Water Conservation

We constantly monitor the water consumption at HAHQ through conducting regular inspections to prevent pipe breakage and leakage and providing water conservation tips to our staff. To demonstrate our commitment to protecting our water resources, while no government-wide water saving target is present at the moment, we have set our own which is to achieve a further 2% reduction in consumption in 2016/17 compared with that in 2015/16. During the year, the premises used 11,316 cubic metres of water – a 26.0% reduction compared with the consumption in 2007/08.

Green Culture and Activities

We foster the green culture in our offices with multimedia platforms. The HA Environmental Corporate Video, which highlights our environmental programmes and activities, is available on the HA/HD website, social media channels and e-Learning Portal, and is played at the induction course for all new staff. In addition, during the year, we organised 22 seminars to improve our staff's understanding of environmental issues. We arranged green display panels at HAHQ and Lung Cheung Office Block during the year to showcase our latest environmental work.



▲ HA Environmental Corporate Video

Our offices have implemented a number of green measures regarding waste minimisation, waste recovery for recycling and reuse, and energy conservation. Apart from ordinary green office practices, including paper-saving measures, recycling of printer cartridges and toners, energy-saving initiatives, the HA has organised routine Office Security cum Energy Conservation Check every day after office hour to ensure the lighting and office machines are switched off. To facilitate behavioural change, we also put in efforts on staff participation and publicity.

An “Environmental Collection and Recycling Campaign” was co-organised with the Community Recycling Coop of Industrial Relations Institute, a non-profit making charitable organisation in June 2016 to raise our staff's environmental awareness and help the needy. With the full support from our staff, more than 4.8 tonnes of reusable items were collected, including electrical appliances, clothes, shoes, handbags, books, stationery, toys, kitchenware, bedding and sports items, decorations, etc.



▲ Environmental Collection and Recycling Campaign at HAHQ (left), Lung Cheung Office Block (middle), and HKHA Customer Service Centre (right)

Our staff are also encouraged to participate in other environmental activities organised by external parties. In 2016/17, about 110 staff and their family members took part in the Hong Kong Tree Planting Day. We also participated in Eco Expo Asia 2016 and the Community Chest's Green Day to showcase our green performance and disseminate green messages to the community.



▲ Hong Kong Tree Planting Day (left and right)

In recognition of our outstanding performance in green purchasing and green management, we were commended with Platinum Awards in the categories of Green Purchasing (Large Corporation) and Green Management (Corporate); Corporate Green Governance Award (Corporate Vision and Stakeholder Engagement) and Outstanding Sustained Performance 7 Years+ Recognition under Hong Kong Green Awards 2016.

Green Manager Scheme

The HA has actively supported the Government-wide Green Manager Scheme launched by the Environmental Protection Department. Same as other bureaux and departments, we have appointed Green Manager and Green Executives to promote environmental protection principles in the offices, and monitor the HA's environmental performance and effectiveness of the measures.



Case Study

Environmental Excellence from Planning to Operation – Lam Tin Estate

As a staunch advocate of environmental sustainability, we put considerable thought and effort, at the planning and design stage of our housing estates, into how to enhance the quality of life of our tenants and the long-term environmental sustainability of each project. Situated on a hillside of east Kowloon between Kwun Tong and Lei Yue Mun, the award-winning Lam Tin Estate presents one of the best examples of how we achieve environmental excellence.



Communal area

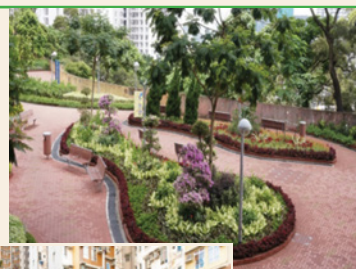
Lam Tin Estate was initially built in 1966 in the form of 24-storey slab blocks, with 4,200 domestic flats accommodating about 13,000 residents. As time passed, the living environment could no longer satisfy the local needs, so a comprehensive redevelopment project was carried out between 1992 and 2009 in 11 phases to improve the quality of the community. In terms of the environment, poor natural ventilation, lighting and lack of open space were prioritised.

Instead of tackling the issues individually, we adopted a holistic approach with innovative measures to create a healthy and green environment for residents. For instance, at the planning and design stage, we conducted micro-climate studies using computer simulations to derive the best redevelopment option which takes the local wind environment, sun path and heat distribution into account. The cruciform block design was adopted for the general enhancement of ventilation, daylight and thermal comfort. The redeveloped areas now house about 13,400 domestic flats with 38,000 residents. Estates completed in the earlier phases were given different estate names; and Phases 7 and 8 were combined and retained the old name Lam Tin Estate.



Present-day Lam Tin Estate

Open space



Community play area

Apart from block design, we leveraged greenery to reduce the urban heat island effect. By planting about 20,000 plants and shrubs and installing vertical green walls and a green roof on the pedestrian covered walkway, the greening ratio of Lam Tin Estate was improved to 26%. To save water for irrigation, an automatic irrigation system with rainwater sensors has been installed on the aforementioned green roof, and the irrigation volume can be adjusted automatically according to the weather conditions.

To reduce the Estate's reliance on electricity generated from non-renewable sources, we installed grid-connected PV modules on the rooftops of the domestic blocks and on the roof of the pedestrian covered walkway that are able to provide around 32,000 kWh of electricity annually, accounting for around 2.6% of electricity demand. The lighting systems are equipped with timers and photo-electric sensors to adjust to the illumination angle and duration of daylight, and thus reduce unnecessary energy demand. In addition, we made use of the environmental facade to reduce solar heat gain, further curbing energy consumption.



Covered walkway with green roof

藍田邨環保約章
Pledge of Go Green in Lam Tin

為鼓勵居民積極參與環保活動，締造一個綠色的生活環境，本處希望藉此「環保的章」，了解住戶現時實行的環保範疇，及住戶承諾日後會致力支持環保活動。透過的章資料，本處可以更清晰制定未來環保活動，和豐富住戶的環保知識，更有效達到「綠在藍田」的理念。

參加辦法：
參加者須於2015年8月31日或之前將填妥的表格投入地下大堂的收集箱，大堂保安將會即時向參加者派發小禮品一份。
請踴躍參加，支持環保。(每戶家庭只限取一份小禮品)
[For non-Chinese readers, please contact Lam Tin Estate Office on 2769 8187 for details.]

現在已做到

- 節約能源：珍惜使用天然資源及能源，例如水、電及紙張等
- 減廢物：源頭減廢，剩物利用，循環再用
- 珍惜食物：食得嘢好過，食得嘢好過，食得嘢好過，食得嘢好過
- 保護環境：使用公共交通工具、多食素食

承諾日後會做到

- 節約能源
- 減廢物
- 珍惜食物
- 保護環境

請在填寫的格子內加上

[For non-Chinese readers, please contact Lam Tin Estate Office on 2769 8187 for details.]

Pledge of Go Green in Lam Tin

Before the completion of the redevelopment, we engaged the residents, schools and organisations in the vicinity to participate in the Action Seedling campaign, where the participants were given seedlings to nurture and transplant into flowerbeds.

While the presence of the hardware directs Lam Tin Estate to a greener path, the involvement of the local community takes the Estate further on the journey to sustainability. To this, a number of green elements have been incorporated into the daily management at Lam Tin Estate. For example, the management team actively promotes green messages on notice boards and electronic display panels, and distributes pamphlets with Green Living Tips to new tenants. Some of our security guards also act as Green Ambassadors to share environmental messages with the residents.



Waste reduction initiative at Lam Tin Estate



Community activity in Lam Tin Estate



Community garden at Lam Tin Estate

We also organise carnivals, workshops, fun fairs and other publicity campaigns to enhance the residents' environmental awareness and encourage them to practice green living in their daily lives. As for green education, the Estate's community farm is available for them to plant fruit and vegetables. In addition, various environmental training events, visits, seminars and workshops for management staff, tenants and contractors were arranged.

For waste reduction, the yard waste collected in Lam Tin Estate is recycled as compost for on-site gardening, with around 40 kilograms produced every month. The Estate also has over 160 collection points to collect recyclables.

With the impressive environmental performance at Lam Tin Estate, in 2012, the redevelopment of the Estate received the Grand Award in the Hong Kong Residential (Multiple Building) Category of the Quality Excellence Award. The Estate received the Gold Award for Property Management (Residential) in the 2016 Hong Kong Awards for Environmental Excellence (HKAEE). It is also certified with ISO 14001 EMS and ISO 50001 EnMS certifications, and awarded "Best Performing Estate - Kowloon East Region" in the 2015 and 2016 Public Housing Waste Reduction Campaign.

SOCIAL PERFORMANCE

- ◆ Performance Overview
- ◆ Initiatives in Planning and Construction of New Housing Estates
- ◆ Initiatives in Existing Housing Estates
- ◆ Initiatives in Office at Work
- ◆ Case Study - Fat Tseung Street West - A Neighbourhood-friendly Community



The Hong Kong Housing Authority (HA) is committed to building a sustainable and harmonious community through ensuring that our public rental housing (PRH) estates are inclusive, keeping the living environment well-maintained, giving tenants the chance to get involved in the management of their estates, and creating public spaces where families and neighbours can enjoy social time together.



Performance Overview



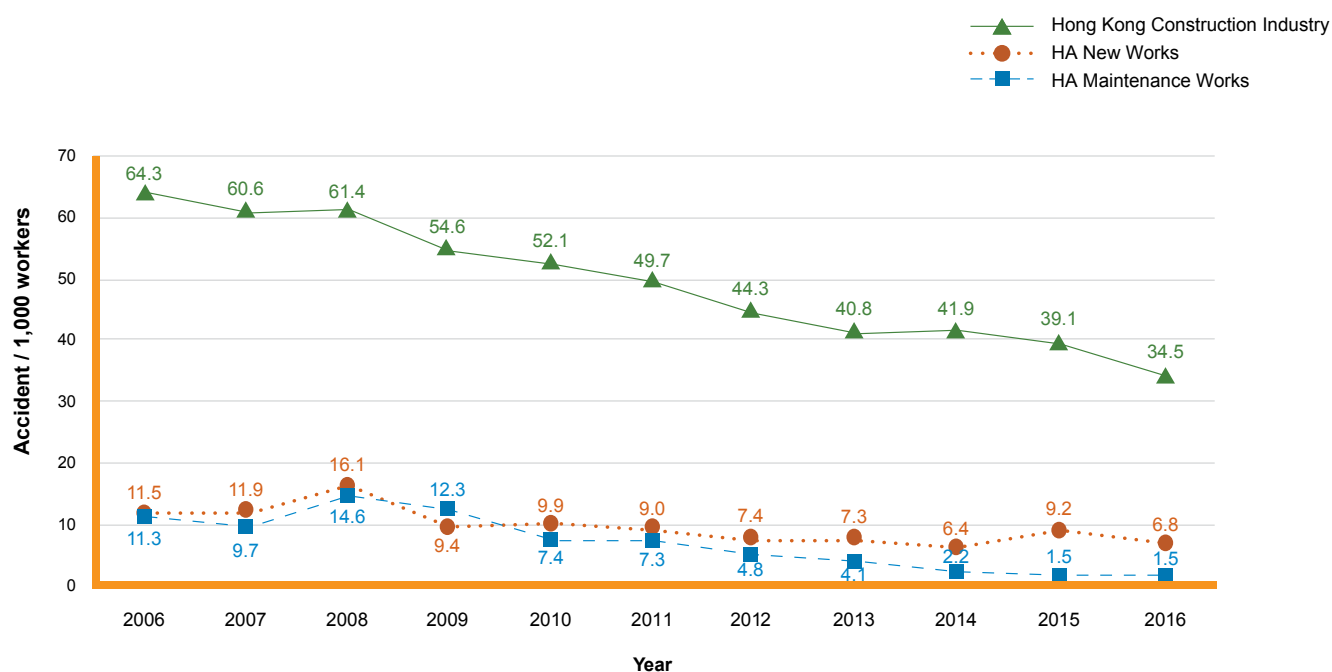
▲ HD attained the “10 years plus Caring Organisation Logo”

The Housing Department (HD) was awarded the “10 years plus Caring Organisation Logo” by the Hong Kong Council of Social Service in 2016/17. It is the second consecutive year the HD has won this award. This honour recognises HD as a caring organisation which is committed to care for the community, its employees and the environment.

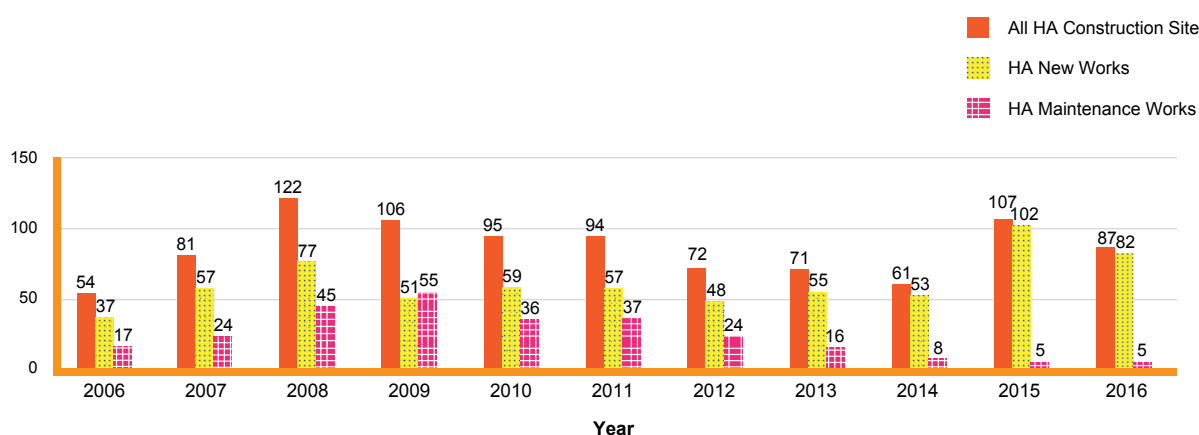
Both the HA's Development and Construction Division and its Estate Management Division have achieved the full score of 5.0 in the Hong Kong Quality Assurance Agency's (HKQAA) Corporate Social Responsibility (CSR) Advocate Index annual performance assessment. This was the fifth consecutive year in which the Development and Construction Division attained this satisfactory result and the third consecutive year in which the Estate Management Division did the same. Such results demonstrate our commitment to being a socially responsible organisation.

The HA applied a robust Site Safety Strategy 2016 at all new works and maintenance work sites, as well as to the work of our property service agents, cleaning services contractors and security contractors. In 2016/17, the HA employed a total of 11,992 workers for new construction works and 3,391 workers for repair and maintenance works. Across all our construction sites, the accident rate was 6.8 per 1,000 workers for new works contracts and 1.5 per 1,000 workers for maintenance contracts, with no fatal accidents. The accident rates for both new works contracts and maintenance contracts remain well below Hong Kong's average industry accident rate of 34.5 per 1,000 workers based on the 2016 statistical data from the Labour Department.

