



Sustainability Report 2015/16

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Executive Summary

- Our Environmental Performance
- Our Social Performance
- Our Economic Performance

This is the eleventh edition of the Sustainability Report publicised by the Hong Kong Housing Authority (HA), **Smart Living in Sustainable Community**. This Report highlights the annual achievements and progress of HA's sustainability performance from 1 April 2015 to 31 March 2016. This Report is prepared in accordance with the internationally recognised GLOBAL REPORTING INITIATIVE (GRI) G4 SUSTAINABILITY REPORTING GUIDELINES Core option. This Executive Summary aims to provide you with an overview of our sustainability performance and achievements in 2015/16.

Our Environmental Performance

We set 40 environmental targets for 2015/16 and 37 out of 40 targets were fully met. The target of the collection of used clothes and paper waste recycling in Public Rental Housing (PRH) estates was fell short due to the HA's keen promotion on source reduction of waste. Meanwhile, the paper consumption has increased in nearly all offices in 2015/16 as a result of the increase in manpower as well as business activities. We will critically review the position and set the future saving target under comparable operating conditions. We will continue to implement paper saving measures, such as wider use of e-reports and e-operations, to control paper consumption.

Our environmental performance for this year is outlined below:

Initiatives in Planning and Construction of New Housing Estates

Adopting Low Carbon Building Design

- We have applied Carbon Emission Estimation (CEE) at the planning and design stage for all new development projects since 2011 to benchmark the carbon emission level among our projects. During the year, we have carried out CEE for 12 projects during the design stage.
- Since implementation, it is estimated that we have achieved an average of about 13% reduction in carbon emission as compared with the baseline figure of New Harmony 1 Option 6 block in terms of construction floor areas.

Environmentally Friendly Construction Practices

- We formally launched a database to indicate the availability of non-inert construction and demolition recyclable materials excavated from construction sites for collection by recyclers to facilitate waste recycling two years ago. The database is now available on the HA website and updated on a monthly basis.

Green Building Recognition

- In 2015/16, the PRH development at Ex-Kwai Chung Police Married Quarters achieved “Provisional Platinum” rating under BEAM Plus version 1.2.

Renewable Energy

- For new rental domestic building blocks, we have installed grid-connected photovoltaic (PV) system where appropriate to provide at least 1.5% of the communal electricity consumption.



◀ Photovoltaic Panels

Energy Efficiency in Buildings

- We have been adopting LED bulkhead lights since early 2016 as the standard luminaires in public areas of domestic blocks of all new works projects under design.
- We continued to provide “smart meter” monitoring system with displays at the main entrance lobbies of all new domestic blocks. The system shows information and peer comparison of communal and tenants’ consumption of electricity, gas and fresh water with the aim of arousing environmental awareness of tenants.

Water Conservation

- We have installed Zero Irrigation System (ZIS) in suitable new works projects and reviewed the effectiveness of the completed installations. ZIS consists of a Sustainable Urban Drainage System and Sub-irrigation Planting System to reduce water consumption in irrigation.
- We initiated the trial use of ZIS, along with Rainwater Harvesting System and Root Zone Irrigation, in Hung Fuk Estate to conserve the water resources and better manage irrigation water use.
- In Shui Chuen O Estate, we introduced an integrated water sensitive urban design which collected rainwater at high elevations and planted slope. Collected rainwater would be treated via bio-retention and held in storage tanks for plant irrigation.



▲ Zero Irrigation System



Estate Ecology

- We have involved local residents in greening all new housing estates through the “Action Seedling” programme during the year.
- We have also introduced planting areas for community participation in three development projects to encourage residents to participate in gardening and planting works within their own estates for recreation and education purposes.
- We have carried out green treatment in five projects with formed slopes.



◀ Newly Formed Slopes After Green Treatment

Noise Control

- To minimise noise impact, we have been adopting different types of noise mitigation measures, including acoustic windows, acoustic balconies, acoustic fins and noise barriers, etc., in different projects to suit the site-specific characteristics and lessen the noise nuisance to the residents.
- We have completed the design of the second generation acoustic balconies and will implement it in new projects where necessary.

Air Quality Management

- We have completed the study on the use of bio-filtration system to reduce air pollutants in the car park at Cheung Sha Wan Estate with satisfactory result.

Initiatives in Existing Housing Estates

Green Recognition

- We have successfully obtained “Final Platinum” rating under the BEAM Plus for Existing Buildings scheme for Kwai Shing West Estate in the third quarter of 2015.



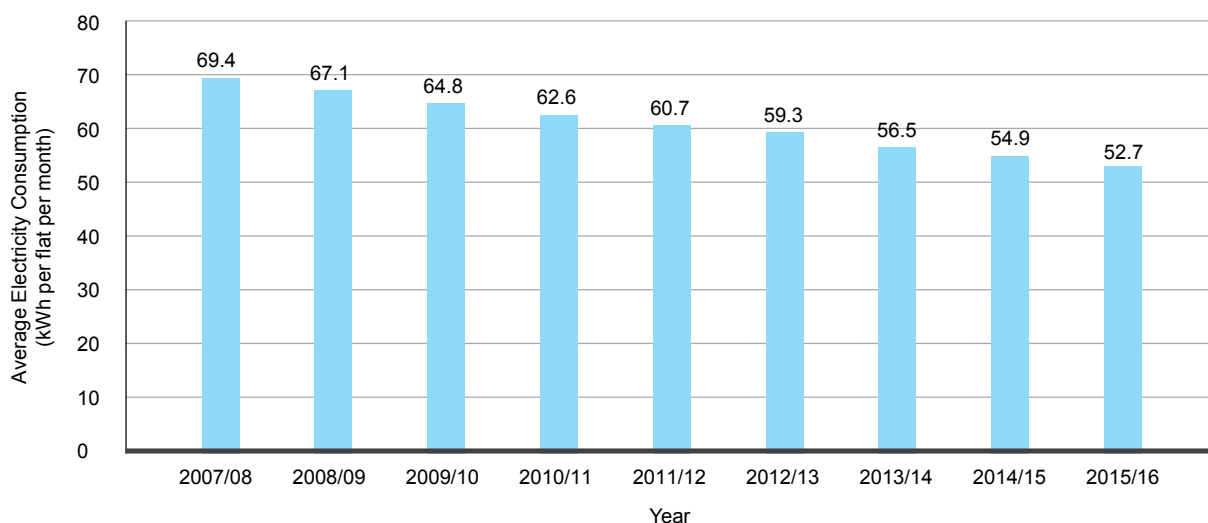
◀ Kwai Shing West Estate

- All our PRH estates obtained the ISO 14001 certifications for maintenance and property management in 2011 and 2013 respectively.
- We have progressively extended the EnMS to cover all PRH estates in two phases with the successful completion of the extended certification for Phases One and Two in August 2014 and April 2015 respectively.

Energy Consumption

- Our electricity consumption in the public areas of PRH blocks was 52.7kWh per flat per month in 2015/16, which was 4% lower than the level recorded in 2014/15.

Electricity Consumption in the Public Areas of Estate



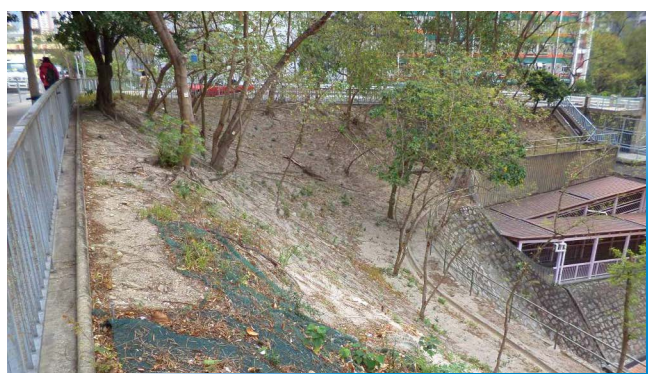
- We have planned to replace electromagnetic ballast at approximately one million light fitting in 960 PRH blocks within a period of 42 months. The replacement work for all PRH blocks was completed in September 2015.

Waste Management

- We have collected, in our estates, around 26 690 tonnes of waste paper, 2 223 tonnes of plastic bottles, 1 353 tonnes of aluminium cans and 867 tonnes of used clothes for recycling.
- All our estates have established collection counters to receive domestic recyclables from tenants with incentives, such as cash or household sundries for exchange.
- We were delighted to achieve the average domestic waste production of 0.55 kg/person/day from our residents during the year, accounting for over 6.8% decrease when compared to that of 2014/15.

Greening and Landscaping

- We have completed green treatment works such as replacing chunam surface with hydroseeding for 10 slopes at nine estates to enhance the slope appearance in our PRH estates.
- We have installed roof greening in Kwai Shing West Estate which is well received by the residents.



▲ Hydroseeding to Bare Slope Surface in Chuk Yuen South Estate Before (Left) and After Green Treatment Works (Right)

- We completed landscape improvement works to enhance greening at 20 PRH estates by introducing new varieties of plants to match the local landscape and conditions.
- We organised community garden programmes in ten estates to promote community participation in greening activities.
- We have developed and implemented a new Enterprise Tree Management System (ETrMS) to assist in monitoring our tree management work and conducting annual tree risk assessment exercise in a systematic way.

Organising Green Activities

- We have been partnering with green groups to launch a long-term estate-wide community environmental education programme, the “Green Delight in Estates” (GDE) since 2005 with the aim to foster environmental awareness of our tenants.
- In 2015/16, we completed GDE Phase 8 and had started the GDE Phase 9 with the theme of “Rehome & Reuse Resources” to encourage residents to share their excessive but useful resources to other people.
- We collaborated with our Estate Management Advisory Committee (EMAC) to organise a considerable number of activities, aiming to increase tenants’ awareness and to promote participation in the greening of PRH estates, including tree planting days in 10 estates and greening activities for residents in 20 estates.

Initiatives in Office at Work

- The HA Headquarters consumed 12 068 cubic metres of water in 2015/16. It was decreased by 21.0% as compared with the consumption of 2007/08.
- In 2015/16, the electricity consumption of our office premises was 35 511 000kWh, representing 7.9% reduction when compared to our baseline consumption figure in 2007/08.
- We had designed an “Art of Living @Home” garden for this year’s Hong Kong Flower Show, echoing the Show’s theme “Blossoms in Vivid Art 2016”. The landscape design won the Gold Award for Unique Feature (Landscape Display) in the Flower Show.