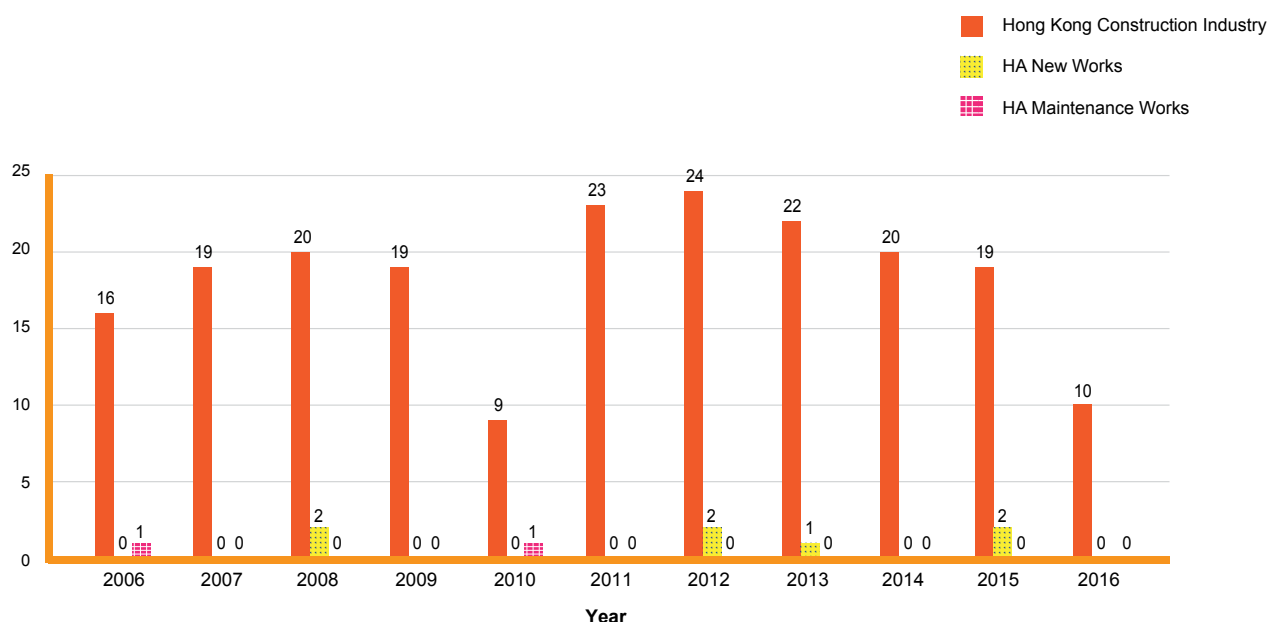
Accident Rate Compared to Local Construction Industry



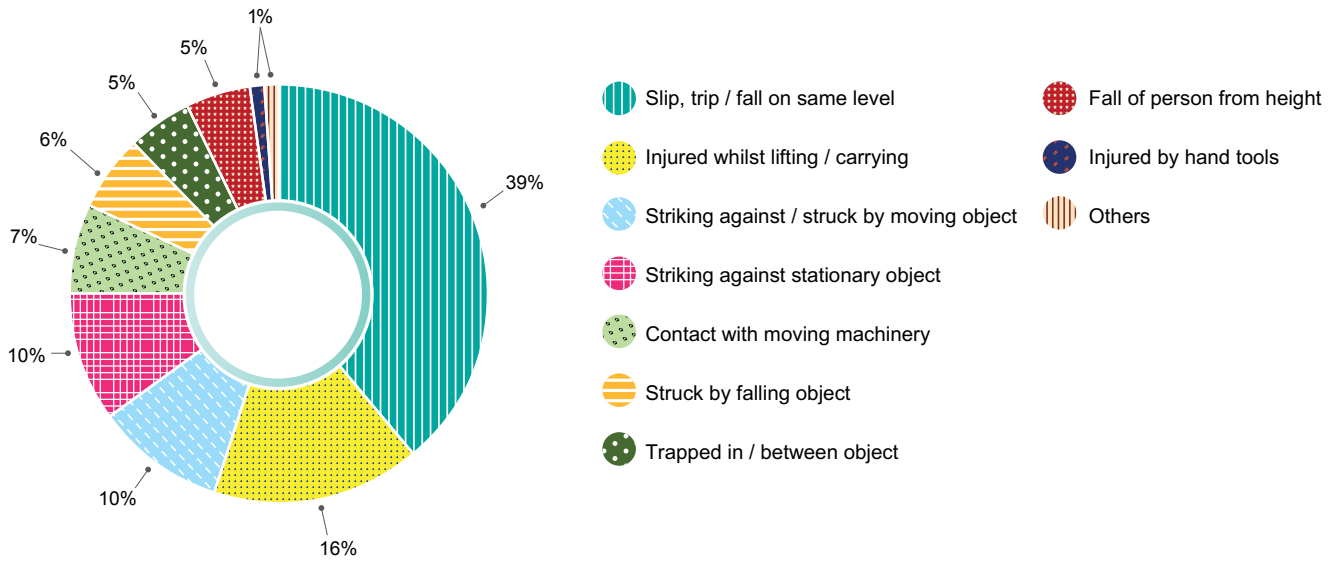
Number of Accidents at the HA's Construction Sites



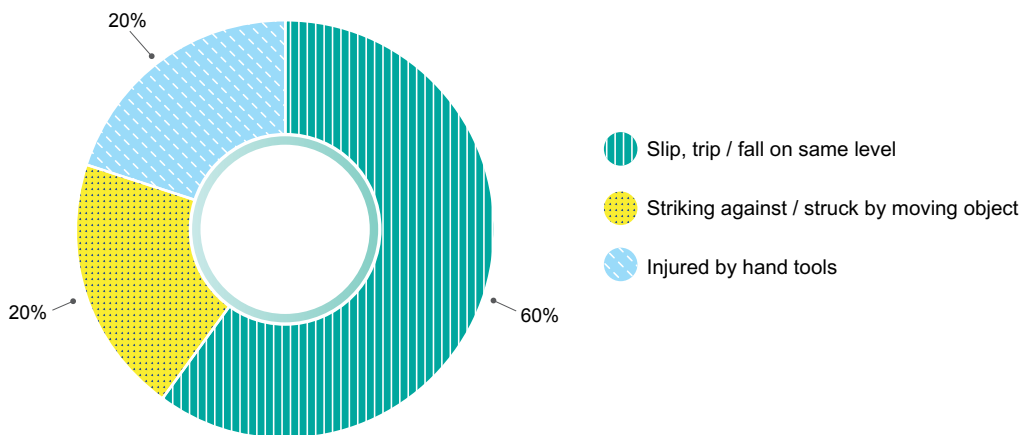
Number of Fatalities Compared to Local Construction Industry



Distribution of Accidents in New Works Construction Sites



Distribution of Accidents in Maintenance Works



Our efforts in protecting our valuable workforce were recognised when we were presented the Safety Leadership Awards – Gold Award (Client-Developer Category) by the Construction Industry Council and the Lighthouse Club in March 2016.



▲ The HA received the "Safety Leadership Awards – Gold Award"



Initiatives in Planning and Construction of New Housing Estates

We plan and construct new housing estates with the goals of creating a desirable and optimum living environment, and enhancing the sense of community harmony for those living there. In the process we create shared values with our staff and contractors, and emphasise protecting their health and safety through established management systems.

Site Safety and Evaluation

We place great emphasis on construction site safety, and continue to enhance our safety training to safeguard our site workers.

During the year, we introduced additional regulatory measures for contractors to improve site safety performance. The new specifications introduced mandatory actions designed to better protect workers on the job. We kept on monitoring the contractors' safety performance in works contracts through Performance Assessment Scoring System (PASS), Maintenance Assessment Scoring System (MASS), Safety Audits and Surprise Safety Inspection Programme (SSIP). We also continued to raise safety awareness among our contractors and works staff by organising safety promotional events such as forums, seminars and workshops.

The HA Site Safety Website is one of the convenient channels we offer for getting safety messages across to industry stakeholders. In 2016, we enhanced the web accessibility of HA Site Safety Website with the compliance of WCAG 2.0 Level AA. We also published and updated our Site Safety Handbook and our Pictorial Guide to Planning and Design for Safety. Both resources provide HA contractors and staff with good reference materials on safety issues. The latest updated versions of both publications are scheduled for publication in 2017/18.

In addition, the HA Occupational Injury and Disease Surveillance System was fully implemented in May 2016, enabling contractors to file web-based accident and incident reports. The system enhances our ability to manage information relating to site safety effectively, generate accident statistics for analysis, and identify areas for improvement.

Continuous Development Support to our Contractors

In April 2016, the HA held a Site Safety Seminar for New Works Capital Works Contracts to boost safety awareness on construction sites. It covered Labour Department's presentation on safety of lift works, findings of Occupational Safety and Health Council revealed in safety audits and surprise safety inspection on sites, and sharing of a HA's staff in his benchmarking study on infrastructure projects and design for safety in Singapore. Over 160 participants, including contractors and HA staff attended the event.



▲ The Site Safety Seminar for New Works Capital Works Contracts aimed to promote safety on construction sites and prevent future construction site accidents

In July 2016, the annual Site Safety Forum, which aimed to boost site safety awareness and foster a safety culture, was co-organised by the HA and the Occupational Safety and Health Council. The theme of the Site Safety Forum 2016 was “Control the risk at source effectively to improve work performance at height”. The Forum attracted over 600 participants, including contractors, property management agents, cleaning and security service providers, and HA works and estate management staff.



▲ The Site Safety Forum aimed to create a site safety culture

Staff Training

To maintain high service quality and to meet an increasing public housing production target, the HD established the Development and Construction Division Academy in April 2016, with the aim of building a knowledge-based community through providing timely, continuous and comprehensive training packages to personnel engaged in public housing development and construction.



▲ Guests and over 200 new recruits attended the opening ceremony of the Development and Construction Division Academy

Recognition of our Contractors

Our contractors are encouraged to participate in safety campaigns and awards. This enables them to learn and share best practices within the industry, and to bring new insights to their work.

In May 2016, three of the HA's projects were honoured with a total of four awards under the non-public work sites category at the award presentation ceremony of the 22nd Considerate Contractors Site Award Scheme that was jointly organised by the Development Bureau and Construction Industry Council, which aims to promote a considerate attitude and good site safety, health and environment practices for sites. The three projects won in the categories of Considerate Contractors and Outstanding Environmental Management Performance.



▲ The HA's contractors were commended at the Considerate Contractors Site Award Scheme

Our efforts in promoting site safety were recognised at the 15th Hong Kong Occupational Safety and Health Award Forum Presentation Ceremony organised by the Occupational Safety and Health Council in September 2016. The HA's contractors for Capital Works New Works contracts were honoured with one Gold and one Bronze awards in the categories of "Work Safe Behaviour Award" and "Pointing and Calling Award" respectively.

Building for the Community

The HA adopts a people-oriented approach to delivery of our development projects. To ensure our public housing developments are built for the community, including prospective tenants and the existing population of the areas around them, we consult with local community groups and stakeholders at the beginning of our planning and design stage in order to deliver win-win solutions that both optimise a site's development potential while also meeting the needs and expectations of the local community. After the completed blocks are occupied, we also conduct Post Completion Reviews together with Resident Surveys so that we gain early feedback on the estate and flat design, which enables us to regularly review our Model Client Brief and Modular Flat Design.

To nurture social cohesion, we launched Action Seedling ceremonies for four PRH building projects in 2016/17. To engage the community in the planning, design, construction, and flat intake process, we conducted resident surveys in five newly completed estates to obtain community feedback. We also held post-completion review workshops for four projects.



▲ Public engagements are important in the planning stage of developments



**Customer
Satisfaction Index**
>90%

As the number of elderly people in Hong Kong rises, the HA has been devoting greater resources to ensuring that the needs of its elderly tenants are comprehensively addressed. This is taking place not just at the level of estate management but also at the design stage, to ensure that our new estates provide safe and accessible living environments for their elderly tenants. For the past 15 years, we have been implementing the universal design approach in our new public housing developments. This means taking the needs of people of all ages and physical conditions into account at every stage of planning. Using this approach, we have introduced a wide range of elderly-friendly designs over recent years. For example, corridors, flat entrances, and kitchen and bathroom doors have all been widened for easier wheelchair access, and materials that are safer for users, such as non-slippery floor tiles, have been introduced. These changes are enabling our elderly tenants to live out the full span of their lives in a familiar environment that they can manage without difficulty.



The HA believes that providing a quality and affordable living environment for our residents are important in sustaining social harmony. We took various measures to ensure that the quality of building components and materials used in public housing is up to the required standards. In January 2017, members of the HA visited factories in China to inspect the manufacturing processes and quality controls relating to power cables, LED lighting, timber doorsets, aluminium windows, lifts and precast concrete components.

- ▲ All fixtures and fittings can be easily and safely operated by all passages including elderlies with walking frame and wheelchair users



- ▲ All estates are designed for accessibility by wheelchair users



- ▲ Multi-sensory maps are installed at all estates



Initiatives in Existing Housing Estates

In existing housing estates maintenance and improvement (M&I), the HA emphasises the importance of harmonious living in the estates and strengthening our residents' sense of belonging to a safe and close-knit community.

Standardised Practices

To provide a well-maintained living environment for our residents, we have implemented ISO 9001 Quality Management – since 1993, ISO 14001 Environmental Management System – since 2010, ISO 26000 Social Responsibility – since 2012, ISO 19011 Auditing Management System – since 2012, ISO 31000 Risk Management System – since 2012, ISO 50001 Energy Management System – since 2013, and OHSAS 18001 Occupational Health and Safety Management System for the M&I works in PRH estates – since 2014.

In recent years, we have closely monitored the overall sustainability performance of 78 distinctive PRH blocks in 10 estates, and maintained their enrolment in the HKQAA's Sustainable Building Index. By systematically analysing the blocks' performance results, we are better able to formulate long-term M&I strategies that will enhance the sustainability of our PRH estates.

Facility Accessibility

The HA has an ongoing commitment to ensuring that its estates are accessible for people of all ages, abilities and physical conditions. In recent years, we have been working on a comprehensive barrier-free access improvement programme, which was largely completed by 2014. However, we are continuing to further enhance access through our Lift Addition Programme, which involves adding lifts at strategic points in PRH estates to elevate platforms and footbridges that were previously only accessible by stairs. In 2016/17, we completed the construction of eight lifts in six PRH estates, while construction of a further five lifts in three PRH estates is still in progress. One of the positive social outcomes of the upgrading of our lift and escalator services is that we are improving the accessibility of our estates for our elderly tenants and allowing them to stay in a well-integrated community.

Lift and Escalator Safety

Safety is also at the forefront of all the building and maintenance works carried out in our existing estates. We have continued to arrange surprise safety inspections of building M&I, lift maintenance and lift modernisation works. A review of these surprise safety inspections was also undertaken to investigate possible improvements.

The HA has introduced a series of measures over recent years designed to make PRH lifts and escalators safer for residents and visitors. Some of the measures involve improving technical design and operational management, while others focus on user awareness and involve broad safety campaigns. A special focus has been placed on one of the most common accidents affecting the elderly, which is falling over while travelling on escalators due to frailty or lack of safety awareness. The Lift and Escalator Safety Campaign for 2016/17 incorporated a range of colourful educational posters and escalator safety stand boards. Lift and escalator safety messages were regularly broadcast on the radio, and a safety video starring popular local celebrity Maria Cordero (widely and affectionately known as “Fat Mum”) shown on the Housing Channel. At a practical level, newly designed “Emergency Stop Button” stickers were stuck near the emergency stop buttons on escalators, making them easier to locate in an emergency.

Community Engagement with Estates

In order to provide fruitful and meaningful experiences for our tenants and to build a proactive and caring corporate image for the HA, we collaborate with external parties to hold workshops and programmes in our estates. Also, the Estate Management Advisory Committees (EMACs), which include representatives of estate staff, District Councillors and tenants, enable tenants to be involved in organising community-building activities. In 2016/17, the EMACs held 450 community building functions to promote neighbourliness.

With the knowledge that fire poses one of the greatest risks in PRH environments, regular fire safety drills and awareness programmes are a standard part of the HA’s estate management activities. Fire drills are organised once every two years for every domestic block, and fire safety tips and information are regularly shared in video broadcasts on the Housing Channel, local radio channels, and in posters with various fire prevention themes. Apart from these regular and recurring fire prevention initiatives, we organise various activities to get the fire prevention message across to our PRH tenants in memorable but fun ways. In 2016/17, for example, we ran an Estate Fire Safety Fun Fair at 30 estates, at which the fire safety message was reinforced through activities, games and souvenirs.

We also collaborated with different EMACs to disseminate the importance of fire safety more widely. In 2016/17, we granted awards to 21 EMACs that had effectively promoted fire safety awareness in their estates. In recognition of their efforts, the winning EMAC members were invited to a special tour of the Fire and Ambulance Services Education Centre and Museum, where they were further able to enhance their knowledge of fire prevention.



▲ Lam Tin Estate - Fire Drill cum Fire Safety Talk



▲ A fire safety talk providing tenants with fire safety tips

Since 2010, the HA has collaborated with the Department of Health (DH) in an effort to encourage PRH tenants to maintain their health and to live healthy lifestyles. Under this collaboration, suitable NGOs are identified which are commissioned to work together with the EMACs to develop and run a variety of community health programmes. In 2016/17, a total of 17 estates took part in these programmes, which helped encourage residents to undertake regular physical activities and to explore healthy eating options.

About a quarter of our tenants are aged 60 or above, and to show our care to the elderly tenants, the HA organises various activities. Members of the HD Volunteers Corps visit elderly people living at the PRH estates during festivals and various gifts, such as lucky bags, hats knitted by our colleagues, fai chun and festive rice cakes, were distributed to them.

To encourage “active ageing” and to draw attention to specific illnesses to which the elderly are vulnerable, the initiative, “Healthy Ageing in PRH Estates”, in collaboration with the PolyU-Henry G Leong Mobile Integrative Health Centre and the Oral Health Education Unit of the Health Department, was created to provide elderly PRH tenants with free health checks, along with a range of health education services. In addition, “Healthy Ageing in PRH Estates” fortune bags are distributed to elderly tenants through the activities.



▲ Elderly PRH tenants were provided with free health checks



▲ Oral Health Education Talk by DH

To bring a memorable shopping experience to local and cross district shoppers in the HA's retail facilities, the HA has not only arranged a variety of themed events and activities during the year itself, but also partnered with non-governmental organisations (NGOs) and institutions to support events or sponsor venues for charity, civic, cultural, entertainment, environmental and other community-building programmes in the HA's shopping centres. For example on Mother's Day, in order to express gratitude to the mothers of the community, mothers visiting some of the shopping centres received fresh flowers, art flowers or cookies. Booth games and acrobatics or magic shows were also organised in some of the HA's shopping centres to provide a different service experience to our residents.



▲ Mother's Day Event in Domain Mall

Support to Families

The theme for this sustainability report, “Sustainable Community Fostering Harmony” is reflected in an important area of the HA’s work for its tenants – its schemes for bringing families together. These schemes are designed to enhance family cohesion, establish family-based support networks and generally foster a culture of harmonious family-based interaction on estates. The schemes include the Harmonious Families Priority Scheme, Harmonious Families Transfer Scheme, Harmonious Families Addition Scheme and Harmonious Families Amalgamation Scheme. The cumulative number of households benefitting from the Harmonious Family policies was 44,150.

PRH households living in units with less than 5.5 square metres of Internal Floor Area (IFA) per person can apply for relocation to larger accommodation through our Territory-wide Overcrowding Relief Transfer Scheme, designed to avoid overcrowded conditions in PRH flats. Similarly, our Living Space Improvement Transfer Scheme enables PRH households living in units with an IFA of less than 7 square metres per person to apply for moving to a larger unit. In 2016/17, a total of about 1,700 households benefited from these schemes.

During the year, the HA also offered rehousing assistance to around 40 households affected by the clearance of squatter housing by the Lands Department and similar removals of illegal rooftop structures by the Buildings Department.



Collaboration with Contractors

We work closely with our contractors to ensure their attention to safety at work and to delivering quality services to our residents. A number of training sessions were conducted during the year to boost awareness of work safety and to enhance best practices in performing estate management and maintenance work.

Same as previous year, in July 2016, the HA organised Site Safety Forum for Works Contracts and Property Service Contracts, to boost site safety awareness among contractors and foster a safety culture for works in PRH estates. In the same month, we organised a briefing session for property service contractors to introduce the latest enhancements made to the HA’s procurement arrangements for property service contracts. The frontline staff of our property service contractors were also invited to a briefing in early 2017, when the HA’s updated and enhanced guidelines on PRH estate management were introduced and explained.

Throughout the year, the HA continued to maintain close and proactive liaison with labour unions and to hold occasional surprise checks in PRH estates to ensure rules on non-skilled workers were being upheld. A seminar with the Labour Department and the Mandatory Provident Fund (MPF) Schemes Authority was also held to promote non-skilled workers’ awareness of the Employment Ordinance, Employees’ Compensation Ordinance, MPF Schemes and other employment protection rights.

We held the Estate Management Services Contractors Awards (EMSCA) 2016, in which we recognised outstanding performances by property service contractors and their front-line staff. A total of 41 awards were presented this year. The awardees cover 12 property management members, cleaning, security service contractors and car park operators, 7 estate managers and 12 front-line staff.

For greater efficiency, the HA outsources a large proportion of its estate management and maintenance services. By January 2017, around 490,000 PRH units (around 63% of the HA's total PRH stock) had had their estate management and maintenance services outsourced. We pay close attention to outsourcing arrangements, and are continually looking for ways to enhance the quality of the services that our contractors provide to tenants. One way we do this is by providing different contract choices for potential service providers in terms of contract mode and contract size, in order to encourage more high quality property service providers to consider entering the PRH management market. Potential contractors can now select from two HA contract modes. One is the Property Services Agency (PSA) mode, which includes the supervision of major M&I works. The other is the Property Management Agency (PMA) mode which excludes the supervision of major M&I works. In 2016, we completed our review of the HA's procurement arrangements for property service contracts. Based on the review, we are now looking to enhance our procurement arrangements in ways that will increase competition for tenders, for example by increasing the maximum workload that each contractor is allowed to undertake.

Rectification Works due to High Lead Readings in Drinking Water

Since excessive lead was found in the drinking water of some PRH estates in 2015, we have been working on both rectification works in the affected estates and enhancement of future plumbing installation works.

In March 2017, rectification works to replace non-compliant water pipes in the common areas of the 11 PRH estates affected by excessive lead in drinking water were substantially completed. Full scale implementation of rectification works inside flats started in the second quarter of 2017.



▲ Plumbing rectification works in the common areas of the PRH estate



Initiatives in Office at Work

To provide a harmonious workplace to our staff, the HA prioritises workplace health and safety, ensures that our staff members have equal opportunities and provides various kinds of training for their professional and personal development. As a major housing developer in Hong Kong, the HA also actively participates in professional knowledge exchange with external stakeholders to fulfil our responsibility to contribute to society.

Staff Health and Safety

Our longstanding Employee Wellness Programme provides staff with support on a wide array of areas relating to physical, emotional, social and occupational health, along with stress management. The programme includes a regular seminar series, which this year had new topics added on subjects such as understanding mood disorders, preventing lower limb injuries, and dealing with allergies etc. Meanwhile, the HA's Health Portal is regularly updated with the latest health-related information and advice.

To maintain staff awareness and enhance their knowledge of occupation safety and health (OSH), the HA continued to arrange OSH training courses and seminars. During the year, around 9,600 staff members attended 230 seminars on topics such as construction site safety, arboriculture safety, safety awareness, first aid, stress and crisis management, working in confined spaces, using display screen equipment and handling potentially violent customers. In conjunction, we kept our dedicated OSH website on the HA intranet up to date by regularly adding relevant safety materials, including the latest OSH guidelines, health tips and publications from the Occupational Safety and Health Council and the Labour Department. We also ran our annual Departmental Office Safety Inspection Exercise, in which potential hazards in the office environment were identified and removed.



Occupation Safety and Health

9,600 staff attended
230 seminars

In late 2015, we rolled out Phase 1 of the Development and Construction Site Mobile System (DCSMS). This system enables HA staff to use mobile devices and applications when carrying out site inspections of building works and building services work during construction, and to raise alerts about accidents or site safety incidents. We are now extending the use of this mobile solution and data interchange to contractors. This extension enables contractors to submit inspection requests via DCSMS once they have completed a construction job. Following this, site staff can schedule an inspection or report the inspection results through the DCSMS app while they are in the construction area; contractors can also check the status of a request through the DCSMS app. The application of DCSMS is streamlining the management of safety and improving quality and productivity at our building sites.

We are now proceeding with the development of Phases 2 and 3 of DCSMS. These include widening the application of our app to cover inspections in other areas such as structural work, offering easy access to documents such as approved method statements and samples, and better integrating the Occupational Injury and Disease Surveillance System into DCSMS. For M&I works for public housing, we operate the OHSAS 18001:2007 Occupational Health and Safety Management System to identify and assess all OSH risks associated with such works.

Equal Opportunities

The HA is committed to providing equal opportunities to persons with disabilities and we promise to provide the necessary assistance for individuals with disabilities to fulfil their duties. We continue to participate in the Labour and Welfare Bureau's "Talent-Wise Employment Charter and Inclusive Organisations Recognition Scheme", and support the Social Welfare Departments' Sunnyway Programme, which gives a helping hand to physically challenged youngsters, aged 15-18, helping them to find job opportunities. As a role model organisation, we have also encouraged our working partners to do the same. In addition, we purchase services, such as catering, office cleaning and car washing from rehabilitation social enterprises and NGOs to increase the employment opportunities of persons with disabilities.

Training and Development

The HA strives to provide its staff with meaningful personal and career development opportunities. In 2016/17, HA staff received on average a total of 27.3 hours of training per person. We continued to run the HD Development Programme to offer a diverse range of learning opportunities, including formal classroom training sessions, attachment programmes, mentoring programmes, site visits and study tours. Management development training and leadership insight sharing sessions were also arranged to prepare selected staff to take on greater responsibilities in the future. The HA e-Learning Portal, available to staff for continuous learning purposes, was also regularly enhanced with new learning materials.



▲ Various trainings are provided for HA staff



▲ Leadership insight sharing session

To nurture a committed and motivated workforce, the HA has started a new series of activities to reinforce the HA's core values among staff. The HA has introduced the "Extra Mile Card Plan" to acknowledge the impressive achievements of our staff members. In 2016/17, the exemplary performance of some 400 colleagues was recognised under the Extra Mile Card Plan. We continued to publicise inspiring success stories about team achievements on the HA e-Learning Portal, and encouraged colleagues to share their responses to these stories. An "Empowering Words Competition" was implemented to further boost workforce motivation.



▲ Staff who did exemplary work were awarded in the Extra Mile Card Plan Presentation Ceremony

To create a green, healthy and comfortable workplace for our valuable staff, the HA organised the Staff Incentive Scheme - Green Office Initiatives Competition in 2016/17, which aimed to encourage our employees to express their creativity to promote environmental protection and green practices in our working environment. Our staff actively participated in the event; a total of 12 teams joined the competition and suggested various creative and practical ideas to be adopted in the working environment.

Knowledge Exchange with External Parties

Our work is promoted through the HA/HD website, the HA Exhibition Centre, and tours and site visits for media, local and overseas corporate delegations and local interest groups.

In recent years, our website has come to play an increasingly important role in keeping the public up to date with the latest public housing issues and developments. To meet the diverse needs of the community, we have further enhanced the design of the website, paying special attention to enhancing the quality of the user experience. Currently, we provide more than 30,000 pages of content on the HA/HD website. To meet the ever expanding demand for web services, we began a system upgrading exercise on the existing web content management system in August 2016, which improved our ability to update web content quickly and efficiently. We have continued throughout the year to keep tenants and the general public informed about our work through our monthly e-newsletter *Housing Dimensions*, and our bi-annual *Estate Newsletter*, published specially for our PRH tenants.



▲ The HA/HD website provides the public with up to date information on public housing issues and developments

Equipped with audio-visual facilities and IT systems, the HA Exhibition Centre is designed to serve as a resource and education centre on public housing development in Hong Kong. More than 12,000 people visited the centre in 2016/17, among whom about 16 percent were guests (including government officials) from the Mainland or abroad.



▲ The HA Exhibition Centre promotes HA's work with audio-visual facilities



▲ Visit by secondary school students

We collaborate closely with the media in order to keep the public well informed of our activities and enhance their understanding of new developments and policies. The media helps spread the HA's messages through newspapers, magazines, TV, radio and online channels. During the year, we issued 72 press releases and arranged some 24 press briefings and interviews.

Each year, the HA organises site visits to its PRH estates for visitors from abroad who wish to learn more about the unique public housing system in Hong Kong. This year, we organised a total of 30 site visits for such groups and delegations; 11 (37%) of these were from a range of overseas countries, and the other 19 (63%) were delegations from the Mainland. We also organised six visits for local interest groups.

In June 2016, a workshop on "Ready Mixed Concrete Quality and Supply Chain Sustainability" was organised to discuss how to maintain a stable quality concrete supply from source to site in the market. The workshop was attended by over 40 participants from stakeholders including representatives from the Hong Kong Construction Association Limited (HKCA), Hong Kong Construction Association Piling Contractors Committee (HKCAPCC), Hong Kong Construction Materials Association Limited (HKCMA) and the Association of Construction Materials Laboratories Limited (ACML).



▲ Participants communicated openly on the barriers encountered in concrete supply

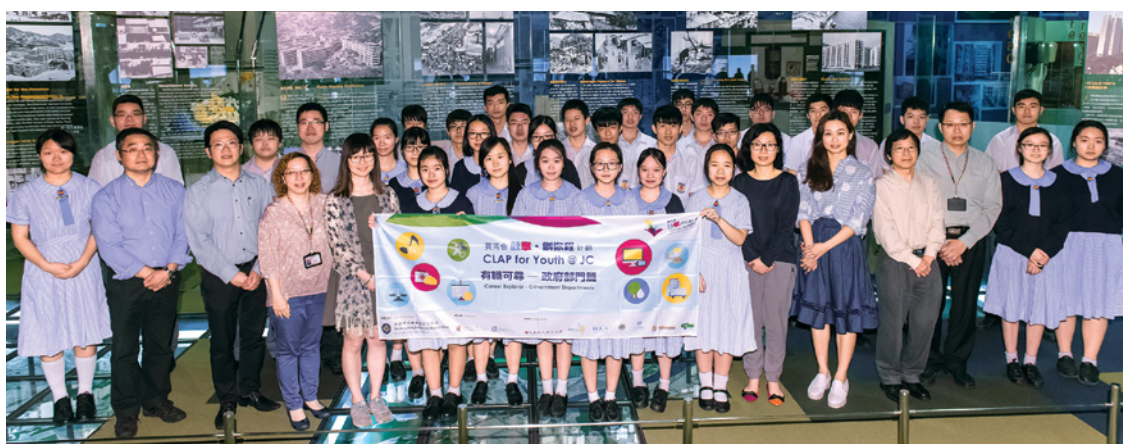
From late August to early September 2016, our delegates participated in the “21st Conference of the Housing and Urban Public Corporations in Asia” (A-HUC) held in Sendai, Japan, to share experiences and exchange ideas on the two themes of “Disaster Prevention and Recovery” and “Community Building for Sustainable Management of Apartment Complex”. We shared our experience in managing major crises over the past two decades and presented on how we strove to build sustainable, harmonious and cohesive communities for public housing tenants.

In December 2016, a workshop on Innovative Technologies, Best Practices and Systems for Construction of Public Housing was held by the HA. Over 20 industry representatives were invited to share their expertise with the professionals of the HD’s Development and Construction Division. Representatives exchanged inspirational ideas on how innovative technologies and best practices could be applied to the planning, design and construction of public housing.



▲ Innovative Technologies, Best Practices and Systems for Construction of Public Housing held in December 2016

The HA supports “CLAP for Youth”, a programme created and funded by the Hong Kong Jockey Club Charities Trust which helps young people, aged 15 to 21, to develop life planning skills and identify their career interests. Under this year’s programme we welcomed a visit by 30 secondary school students, during which the students had the chance to gain a better understanding of different job disciplines available within the HA and the career prospects on offer here.