◀ Hong Kong Flower Show 2016

▲ [Back to top](#)

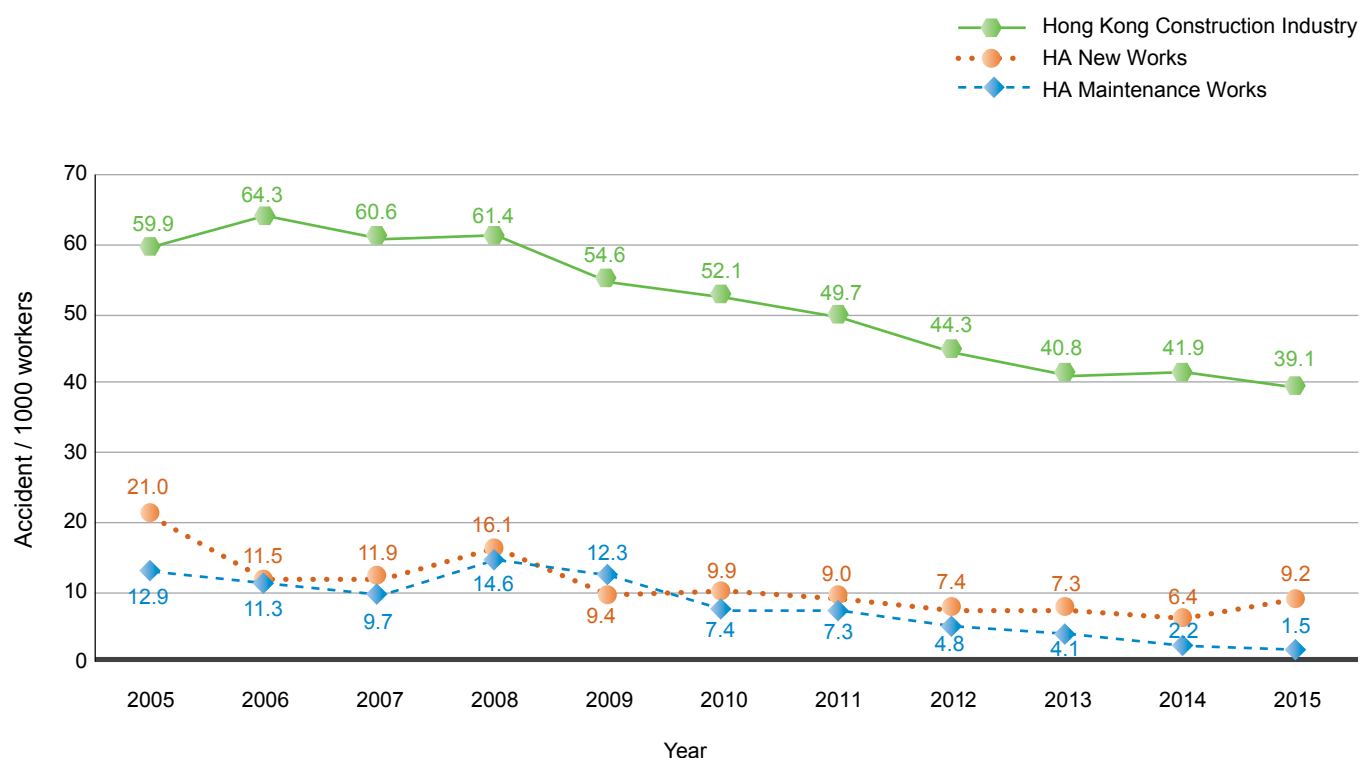
Our Social Performance

We set 22 social targets for 2015/16 and all these targets were fully met. Our social performance during the year is highlighted below:

Overview

- Housing Department (HD) successfully attained the “10 years plus Caring Organisation Logo” for the first time in early 2016.
- HA’s Development & Construction Division and Estate Management Division have continued to participate in the annual performance assessment of the Hong Kong Quality Assurance Agency’s Corporate Social Responsibility Index in 2015/16. The two divisions received the full score of 5.0, and were awarded the HKQAA CSR Advocate Mark.
- Across all our construction sites, the accident rates were 9.2 per 1 000 workers for new works contracts and 1.5 per 1 000 workers for maintenance contracts, based on the 2015 statistical data from Labour Department.

Accident Rate Compared to Local Construction Industry



Initiatives in Planning and Construction of New Housing Estates

Safety

- We made further enhancement to the Performance Assessment Scoring System in the third quarter of 2015, including improving the safety requirements and revising the programme milestone dates
- We developed a new web-based tool in the past year, namely, Occupational Injury and Disease Surveillance System (OIDSS), to strengthen accident and incident reporting. It has been fully implemented starting from May 2016.

Supporting Our Contractors

- Starting from April 2015, we have included Contractor Cooperative Training Scheme in the tenders of all building services sub-contracts.
- A total of 61 safety circulars were issued in the financial year, covering alerts, new guidelines, good practice, advice and information related to site safety and health from the Labour Department, the Occupational Safety and Health Council, and the Construction Industry Council.
- We announced the launch of the HA Occupational Injury and Disease Surveillance System, upgrading of the HA Safety Auditing System to version 1.5.1, and the revised Safety Auditing Checklist for Building Services Contractors during our Site Safety Seminar in October 2015.

Community Engagement

- For all new developments, we continued to consult district councils, organised community engagement activities to present development proposals, and obtained feedback on the planning and design of projects.

Initiatives in Existing Housing Estates

Facilities Upkeep

- To identify room for improvement through peer benchmarking, we took the initiative to conduct a review by enrolling ten selected pilot estates to the HKQAA Sustainable Building Index (SBI), with an aim to evaluate our building sustainable performance against industry best practices.
- We completed the inspection on 65 new lift installations in existing estates, and carried out 438 inspections on existing lift installations and 35 escalator installations. Audits on the safety aspect of 36 lifts works under lift addition / modernisation contracts were also conducted.
- We replaced the electrical wirings for around 1 716 flats built between 1986 and 1992 through the Rewiring inside Domestic Flats (RDF) programme. Safety related messages and videos were also developed and broadcast throughout all estates.

Community Engagement

- Approximately 450 community building campaigns and activities were co-organised by our EMACs and NGOs at estates during the year.
- EMACs collaborated with NGOs to deliver outreach services for elderly tenants. About 190 functions were held in which some 1 800 home visits to elderly tenants have been conducted under the programme of Healthy Ageing in PRH Estates 2015/16.



◀ A Partnering Function Promoting “Caring for the Elderly” through Home Visits

- We designed a number of the harmonious families schemes, including the Harmonious Families Priority Scheme, the Harmonious Families Transfer Scheme, the Harmonious Families Addition Scheme, and the Harmonious Families Amalgamation Scheme, to encourage young generations to live near to and take care of their elderly parents or dependent relatives. By the end of 2015/16, the total number of the benefited households have reached about 39 160.

Initiatives in Office at Work

Safety and Healthy Work Environment

- We organised about 230 occupational safety and health (OSH)-related training courses and seminars with over 10 000 staff attendance in 2015. Through the dedicated OSH website on intranet, we shared latest guidance and publications from the OSHC and the Labour Department with our staff.
- To upkeep staff safety awareness and to identify area for improvement in the workplace, our annual office safety inspection for over 350 offices was completed in May 2015.

Knowledge Exchange

- We have promoted our work through the HA Exhibition Centre, arranged tours, and site visits for media, local, the Mainland and overseas visitors.
- We exhibited our works entitled “Fundamentally Hong Kong? - Delta Four 1984-2044” in the 14th Venice Biennale International Exhibition in 2014. Then, we showcased the exhibits under the theme of “Home and Community” in the Hong Kong Heritage Discovery Centre from March to May 2015.
- In March 2016, we arranged a special visit for a youth supporting programme entitled “CLAP for Youth”, in which 30 senior form students visited our headquarter building. They were guided around the HA's Exhibition Centre and Building Information Modelling Centre, and invited to participate in discussion for a better understanding of different job disciplines.



▲ Visit HA Exhibition Centre



▲ Visit Hosted for the CLAP for Youth Programme

- In November 2015, at the 20th Conference of the Housing and Urban Public Corporations in Asia (A-HUC) hosted by the Korea Land and Housing Corporate in Seoul, we shared experience with the delegations of housing organisations from Japan, Singapore, and South Korea, with regard to “Housing Welfare Improvement based on the Public-Private Partnership”.

Our Economic Performance

We set 4 economic performance targets for 2015/16 and all these targets were fully met. Our economic performance in this year is highlighted below:

Financial Performance

- As at 31 March 2016, the HA's available investment funds stood at HK\$56.6 billion.
- During the year, the recurrent expenditure of the HA was HK\$16 449 million, which was HK\$535 million higher than 2014/15.

Initiatives in Planning and Construction of New Housing Estates

Planning and Design

- In 2015/16, we completed the construction of around 14 300 PRH units in a total of twelve projects.



▲ Lei Yue Mun Estate



▲ Hung Fuk Estate

- To improve the design and construction process of new housing development, we seek to adopt advanced information technologies where applicable, including Building Information Modelling, Geographic Information System, Housing Construction Management Enterprise System, Radio Frequency Identification, Development and Construction Site Mobile System.
- This year, we have conducted the pilot trial on the integration of RFID with BIM through Cloud technology in the development project at Tuen Mun Area 54 Site 2 (Yan Tin Estate), for enhancing the efficiency of logistic and supply chain management of precast construction.

Optimising Resources Use

- The HA lists of contractors, sub-contractors and service providers have been maintained per our pre-qualification requirements
- We reviewed the monitoring mechanism for contractors who are not on the HA-list and formulated a set of management procedures to review and report their service quality.
- We have continued to monitor and review the requirements for Trade Tested Worker in response to the industry trends, and to implement the streamlined Supplementary Labour Scheme (SLS) in HA's new works contracts. In the year under review, our active contractors had made ten applications to the scheme and two were successful.

Initiatives in Existing Housing Estates

Optimising the Allocation of Housing Resources

- In 2015/16, our frontline staff completed the checking of some 211 500 biennial declarations of income/assets under the Housing Subsidy Policy, Policy on Safeguarding Rational Allocation of Public Housing Resources and other tenancy management policies.
- About 2 100 households were rehoused under the Territory-wide Overcrowding Relief Transfer Scheme and the Living Space Improvement Transfer Scheme.

Maximising Resources Efficiency

- We have commenced the Total Maintenance Scheme (TMS) for over 15 estates during the year. 214 PRH estates received our Responsive In-flat Maintenance Service (RIMS) as at March 2016.
- We continued to implement the stage 2 Life Addition Programme, with two lifts completed in the year and 11 lifts under construction. We had replaced 101 lifts of over 25 years of service under Lift Modernisation Programme 2015/16.

Initiatives in Office at Work

- With the aid of latest IT services and software products, we have achieved accreditations in three main areas, namely application software development maintenance, IT services management, and information security management.
- We launched the Human Resource Management System in August 2015.
- We completed the upgrade of the aged network at Data Centre in March 2016.
- We established a common e-Services platform to provide internet services for the general public, public housing tenants and applicants. The migration to the new e-Services platform and decommission of the old platform were completed in June 2015.



Message from the Chairman

Welcome to the Hong Kong Housing Authority's (HA) Sustainability Report 2015/16 with the theme of ***“Smart Living in Sustainable Community”***. This report is an important communication channel with our stakeholders, aimed at demonstrating our long lasting commitment to the community, reviewing our actions in the light of the latest public housing policies, and supporting the Government's pledge to the global agenda on sustainable development.



Housing remains the top priority among livelihood issues in Hong Kong. At present, our public rental housing (PRH) stock exceeds 750 000 units, accommodating about one-third of the population. With this in mind, we are fully committed to supporting the sustainable growth of the communities across public housing in Hong Kong, and protecting the environment throughout the construction and management of our estates. Internally, we upgrade our operational efficiency through the adoption of the latest smart technologies, and care for the safety and competence development of our workforce and site workers.

We devote great effort to exploring new techniques and improving existing means to develop our estates in a smarter way. In almost all disciplines and aspects of planning, design and construction of new projects, we have applied the Building Information Modelling (BIM) to increase efficiency and reduce wastage. We have started to implement our innovative “5D BIM” with “time” and “cost” added to the traditional three dimensions, in addition to the integration of BIM and Geographic Information System (GIS).

The latest Radio Frequency Identification (RFID) technology has also been widely adopted in our construction process. We are able to track the delivery of concrete cubes and selected building components to our construction sites, and monitor the disposal of inert construction and demolition waste with wireless signals. Since 2014, we have applied RFID to the maintenance of selected estate facilities in seven pilot estates, and completed a pilot scheme of expanding the use of RFID in the maintenance work of additional outdoor facilities in 2015. In addition, we have conducted the pilot trial on the integration of RFID with BIM through Cloud technology for enhancing the efficiency of logistics and supply chain management of precast construction in the development project at Tuen Mun Area 54 Site 2 (Yan Tin Estate).

For office operations, we continue to apply new electronic document systems where feasible to save resources and increase efficiency. A Housing Electronic Plan Submission System (HePlan) has commenced its trial use in December 2015. This system allows users to make online submissions for HA projects to our Independent Checking Unit (ICU).

This year, we have launched the Development and Construction Site Mobile System (DCSMS) Phase 1 for conducting site inspections during construction and heightening alert on site safety. Phase 2 of DCSMS will commence in 2016/17 to enhance the Occupational Injury and Disease Surveillance System on incident reporting. To maintain the site safety awareness of our staff and contractors, we plan to adopt the “Safety Alert Apps” for mobile devices and RFID technology for registering site safety matters.

To enhance a smart living environment in our estates, we provide a two-level lighting control system in all domestic blocks of new works projects, as well as electric vehicles charging facilities in indoor car parks of all new estates under design. Free Wi-Fi services are available at the ground floor lift lobby and some external areas in most of our existing and new estates. We have installed the “Smart Meter” monitoring system at the main entrance lobby of all new domestic blocks to raise the energy awareness of the residents.

We have pledged to maintain our estates in a more sustainable way. Zero Irrigation System has been installed in suitable new works projects such as Hung Fuk Estate to reuse storm water for irrigation. We have completed the design of the second generation acoustic balconies to mitigate traffic noise, for implementation in new projects where necessary. For the existing estates, we have completed the replacement works of the electromagnetic ballast with electronic type for the public light fittings in all estates by September 2015 for energy saving. We continue to collaborate with green groups in launching a long-term community education programme, known as Green Delight in Estates, to promote smart environmental-friendly habits among tenants such as sharing and exchange of second-hand household goods, and bringing one’s own bag/bottle/box, etc.

This year, I am glad that we have achieved “Provisional Platinum” rating under BEAM Plus version 1.2 for New Building for our PRH development at Ex-Kwai Chung Police Married Quarters, as well as “Final Platinum” rating under BEAM Plus for Existing Buildings for our Kwai Shing West Estate. In April 2015, we successfully completed certification of the ISO 50001 Energy Management System for all existing public housing estates, in addition to all new works projects.

With the involvement of our HA members and concerted effort of our staff, we are confident in meeting future challenges in public housing planning, development and management, in support of the sustainable development of Hong Kong.

Professor Anthony Cheung Bing-leung, GBS, JP
Chairman, The Hong Kong Housing Authority
January 2017



About This Report

This is the eleventh edition of the Sustainability Report publicised by the Hong Kong Housing Authority (HA), **Smart Living in Sustainable Community**. This Report highlights HA's major sustainability commitments and performance in the areas of environmental, social and economic aspects and features HA's governance structure, management approaches, operations, activities and sustainability initiatives. It also summarises HA's performance and future plans in maintaining and providing local public housing programme in a sustainable manner for Hong Kong.

Report Scope

This Report highlights the annual achievements and progress of HA's sustainability performance from 1 April 2015 to 31 March 2016 (unless otherwise mentioned in the Report). It makes references to HA's sustainability objectives and targets regarding planning and construction of new housing developments, management and maintenance of the existing public rental housing estates and; as well as the operations of our own office.

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

Criteria

This Report is prepared in accordance with the internationally recognised [Global Reporting Initiative \(GRI\) G4 Sustainability Reporting Guidelines](#) Core option. The GRI Content Index at the end of this chapter illustrates how all the sections in this Report are linked to the relevant GRI indicators.

To facilitate the preparation of the report content, we have engaged a wide range of stakeholder groups including staff, tenants, contractors and green groups through surveys and interviews. With reference to the stakeholder engagement results concluded in the past exercises, we came up with the material aspects and the respective boundaries to be covered in this Report.

We welcome stakeholder's 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 the latter 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.

GRI Content Index

Corresponding GRI indicators denoted in each section are tabulated below.

General Standard Disclosures

General Standard Disclosures	Cross-reference/Comments	External Assurance
Strategy and Analysis		
G4-1 Statement from the most senior decision-maker of the organisation	Message from the Chairman	✓
Organisational Profile		
G4-3 Name of the organisation	About the Hong Kong Housing Authority	✓
G4-4 Primary brands, products and services	About the Hong Kong Housing Authority	✓
G4-5 Location of organisation's headquarters	About the Hong Kong Housing Authority	✓
G4-6 Number of countries where the organisation operates	Hong Kong only	✓
G4-7 Nature of ownership and legal form	Part of the Hong Kong SAR Government	✓
G4-8 Markets served	About the Hong Kong Housing Authority	✓
G4-9 Scale of the organisation	About the Hong Kong Housing Authority	✓
G4-10 Number of Employees	About the Hong Kong Housing Authority	✓
G4-11 Percentage of employees covered by collective bargaining agreements	None. There is no collective bargaining legislation exists in Hong Kong but we have maintained various staff engagement channels.	✓
G4-12 Organisation's supply chain	About the Hong Kong Housing Authority	✓
G4-13 Significant changes during the reporting period regarding size, structure, ownership or organisation's supply chain	During the reporting period, there was no significant change in the scope, boundary and measurement methods from previous reports.	✓
G4-14 Explanation of whether and how the precautionary approach or principle is addressed by the organisation	About the Hong Kong Housing Authority	✓
G4-15 Externally developed economic, environmental, and social charters, principles, or other initiatives to which the organisation subscribes or endorses	Environmental Performance Social Performance Economic Performance	✓

General Standard Disclosures	Cross-reference/Comments	External Assurance
G4-16 Memberships in associations and/or national/international advocacy organisations	About the Hong Kong Housing Authority	✓
Identified Material Aspects and Boundary		
G4-17 Entities included in the organisation's consolidated financial statements or equivalent documents	About the Hong Kong Housing Authority	✓
G4-18 Process for defining report content and the aspect boundaries	About This Report About the Hong Kong Housing Authority	✓
G4-19 Material aspects identified in the process for defining report content	About the Hong Kong Housing Authority	✓
G4-20 Aspect boundary within the organisation for each material aspect	About the Hong Kong Housing Authority	✓
G4-21 Aspect boundary outside the organisation for each material aspect	About the Hong Kong Housing Authority	✓
G4-22 Explanation of the effect of any re-statements of information provided in earlier reports, and the reasons for such re-statement	There is no restatement of information and data provided in our earlier sustainability reports herein.	✓
G4-23 Significant changes from previous reporting periods in the scope and boundary	About This Report	✓
Stakeholder Engagement		
G4-24 List of stakeholder groups engaged by the organisation	About This Report	✓
G4-25 Basis for identification and selection of stakeholders with whom to engage	About the Hong Kong Housing Authority	✓
G4-26 Approaches to stakeholder engagement, including frequency of engagement by type and by stakeholder group	About This Report	✓
G4-27 Key topics and concerns that have been raised through stakeholder engagement, and how the organisation has responded to those key topics and concerns, including through its reporting	About the Hong Kong Housing Authority	✓
Report Profile		
G4-28 Reporting period	About This Report	✓
G4-29 Date of most recent previous report	About This Report	✓
G4-30 Reporting cycle	About This Report	✓
G4-31 Contact point for questions regarding the report or its contents	Feedback	✓
G4-32 GRI Content Index, the 'in accordance' option the organisation has chosen and the reference to the External Assurance Report if any	About This Report	✓
G4-33 Policy and current practice with regard to seeking external assurance for the report	About This Report Verification Statement	✓

General Standard Disclosures	Cross-reference/Comments	External Assurance
Governance		
G4-34 Governance structure of the organisation	About the Hong Kong Housing Authority	✓
Ethics and Integrity		
G4-56 Organisation's values, principles, standards and norms of behaviour	About the Hong Kong Housing Authority	✓

Specific Standard Disclosure

Material Aspects	Disclosures on Management Approach (DMA) and Indicators	Cross-reference/Comments	External Assurance
Economic Performance	DMA	Economic Performance	✓
Economic Performance	G4-EC1 Direct economic value generated and distributed	Economic Performance	✓
Indirect Economic Impacts	DMA	Economic Performance	✓
Indirect Economic Impacts	G4-EC8 Significant indirect economic impacts, including the extent of impacts	Economic Performance	✓
Procurement Practices	DMA	About the Hong Kong Housing Authority	✓
Procurement Practices	G4-EC9 Proportion of spending on local suppliers at significant locations of operation	About the Hong Kong Housing Authority	✓
Materials	DMA	Environmental Performance	✓
Materials	G4-EN1 Materials used by weight or volume	Environmental Performance	✓
Energy	DMA	Environmental Performance	✓
Energy	G4-EN3 Energy consumption within the organisation	Environmental Performance	✓
Energy	G4-EN4 Energy consumption outside of the organisation	Environmental Performance	✓
Water	DMA	Environmental Performance	✓
Water	G4-EN8 Total 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 outstationed offices were excluded since outstationed offices include the consumption by other users and the usage in common areas, resident car parks and shopping facilities, etc.	✓

Material Aspects	Disclosures on Management Approach (DMA) and Indicators	Cross-reference/Comments	External Assurance
Biodiversity	DMA	Environmental Performance	✓
Biodiversity	G4-EN11 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 2015/16 were situated away from areas of high biodiversity value and had no significant impact on the biodiversity.	✓
Emissions	DMA	Environmental Performance	✓
Emissions	G4-EN15 Direct greenhouse gas (GHG) emission (Scope 1)	Environmental Performance	✓
Effluents and Waste	DMA	Environmental Performance	✓
Effluents and Waste	G4-EN23 Total weight of waste by type and disposal method	Environmental Performance	✓
Environmental - Compliance	DMA	Environmental Performance	✓
Environmental - Compliance	G4-EN29 Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations	There are no significant fines and non-monetary sanctions for non-compliance with environmental laws and regulations during 2015/16.	✓
Transport	DMA	Environmental Performance	✓
Transport	G4-EN30 Significant environmental impacts of transporting products and other goods and materials for the organisation's operations, and transporting members of the workforce	Environmental Performance	✓
Labour/ Management Relations	DMA	Social Performance	✓
Labour/ Management Relations	G4-LA4 Minimum notice periods regarding operational changes, including whether these are specified in collective agreements	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	DMA	Social Performance	✓
Occupational Health and Safety	G4-LA6 Type of injury and rates of injury, occupational diseases, lost days, and absenteeism, and total number of work-related fatalities, by region and by gender	Social Performance	✓
Training and Education	DMA	Social Performance	✓

Material Aspects	Disclosures on Management Approach (DMA) and Indicators	Cross-reference/Comments	External Assurance
Training and Education	G4-LA9 Average hours of training per year per employee by gender, and by employee category	Social Performance	✓
Training and Education	G4-LA11 Percentage of employees receiving regular performance and career development reviews, by gender and by employee category	100% of HA staff[1] received performance appraisal during the reporting period, and there is no distinct arrangement in terms of gender.	✓
Non-discrimination	DMA	Social Performance	✓
Non-discrimination	G4-HR3 Total number of incidents of discrimination and corrective actions taken	There was one substantiated complaint of discrimination received in 2015/16. Disciplinary actions were taken against officers with substantiated misconduct.	✓
Freedom of Association and Collective Bargaining	DMA	About the Hong Kong Housing Authority	✓
Freedom of Association and Collective Bargaining	G4-HR4 Operations and suppliers identified in which the right to exercise freedom of association and collective bargaining may be violated or at significant risk, and measures taken to support these rights	About the Hong Kong Housing Authority	✓
Anti-corruption	DMA	About the Hong Kong Housing Authority	✓
Anti-corruption	G4-SO5 Confirmed incidents of corruption and actions taken	About the Hong Kong Housing Authority	✓
Society - Compliance	DMA	Social Performance	✓
Society - Compliance	G4-SO8 Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations	Social Performance	✓

Notes:

[1] Including civil servants and HA contract staff.