▲ We supported the CLAP for Youth programme by introducing HA career prospects to students



Case Study

Fat Tseung Street West - A Neighbourhood-friendly Community

The theme of this sustainability report “Sustainable Community Fostering Harmony” emphasises that the HA is committed to promoting urban sustainability in the planning and design of public housing developments, as well as building neighbourhood-friendly communities. In 2016, our efforts were again recognised. One of the BEAM Plus Neighbourhood pilot projects – the Subsidised Sale Flats Development at Fat Tseung Street West was awarded a Platinum Certificate at the BEAM Plus Neighbourhood V1.0 Launching Ceremony organised by the Hong Kong Green Building Council in December 2016. The honour acknowledges the HA’s exemplary achievements in neighbourhood-responsive site planning, sustainable building design with innovations, and close community engagement.



The Subsidised Sale Flats Development at Fat Tseung Street West attained Platinum rating under BEAM Plus Neighbourhood Version 1.0.

Background

The Fat Tseung Street West Development comprises a 41-storey domestic block providing 814 flats, estate management facilities, a basement car park and associated external works.

Close Interaction with the Community

The HA has adopted a people-oriented approach in the delivery of this development project. At the early planning stage of the Fat Tseung Street West Development, local consultations and public engagement workshops were held to collect people’s views. Views collected were adequately considered in optimising the master layout.

The Subsidised Sale Flats Development at Fat Tseung Street West



Voices of the community were listened to as part of the public consultation process

In responding to comments and feedback collected and providing a neighbourhood-friendly environment, the original two single-aspect domestic blocks were revised to one double-loaded domestic block with a view to preserve the visual link and optimise the natural ventilation of the area. The block disposition also enables deferred closing of the existing Fat Tseung Street West Playground to minimise disturbance to the community.



The three-storey high void at main entrance enhances better wind permeability and visual links to the surrounding areas

Create Public Spaces for Families and Neighbours to Socialise

The HA strives to create fresh green public spaces where families and neighbours can meet and share social time together. In the Fat Tseung Street West Development, vehicular access is segregated from the pedestrian route by roadway to basement car park near the entrance, residents can then enjoy the open space in a vehicle-free pedestrian environment.



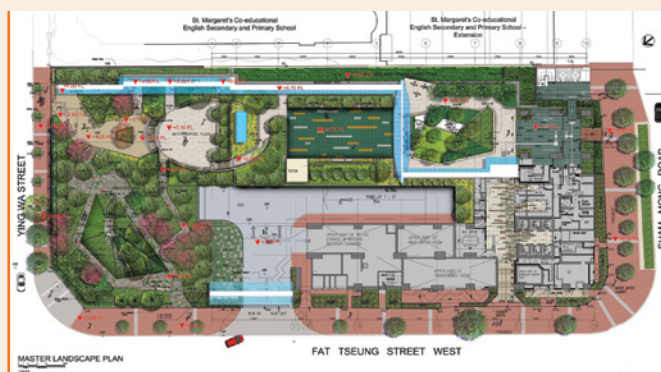
Families and neighbours can gather in the external amenity area



Vehicular access is segregated from the pedestrian route

Increased Connections to the Neighbourhood

To increase the accessibility to the neighbourhood, a footbridge and a lift tower adjacent to the main entrance were designed to conveniently connect the residents to the public open spaces, retail facilities, community facilities, covered pedestrian network and transportation hubs at North West Kowloon Reclamation Site 6.



The site abuts public road and streets on three sides

Mitigated Noise Impacts from the Neighbourhood

The HA has adopted suitable noise mitigation measures to deal with the traffic noises from the nearby roadways. To address the noise constraints, acoustic windows were used in the affected domestic flats, and strategically orientated non-standard modular flats facing at Fat Tseung Street West were adopted to avoid direct line of sight to the fixed noise sources. Vertical acoustic fins were also used to combat noise.

ECONOMIC PERFORMANCE

- ◆ Financial Performance
- ◆ Initiatives in Planning and Construction of New Housing Estates
- ◆ Initiatives in Existing Housing Estates
- ◆ Initiatives in Office at Work



The Hong Kong Housing Authority (HA) strives to achieve economic sustainability in its daily operation. While caring about economic and social development, we are committed to providing high quality and affordable housing for the public through maintaining cost effectiveness and high efficiency from planning and construction to management and procurement.



Financial Performance

The HA is a financially autonomous entity. To support public housing development, it generates income from rental of public housing and commercial properties, sale of subsidised sale flats, and fund investment.

The Finance Committee (FC) advises on financial policies and issues, and monitors the financial performance of the HA. The FC, with the assistance of its Funds Management Sub-Committee, also reviews the HA's investment strategy and position from time to time.

To manage our finance in a prudent manner, we have carried out monthly reviews of the financial positions of the HA and reported the results to FC regularly. In addition, we have reviewed the financial management practice when necessary, and monitored and evaluated our financial planning and budgeting process.

Details of the 2016/17 financial statements are provided in [the HA's Annual Report 2016/17](#). A summary of our financial performance is highlighted below:

Consolidated Results in 2016/17

Item Description	HK\$ million
Consolidated Operating Account Surplus	3,010
Funds Management Account Surplus	2,319
Agency Account Deficit	(12)
Surplus for the Year	5,317

Consolidated Operating Account in 2016/17

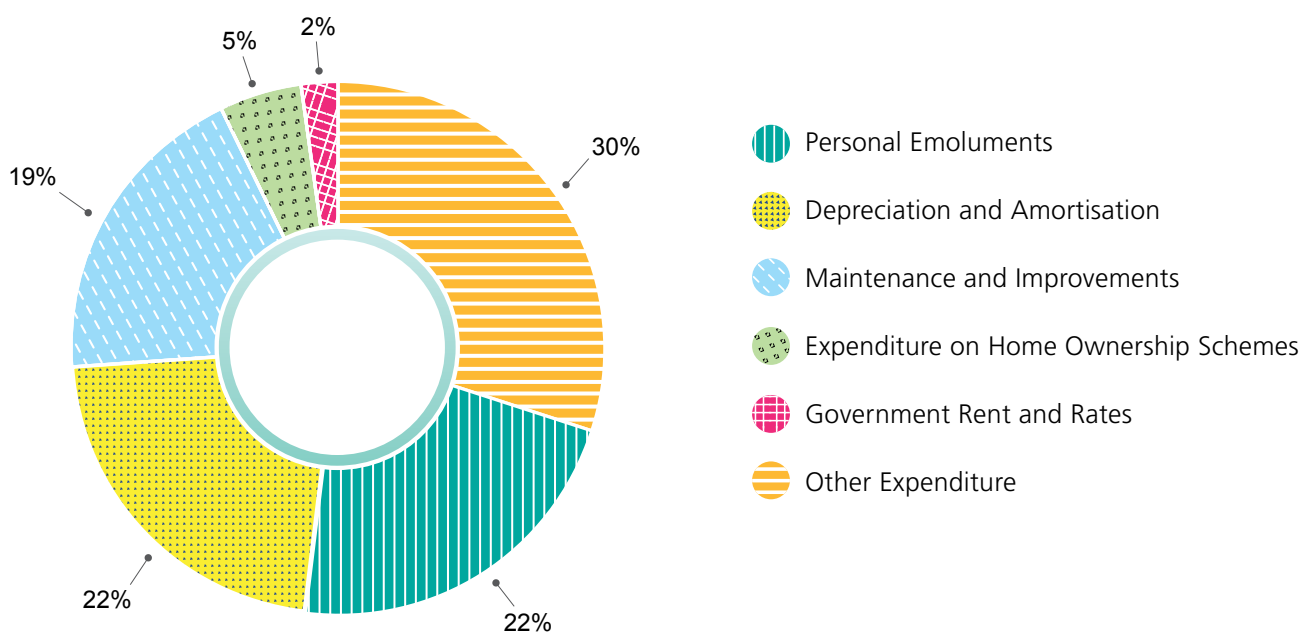
Item Description	HK\$ million
Rental Housing Operating Surplus	326
Commercial Operating Surplus	1,266
Home Ownership Assistance Operating Surplus	1,403
Sub-total	2,995
Net Non-operating Income	15
Consolidated Operating Account Surplus	3,010

Capital Expenditure for Financial Years 2012/13 to 2016/17

Items	2012/13 (HK\$ million)	2013/14 (HK\$ million)	2014/15 (HK\$ million)	2015/16 (HK\$ million)	2016/17 (HK\$ million)
Construction	8,639	8,911	11,945	17,411	16,766
Improvement works	682	657	646	812	659
Computer equipment/ motor vehicles	189	153	134	129	105
Total Capital Expenditure	9,510	9,721	12,725	18,352	17,530

As at 31 March 2017, the HA's funds available for investment stood at HK\$48.9 billion, which was decreased by HK\$7.7 billion as compared to 31 March 2016. During the reporting year, the recurrent expenditure of the HA was HK\$16,950 million, which was HK\$501 million higher than that of 2015/16.

Analysis of Recurrent Expenditure 2016/17





Initiatives in Planning and Construction of New Housing Estates

The HA strives to cater to the housing needs of low-income families. To achieve this mission, the HA has been developing and implementing public housing programmes. In 2014, the Government promulgated the Long Term Housing Strategy (LTHS) with a view to gradually averting the supply-demand imbalance in housing. Along with the strategic directions under the LTHS towards providing more public rental housing (PRH) units and subsidised sale flats, we are dedicated to providing more public housing units to meet the housing needs of low to middle-income families, as well as ensuring the rational use of existing housing resources.

According to the projection results announced in December 2016, the total housing supply target for the ten-year period from 2017/18 to 2026/27 was 460,000 units. According to a public/private housing supply split of 60:40, the supply targets for PRH units and subsidised sale flats were 200,000 units and 80,000 units respectively. As for the HA, we rolled out a five-year Public Housing Construction Programme which targets at producing about 70,700 PRH units and 21,000 subsidised sale flats from 2016/17 to 2020/21 inclusively.

To ensure the housing supply meets the Government's target in the LTHS, the HA has been closely liaising with all concerned Government bureaux and departments to provide suitable and "spade ready" sites for public housing development. With the assistance of these Government bureaux and departments, the HA carries out comprehensive site selection studies and optimises the development potential of the land and facilities to maximise public housing supply under appropriate planning and design. The HA will continue to closely communicate with the concerned Government bureaux and departments and adopt extensive planning and site-specific design for housing supply optimisation.

Provision of Public Rental Housing

In 2016/17, the HA completed 11,300 new PRH units in a total of seven projects, including Wah Ha Estate, On Tai Estate, On Tat Estate (Anderson Road Site D), On Tat Estate (Anderson Road Site E), Long Shin Estate, Shui Chuen O Estate Phase 3 and Shui Chuen O Estate Phase 4. We also completed around 1,900 square metres of retail facilities and around 520 private car and lorry parking spaces.



▲ Shui Chuen O Estate



▲ On Tat Estate

Managing the Home Ownership Scheme

The provision of Home Ownership Scheme (HOS) flats is one of the HA's major initiatives. Under the HOS, the HA is responsible for planning and providing subsidised sale flats to eligible applicants at selling price lower than the market value, aiming at helping low- to middle-income families to achieve home ownership. The scheme, meanwhile, can also provide an avenue for better-off PRH tenants to achieve home ownership, thereby releasing their PRH units for others in need.

After completion of sale of the first batch of new HOS flats in August 2015, the second batch of 2,657 new HOS flats (scheduled for completion in 2018) was sold out in October 2016. The pre-sale of the third batch of 2,057 new HOS flats (scheduled for completion in 2018/19) was launched at the end of March 2017.

The first batch of new HOS projects, comprising 2,160 flats, includes Wang Fu Court, Ching Chun Court, Mei Ying Court, Mei Pak Court and Sheung Chui Court. These developments were completed and the flat in-take by owners has been started from early 2017 onwards.

Apart from the provision of new HOS flats, the HA endorsed the introduction of the Green Form Subsidised Home Ownership Pilot Scheme (GSH) in 2015. The scheme identifies suitable PRH development under construction for sale to Green Form applicants (mainly PRH tenants and PRH applicants who have passed the detailed eligibility vetting and obtained a Green Form Certificate), with prices set below the level of HOS flats. The PRH development at San Po Kong, which provides a total of 857 flats, was selected for conversion to GSH, and pre-sale was launched in October 2016. By mid-February 2017 all the flats have been sold, and are expected to be ready for occupation by mid-2017. The HA will review the effectiveness of the scheme and decide whether to proceed with other GSH project(s).

In 2013, the HA launched an interim scheme with a quota of 5,000 to enable eligible White Form applicants to purchase flats in the HOS Secondary Market without payment of premium. Over 2,400 White Form applicants were able to purchase their own homes under the scheme. In August 2015, the HA implemented a new round of the interim scheme, with a quota of 2,500. Up to the end of March 2017, over 1,600 applicants have successfully achieved home ownership through this round of the interim scheme. Once the second round has been completed in the first half of 2017, the HA will review the scheme and decide on its future.

Optimising Use of Resources

Management and Procurement Practices

The HA endeavours to improve the management and procurement system by enhancing the operational efficiency and maintaining our business partners' service quality. During the year, the HA continued to maintain the list of contractors, sub-contractors and service providers under our pre-qualification requirements and a two-envelope tendering system where applicable. For non-HA list contractors and service providers, the HA also formulated and implemented a set of management procedures for reviewing and monitoring their service quality. The HA also conducted the following procurement process to ensure the service standards of the contractors:

- ◆ Implement a tender scoring system with a price-to-technical ratio and fine-tune various score-weighting mechanism for tender assessment;
- ◆ Apply a "Quarantine" system under the tender evaluation mechanism to ensure the selected supplier is not involved in any serious incidents;

- ◆ Monitor the implementation of the Integrated Contract for Anderson Road Site A and Site B;
- ◆ Implement and monitor the application of the General Conditions of Contract (GCC) in the HA's new work contract;
- ◆ Apply and monitor the on-demand bond requirements to new work contract and nominated sub-contractors;
- ◆ Implement and strengthen procurement practices under the "Guide to Registration of Work Contractors and Property Management Services Providers";
- ◆ Revise the Schedule of Rates (SOR) for Term Contracts for electrical, water supply and fire services maintenance;
- ◆ Outsource Architectural, Engineering, Building Services Engineering and Quantity Surveying Services for selected new works projects to Professional Services Providers to meet the manpower demand.

The HA actively works with industry stakeholders to review our procurement initiatives and match them with industry practices. To address the labour shortage, we monitor and review the requirement for Trade Tested Workers and the application of the streamlined Supplementary Labour Scheme (SLS) in new work and maintenance contracts. During the year, no application was submitted to the two schemes. We will review any new applications and enhancements made by the Development Bureau to the scheme.

Enhance Efficiency of Building Design and Construction with Information Technology

The HA deploys advanced information technologies where applicable to improve the design and construction process of new housing developments.

- ◆ Development and Construction Site Mobile System (DCSMS)

DCSMS is used to assist the HA staff in conducting site inspections, site management tasks and exchange related information with contractors. The system runs with mobile applications under an on-site working environment. During the year, the HA revamped the DCSMS Phase 1 system and developed DCSMS Phase 2 to further enhance the functionality of the system.

The screenshot displays the DCSMS mobile application interface. On the left, a blue login screen titled 'Building Works Inspection' features a large 'B.W.' logo and a yellow checkmark icon. It includes input fields for 'User Name' and 'Password', a 'Sign In' button, and service hours: 'Mon to Fri: 07:30 - 21:00' and 'Sat: 07:30 - 18:00'. A disclaimer at the bottom states: 'This application can only be used by authorized person.' On the right, a white 'Site Inspection' form is shown with a blue header. It contains dropdown menus for 'Contract No.' (20170000 (KT00NR)), 'Project' (Construction of Public Rental Housing Development at Shek Kip Mei Estate), 'Inspection Form' (DASM-F0001), and 'Inspection Area' (INTERNAL AREA).

▲ Interface of the Mobile Applications under DCSMS

- ◆ Radio Frequency Identification (RFID)

RFID reinforces the efficiency in delivery tracking of building components and tracking construction waste from construction sites. The HA applies RFID for the tracking of building material delivery and construction waste disposal. RFID has been extended to selected Building Services installations.