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. Housing Department (HD) acts as an executive arm.

Our Vision, Mission and Core Values

Our Vision

To help low-income families with housing need gain access to affordable housing.

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 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 environment-friendly, we incorporate many 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, reduce energy consumption in the daily operation of the public rental housing, and enhance construction safety to protect the well-being of our business partners and the general public.

We have well defined our strategies and priorities for various sustainability aspects, details of which are highlighted below:

Our Strategy for Sustainable Housing

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

Our Priority in Environmental Sustainability

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

Our Priority in Social Sustainability

Corporate Social Responsibility has become an integral part of our corporate policy and daily work. The HA prioritised public housing to those who are in need. We are committed to providing a safe, hygienic and affordable living environment to 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 with the supply chain.

Our Priority in 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. We have ascertained the building sustainability performance of our existing PRH estates by registering the Hong Kong Quality Assurance Agency Sustainable Building Index (SBI) Scheme since 2012/13. This year, we have selected ten estates, containing about 78 housing blocks representing the majority of the standard HA's block designs, for enrolment in the SBI Scheme. We successfully obtained the SBI Verified Mark for all these estates in March 2016.

Our Role and Services

The HA plans, designs, builds, manages and maintains different types of public housing, including rental housing estates, interim housing estates, and transit centres. Besides, the HA owns and operates some flatted factories and ancillary commercial and other non-domestic facilities. The HA also provides subsidised sale flats for qualified persons.

The HA plays an advisory role on various public housing issues for the government, while the HD is the executive arm to realise our public housing programme. We work closely with other government departments when dealing with local public housing matters.

We actively support community voluntary initiatives 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, the HA also participated in activities organised by a number professional organisations as listed below.

- Asia Carbon Footprint Network
- Asia Pacific Network for Housing Research
- BEAM Society Limited
- British Standards Institution
- Construction Industry Council
- Council on Tall Buildings & Urban Habitat
- Eastern Regional Organization for Planning and Housing
- Green Council
- Hong Kong Green Building Council
- International Code Council
- International Concrete Repair Institute
- International Council for Research & Innovation in Building & Construction
- Occupational Safety & Health Council
- The Hong Kong Institution of Engineers
- The Lighthouse Club
- World Green Building Council

Housing Stock and Production

As at the end of March 2016, we were providing accommodation to about two million people who live in around 750 300 PRH units in 172 PRH estates across Hong Kong.

In 2015/16, we completed construction of around 14 300 PRH units. Twelve projects were completed including:

- Long Ching Estate (Yat Long House and Ching Long House);
- Shui Chuen O Estate Phase 2 and Phase 4 (Ming Chuen House, Yuet Chuen House and Ying Chuen House and Ling Chuen House);
- So Uk Estate Phase 1 (Orchid House, Marigold House, Peony House, Cedar House, Willow House, Cherry House and Camellia House);
- Lower Ngau Tau Kok Estate Phase 2 (Kwai Wah House);

- On Tat Estate Phase 1 and Phase 2 (Oi Tat House, Shing Tat House, Chun Tat House, Yin Tat House, Hau Tat House, Him Tat House and Ching Tat House);
- Hung Fuk Estate Phases 1 to 3 (Hung Foon House, Hung Lok House and Hung Long House);
- Po Heung Estate (Po Hing House and Po Shun House); and
- Lei Yue Mun Estate Phase 3 (Lei Wong House)

In response to the pressing needs for PRH, our rolling five-year Public Housing Construction Programme targets to supply around 77 100 PRH units and 10 600 subsidised sale flats in the five-year period from 2014/15 to 2018/19.



▲ Shui Chuen O Estate



▲ So Uk Estate



▲ Lower Ngau Tau Kok Estate



▲ On Tat Estate

Infrastructure

In 2015/16, we have awarded five foundation contracts and eleven new building contracts.

We always look for opportunities to create user- and environment-friendly public housing. 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 development, in order to provide a connected and sustainable living environment for our tenants and the community.

Commercial Properties

In 2015/16, we completed 25 100 square metres of retail facilities, and 530 car parking spaces. As at the end of March 2016, our total non-domestic stock included:

- around 218 700 square metres of commercial and retail space
- around 28 700 car parking spaces
- around 202 100 square metres of factory premises
- around 2 154 700 square metres of community, education and welfare facilities
- around 405 700 square metres of other space, used for miscellaneous purposes

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Human Resources

Staff Resources

We regularly review the labour plan and human resources management policy. As at the end of March 2016, we had 9 110 staff, including 8 444 civil servants and 666 contract staff, representing a slight increase of 2.3% from the previous year.

Total Workforce (as at 31 March 2016)

Total number of staff	9 110	
Breakdown by employment type	Civil servants:	8 444
	Contract staff:	666
Breakdown by strength	Directorate Staff:	59
	Professional Staff:	877
	General Staff:	5 148
	Site Staff:	1 754
	Technical Staff:	1 272
Breakdown by employment contract	Full-time:	9 110
	Part-time:	N/A

Total number of staff	9 110
Breakdown by gender	Male: 5 729
	Female: 3 381
Breakdown by age	Age 20-29: 751
	Age 30-39: 1 958
	Age 40-49: 2 385
	Age 50-59: 3 882
	Age 60 or above: 134

New Employee Hires and Employee Turnover

	Male	Female
New employee hires [1]		
Age 29 or below:	165	100
Age 30-39:	132	70
Age 40-49:	40	31
Age 50-59:	16	9
Age 60 or above:	0	0
Employee turnover [2]		
Age 29 or below:	28	29
Age 30-39:	28	33
Age 40-49:	24	27
Age 50-59:	80	79
Age 60 or above:	205	53

Notes:

[1] The above figures involve staff (position as at 31.3.2016) with their 1st appointment date falling within the period from 1.4.2015 to 31.3.2016.

[2] The figures include staff transferred out of the Department from 1.4.2015 to 31.3.2016.

Training

Throughout the reporting year, we arranged 908 training courses and a total of 32 663 trainee days were involved.

Training Hours Breakdown

	No. of staff	No. of staff attended training	Training hours received (hours)	Training hours per staff (hours)
By Strength				
Directorate Staff	59	54	1 377	23.3
Professional and Technical Staff	2 149	2 064	59 661	27.8
General and Site Staff	6 902	5 790	167 605	24.3
By Gender				
Male	5 729	5 028	147 608	25.8
Female	3 381	2 880	81 035	24.0
Training Regarding Human Rights				
Training on policies and procedures concerning aspects of human rights	9 110	309	1 042	0.1

Injury

Number of staff injury cases [3]	17
Staff sick leave granted for staff injury cases [4]	736 days

Notes:

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

[4] The number includes sick leave days granted in 2015/16 but taken in 2016/17.

In 2015/16, we employed around 750 new staff to fill civil service and HA contract posts and converted 38 contract staff posts into civil service positions. We adopt 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.

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

Staff Appointment, Remuneration and Benefits

The HA abide by requirements stipulated in the Basic Law for our staff appointment. 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 band, which will be adjusted annually according to the respective annual pay adjustment exercises and staff performance, 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 on staff's performance. In general, civil servants may have one increment annually in their respective rank scales and the contract staff may also be received a one-off merit payment annually based on their performance.

We offer various fringe benefits to staff with respect to their rank levels and terms of employment. These benefits include medical and dental treatment, housing benefits, annual leaves, retirement benefits, passage and education allowances.

Staff Integrity

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. These documents lay down the internal guidelines and requirements for the declaration of private investments, avoidance of conflict of interest, and acceptance of advantages and benefits.

We also issue internal circulars to stipulate procedures to deal with attempted bribe, allegations of corruption and Independent Commission Against Corruption's referrals. 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 2015/16, a total of 1 367 staff attended various anti-corruption courses. As a government body, we are fully committed to complying with all anti-corruption legislation. During the year, there was nil case of conviction in relation to corruption in HD.

Human Rights

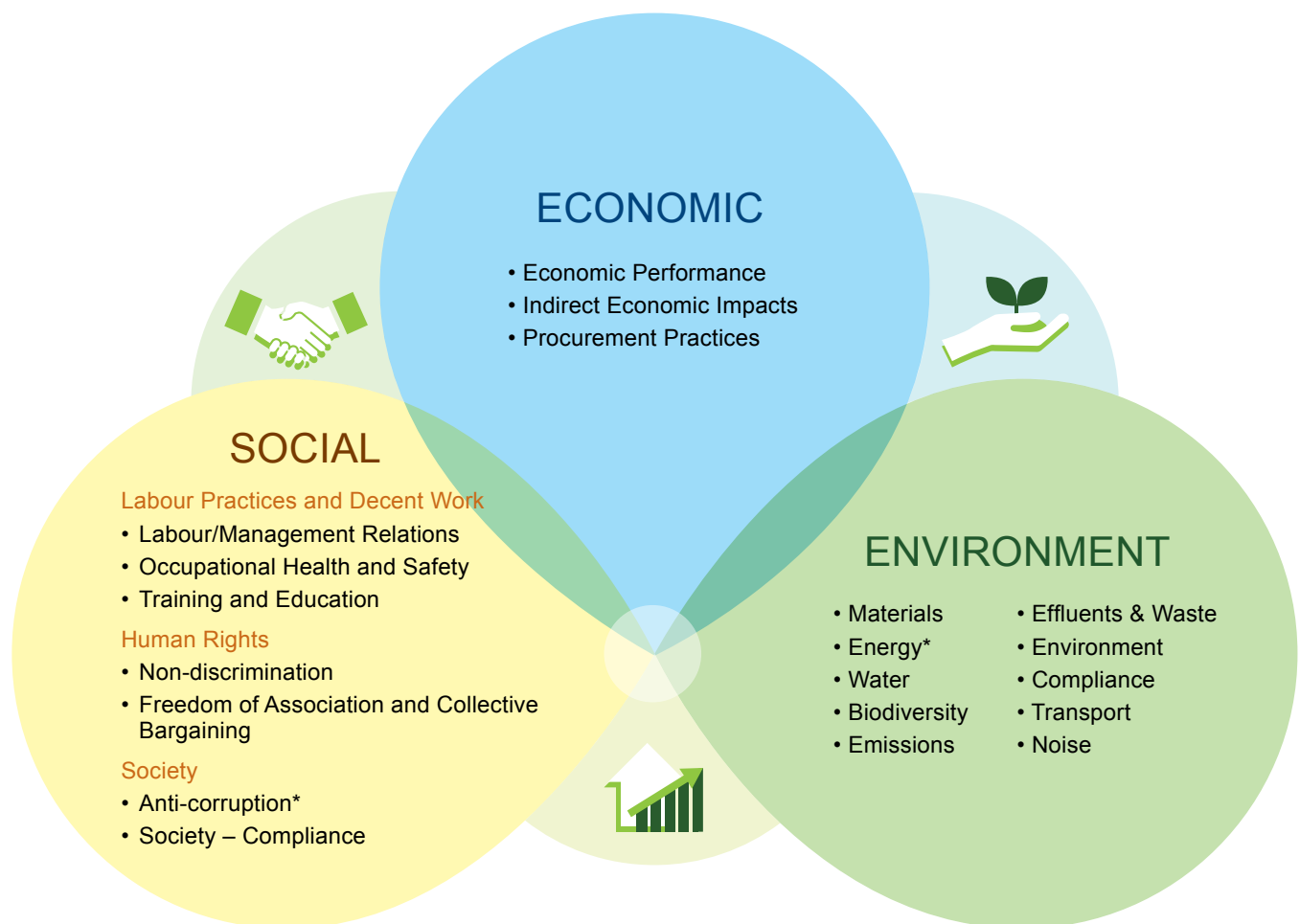
We believe all people are equally entitled to their human rights without discrimination. We therefore provide equal opportunities and fair treatment in terms of remuneration, fringe benefits, promotion and compensation for all our staff without discriminating individual's gender, ethnic group, age and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

Staff members are the foundation of our operations. We maintain close relationship and open communication between the management and staff to foster a dynamic and committed workforce. Our staff have the freedom to join staff associations and working groups. In 2015/16, there were a total of 33 staff associations or working groups and five Departmental Consultative Committees in the HD. In addition to our bi-weekly publication the "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.