- ◆ Building Information Modelling (BIM)

BIM is a modelling system for visualising the planned building and enable planning at a higher level of accuracy. During the year, the HA has applied BIM in all disciplines and aspects of planning, design and construction of new projects. Over 45 projects are now using BIM at various stages.

- ◆ Geographic Information System (GIS)

The HA utilises GIS for site potential studies. GIS enables the search and enquiry for a range of spatial and textual data when identifying potential building sites. During the year, the HA performed 17 site potential and feasibility studies with GIS. We also used GIS in the maintenance of centralised drawing records and for location identification in maintenance work orders.

- ◆ Housing Construction Management Enterprise System (HOMES)

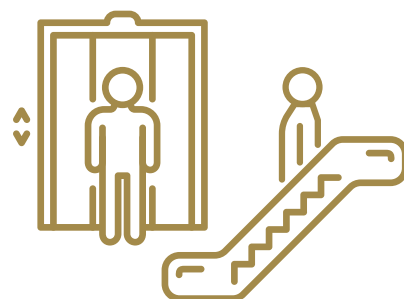
HOMES is an online collaboration and knowledge management platform aimed at enhancing the efficiency in managing construction projects. During the year, the HA completed 15 enhancement items of HOMES to improve the functions of budget, payment and contract management.

Enhancing Building Standards, Quality and Productivity

The HA aligns its management and operations with international practices. We have been conducting regular internal audits and documents reviews according to relevant standards, including those published by the International Organisation of Standardisation (ISO) and European Foundation for Quality Management (EFQM) Excellence Model in development and construction works.

The Independent Checking Unit (ICU) reports directly to the Office of the Permanent Secretary for Transport and Housing (Housing). It provides third-party checking of the building and structural plans for the HA's new development projects, and processes submissions for alternations and additions in the existing buildings under the HA's purview. In 2016/17, the ICU processed 1,480 building submissions, 1,738 structural submissions, 1,127 consents for New Construction Projects, 2,228 submissions for Alteration and Addition Works and 37,278 submissions under the Minor Works Control System. The ICU also issued 40 occupation permits and 168 structural certificates of completion for new projects. To facilitate risk management for new developments and alteration works, we issued Quarterly Site Monitoring Reports for the active projects. The ICU also conducted several experience sharing sessions on alternation and addition works for professional services providers in September 2016 to explain building control feedback.

Further to structural safety, the Lift Inspection Focus Team (LIFT) inspected 260 new lift installations and 2 new escalator installations during the year. LIFT also conducted sampling inspections of 519 existing lift installations and 56 escalator installations. Accident investigations for 4 lifts and 2 escalators and safety audits for 11 lifts were conducted by LIFT to uphold lift and escalator safety under the HA's management.



To improve the product quality and construction productivity, the HA is engaged in research and development (R&D) activities. The total number of research and development studies was 249 by the end of 31 March 2017. The HA will continue to regularly liaise with stakeholders through platforms including regular meetings, forums and seminars to enhance the product quality and construction productivity, and meeting the housing supply target.

In revamping the choice of construction materials in our construction projects, the HA regularly reviews and updates the General Specification for Maintenance Works to follow the latest market trend and industry practices. During the year, the HA promulgated new and revised specifications for the procurement of materials, including play/fitness equipment, impact absorbing surfacing materials (IASM) and proprietary external furniture. Also, the HA expedited and revised the specification of risk control of material covering the architectural components of aluminium windows, timber doorsets, metal gates and cooking benches in the first quarter of 2017.

In addition to reviewing the material standards, the HA has developed and implemented the Product Certification for 11 selected building material and building services since 2010. The HA targets to implement product certification for paint products in 2017/18. Currently, the following 11 building products require product certification in the HA's construction projects:

- ◆ Fire resistant timber doors
- ◆ Panel wall partitions
- ◆ Packed cement for architectural use
- ◆ Tile adhesives
- ◆ Ceramic tiles
- ◆ Repair mortars
- ◆ Aluminium windows
- ◆ uPVC drainage pipes and fittings
- ◆ Closed-coupled water closet suites
- ◆ Mesh reinforcement
- ◆ LED bulkheads



Product Certification

for **11** selected
building material and
building services

To improve cost effectiveness and productivity, the HA has adopted "Lean Design and Construction" in new construction projects. The basic principle is to explore and apply innovative construction methods to save labour, time and resources, enhancing the cost effectiveness and productivity in our construction projects. For new projects, the HA has adopted standard modular design. The standard modular design facilitates precast construction. The HA also closely monitors the market cost trend and the construction cost per flat to achieve cost effectiveness in housing development. According to the latest tender price movements, the construction cost of the superstructure of PRH was on average 48% lower than that of private sector residential buildings of average standard.

During the year, other on-going measures implemented to expedite construction of our new projects included the following:

- ◆ Adopt separate advance hoarding contracts
- ◆ Prepare major Excavation and Lateral Support Work plans
- ◆ Submit a piling record plan and consent for pile cap construction concurrently
- ◆ Liaise closely with Direct Testing Contractors
- ◆ Use draft or preliminary pile test reports for a more efficient processing and reporting process
- ◆ Establish a streamlined joint survey for foundation contract and building contract interface
- ◆ Streamline the checking and approval of material sample submission
- ◆ Implement streamlined inspection procedures
- ◆ Implement streamlined site audits for 7 construction projects consisting of buildings of 30 storeys or less
- ◆ Apply standardised falsework details for precast facades and semi-precast slabs
- ◆ Explore the use of standardised precast elements in suitable projects
- ◆ Use labour saving installation methods



Initiatives in Existing Housing Estates

Rent Adjustment and Rent Assistance Policies

The HA conducted the fourth biennial PRH rent review exercise in 2016. The PRH rent was increased at a cap of 10%, with effect from 1 September 2016, notwithstanding an increase of 16.11% in the income index in the period covered by the review. As at March 2017, the rents of PRH range of actual rents charged in different estates across Hong Kong running from around \$350 to \$4,690 per month, including the rates, management fee and maintenance costs. The average monthly rent was about \$1,880.

The HA introduced the Rent Assistance Scheme (RAS) to help PRH tenants with temporary financial difficulties pay their rent. Depending on the level of their income, eligible applicants will be granted either 25% or 50% rental reduction. With further enhancement measures taking effect on 1 September 2016, the frequency of tenant eligibility review was relaxed from once every year to once every two years. The requirement for non-elderly tenants living in newer block types who have received rent assistance for three consecutive years to move to cheaper accommodation within the same District Council was also relaxed to four consecutive years.

To raise the awareness of PRH tenants on RAS, the HA has conducted publicity campaigns through various channels, including the Housing Channel, radio broadcasts, posters, leaflets, the HA website, iHousing, YouTube and estate newsletter, etc. Estate staff also solicited assistance from non-government organisations (NGOs) and local District Council members to refer tenants in need to the estate offices for rent assistance.

Optimising the Allocation of Housing Resources

In 2016/17, approximately 26,520 PRH flats were allocated to general applicants (i.e., family and elderly one-person applicants) and non-elderly one-person applicants under the Quota and Points System (QPS), while around 7,240 PRH units were allocated to PRH tenants requesting for transfer, households with housing need recommended by the Social Welfare Department for compassionate rehousing, junior civil servants, eligible clearers under government clearance projects, etc.

Curbing Tenancy Abuse

To ensure the public housing resources are allocated to those with genuine needs, the HA has established a set of stringent policies and a tenancy management framework for preventing tenancy abuse. In 2016/17, our frontline management staff checked some 248,000 biennial declarations of income/assets under the Housing Subsidy Policy, Policy on Safeguarding Rational Allocation of Public Housing Resource and other tenancy management policies. The Public Housing Resources Management Sub-section (PHRM) carried out intensive checking on some 5,000 income/assets declaration cases randomly selected and suspected cases referred by the frontline management staff. In addition, the frontline staff visited around 117,000 PRH flats in the current biennial inspection cycle which commenced in November 2016. PHRM also conducted rigorous investigation on around 6,000 occupancy-related cases.

In light of pressing demand for PRH, the Subsidised Housing Committee (SHC) revised the “Well-off Tenants Policies” starting from the declaration cycle in October 2017. The policies were revised as listed below:

- ◆ PRH tenants with household income exceeding five times the PRH income limits, or with assets exceeding 100 times the income limits should vacate their flats.

- ◆ PRH tenants with private domestic property ownership in Hong Kong should also vacate their flats.
- ◆ For tenants with household income equivalent to two to three times the income limits, they will be required to pay 1.5 times net rent plus rates.
- ◆ For tenants with household income equivalent to three to five times the income limits, they will be required to pay double net rent plus rates.
- ◆ After living in PRH for ten years, tenants will have to declare both their income and assets on a biennial basis.

To further promote the importance of rational allocation of PRH resources, the HA continued the extensive publicity campaign through advertisements on public transport, radio broadcasts, the HA website and the Housing Channel, and display of posters and banners at all PRH estates. The two thematic characters, the “Housing Protector” and the “Housing Abuser”, have visited 40 PRH estates to promote messages on combating tenancy abuse and encourage tenants to report abuse.



▲ Mascot visit in PRH Estates



▲ Poster for “Fight Tenancy Abuse”

In addition, the HA has also organised promotional activities under the theme of cherishing public housing estate resources at 49 PRH estates and conduct outreach visits to the Estate Advisory Management Committee of 12 PRH estates in the year to promote the appropriate use of PRH resources and enlist residents’ support.

Territory-wide Overcrowding Relief Exercise and Living Space Improvement Transfer Scheme

To enhance the living environment of overcrowded families living in PRH, the HA commenced the Territory-wide Overcrowding Relief (TWOR) exercise and Living Space Improvement Transfer Scheme (LSITS). Tenants with less than seven square metres of internal floor area per person may apply for transfer to a larger flat under the schemes. In 2016/17, the HA completed one TWOR exercise and one LSITS exercise and around 1,700 households were rehoused under the two schemes.

Maintenance and Enhancement of Buildings

The HA devotes abundant resources to maintenance and enhancement of existing housing estates, with a focus on the improvement of building safety and quality and reducing operation cost. Under the Total Maintenance Scheme (TMS), the HA commenced the in-flat inspection programme, as a continuous initiative in 13 estates during the year. In addition, Responsive In-flat Maintenance Services (RIMS) were provided to all PRH estates, a total of 219 as at March 2017. To prolong the useful life of aged estates, the HA continued to implement the Comprehensive Structural Investigation Programme (CSIP) and Estate Improvement Programme (EIP) for older estates as scheduled.

The major maintenance programmes carried out during the year include the following:

- ◆ Survey for improvement works in all 64 PRH estates which fall within the ambit of the Fire Safety (Building) Ordinance and Fire Safety Improvement Reports for 13 PRH estates have been completed in 2016/17;
- ◆ Replaced laundry pole holders in 170,000 units under the Laundry Rack Enhancement Programme;
- ◆ Replaced collapsible gates in 59,000 units under the Collapsible Gate Enhancement Programme (as at end of March 2017);
- ◆ Completed lift addition projects under the Lift Addition Programme as scheduled;
- ◆ Replaced 107 old lifts under the Lift Modernisation Programme.

The HA has also deployed information technology to assist in maintenance work. Some examples are as follows:

- ◆ Used GIS for location identification in maintenance work orders.
- ◆ Enhanced existing library system by replacing hardcopy geotechnical and slope maintenance reports with electronic copies. Also enabled users to browse through the library collections via the HA network.
- ◆ Used spreadsheet to create electronic template for standard forms (e.g. engineering inspection) to improve accuracy and reduce checking time of the forms.
- ◆ Used geodatabase as the media for slope information communication between Geotechnical Engineering Services Providers (GESPs) and other government departments.
- ◆ Used GIS for location identification of slopes with slope basic information and generation of updated slope record plans to replace the existing hardcopies in e-Housing.
- ◆ Integrated GIS and database technology by setting up an Slope Maintenance Management System (SMMS) to enhance the working efficiency, cost effectiveness of slope maintenance operation (e.g. programme and works order management, slope inventory management, budgeting monitoring, emergency management) and data mining.
- ◆ Used 360 degree camera to capture photosphere of slopes to enhance visualisation of site constraint and emergency inspection, reduce number of site visit and facilitate more effective discussions on site condition. All photosphere taken was stored in SMMS's database for viewing.
- ◆ Applied RFID as a trial for the maintenance of basketball stands, pressure release valves and gauges for water flushing systems, glazed entrance doors for estate offices and commercial centres, external metal gates for ball courts, estate entrances, gardens and refuse collection points in seven estates.

Redevelopment and Adaptive Re-Use

As reaffirmed in the LTHS and Annual Progress Report 2016 in December 2016 of the HA's policy on redevelopment, while redevelopment may increase PRH supply over the long term, it will in the short term reduce PRH stock available for allocation. The net gain in flat supply will take a long time to realise, very often towards the latter if not the last phase of the redevelopment. Hence, redevelopment can at best serve as a supplementary source of PRH supply. Under the pressing demand for PRH, it is not recommended to conduct massive PRH redevelopment programmes, which lead to freezing of a large number of PRH units that can be allocated to needy households. Echoing the Government's policy, the HA will examine the redevelopment of aged estates on an estate-by-estate basis.

The conversion of the Chai Wan Factory Estate to PRH was completed in the second quarter of 2016. The conversion provides about 200 PRH flats and ancillary facilities for tenants. The first phase of So Uk Estate redevelopment was also completed in 2016, providing about 2,900 PRH units for about 7,600 residents.



▲ Chai Wan Factory Estate was transformed into Wah Ha Estate



▲ First phase of redevelopment of So Uk Estate

Optimising Utilisation of Commercial Properties

The HA possesses a variety of retail premises and community facilities, including retail shops, car parking spaces, factory premises, community, education and welfare facilities. In considering the planning and management of these premises and facilities, the prime concern is to better support the daily needs of the PRH residents.

Measures to Better Suit the Community Needs

The HA prioritises catering the basic daily needs of residents in the operation of commercial properties. In response to local demand, the HA has enhanced the trade and tenant mix, provided mobile facilities, arranged trade fairs, and converted less popular retail facilities into other beneficial uses.

In response to the new modes of banking services for better serving the needs of our residents, the HA collaborates with major banks to provide mobile banking facilities in ten selected estates. Also, the HA has arranged leasing of shops to tenants providing logistics services and set up 16 parcel lockers at suitable locations for the growing needs and prevalence of online shopping.

The leasing and trade mix of new retail facilities at two new shopping centres and three PRH estates were meticulously planned and implemented in accordance with the building completion programme and intake of residents.

To enrich the shopping variety, the HA works with small operators and service providers to furnish our tenants and the community with more shopping choices and necessary services. Packaged letting of promotional venues in various shopping centres to small operators and service providers are arranged periodically.

Enhancing the Leasing and Operation Arrangements of Single Operator Markets (SOMs)

The HA has enhanced the letting arrangements and monitoring mechanism for Single Operator Markets with a view to providing better services to our residents.

Measures to Enhance Shoppers' Experience

The HA has actively adopted measures to provide an enjoyable shopping experience for customers. Promotion strategies include arranging seasonal decorations during major festivals and special days, organising promotional events or sponsoring venues for charity, cultural and other community building programmes.

- ◆ Organising promotional activities during festivals and opening celebrations of new shopping centres

During the year, the HA organised a total of 30 seasonal decorations and promotional activities including stage shows, game booths, handicraft workshops and redemption activities during festive seasons and special days. Feedback on the programmes was collected for monitoring and reviewing their effectiveness.



▲ Halloween celebration event in Domain



▲ Chinese New Year celebration event in Domain

- ◆ Sponsoring venues for community building programmes

In collaboration with various NGOs, institutions and government departments, a total of 64 community events and activities were held in the HA's shopping centres during the year, such as the Basic Law Exhibition, careers expo, health talk, winter precaution campaign and charity sale etc.