Material Aspects

Our activities mainly involve building construction, estate management and maintenance. Each activity will have impact on the community in the aspects of environment, health, safety and society. To avoid, eliminate, minimise, manage and control potential risks arising from our daily operations proactively, we have adopted a systematic “plan-do-check-act” approach and introduced a series of initiatives to achieve sustainability in the 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.

We treasure views and comments from our stakeholders. Based on our daily operation, we have identified a list of stakeholders who may be interested in our sustainability performance. Following the stakeholder engagement exercises conducted in previous years, we have engaged one of our key stakeholder groups, the tenants, through meetings and survey to collect their views and feedback on our sustainability initiatives and performance during the year. Through the engagement exercises, we have identified a list of material aspects and their respective boundaries to be covered in this report. Taking a further step to manage the energy consumption by our piling and building contractors, we have started to collect their energy consumption in the course of the project delivery. Their energy consumption figures are also disclosed in the Report. List of our material aspects and the reporting boundaries are depicted below:



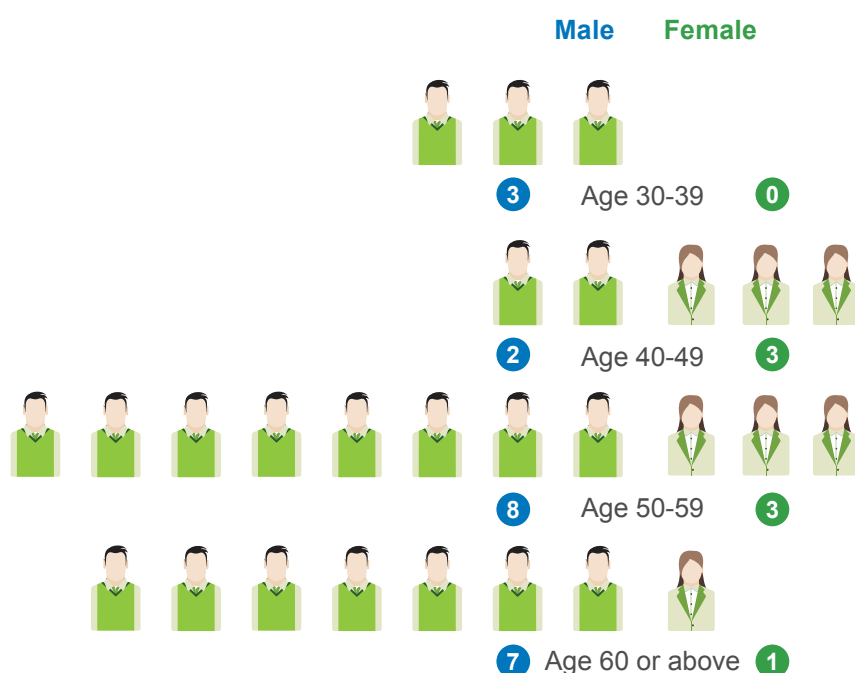
* The performance of HA’s contractors in the material aspects “Anti-corruption” and “Energy” has also been covered in this report.

Governance Structure and Management

Our Governance Structure

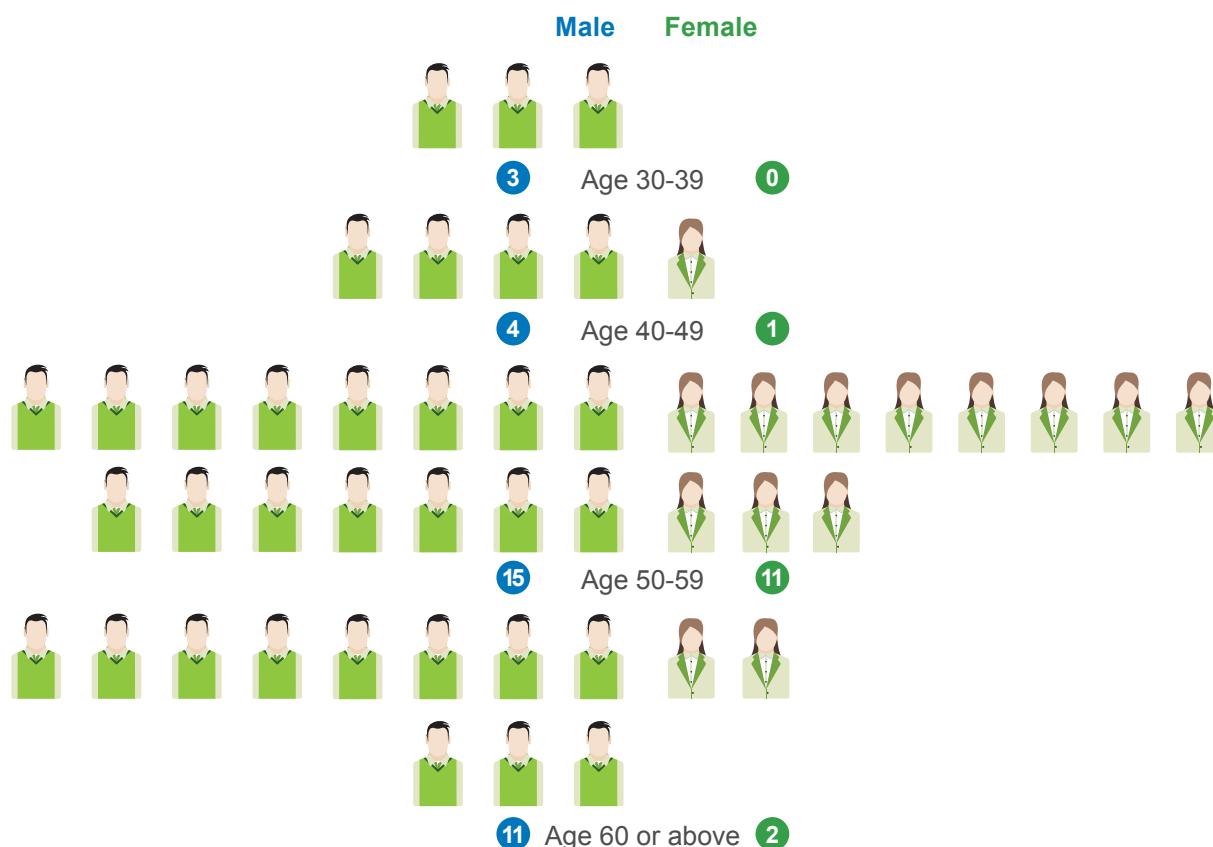
Apart from the Chairman and Vice-chairman, the HA has two official members and 27 non-official members. Appointments are made by the Chief Executive. All non-official members are appointed on an individual basis. The Secretary for Transport and Housing assumes the office of Chairman of the HA, while 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 will be set up when necessary. Details of our governance structure and the terms of reference of respective committees can be found in [our website](#).

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



The HD is serving as an executive arm of the HA to assist in the implementation of housing related policies. The HD 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 operation divisions, namely Strategy, Development & Construction, Estate Management and Corporate Services, which support the implementation of HA's policies in housing strategies, overall housing development, construction and estate management. The HD's organisation can be found in [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 at their workplace.
- 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 framework for continuous improvement, in order to take care of a wide range of public housing programmes. Providing a clear direction on our sustainability commitment and approach, these policies at both departmental level and divisional level have been widely communicated to and fully supported by our staff, services providers, materials suppliers and contractors.

Policies at Departmental Level

Environmental Policy

The Hong Kong Housing Authority is committed to continuously improving the environmental standards in the provision of public housing and related services. In achieving this objective, the Housing Authority has 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 in planning and design, construction and demolition, marketing and estate management activities;
- To minimise environmental impacts (air, dust, noise, waste and water) to residents and public from the Housing Authority'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 Hong Kong Housing Authority (HA) fully recognises safety and health at work as an integral part of our activities. The HA is dedicated to provide and maintain 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, observing all statutory requirements and guidelines that are related to their works.

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 health working environment; and
- To pursue continual improvement in occupational safety and health by regularly reviewing our performance.

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

We have developed an Environmentally Responsible Procurement Policy to provide guidelines regarding procurement of products and services, and lay down the foundation of our green procurement requirements. We encourage all staff members to follow the Environmentally Responsible Procurement Policy and to 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 the supply chain management, we work and communicate closely 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 Hong Kong Housing Authority Environmental Policy, the HA is committed to minimise the use of resource and achieve cost effectiveness in its operation. 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 environmental management plan as part of our ongoing supervision of works;
- Providing feedback, advice and facilitate training to 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, HA environmental procurement policy and contribute to HA's environmental objectives; and
- Establishing systems, targets and action plans for effective environmental procurement and regular reports on performance.

Policies at Divisional Level

Apart from following the policies at departmental level, individual divisions/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 ISO 14001 EMS certification for maintenance and property management for all existing estates in May 2011 and July 2013 respectively. The Corporate Services Division has been certified to ISO 14001 EMS for the provision of property management functions in the HA Headquarters in December 2013. The Independent Checking Unit also achieved 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 has developed and rolled out an Energy Management System (EnMS) according to ISO 50001 standard in

December 2011, and obtained external certification in June 2012. The EMD has selected Kwai Shing West Estate as a pilot for the implementation of the ISO 50001 EnMS, and the Estate was certified in June 2013. With the successful 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 in DCD

In moving towards our goal of sustainable operations in meeting the customer and community expectations, 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; and
- comply with applicable legal requirements and other requirements to which we subscribe that relate to our energy use, consumption and efficiency.

In addition, we support the purchase of energy-efficient products and services, and the design for energy performance improvement.

Energy Policy in EMD

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

- To regularly review and seek for 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 the 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 framework on management of the divisional social issues.

Social Responsibility Policy

We recognise social responsibility as an integral part of our long established caring value. Social responsibility is the way we have done 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 to the rule of law and international norms of behaviour for environmental or social safeguards; and
- Be respectful and supportive to 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

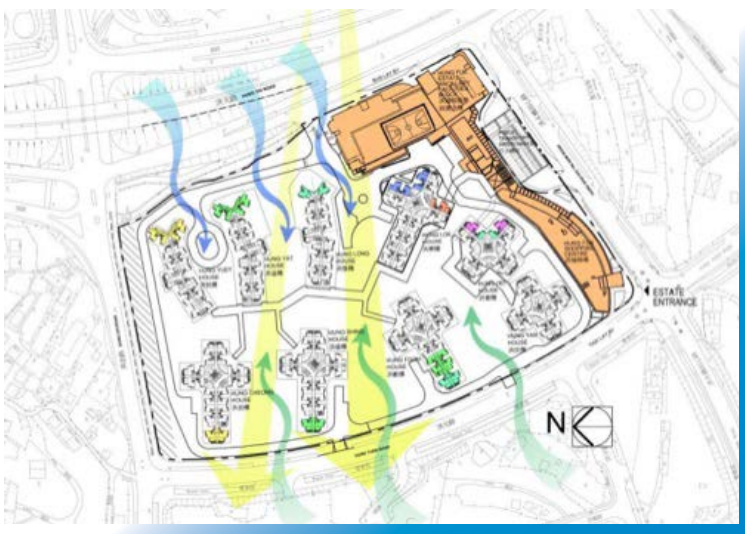
The Hong Kong Housing Authority (HA) endeavours to provide quality and environment-friendly housing estates for the public. We actively manage different environmental aspects in our estates and offices to achieve energy efficiency, resource conservation, better air quality and more greening.

Initiatives in Planning and Construction of New Housing Estates

Green Design and Construction

Conducting Micro-climate Studies

We apply micro-climate study to our site planning and design stages for public housing. The study makes use of computer simulations with prior calibration of software based on the local climatic conditions to have better understanding on how new projects will affect the environment nearby. It takes into account a wide range of environmental factors including wind speed and direction, natural ventilation, pollutant dispersion, natural daylight and solar heat gain, etc. During the year, we conducted micro-climate studies in 40 public housing projects and Air Ventilation Assessment in 30 projects to enhance wind environment, natural ventilation, mitigate solar heat gain, and use of daylight in housing blocks and external areas.



- ◀ New Developments with Detailed Design to Optimise Natural Ventilation

Taking advantages of the unique characteristics of individual site, we have adopted passive design in our public housing projects to enhance environmental performance and continued to explore other green design initiatives in our development projects.

Adopting Low Carbon Building Design

In support of the Government's target of reducing 50%-60% greenhouse gas (GHG) emissions by 2020 relative to the emission level in 2005, we have put substantial efforts to apply various green building strategies during the design and construction stages to cut down carbon emissions of our public housing projects.

We have applied Carbon Emission Estimation (CEE) at the planning and design stage for all new development projects since 2011 to benchmark the carbon emission level among our projects. CEE provides the GHG emissions of a public housing block throughout the entire expected life in terms of carbon dioxide equivalent. During the year, we have carried out CEE for 12 projects during the design stage. Carbon emissions of these domestic blocks were compared with that of the New Harmony 1 Option 6 block and Kai Ching Estate, which are benchmarks for comparison. Since implementation, it is estimated that we have achieved an average of about 13% reduction in carbon emission as compared with the baseline figure of New Harmony 1 Option 6 block in terms of construction floor areas.

Utilising Green Materials and Products

We have specified to use Ground Granular Blast Furnace Slag (GGBS) for precast facades and precast staircase in all new projects starting from the first quarter of 2016 to reduce concrete usage and enhance utilisation of recycled materials. We are also studying the use of GGBS in the production of precast beams, precast refuse chutes and precast plank of semi-precast slab. We have investigated the possibility of using GGBS to replace 60% of the cement in massive concrete, such as pile caps. However, due to limited supply of GGBS, GGBS could not be used for in-situ concrete.

Apart from concrete, we continued to apply installations and specifications to conserve resources, including the use of timber from certified sustainable sources for manufacturing of doors, Water Efficiency Labelling Scheme (WELS) registered plumbing fixtures, two-level lighting, grid-connected photovoltaic systems, etc. We also closely monitored the performance of mixer tap products to comply with the specified flow rate restrictions and keep updating the specification by consulting the Water Supplies Department on the results of the latest flow rate tests. The latest specification are documented in our Specification Library in December 2015.



▲ Precast Façades with GGBS



▲ Ground Granulated Blastfurnace Slag (GGBS)

In addition to the above green materials and components, we apply BEAM Plus specification clauses in all new works projects. We defined and updated the specification for the use of the following items in our contract requirements to enhance environmental footprint of our housing estates:

- pulverized 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 works for landscape and associated external works;
- GGBS as cement replacement material in concrete for the manufacture of precast facades in domestic blocks;
- concrete paving blocks with recycled glass cum aggregates replace concrete paving blocks for new building and civil engineering contracts;
- marine mud excavated at site stabilized by cement treatment to useful backfilling material;
- timber from sustainable sources for temporary works; and
- modular hoarding using bolt-and-nut connections for re-use in projects.

To implement effective upstream control of the quality of building materials and components in manufacturing factories, we had previously implemented product certification for ten selected types of building materials. Such certification was carried out with reference to the Product Conformity Certification Schemes, developed and published by respective professional bodies. During the year, we are preparing to implement certification for the eleventh type of material – paint products. Consultation sessions with paint suppliers were in progress to discuss the time of implementation.

Environmentally Friendly Construction Practices

During the construction phase, we require our contractors to adopt green construction methods that go beyond the compliance with statutory requirements. We laid down various requirements in different construction stages and projects covering site formation, demolition, foundation, building of superstructure and civil engineering works in order to enhance contractors' environmental performance. These requirements include:

- Submitting and implementing environmental management plans;
- Implementing ISO 9001 Quality Management Systems (QMS) and ISO 14001 Environmental Management Systems (EMS);
- Requiring Building (New Works Category) and Piling Contractors to be certified ISO 50001 Energy Management Systems (EnMS);
- Banning the use of incandescent light bulbs for temporary lighting on site;
- Using generators with Quality Powered Mechanical Equipment (QPME) labels;
- Installing water recycling facilities;
- Restricting vehicle speed on site;
- Adopting hard paved construction;
- Using precast concrete components;
- Implementing single board hoarding;

- Providing solar hot water heaters in workers' shower areas;
- Using food waste composting facilities in remote sites with canteens or catering services;
- Providing greening on site;
- Using electric vehicles (EVs) as contract cars within specified round trip distance; and
- Recovering undamaged timber pallets for locally manufactured pavers for reuse or recycling.



◀ Precast Facade



▲ Precast Staircase



▲ Hard Paved Construction

We have also developed suitable standards for the application of various innovative green practices. For example, we conducted a pilot run of using precast segmental roof water tank for reviewing its effectiveness, the result was satisfactory. We therefore have standardised its construction details for application in future projects.

Meanwhile, we are exploring the application of other innovative measures including 5D Building Information Modeling (BIM) and structural soil in Anderson Road Sites A and B Phases 1 and 2 (On Tai Estate). The 5D BIM adds two more dimensions: time and cost in traditional BIM to strengthen project management. We have completed 53% of the 5D BIM modeling for the Anderson Road project during the year and target to complete the model by the end of 2016. Structural soil composition facilitates compliance with load-bearing requirements and allows root growth for vegetation. We have tested various mixes of soil in laboratory and will carry out field tests in 2016/17 for the Anderson Road project.

We formally launched a database to indicate the availability of non-inert construction and demolition recyclable materials excavated from construction sites for collection by recyclers to facilitate waste recycling two years ago. The database is now available on the HA website and updated on a monthly basis.

Green Building Recognition

We strive to incorporate green features into our public housing. We have laid down requirements in the contract specifications to ensure that all our new projects should be ready to achieve “Gold” rating under the Building Environmental Assessment Method Plus (BEAM Plus) scheme run by the Hong Kong Green Building Council. During the year, we registered and completed provisional assessment for seven new works projects in the BEAM Plus Scheme. In 2015/16, public rental housing (PRH) development at Ex-Kwai Chung Police Married Quarters achieved “Provisional Platinum” rating under BEAM Plus version 1.2.

Resource Conservation

Holistic Energy Management

We understand the importance of implementing an effective EnMS to improve energy efficiency. We have started to implement EnMS in accordance with the ISO 50001 EnMS standard for our housing development projects since 2011. With the EnMS in place, we estimated the communal energy consumption associated with their operation phase for each of our new domestic blocks at the design stage and managed to figure out possible control measures to improve their energy performance. During the year, we have applied the energy estimation approach to 12 new public housing developments.

Since 2013, we implemented EnMS in existing PRH estates and attained ISO 50001 certification in 2 phases. The extended certification for all PRH estates was awarded in April 2015. We would continue to maintain this EnMS in existing PRH estates to enhance their energy efficiency.

To extend our circle of influence, we mandated the contractors to apply for admission to the HA Lists of Building (New Works Category) and Piling Contractors on or after 1 January 2014 to be certified to ISO 50001. For contractors who were already admitted to the HA Lists prior to 1 January 2014, they had to obtain certification on or before 31 December 2015.

We continued to closely monitor the energy consumption of our contractors. Data on their energy use were collected and analysed to gauge their energy performance.

Energy Consumption of Construction Contractors (April 2015 – March 2016)	Gigajoule (GJ)	%
Diesel consumption for construction activities	781 846	92.6
Diesel consumption for transportation of construction waste	40 595	4.8
Electricity consumption for construction activities	17 244	2.0
Gasoline consumption for contract cars	5 298	0.6
Total	844 982	100

Renewable Energy

As a pioneer to incorporate green features in housing development projects, we have adopted renewable energy as far as possible. For new rental domestic building blocks, we have installed grid-connected photovoltaic (PV) system where appropriate to provide at least 1.5% of the communal electricity consumption. In addition, we further promote the use of renewable energy by installing one to two solar-powered lights in all new housing developments.



▲ Photovoltaic Panels

Promoting Electric Vehicles

To support Government's policy in promoting the wider use of electric vehicles (EVs), we have provided EV charging facilities in the covered car parks of all new estates under design. As of the end of the year, we have already been equipped with standard EV charging facilities in about 200 parking spaces. As an incentive to promote the use of EVs, we have offered free parking for EVs for a maximum of two hours. In our development projects, we have also adopted specification on provision of EVs as contract cars.



▲ EV Charging Station

Energy Efficiency in Buildings

Following the promulgation of the new "Guidelines on the Design and Construction Requirements for Energy Efficiency of Residential Buildings" (the Guidelines) by the Buildings Department in 2014, we have aligned our design of new works projects with the prescribed requirements. We continued to improve design of our domestic blocks to achieve energy efficiency and to adopt natural ventilation according to the Guidelines.

During 2015/16, we have obtained 24 energy certificates under Energy Efficiency Registration Scheme for Buildings from the Electrical and Mechanical Services Department. This demonstrated our effort to meet energy efficiency requirements in different building installations.

For air-conditioning system, based on the evaluation of three pilot systems in Yau Lai Shopping Centre, Choi Tak Shopping Centre and Domain, we prepared a set of application criteria and guidelines to facilitate implementation of hybrid ventilation systems in suitable projects. Such system can save energy from air conditioning and mechanical ventilation systems. We also explored the use of foamed concrete panel at gable end wall for thermal insulation during the year. Initial findings indicated that such application was feasible in structural design. A mock-up test is being prepared to further study its effectiveness of thermal insulation in 2016/17.



▲ Lift Drives Installation at Kai Ching Estate

For lift systems, we have stipulated the use of regenerative power for lift motors of 18kW or above and energy efficient gearless lift drives in the latest specifications for new lift installations. During the year, we have completed the data collection and analysis for the lift system at Kai Ching Estate and Tak Long Estate, and the review of performance was finalised and the result was satisfactory. Further, we have adopted permanent magnet synchronous lift motor in some projects to further cut down energy consumption.



▲ LED Bulkhead Lights

For lighting system, we have been adopting LED bulkhead lights since early 2016 as the standard luminaires in public areas of domestic blocks of all new works projects under design. We have also implemented two-level lighting control system for barrier free access in domestic and non-domestic blocks of new works projects. Lightings can be operated by environmental lighting controls using motion sensors and on-demand switches with timer-controls.