▲ Kick-off Event for The 7th "Quit to Win" Smoke-free Community Campaign



▲ RTHK Media Education Prizing

◆ Revamping the shopping environment in shopping centres

To enhance the value of the HA's commercial assets and identify new enhancement opportunities, the HA has formulated a five-year rolling programme for prioritising asset enhancement of the HA's retail and carparking facilities by conducting the Strengths-Weaknesses-Opportunities-Threats (SWOT) analysis of the HA's commercial portfolio. The HA also conducted financial reassessment to review the effectiveness of major enhancement works upon completion.

During the year, the HA completed the improvement works for On Kay Commercial Centre, Kwai Shing West Shopping Centre, Tin Yan Shopping Centre and Yip On Factory. The improvement works in Pok Hong Shopping Centre and Hoi Lai Shopping Centre were in good progress. The HA will continue to monitor the implementation of the improvement works of the earmarked facilities according to the priority set.

◆ Provision of free Wifi in selected shopping centres

To keep pace with the information technology development, the HA provides free Wifi to our residents in selected shopping centres. In 2016/17, 28 HA shopping centres were provided with free Wifi service for our residents to improve their shopping experience.

Maintaining Domain as an East Kowloon Regional Shopping Centre and Entertainment Hub

Domain is one of the key shopping centres in the HA commercial portfolio. Located in the East Kowloon, Domain offers a wide variety of shops and entertainment facilities. The HA aims at sustaining Domain as a regional shopping centre and entertainment hub, bringing a memorable shopping experience to local and cross district shoppers.

To deliver quality service and enhance its image and effectiveness, the HA held regular meetings with the management contractors to review their performance and ensure quality customer service. In enhancing the facility management in Domain, the fire rated doors leading to lift lobbies were upgraded to automatic doors for convenient access. Landscape facilities at roof gardens were further enhanced to provide a comfortable and relaxing environment for shoppers.

Kiosks, road shows and festive trade fairs were arranged to widen the choice of products and services for visitors and customers. Domain also organised tailor-made promotional activities, including popular events and seasonal decoration throughout the year. Special themed trade fairs, including "Travel the World", were popular to shoppers and visitors.

To establish brand loyalty, the HA established the Domain Club. As at March 2017, the number of members was around 19,400, representing an increase of 7% over the year.

During the year, the HA worked with NGOs and institutions, such as WWF Hong Kong, HK Council of Smoking and Health, the Occupational Deafness Compensation Board, Hong Kong Red Cross and Haven of Hope Christian Service, to arrange entertaining, cultural, environmental protection and community building events. A total of 20 events were held for the benefit of the community.



▲ Domain

Performance of Our Commercial Operations

The HA has defined a set of key performance indicators (KPIs) to monitor the performance of the commercial portfolio. These parameters, including the vacancy rate, rent arrears rate and operating expenditure to income ratio, help gauge the effectiveness of managing our commercial portfolio.

Achievements as related to KPIs as at 31 March 2017		
	Targets	Actual
Vacancy Rate for Retail Premises (Shops)	Below 2.5%	2.1%
Rent Arrears Rate	Below 2.5%	1.5%
Operating Expenditure to Income Ratio	Below 60%	51.4%



Initiatives in Office at Work

Apart from incorporating green elements into construction projects, PRH estates and commercial premises, the HA also aims to achieve better management at the organisational level and in its offices to improve its overall sustainability performance. In upholding management best practices and aligning with international trends, the HA has actively established various international management systems. The certifications and verification acquired are listed below:

Years	Management systems
1993	ISO 9001 Certification on Quality Management
2010	ISO 14001 Certification on Environment Management System
2010	ISO 26000 on Social Responsibility
2012	ISO 50001 Certification on Energy Management System
2013	ISO 19011 Auditing Management System
2013	ISO 31000 Risk Management System
2014	OHSAS 18001 Certification on Occupational Health and Safety Management

Engaging the supply chain can help the HA achieve a larger impact on sustainable development in Hong Kong. The HA, therefore, requires contractors to attain relevant certifications including ISO 9001, ISO 14001, OHSAS 18001 and ISO 50001 before registering in the HA's contractor list. To further monitor the compliance of the contractors, they have been required to sign a "Statutory Declaration" for list admission or on contract renewal since the second quarter of 2013. Besides technical competence, the financial capability of our tenderers is also considered. The HA conducts writ searches for the lowest three tenderers or the top three scorers of new work projects to ensure their financial integrity.

The HA maintains a close partnership and collaborates with key stakeholders to facilitate project delivery and enhance operational performance. During the year, the HA conducted regular briefings, seminars and experience sharing sessions with industry peers. Through communication with our business partners, the HA has also collected feedback to improve the procurement practices. In addition to business partners, the HA also conducted briefing and debriefing sessions, and site visits for contractors in order to disseminate the HA's latest requirements.

Enhance Efficiency with Information Technology

The HA has continuously invested in information technology to provide reliable digital platforms and IT services to support the HA's business operations and to optimise the operational efficiency. Furthermore, the HA has maintained the accreditation in three major areas, including application software development and maintenance, IT Services Management and Information Security Management. The accreditations are presented below:

Years attained and latest renewal	Accreditations
2008 and 2015	Capability Maturity Model Integration (CMMI) for Development and Maturity Level 3 (CMMI-DEV ML3)
2012 and 2015	ISO/IEC 20000-1:2011 for IT Services Management
2014 and 2017	ISO/IEC 27001:2013 for Information Security Management

The HA has also been continuously upgrading its IT infrastructure and utilising IT solutions to help improve operational efficiency, enhance service quality and customer experience. During the year, the HA:

- ◆ enhanced the Host-based Intrusion Detection System (HIDS) for better security protection for the HA's Internet-facing systems and services in May 2016;
- ◆ upgraded the HA's network infrastructure and database system to enhance capability in supporting the HA's IT system and services in March 2017;
- ◆ implemented an Enterprise Mobility Management Infrastructure (EMMI) in October 2016;
- ◆ implemented the "L10 Pro" electronic tender booklet system in all tenders for new works foundation and building contracts;
- ◆ applied IT to improve design and construction processes (See **Enhance Efficiency of Building Design and Construction with Information Technology** section in this chapter);
- ◆ launched a new automated document approval system in July 2016 to support the handling of collection, consolidation, review and approval of External Document Impact Assessment and approval of Quality Document for the Estate Management Division; and
- ◆ the ICU also reviewed and enhanced the Housing electronic Plan Submission System (HePlan) for professionals to make submissions and the Housing electronic Building Record Online System (HeBROS) for the public to view and purchase HA building records.

LISTS OF AWARDS AND COMMUNITY RECOGNITIONS



We are committed to enhancing our sustainability performance in the areas of planning, construction, management and maintenance of the public housing over the years. Our efforts have been well recognised by the numbers of awards and honours received for our dedication and contributions toward various sustainability aspects. The major achievements in 2016/17 are listed below.



Corporate

Hong Kong Green Awards 2016

Corporate Green Governance Award (Corporate)

- ◆ Corporate Vision and Stakeholder Engagement Award

Green Management Award (Corporate)

- ◆ Platinum Award

Green Purchasewi\$e Award (Large Corporation)

- ◆ Platinum Award

Outstanding Sustained Performance (7 Years+)

Organiser:

Green Council



Caring Organisation 2016/17

10 Years Plus Caring Organisation Logo

- ◆ Housing Department

Organiser:

Hong Kong Council of Social Service



Hong Kong Green Organisation Certification

Wastewi\$e Certificate

◆ Excellence Level

Organiser:

Environmental Campaign Committee



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Development and Construction

The Hong Kong Institute of Landscape Architects Design Awards 2016

Hung Fuk Estate, Hung Shui Kiu Area 13, Yuen Long

Sustainable Design Collectives: Landscape Design (Public) Category

◆ Merit Award

Organiser:

The Hong Kong Institute of Landscape Architects



BEAM Plus Neighbourhood Pilot Version

Subsidised Sales Flats Development at Fat Tseung Street West

- ◆ Platinum Rating

Organiser:

Hong Kong Green Building Council



Hong Kong Green Building Award 2016

Green Building Leadership Category

- ◆ Grand Award

Hung Fuk Estate, Hung Shui Kiu Area 13, Yuen Long

New Buildings Category (Completed Projects - Residential Building)

- ◆ Grand Award

Research and Development of 2nd Generation Acoustic Balcony

Research & Planning Category

- ◆ Merit Award

Concrete Innovation, Application Research of Carbon Footprint Reduction

Research & Planning Category

- ◆ Merit Award

Organiser:

The Hong Kong Green Building Council



Hong Kong International BIM Awards 2016

Tuen Mun Area 54 Site 2 – Towards a New Era in Logistic and Supply Chain Management of Prefabricated Construction Components through the Integrated Use of BIM and RFID

Building Information Modelling (BIM)

◆ Merit Award

Organiser:

buildingSMART Hong Kong



22nd Considerate Contractors Site Award (CCSA) Scheme

Construction of Public Rental Housing Development at Tuen Mun Area 54, Site 2, Phases 1 & 2

Non-Public Works Sites, New Works (Group A) CCSA

◆ Bronze Award

Outstanding Environmental Management Performance

◆ Merit Award

Construction of Public Rental Housing Development at Shatin Area 52 Phases 3 & 4

Non-Public Works Sites, New Works (Group A) CCSA

◆ Merit Award

Outstanding Environmental Management Performance

◆ Merit Award

Organiser:

Development Bureau



17th Construction Safety Forum and Award Presentation Ceremony

Construction of Home Ownership Scheme at Kiu Cheong Road and Ngan Kwong Wan Road East and West

Best Program to Prevent Heat Stroke at Work

◆ Gold Award

Construction of Pak Tin Estate Redevelopment Phase 9 (Pak Tin Community Complex)

Best Safety Enhancement Program for Working at Height

◆ Merit Award



Construction of Public Rental Housing Development at San Po Kong

Best Safety Culture Site

◆ Bronze Award

Best-Safety Culture Project Manager/Site Agent

◆ Bronze Award

Best Safety Culture Activity Team

◆ Bronze Award

Best Safety Culture Sub-contractor

◆ Merit Award

Construction of Public Rental Housing Development at Ex-Kwai Chung Police Married Quarters

Best Performance Award

◆ Gold Award

Best Safety Culture Site

◆ Merit Award

Best-Safety Culture Project Manager/Site Agent

◆ Merit Award

Best Safety Culture Activity Team

◆ Merit Award

Best Safety Culture Sub-contractor

◆ Merit Award

Organiser:

Occupational Safety and Health Council

15th Hong Kong Occupational Safety & Health Award

Construction of Home Ownership Scheme at Kiu Cheong Road and Ngan Kwong Wan Road East and West

Work Safe Behaviour Award

◆ Gold Award

Foundation for Public Rental Housing Development at Fanling Area 49

Pointing and Calling Award

◆ Bronze Award

Organiser:

Occupational Safety and Health Council



Good Housekeeping Competition 2016-17

Construction of Home Ownership Scheme at Kai Tak Site 1G1(B)

Construction Category

◆ Silver Award

Organiser:

Occupational Safety and Health Council



Occupational Health Award 2016-17

Construction of Home Ownership Scheme at Ngan Kwong Wan Road East and West

Joyful@Healthy Workplace Best Practices Award (Branch/SME Category)

- ◆ Grand Award
- Hearing Conservation Best Practices Award
- ◆ Innovative Improvement Award
- ◆ Excellence Award
- Prevention of Pneumoconiosis Best Practices Award
- ◆ Excellence Award



Construction of Home Ownership Scheme at Kiu Cheong Road

Joyful@Healthy Workplace Best Practices Award (Branch/SME Category)

- ◆ Outstanding Award
- Prevention of Pneumoconiosis Best Practices Award
- ◆ Excellence Award
- Best Performance Award
- ◆ Silver Award



Construction of Public Rental Housing Development at Ex-Kwai Chung Police Married Quarters

Joyful@Healthy Workplace Best Practices Award (Branch/SME Category)

- ◆ Merit Award

Construction of Public Rental Housing at Cheung Sha Wan Wholesale Food Market Site 3 and Site 5 Phases 1 & 2

Joyful@Healthy Workplace Best Practices Award (Enterprise/Organisation Category)

- ◆ Merit Award

Construction of Public Rental Housing Development at Fo Tan, (In Sha Tin Areas 16 & 58D) Phases 1 & 2

Joyful@Healthy Workplace Best Practices Award (Enterprise/Organisation Category)

- ◆ Outstanding Award

Organiser:

Occupational Safety and Health Council

Construction Industry Safety Award Scheme 2016-17

Construction of Home Ownership Scheme at Ngan Kwong Wan Road East and West

Building Sites (Public Sector)

- ◆ Silver Award

Building Sites Subcontractors

- ◆ Merit Award

Safety Teams

- ◆ Merit Award



Construction of Public Rental Housing Development at Ex-Kwai Chung Police Married Quarters

Building Sites (Public Sector)

- ◆ Gold Award

Safety Teams

- ◆ Merit Award

Foundation and Site Formation for Home Ownership Scheme Development at Wo Sheung Tun Street, Fo Tan, Shatin

Building Sites Subcontractors

- ◆ Gold Award

- ◆ Outstanding Performance in Work-at-Height Safety Prize

Safety Teams

- ◆ Merit Award

Construction of Public Rental Housing Development at Lin Shing Road

Building Sites Subcontractors

- ◆ Silver Award

Safety Teams

- ◆ Merit Award

Construction of Public Rental Housing Development at Tung Chung Area 39

Safety Teams

- ◆ Gold Award

Foundation for Public Rental Housing Development at Wing Tai Road, Chai Wan and Foundation for Subsidised Sale Flats Development at Hang Kin Street, Ma On Shan Area 90B

Safety Teams

- ◆ Merit Award

Foundation for Public Rental Housing Development at Fung Shing Street, Wong Tai Sin and Construction of Public Transport Interchange at Kwai Chung

Safety Teams

- ◆ Merit Award

District Term Contract for the Maintenance, Improvement and Vacant Flat Refurbishment for Tai Po, North, Shatin and Sai Kung(1) 2015/2017

Minor Renovation and Maintenance Works

- ◆ Gold Award
- ◆ Outstanding Performance in Work-at-Height Safety Prize

District Term Contract for the Maintenance, Improvement and Vacant Flat Refurbishment for Tai Po, North, Shatin and Sai Kung(2) 2015/2017

Renovation and Maintenance Works

- ◆ Silver Award
- ◆ Outstanding Performance in Work-at-Height Safety Prize

District Term Contract for the Maintenance, Improvement and Vacant Flat Refurbishment for Properties Managed by District Maintenance Offices/ Tuen Mun and Yuen Long (2) 2013/2016

Safety Teams

- ◆ Merit Award

Organiser:

Labour Department

Special Achievement in GIS Award 2016

Enterprise Tree Management System – Geographic Information System

- ◆ Special Achievement in GIS Award

Organiser:

Esri



Hong Kong Quality Assurance Agency (HKQAA) Corporate Social Responsibility (CSR) Index

Development and Construction Division

- ◆ HKQAA CSR Advocate Marks

Organiser:

Hong Kong Quality Assurance Agency



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Estate Management

Hong Kong Flower Show 2017

Unique Feature (Landscape Display)

- ◆ Gold Award

Organiser:

Leisure and Cultural Services Department



Hong Kong Awards for Environmental Excellence 2016 and Hong Kong Green Organisation Certification

Lam Tin Estate

- ◆ Gold Award in Property Management (Residential) Sector of 2016 Hong Kong Awards for Environmental Excellence
- ◆ Hong Kong Green Organisation

Organiser:

Environmental Campaign Committee



2016 Inclusive Environment Recognition Scheme

Yau Lai Shopping Centre

- ◆ Excellence Award for Inclusive Environment

Organiser:

Hong Kong Joint Council for People with Disabilities/
The Hong Kong Council of Social Service



Hong Kong Quality Assurance Agency Corporate Social Responsibility Index Advocate Mark

Estate Management Division

- ◆ HKQAA CSR Advocate Marks

Organiser:

Hong Kong Quality Assurance Agency





Corporate Services

2016 ARC Awards

The Hong Kong Housing Authority Annual Report 2014/15

◆ Bronze Winner (Non-profit Organisation: Housing)

Organiser:

MerComm, Inc



ISO/IEC 27001: 2013

Information Security Management System Certification

Organiser:

British Standard Institute

PREVIOUS TARGETS



For the fiscal year 2016/17, we have set 65 sustainability targets in relation to environmental, social and economic aspects. Over 95% targets (62 out of 65) are fully achieved. Details and progress of these targets are provided below.