▲ Two-level Lighting Control System Before (Left) and After (Right)

Smart Meter

We continued to provide “smart meter” monitoring system with displays at the main entrance lobbies of all new domestic blocks. The system shows information and peer comparison of communal and tenants’ consumption of electricity, gas and fresh water with the aim of arousing environmental awareness of tenants. During the year, we had prepared a new standard specification for implementation.



▲ Display of the Smart Meter Monitoring System at Ground Floor Lobby of Tak Long Estate

Water Conservation

To preserve our precious water resource, we have implemented a number of conservation initiatives in our developments.

For gardening, we have installed Zero Irrigation System (ZIS) in suitable new works projects and reviewed the effectiveness of the completed installations. ZIS consists of a Sustainable Urban Drainage System and Sub-irrigation Planting System to reduce water consumption in irrigation. For instance, we initiated the trial use of Zero Irrigation System (ZIS), along with Rainwater Harvesting System and Root Zone Irrigation, in Hung Fuk Estate to conserve the water resources and better manage irrigation water use.



▲ Zero Irrigation System

In Shui Chuen O Estate, we introduced an integrated water sensitive urban design which collected rainwater at high elevations and planted slope. Collected rainwater would be treated via bio-retention and held in storage tanks for plant irrigation.

For housing flats fixtures, we have promulgated specification to use water efficient installations, such as 6-litre single or dual flush water-closet suites, and plumbing fixtures registered under WELS of the Water Supplies Department.

Mitigating Environmental Impacts

Estate Ecology

We protect the ecology nearby our housing estate carefully by applying balanced ecological planning and design principles in all suitable projects. For instance, we conducted a plantation improvement study jointly with the University of Hong Kong for revitalising the existing low-eco plantation on the slopes at Long Shin Estate. We planted native tree seedlings on the slopes and are currently monitoring the results. We also co-ordinate with the Development Bureau on tree preservation and management works. New guidelines and contractual requirements are under development and we will engage our contractors through regular liaison channels.

We set out green design guidelines for public housing developments. The overall greening coverage target is to have at least 20% greening ratio in new estates and 30% for sites over two hectares. As a rule of thumb, the tree planting ratio is not less than one tree per 15 flats. In addition, we continued to closely monitor the cost effectiveness of the greening design and provisions in our new estates.

To facilitate sustainable gardening, we have experimented recycling of felled trees to produce gardening compost in Hung Fuk Estate. The results have been used to develop the criteria for selecting composting machine and the optimum application rate of wood waste and garden waste for the production of compost.

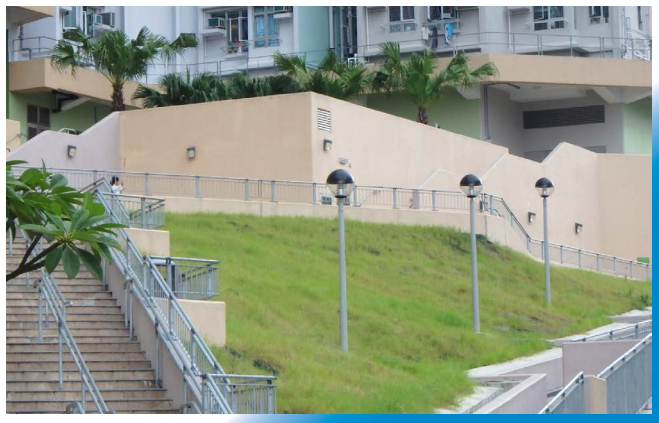


▲ Turning Felled Tree into Compost



▲ “Action Seedling” Programme

We have involved local residents in greening all new housing estates through the “Action Seedling” programme during the year. We have also introduced planting areas for community participation in three development projects to encourage residents to participate in gardening and planting works within their own estates for recreation and education purposes.



▲ Newly Formed Slopes after Green Treatment

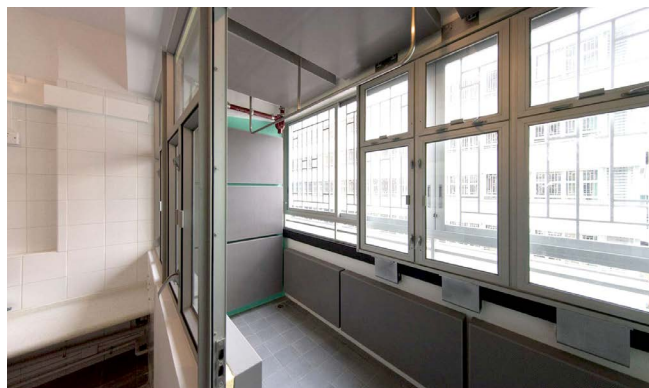
To create aesthetic values for residents, we proactively provide green treatment to newly formed slopes by hydroseeding, planting or other appropriate methods. During the year, green treatment was carried out in five projects with formed slopes, including Choi Yuen Road, Shui Chuen O Estate Phases 1 and 2, On Tat Estate and Long Shin Estate.

Noise Control

To minimise noise impact, we have been adopting different types of noise mitigation measures, including acoustic windows, acoustic balconies, acoustic fins and noise barriers, etc., in different projects to suit the site-specific characteristics and lessen the noise nuisance to the residents.



▲ 1st Generation Acoustic Balcony



▲ Project Adopting the Principle of the 2nd Generation Acoustic Balcony

We have completed the design of the second generation acoustic balconies in which a sliding screen is installed in front of the balcony door. Other auxiliary feature such as noise adsorptive material at the wall and ceiling of the balcony and inclined panel along the parapet would be provided for further noise mitigation enhancement. The second generation acoustic balconies will be implemented in new projects where necessary.



▲ Sliding Window

Air Quality Management

To reduce air pollutants in car parks and roads, we have been studying the use of bio-filtration system in different estates. We have completed the study on the use of bio-filtration system to reduce air pollutants in the car park at Cheung Sha Wan Estate with satisfactory result.

Bio-filtration Units ►



▲ Back to top

Initiatives in Existing Housing Estates

Environmentally Responsible Management and Maintenance

ISO 14001 Environmental Management System

Since 2010, we have started establishing an effective EMS for estate management in accordance with the internationally recognised ISO 14001 standard to better control, measure and improve our environmental performance. All our PRH estates obtained the ISO 14001 certifications for maintenance and property management in 2011 and 2013 respectively.



▲ Awareness Training Course for Management Frontline Staff Held in November 2015

During the year, we continued to implement the EMS in the planning, design, project management, contract administration of planned Maintenance and Improvement (M&I) Works, and property management services in existing estates to maintain continual improvement in our environmental performance.



▲ Kwai Shing West Estate

Green Recognition

To showcase our environmental management, we have been working on a pilot project to obtain certification for a selected existing PRH estate under the BEAM Plus for Existing Buildings. In the year under review, we have successfully obtained “Final Platinum” rating under the abovementioned scheme for Kwai Shing West Estate in the third quarter of 2015.

Energy Conservation and Carbon Management

ISO 50001 Energy Management System

Taking Kwai Shing West Estate as a pilot, we are the first organisation in Hong Kong obtained EnMS to ISO 50001 certification for existing residential buildings to enhance overall energy efficiency and energy performance. We have progressively extended the EnMS to cover all PRH estates in two Phases with the successful completion of the extended certification for Phases One and Two in August 2014 and April 2015 respectively.

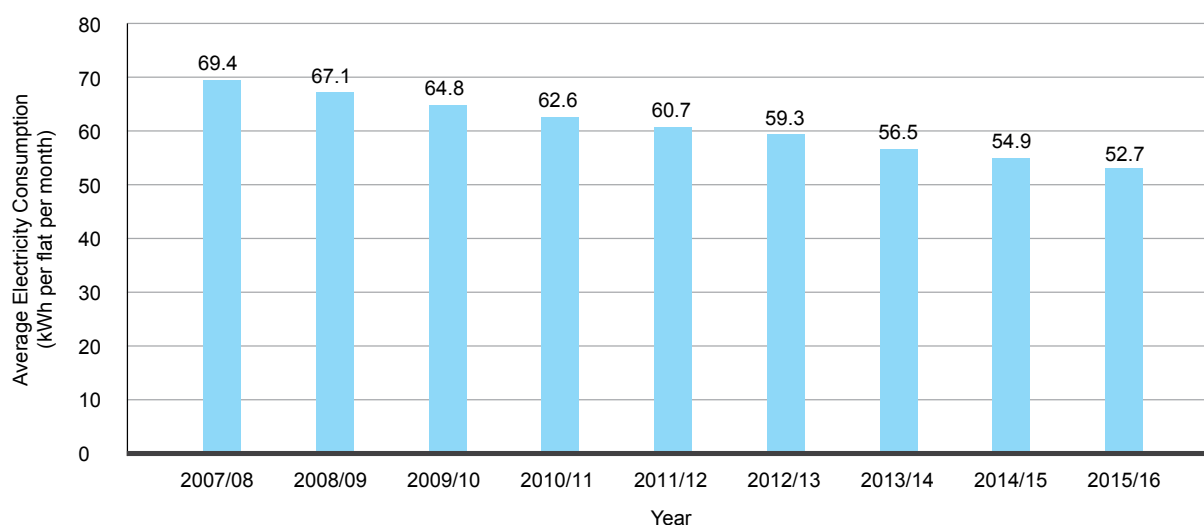


▲ ISO 50001 EnMS Certificate Presentation in May 2015

Overall Energy Consumption

With the EnMS in place, our electricity consumption in the public areas of PRH blocks was 52.7kWh per flat per month in 2015/16, which was 4.0% lower than the level recorded in 2014/15.

Electricity Consumption in the Public Areas of Estate





▲ Light Fittings at Tin Heng Estate Replaced with Sensor-controlled LED Light Fittings

Adoption of Energy and Carbon Reduction Measures

Since April 2012, we have launched a Light Fitting Replacement Programme to replace electromagnetic ballast with electronic ballast in existing light fittings of public area in PRH blocks with the aim to enhance efficiency and effectiveness of energy use. We have planned to replace electromagnetic ballast at approximately one million light fitting in 960 PRH blocks within a period of 42 months. The replacement work for all PRH blocks was completed in September 2015.

During the year, we initiated a trial replacement of conventional light fittings with sensor-controlled LED light fittings in the common areas of domestic block in existing estate. We completed the trial installation in Tin Heng Estate in the third quarter of 2015 and other two trial installations in Tsz Ching and Kai Ching Estates by March 2016.

Under our Lift Modernisation Programme (LMP), we replaced 101 old lifts during 2015/16. In general, the new lifts can save over 30% energy consumption as compared with the old models.

We continued to conduct carbon audit for 14 typical PRH block types to monitor and benchmark our carbon emission. The overall carbon emissions of the 14 blocks in 2014/15, when comparing with their baseline figures in 2011/12, ranged from -23.91% to -0.72%. The carbon audit results facilitated us to identify appropriate measures to reduce carbon emissions.

In line with the Government's energy saving initiatives, the HA continued to join the Energy Saving Charter and pledged to reduce electricity consumption. During summer, we have maintained an average indoor temperature at 24 - 26 degrees Celsius in public areas of all our shopping centres with central air-conditioning to save energy. In addition, we have implemented other energy saving measures in various shopping centres, such as partial closure of lighting during non-peak hours, setting timers of advertising panels and decorative lightings and installation of oil-free chillers, to minimise energy use.

Noise Control

We care about the noise impact may have on our PRH residents. We therefore strictly follow relevant legislation and take appropriate measures to minimise our operational noise without causing any nuisance to our residents and the nearby areas. With our concerted effort, we have not received any noise abatement notices from the Government since 2005/06.