Environmental Awareness and Participation Targets	Progress
Review and monitor environmental awareness in public rental housing (PRH) by liaising with green groups and Statistics Section to conduct survey on PRH residents.	Fully achieved
Monitor environmental awareness of the Hong Kong Housing Authority (HA) staff and enhance general awareness by reviewing and implementing training and publicity strategies.	Fully achieved
Collaborate with green groups to conduct environmental awareness programme in PRH.	Fully achieved
Enhance environmental performance of contractors on site.	Fully achieved
Promote PRH tenants' awareness and participation related to waste separation at source, waste reduction and green management initiatives through various publicity channels such as EMAC newsletters and activities, broadcasting of Announcement of Public Interest and rolling text in Housing Channel and other joint activities with green groups.	Fully achieved
Enhance staff environmental awareness and knowledge by organising seminars related to Waste Management Plan, legislation updates and general seminars on environmental issues and campaigns to promote environmental protection.	Fully achieved
Promote environmental message to HA staff by displaying environmental issues at HA Headquarters' (HAHQ) Green Corner.	Fully achieved
Enhance community awareness on environmental protection by organising programmes to promote environmental protection messages.	Fully achieved

Energy Efficiency Targets	Progress
Reduce electricity consumption of building services installation in communal areas of new domestic blocks.	Fully achieved
Explore and study the application of more energy efficient equipment, mass application of LED bulkhead lightings at the communal areas of all newly designed domestic blocks. Implement the environmental lighting controls using motion-sensors and push buttons at the communal areas of domestic blocks and implement gearless lift and regenerative power for lift with a capacity of 18kW or above in all new projects under design.	Fully achieved
Conduct Carbon Audit in the 14 typical block types for monitoring and benchmarking purpose.	Fully achieved
Reduce energy consumption for HA office premises by performing various energy saving initiatives.	Fully achieved
Adopt green design for building services equipment by installing solar-powered lights in each new estate for educational purpose, conducting carbon emission estimation (CEE) for projects with domestic blocks and energy estimation of domestic blocks for projects at detailed design stage.	Fully achieved

Greening and Landscaping Targets	Progress
Provide green treatment to newly formed slopes such as hydroseeding, planting or other appropriate green treatments to soil or rock slopes.	Fully achieved
Add new vegetation and promote greening in new housing estates to meet the minimum target of one tree per 15 PRH flats. Conduct annual tree surveys to ensure all new housing estates meet the target. Achieve an overall target of 30% green coverage, and at least 20% as a minimum for public housing developments at planning design and implementation stage.	Fully achieved
Promote local residents and the community to participate in early plant raising for new housing estates.	Fully achieved
Promote community involvement in greening of the new PRH estates by introducing communal planting areas/community farms in master landscape layout plan at design stage and encourage PRH residents to participating in gardening and planting works within their own estates for education and recreation purposes.	Fully achieved
Re-landscape and upgrade the existing landscape facilities in the selected PRH estates by improving soft landscaping through Landscape Improvement Programme.	Fully achieved
Promote green environment in PRH estates with Estate Management Advisory Committee's support and to increase tenants' awareness and promote community participation in greening of PRH through the provision of greening activities in the estates, such as organising tree planting days and developing community gardens in selected estates.	Fully achieved
Improve the slope appearance in the existing PRH estates by providing green treatment to hard surfaced slopes and improving existing vegetated slopes. Also, chunam surfaces will be improved through hydroseeding, stone pitching and toe planters.	Fully achieved
Promote staff involvement in greening activities by arranging staff/ tenants to participate in Tree-planting Day.	Fully achieved

Hazardous Materials Management Targets	Progress
Further abate the remaining asbestos-containing materials in the existing HA managed properties by implementing asbestos abatement programme through estate redevelopment programme and asbestos removal works.	Fully achieved
Maintain the remaining asbestos containing materials in satisfactory condition in the existing PRH estates by conducting two condition surveys per year to monitor the condition of ACM and engaging registered asbestos contractor for inspection, making recommendation and emergency repair to underground asbestos cement water mains.	Fully achieved
Control of hazardous materials to minimise harm to environment by collecting all disposed mercury-containing lamps in the HAHQ for special waste treatment.	Fully achieved

Waste Management and 4Rs ^[1] Targets	Progress
All softwood and at least 50% of timber used for all types of timber doors in the new public housing developments shall be from sustainable sources.	Fully achieved
Use timber from sustainable sources for temporary works during construction.	Fully achieved
Enhance the use of “green” materials and components.	Fully achieved
Promote recovery of domestic waste for paper by arranging publicity activities in the PRH estates.	Fell Short ^[2]
Promote recovery of domestic waste for aluminium cans by arranging publicity activities in the PRH estates.	Fully achieved
Promote recovery of domestic waste for plastic bottles by arranging publicity activities in PRH estates.	Fell Short ^[3]
Promote recovery of glass bottles for recycling by arranging joint publicity activities with green groups in PRH estates.	Fully achieved
Promote recovery of rechargeable batteries by arranging publicity activities in PRH estates.	Fully achieved
Promote recovery of domestic waste for used clothes by allowing charity organisations to collect used clothing and to promote used clothes recovery in the PRH estates.	Fell Short ^[4]
Reduce domestic waste by promoting waste reduction through various publicity campaigns such as Estate Management Advisory Committees newsletters and activities, and other joint activities with green groups.	Fully achieved
Promote waste separation at source and green management initiatives by implementing Source Separation of Domestic Waste Programme in all estates, and setting up collection point in the PRH estates for collecting domestic recyclable from tenants with incentives such as cash or household sundries for exchange.	Fully achieved
Reduce A3 and A4 paper consumption in the HA offices by performing various initiatives to reduce paper consumption.	Fully achieved
Use environment-friendly paper for printing of all publicity materials.	Fully achieved
Collect waste paper in all HA offices and implement various initiatives to encourage paper recycling.	Fully achieved

Notes:

^[1] 4Rs include Reduce, Reuse, Recycle and Replace.

^[2] The drop in collection of waste paper is probably attributed to the change of residents’ habit on reading the printed copy of newspaper and decline in paper media.

^[3] The drop in recycled amount of waste plastic bottles may be attributed to the drop in the value of plastic material resulting from the drop in crude oil price and thus lack of recyclers to collect those plastic products for recycling.

^[4] The reduction is attributed to the keen promotion of waste reduction and re-use of used clothes in our estates.

Water Conservation Targets	Progress
Reduce flushing water consumption by using 6-litre single or dual flush water-closet suite.	Fully achieved
Reduce irrigation water consumption by providing Zero Irrigation System (ZIS) or other types of root-zone irrigation system in new building projects.	Fully achieved
Study the performance of the Rain Water Harvesting System (RWHS) by evaluating the effectiveness of the RWHS system for all commercial centres and PRH estates where the system was installed.	Fully achieved
Reduce water consumption at the HAHQ by recording and monitoring water consumption.	Fully achieved

Social Targets	Progress
Continue the implementation of the Marking Schemes for Estate Management Enforcement in all the PRH estates and non-domestic premises to enhance the living and business environment.	Fully achieved
Conduct various initiatives for the HA staff, for example, activities organised by the HA Staff Club.	Fully achieved
Maintain active communications with staff and obtain feedback to enhance operational effectiveness.	Fully achieved
Continue to actively work with relevant stakeholders to promote better understanding of the HA's policies and initiatives through different publicity channels.	Fully achieved

Safety Targets	Progress
Continue to closely monitor the contractors' performance through mechanisms such as Performance Assessment Scoring System (PASS), Building Services PASS, Piling PASS, Demolition PASS, Maintenance Assessment Scoring System (MASS), Lift MASS, Housing Authority Safety Auditing System (HASAS), HASAS (Maintenance & Improvement), Surprise Safety Inspection Programme and Housing Authority Lift and Escalator Nominated Sub-contracts Safety Auditing System, surprise safety inspection for building maintenance works, surprise check to lift works contractors for lift term maintenance and lift modernisation works.	Fully achieved
Continue to tighten monitoring of contractors with high accident rates through occupational injury alert and warning triggering system.	Fully achieved
Continue to tighten control measures for high-risk operations on site.	Fully achieved
Continue to hold regular seminars and forums on best safety practices with the participation of contractors and project teams.	Fully achieved

Safety Targets (Cont'd)	Progress
Continue to partner with industry stakeholders in territory-wide safety campaigns and publicity.	Fully achieved
Continue to provide safety training for our staff, e.g. Refresher Site Safety PASSPORT Web Course for new works staff and Occupational Safety & Health Courseware for maintenance works and estate management staff through e-Learning Portal.	Fully achieved
Continue to enhance personal protective equipment for contractors' site personnel and our staff.	Fully achieved
Continue to develop mobile applications to streamline management of safety, quality and productivity on site.	Fully achieved
Continue to issue best practice alerts to contractors, service providers and frontline staff.	Fully achieved
Implement measures to enhance road / roadside work safety for cleansing and security service providers.	Fully achieved
Continue to improve safety of office operations with potential health and safety risks.	Fully achieved
Continue to study the specification enhancement for provision of sunshade of gondola.	Fully achieved
Continue to explore enhancements in contract provisions for safety innovation/measures, e.g. anti-heat stress uniform, safety waist belt and hitch for hand tools, posting warning notice to the fencing off the danger zone into contractual provision.	Fully achieved
Continue to study the enhancement of the Integrated Pay for Safety, Environment and Hygiene Scheme by including lunchtime safety talk, and submission of drawing and specification for safety innovative measures as pre-requisite requirement for Pay for Safety.	Fully achieved
Continue to develop standardised oral commands with Occupational Safety & Health Council for the pointing-and-calling practice used by contractors in high risk activities.	Fully achieved

Economic Performance Targets	Progress
Implement the rent adjustment mechanism.	Fully achieved
Continue to minimise the vacancy of the PRH estates.	Fully achieved
Conduct tenancy control and education campaigns with an aim to reduce abuse of housing resources.	Fully achieved
Continue to review older estates and enhance their preventive maintenance and restoration.	Fully achieved

TARGETS AND OUTLOOK



We endeavour to meet our quantitative flat production targets and to enhance the sustainability of local public housing. By setting challenging yet realistic annual targets on environmental, social and economic aspects, we strive to improve and gauge our sustainability performance and direct it towards sustainability excellence. In 2017/18, we have set 66 targets which are detailed below.

Environmental Awareness and Participation Targets

Review and monitor environmental awareness in public rental housing (PRH) by liaising with green groups and Statistics Section to conduct surveys of PRH residents.

Monitor environmental awareness of the Hong Kong Housing Authority (HA) staff and enhance general awareness by reviewing and implementing training and publicity strategies.

Collaborate with green groups to conduct environmental awareness programmes in PRH.

Enhance the environmental performance of contractors on site.

Promote PRH tenants' awareness and participation related to waste separation at source, waste reduction and green management initiatives through various publicity channels such as EMAC newsletters and activities, broadcasting of Announcement of Public Interest, rolling text in Housing Channel and other joint activities with green groups.

Enhance staff environmental awareness and knowledge by organising seminars related to Waste Management Plan, legislation updates and general seminars on environmental issues and campaigns to promote environmental protection.

Promote environmental message to HA staff by displaying environmental issues at HA Headquarter (HAHQ) Green Corner.

Enhance community awareness of environmental protection by organising programmes to promote environmental protection messages.

Energy Efficiency Targets

Reduce the electricity consumption of building services installations in communal areas of new domestic blocks.

Explore and study the application of more energy efficient equipment, mass application of LED bulkhead lightings at the communal areas of all newly designed domestic blocks. Implement the environmental lighting controls using motion-sensors and push buttons at the communal areas of domestic blocks and implement gearless lift and regenerative power for lift with a capacity of 8kW or above in all new projects under design.

Conduct Carbon Audit in the 14 typical PRH blocks representing the majority of PRH block types for monitoring and benchmarking purpose, and to investigate measures for energy reduction when the building carbon emission is found exceeding the baseline figure.

Reduce energy consumption for HA office premises by performing various energy saving initiatives.

Adopt green design for building services equipment by installing solar-powered lights in each new estate for educational purpose, conducting carbon emission estimation for projects with domestic blocks and energy estimation of domestic blocks for projects at detailed design stage.

Greening and Landscaping Targets

Provide green treatment to newly formed slopes such as hydroseeding, planting or other appropriate green treatments to soil or rock slopes.

Add new vegetation and promote greening in new housing estates to meet the minimum target of one tree per 15 PRH flats. Conduct annual tree surveys to ensure all new housing estates meet the target. Achieve an overall target of 30% green coverage, and at least 20% as a minimum for public housing developments at planning design and implementation stage.

Promote local residents and community participation in early plant raising for new housing estates.

Promote community involvement in greening of the new PRH estates by introducing communal planting areas/community farms in master landscape layout plan at design stage and encourage PRH residents to participate in gardening and planting works within their own estates for recreation and education purpose.

Re-landscape and upgrade the existing landscape facilities in the selected PRH estates by planting more trees and flowers through Landscape Improvement Programme.

Promote community participation and increase tenants' awareness in greening of PRH estates, in collaboration with the Estate Management Advisory Committee, through organizing greening activities in the estates, such as tree planting days.

Improve the slope appearance in existing PRH estates by providing green treatment to hard surfaced slopes and improving the existing vegetated slopes. Also, chunam surfaces will be improved through hydroseeding, stone pitching and toe planters.

Promote staff involvement in greening activities by arranging staff/tenants to participate in Tree-planting Day.

Hazardous Materials Management Targets

Abate the existing asbestos containing materials in HA construction sites by implementing proper asbestos removal works in demolition.

Implement asbestos abatement programme in PRH estates by promulgating and enhancing publicity of locations and proper handling of Asbestos Containing Materials (ACM), enhancing regular monitoring system on ACM, formulating the asbestos abatement programme, arranging regular training seminars and briefings and reminding project team to take proper mitigation measures.

Control hazardous materials to minimise harm to environment by collecting all disposed mercury-containing lamps in HAHQ for special waste treatment.

Waste Management and 4Rs^[1] Targets

All softwood and at least 50% of timber used for all types of timber doors in the new public housing developments shall be from sustainable sources in compliance with BEAM Plus (New Building) requirement.

Use timber from sustainable sources for temporary works during construction.

Enhance the use of "green" materials and components.

Promote recovery of domestic waste for paper by arranging publicity activities in PRH estates.

Promote recovery of domestic waste for aluminium cans by arranging publicity activities in PRH estates.

Promote recovery of domestic waste for plastic bottles by arranging publicity activities in PRH estates.

Promote recovery of glass bottles for recycling by arranging joint publicity activities with green groups in PRH estates.

Promote recovery of rechargeable batteries by arranging publicity activities in PRH estates.

Promote recovery of domestic waste for used clothes by allowing charity organisations to collect used clothing and to promote used clothes recovery in PRH estates.

Reduce domestic waste by promoting waste reduction through various publicity campaigns such as Estate Management Advisory Committees newsletters and activities, and other joint activities with green groups.

Promote waste separation at source and green management initiatives by implementing Source Separation of Domestic Waste Programme in all estates, and setting up collection point in the PRH estates for collecting domestic recyclable from tenants with incentives such as cash or household groceries for exchange.

Use environment-friendly paper for printing of all publicity materials.

Reduce A3 and A4 paper consumption in the HA offices by performing various initiatives to reduce paper consumption.

Collect waste paper in all HA offices and implement various initiatives to encourage paper recycling.

Notes:

^[1] 4Rs include Reduce, Reuse, Recycle and Replace.

Water Conservation Targets

- Reduce flushing water consumption by using 6-litre single or dual flush water-closet suites.
- Reduce irrigation water consumption by providing Zero Irrigation Systems (ZIS) or other types of root-zone irrigation systems in new building projects.
- Reduce water consumption at the HAHQ by recording and monitoring water consumption.

Social Targets

- Continue the implementation of the Marking Schemes for Estate Management Enforcement in all PRH estates and non-domestic premises to enhance the living and business environment.
- Conduct various initiatives for the HA staff, for example, activities organised by the HA Staff Club.
- Maintain active communications with staff and obtain feedback to enhance operational effectiveness.
- Continue to actively work with relevant stakeholders to promote better understanding of the HA's policies and initiatives through different publicity channels.

Safety Targets

- Continue to closely monitor the contractors' performance through mechanisms such as the Performance Assessment Scoring System (PASS), Building Services PASS, Piling PASS, Demolition PASS, Maintenance Assessment Scoring System (MASS), Lift MASS, Housing Authority Safety Auditing System (HASAS), HASAS (Maintenance & Improvement), Surprise Safety Inspection Programme and Housing Authority Lift and Escalator Nominated Sub-contracts Safety Auditing System, surprise safety inspections for building maintenance works, surprise checks of lift works contractors for lift term maintenance and lift modernisation works.
- Continue to tighten monitoring of contractors with high accident rates through occupational injury alerts and warning systems.
- Continue to tighten control measures for high-risk operations on site.
- Continue to hold regular seminars and forums on best safety practices with the participation of contractors and project teams.
- Continue to partner with industry stakeholders in territory-wide safety campaigns and publicity.
- Continue to provide safety training for our works staff, e.g., Refresher Site Safety PASSPORT Web Course for works staff and Occupational Safety & Health Courseware for maintenance works and estate management staff through e-Learning Portal.
- Continue to enhance personal protective equipment for contractors' site personnel and our works staff.
- Continue to develop mobile applications to streamline management of safety, quality and productivity on site.
- Continue to issue best practice alerts to contractors, service providers and frontline staff.
- Continue to implement measures to enhance road and roadside work safety for cleaning and security service providers.

Safety Targets (Cont'd)

Continue to improve safety of office operations with potential health and safety risks.

Continue to study the specification enhancement for provision of sunshade of gondola.

Continue to explore enhancements in contract provisions for safety innovation/measures. e.g., Virtual Reality technique for safety training, BIM for logistic planning and safety training, RFID for alert and warning system, RFID for access control to works area and plant, and checking plant certificate and workers' data, remote control of concrete skip.

Continue to review the Integrated Pay for Safety, Environment and Hygiene Scheme to include lunchtime safety talk, full payment only for safety critical pass item attaining a minimum score of 80 marks, setting aside a payment for release at the contract completion to encourage timely reporting of accident/incident, submission of drawing and specification for safety innovative measures as pre-requisite requirement for Pay for Safety, and setting a threshold of scores of all the 6 environmental performance indicators to achieve for release of payment.

Explore enhancements in contract requirements by including good safety measures such as electrical wheelbarrow, double lock ground release shackle for safe lifting of H piles, cordless power handheld tools and wearing proper gloves by workers, incorporating safety climate index survey and work safe behaviour, specifying duration for maintenance and checking of tower crane, separate power supply for tower crane operation, installing CCTV in control cabin of tower crane, arranging work roster for tower crane operator, implementing mentor and mentee scheme for training tower crane operators, requiring accreditation of safety supervisor under the Hong Kong Safety and Health Accreditation Scheme, and including relevant clause of Reference Materials on Site Welfare, Health and Safety Measures published by Construction Industry Council.

Continue to develop standardised oral commands with Occupational Safety & Health Council for the pointing-and-calling practice used by contractors in high risk activities.

Adopt universal design for all ages and abilities in modular flats, communal facilities and integrated community play areas, and implement barrier-free access to PRH block entrances, strategic estate facilities and transportation nodes to enhance safety, accessibility and spatial equity in the community.

Economic Performance Targets

Implement the rent adjustment mechanism.

Continue to minimise the vacancy of the PRH estates.

Conduct tenancy control and education campaigns with an aim to reduce abuse of housing resources.

Continue to review older estates and enhance their preventive maintenance and restoration.

VERIFICATION STATEMENT



Verification Statement



Scope and Objective of Verification

Hong Kong Quality Assurance Agency (HKQAA) has been engaged by the Hong Kong Housing Authority (HA) to conduct an independent verification of its Sustainability Report 2016/17 (the Report). The Report highlights HA's major sustainability commitments and performance in terms of environmental, social and economic sustainability from 1 April 2016 to 31 March 2017.

The aim of this verification was to provide assurance on the completeness and accuracy of the information stated in the Report. The report is prepared in accordance with the Core Option of the GRI Sustainability Reporting Standards (GRI Standards).

Level of Assurance and Methodology

The process applied in this verification was based on the following criteria:

- ◆ International Standard on Assurance Engagement 3000 (ISAE 3000) – "Assurance Engagement Other Than Audits or Reviews of Historical Financial Information" issued by the International Auditing and Assurance Standards Board; and
- ◆ The Global Reporting Initiative (GRI) Standards

Our evidence gathering process was designed to obtain a reasonable level of assurance in accordance with the verification standards for devising opinions and conclusion.

The verification procedure included reviewing relevant documentation, interviewing personnel with involvement in preparing the Report and verifying selected samples of data and information. Supporting data and evidence of the selected samples were reviewed.

Independence

HA is responsible for the collection and presentation of the information in the Report. HKQAA did not involve in the collection and calculation of data in the Report or the compilation of the Report. HKQAA's verification activities are independent from HA. There is no relationship between HKQAA and HA that will affect the independence of HKQAA for providing this verification service.

Conclusion

On the basis of our verification results and in accordance with the verification procedures undertaken, it is the opinion of the HKQAA's verification team that:

- ◆ The Report has been prepared in accordance with the Core Option of the GRI Standards;
- ◆ The Report illustrates HA's sustainability performance in a structured, balanced and consistent manner; and
- ◆ The data and information disclosed in the Report are factual, accurate and reliable.

Nothing has come to HKQAA attention that the selected sustainability performance information and data contained in the Report has not been prepared and presented fairly and honestly, in all material aspects, in accordance with the verification criteria.

Signed on behalf of Hong Kong Quality Assurance Agency



Connie Sham
Head of Audit
March 2018

GRI CONTENT INDEX



General Disclosure

General Standard Disclosures		Cross-reference/ Comments	External Assurance
Organisational Profile			
102-1	Name of the organisation	About the Hong Kong Housing Authority	✓
102-2	Activities, brands, products, and services	About the Hong Kong Housing Authority	✓
102-3	Location of headquarters	About the Hong Kong Housing Authority	✓
102-4	Location of operations	Hong Kong Only	✓
102-5	Ownership and legal form	Part of the Hong Kong SAR Government	✓
102-6	Markets served	About the Hong Kong Housing Authority	✓
102-7	Scale of the organisation	About the Hong Kong Housing Authority	✓
102-8	Information on employees and other workers	About the Hong Kong Housing Authority	✓
102-9	Supply chain	About the Hong Kong Housing Authority	✓
102-10	Significant changes to the organisation and its supply chain	During the reporting period, there was no significant change in the scope, boundary and measurement methods from previous reports.	✓
102-11	Precautionary principle or approach	About the Hong Kong Housing Authority	✓
102-12	External initiatives	Environmental Performance Social Performance Economic Performance	✓

General Standard Disclosures		Cross-reference/ Comments	External Assurance
102-13	Membership of associations	About the Hong Kong Housing Authority	✓
Strategy			
102-14	Statement from senior decision-maker	Message from the Chairman	✓
Ethnic and Integrity			
102-16	Values, principles, standards, and norms of behaviour	About the Hong Kong Housing Authority	✓
Governance			
102-18	Governance structure	About the Hong Kong Housing Authority	✓
Stakeholder Engagement			
102-40	List of stakeholder groups	About This Report - Criteria	✓
102-41	Collective bargaining agreements	None – there is no collective bargaining legislation enacted in Hong Kong, but we maintain various staff engagement channels.	✓
102-42	Identifying and selecting stakeholders	About the Hong Kong Housing Authority - Significant Material Aspects	✓
102-43	Approach to stakeholder engagement	About This Report - Criteria	✓
102-44	Key topics and concerns raised	About the Hong Kong Housing Authority - Significant Material Aspects	✓
Reporting Practice			
102-45	Entities included in the consolidated financial statements	About the Hong Kong Housing Authority	✓
102-46	Defining report content and topic boundaries	About This Report About the Hong Kong Housing Authority	✓
102-47	List of material topics	About the Hong Kong Housing Authority	✓
102-48	Restatements of information	There is no restatement of information and data provided in our earlier sustainability reports.	✓

General Standard Disclosures		Cross-reference/ Comments	External Assurance
102-49	Changes in reporting	About This Report	✓
102-50	Reporting period	About This Report	✓
102-51	Date of most recent report	About This Report	✓
102-52	Reporting cycle	About This Report	✓
102-53	Contact point for questions regarding the report	Feedback Form	✓
102-54	Claims of reporting in accordance with the GRI Standards	About This Report	✓
102-55	GRI Content Index	GRI Content Index	✓
102-56	External assurance	About This Report Verification Statement	✓
Management Approach			
103-1	Explanation of the material topic and its boundary	About the Hong Kong Housing Authority	✓

Topic-specific Standards

Material Topics	Indicators	Cross-reference/ Comments	External Assurance
Economic Performance	103-2 Management approach 103-3	Economic Performance	✓
Economic Performance	201-1 Direct economic value generated and distributed	Economic Performance	✓
Indirect Economic Impacts	103-2 Management approach 103-3	Economic Performance	✓
Indirect Economic Impacts	203-2 Significant indirect economic impacts	Economic Performance	✓
Procurement Practices	103-2 Management approach 103-3	About the Hong Kong Housing Authority	✓
Procurement Practices	204-1 Proportion of spending on local suppliers	About the Hong Kong Housing Authority	✓
Anti-corruption	103-2 Management approach 103-3	About the Hong Kong Housing Authority	✓
Anti-corruption	205-3 Confirmed incidents of corruption and actions taken	About the Hong Kong Housing Authority	✓
Material	103-2 Management approach 103-3	Environmental Performance	✓

Material Topics	Indicators		Cross-reference/ Comments	External Assurance
Material	301-1	Materials used by weight or volume	Environmental Performance	✓
Energy	103-2 103-3	Management approach	Environmental Performance	✓
Energy	302-1	Energy consumption within the organisation	Environmental Performance	✓
Energy	302-2	Energy consumption outside of the organisation	Environmental Performance	✓
Water	103-2 103-3	Management approach	Environmental Performance	✓
Water	303-1	Water withdrawal by source	Environmental Performance We have set our water saving target in HAHQ since 2004/05 with a view to demonstrating HA's commitment to environmental protection. However, the water consumption of other HA offices was excluded since such offices include consumption by other users, usage in common areas, resident car parks and shopping facilities, etc.	✓
Biodiversity	103-2 103-3	Management approach	Environmental Performance	✓
Biodiversity	304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	Projects in progress or commenced in 2016/17 were situated away from areas of high biodiversity value and had no significant impact on biodiversity.	✓
Emissions	103-2 103-3	Management approach	Environmental Performance	✓
Emissions	305-1	Direct (Scope 1) GHG emissions	Environmental Performance	✓
Effluents and Waste	103-2 103-3	Management approach	Environmental Performance	✓
Effluents and Waste	306-2	Waste by type and disposal method	Environmental Performance	✓
Environmental Compliance	103-2 103-3	Management approach	Environmental Performance	✓

Material Topics	Indicators	Cross-reference/ Comments	External Assurance
Environmental Compliance	307-1 Non-compliance with environmental laws and regulations	There were no significant fines or non-monetary sanctions for non-compliance with environmental laws and regulations during 2016/17.	✓
Labour/ Management Relations	103-2 Management approach 103-3	Social Performance	✓
Labour/ Management Relations	402-1 Minimum notice periods regarding operational changes	Following HA's internal circulars, no minimum notice period is required. However, staff are informed and consulted regarding significant changes beforehand, and notices are issued as soon as possible.	✓
Occupational Health and Safety	103-2 Management approach 103-3	Social Performance	✓
Occupational Health and Safety	403-2 Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	Social Performance	✓
Training and Education	103-2 Management approach 103-3	Social Performance	✓
Training and Education	404-1 Average hours of training per year per employee	Social Performance	✓
Training and Education	404-3 Percentage of employees receiving regular performance and career development reviews	100% of HA staff ^[1] received performance appraisals during the reporting period, and there is no differential treatment in terms of gender.	✓
Non-discrimination	103-2 Management approach 103-3	Social Performance	✓
Non-discrimination	406-1 Incidents of discrimination and corrective actions taken	There is no reported incidents of discrimination in 2016/17.	✓

Material Topics	Indicators	Cross-reference/ Comments	External Assurance
Freedom of Association and Collective Bargaining	103-2 Management approach 103-3	About the Hong Kong Housing Authority	✓
Freedom of Association and Collective Bargaining	407-1 Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	About the Hong Kong Housing Authority	✓
Socioeconomic Compliance	103-2 Management approach 103-3	Social Performance	✓
Socioeconomic Compliance	419-1 Non-compliance with laws and regulations in the social and economic area	Social Performance	✓

Note:

^[1] Including civil servants and HA contract staff.

FEEDBACK FORM



The Sustainability Report 2016/17, ***Sustainable Community Fostering Harmony***, detailing our sustainability principles and summarising our performance during the fiscal year of 2016/17 is available on the Hong Kong Housing Authority (HA) website with both the desktop and mobile versions.

We treasure your feedback to help us continuously improve our performance, services and reporting process. We sincerely hope that you will provide your views as well as comments on this Report, our sustainability initiatives, and our performance before 30 September 2018, by emailing the Feedback Form (emu@housingauthority.gov.hk), or by post to:

Senior Manager/Environment
Environmental Management Unit
Hong Kong Housing Authority Headquarters
33 Fat Kwong Street, Ho Man Tin, Kowloon, Hong Kong



Feedback Form

1. What is your overall view of the Report? ☐ Very Good ☐ Good ☐ Adequate ☐ Poor ☐ Very Poor
2. Do you find the Report information useful? ☐ Very Good ☐ Good ☐ Adequate ☐ Poor ☐ Very Poor
3. Do you find the Report easy to understand? ☐ Very Good ☐ Good ☐ Adequate ☐ Poor ☐ Very Poor
4. Do you think the presentation of the Report is clear? ☐ Very Good ☐ Good ☐ Adequate ☐ Poor ☐ Very Poor
5. Which aspect(s) of the Report do you find most useful? ☐ *1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10
- Please specify

*Note:

- | | |
|--|--|
| 1. About This Report | 6. List of Awards and Community Recognitions |
| 2. About the Hong Kong Housing Authority | 7. Previous Targets |
| 3. Environmental Performance | 8. Targets and Outlook |
| 4. Social Performance | 9. Verification Statement |
| 5. Economic Performance | 10. GRI Content Index |

6. Which aspect(s) of the Report do you find least useful? *1 2 3 4 5 6 7 8 9 10

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Please specify

7. Which aspect(s) of the Report would you like to have more information on? *1 2 3 4 5 6 7 8 9 10

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Please specify

8. What improvement(s) would you recommend for our next Report? *1 2 3 4 5 6 7 8 9 10

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Please specify

9. What group(s) do you belong to? (You can tick more than one box.)

- ☐ Owner/Tenant in HA Flat ☐ Green Group ☐ Education/Academic
☐ Government Department ☐ Other Public Organisation ☐ Professional Engineer/Scientist
☐ Other, please specify _____

Name: _____ Email Address: _____

Contact Number: _____ Mailing Address: _____

*Note:

- | | |
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