Waste Management

With a view to promoting waste reduction and green living at the community level, we have been in full support of waste separation at source by implementing the Source Separation of Domestic Waste Programme across all our estates. To actively raise the awareness of our PRH tenants, various publicity channels, such as video broadcasting and promotional activities, have been rolled out to call for participation. During the year, we have collected, in our estates, around 26 690 tonnes of waste paper, 2 223 tonnes of plastic bottles, 1 353 tonnes of aluminium cans and 867 tonnes of used clothes for recycling. In addition, all our estates have established collection counters to receive domestic recyclables from tenants with incentive, such as cash or household sundries for exchange.

Waste Type	Quantity of Waste Collected for Recycling (tonnes)								
	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16
Paper	14 748	14 194	17 935	21 376	23 849	27 589	29 394	27 127	26 690
Plastic Bottles	765	939	1 218	1 427	1 584	1 929	1 812	1 983	2 223
Aluminium Cans	310	496	520	865	1 054	1 133	1 359	1 362	1 353
Used Clothes	633	618	775	844	945	998	1 053	896	867

Tenants of restaurants, supermarkets and market stalls were encouraged to adopt the food waste management practices, such as food donation to non-governmental organisations (NGOs).



▲ Poster of Lai See Pocket Reuse and Recycling Programme 2016

Apart from implementing various waste reduction initiatives in our PRH, we have provided free venues in HA's shopping centre where appropriate to support waste reduction and other environmental activities initiated by NGOs or other government departments. For instance, we sponsored venues for displaying polling boxes and promotional materials of the Zero Food Waste Cooking Competition to promote food waste reduction. A total of eleven of our shopping centres participated in Lai See Pocket Reuse and Recycling Programme 2016 to distribute reusable Lai See packets and collect used ones.

Having all these waste reduction initiatives in place, we were delighted to achieve the average domestic waste production of 0.55 kg/person/day from our residents during the year, accounting for over 6.8% decrease when compared to that of 2014/15.

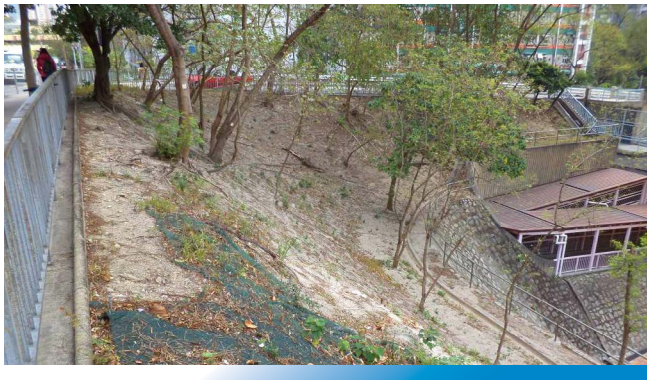
Greening and Tree Management

Greening and Landscaping

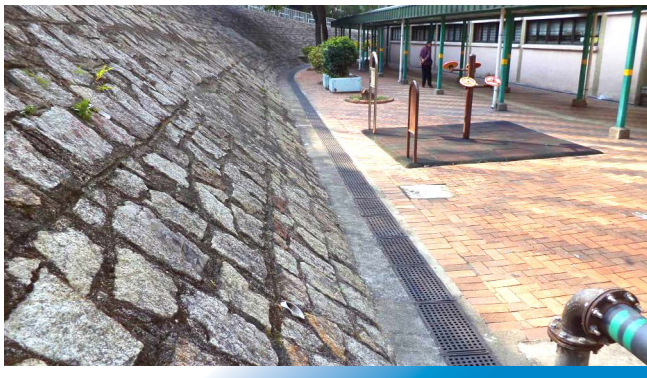
During the year, we have completed green treatment works such as replacing chunam surface with hydroseeding for 10 slopes at nine estates to enhance the slope appearance in our PRH estates. In addition, we have installed roof greening in Kwai Shing West Estate which is well received by the residents.



▲ Roof Greening at Kwai Shing West Estate



▲ Hydroseeding to Bare Slope Surface in Chuk Yuen South Estate Before (Left) and After Green Treatment Works (Right)



▲ Planter at Toe of Slope in Chuk Yuen South Estate Before (Left) and After Green Treatment Works (Right)



▲ Community Garden Programme at Lok Wah South Estate in November 2015

In 2015/16, we completed landscape improvement works to enhance greening at 20 PRH estates by introducing new varieties of plants to match the local landscape and conditions. In addition, we organised community garden programmes in 10 estates to promote community participation in greening activities.

Strengthening Tree Management

The approximately 100 000 trees growing in and around PRH estates across Hong Kong require effective tree risk assessment and management, and to this end we have developed and implemented a new Enterprise Tree Management System (ETrMS) to assist in monitoring our tree management work and conducting annual tree risk assessment exercise in a systematic way. With the aid of the database, we are able to identify trees that need prompt remedial actions through assessment and inspection. Data would be updated and uploaded to a comprehensive Geographic Information System (GIS) tree database after each assessment. We have also carried out ad hoc tree risk assessment and maintenance work when needed.

To support our work in preserving trees, we have recruited Estate Tree Ambassador (ETA) to assist in tree management in our housing estates. As at March 2016, there were 690 ETAs recruited. To enhance and refresh their knowledge, we have organised two refresher and training courses during the year to foster their knowledge in tree preservation.



▲ ETA Refresher Course in June 2015



▲ ETA Training Course in September 2015

To ensure we are following update and effective practices, we have arranged regular meetings with the Development Bureau to review our guidelines and contractual requirements for tree preservation and management. In addition, a mini-website has been developed for public access to obtain general information and characteristics of common tree species that can be found in our PRH estates.

Asbestos Abatement

The presence of asbestos in some of our old housing blocks and buildings pose minimal or no health risk as long as it remains intact and undisturbed. To minimise the occurrence of potential health risk, we have carried out two surveys annually to monitor the condition of asbestos-containing materials in existing PRH estates to ensure that they are in good condition. A registered asbestos contractor has been engaged for emergency repair to underground asbestos cement water-mains when necessary.

During the year, we have conducted the asbestos removal works for the Public Housing Development at Queen's Hill which was completed in June 2016.

Organising Green Activities

Since its inception in 2005, we have been partnering with green groups to launch a long-term estate-wide community environmental education programme, the “Green Delight in Estates” (GDE) with the aim to foster environmental awareness of our tenants.

In 2015/16, we completed GDE Phase 8 and had started the GDE Phase 9 with the theme of “Rehome & Reuse Resources” to encourage residents to share their excessive but useful resources to other people. Environmental educational programmes including rehome box graphics design competition, green living carnivals, second-hand barter markets, upcycling and eco-detergent workshop, eco-tours and talks have been organised for PRH residents. Around 4 400 volunteers were recruited as Green Estate Ambassadors to help launch these activities to promote waste reduction.



▲ GDE Phase 9 Kick-off Ceremony



▲ Green Estate Ambassadors Training



▲ Second-hand Goods Barter Market

Our Estate Management Advisory Committee (EMAC) put substantial efforts to promote green living environment to our PRH tenants. During the year, we collaborated with EMAC to organise a considerable number of activities, aiming to increase tenants' awareness and to promote participation in the greening of PRH estates, including tree planting days in 10 estates and greening activities for residents in 20 estates.



▲ Tree Planting Days at Sun Chui Estate (Left) and Yiu Tung Estate (Right) in Mid-2015



▲ EMAC-Funded Greening Activity at Wo Che Estate in October 2015 (Left) and Tin Yiu Estate in March 2016 (Right)

We have also implemented the pilot “Environmental Protection Window” Scheme to disseminate environmental protection messages to PRH tenants and conducted other environmental programmes, such as Promotion of Green Living, Green Carnival and Epidemic Prevention to enhance environmental awareness of PRH tenants.

Initiatives in Office at Work

Implementation of Environmental Management System

In December 2013, our Corporate Services Division was awarded the ISO 14001 EMS certification for the provision of property management functions at the HA Headquarters (HAHQ). In May 2014, Independent Checking Unit (ICU) was certified to ISO 14001 EMS and ISO 9001 QMS standards. We are the first regulatory body in Hong Kong which obtained such certifications in relation to building control. This has marked a significant milestone in our relentless pursuit of excellence in discharging our duties of regulatory control. Following the publication of the new version of these standards in September 2015, we have planned to upgrade our systems within three years.

Energy Saving and Carbon Management

Over the years, we have implemented various initiatives to enhance our energy performance, reduce electricity consumption and cut down carbon footprint by controlling refrigerant consumption, optimising chiller system control, adopting motion sensors for lighting, and optimising operating hours of lifts, escalators and air-conditioning equipment, etc.

In 2015/16, the electricity consumption of our office premises was 35 511 000kWh, representing 7.9% reduction when compared to our baseline consumption figure in 2007/08.

Since 2008/09, we have conducted carbon audit to gauge our carbon emissions. The yearly audit results from 2008/09 to 2014/15 of carbon emission are tabulated below. The carbon emission in our properties has been stable over the past few years, which indicates the success of our carbon management programme in place.

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

Waste Management

To minimise solid waste generated in our offices, we have initiated various waste management initiatives at all Housing Department (HD) offices. During the year, we consumed 147 267 reams of papers, representing an increase of 9.2% when compared with the consumption baseline in 2007/08. There had been a general increase in paper consumption in nearly all offices in 2015/16 as a result of the upsurge in manpower of about 300 staff members to achieve the production target of 200 000 PRH units and 80 000 subsidised sale flats by 2025/26 according to the Long Term Housing Strategy, as well as the expanded business activities.

The volume of waste paper collection per staff in 2015/16 was 55.0 kg per staff. The volume well exceeded the collection target of 21.6 kg per staff.

Apart from collecting waste paper for recycling, we have been using environment-friendly paper as a prerequisite requirement in printing of all publicity materials.

We have also arranged to collect all defective mercury-containing lamps in HAHQ for special waste treatment to minimise the impact of disposal of hazardous materials.

Water Conservation

We monitor our water consumption continuously at HAHQ. In 2015/16, the HAHQ consumed 12 068 cubic metres of water. It was decreased by 21.0% as compared with the consumption of 2007/08.

Green Culture and Activities

The HA Environmental Corporate Video highlighting our environmental initiatives has been uploaded to the HA/HD website, social media platforms and e-Learning Portal that are accessible by staff members and the public. It has been broadcasted during the induction course for all new recruits. Apart from the corporate video and induction course, we organised 28 seminars for our staff during the year to enhance their environmental awareness and knowledge. To tie in with the World Environment Day, green display panels were set up in the HAHQ from May to August 2015 to showcase our latest environmental initiatives.

To promote green messages among our staff and encourage them to help the needy of the society, we have joint hands with a non-profit making charity organisation to host two “Environmental Collection and Recycling Campaigns” in June 2015 and January 2016 respectively. We received overwhelming support from our staff and collected about 4.8 tonnes reusable items in total. Those items include electrical appliances, shoes, handbags, books, stationeries, household items, beddings and decorations, etc. The Campaign not only helps those in need, but also boosts staff awareness of environmental protection by promoting waste reduction and re-use of resources.



▲ HA staff at the HAHQ, the Customer Service Centre in Lok Fu and Lung Cheung Office in Wong Tai Sin are Enthusiastic about Donating Reusable Household Items to those in Need.

In addition to our own initiatives, we encourage our staff to join various external green activities to arouse their environmental awareness, such as the Hong Kong Tree Planting Day, the Community Chest's Green Day and the Hong Kong Flower Show. About 100 staff and their family members joined the Hong Kong Tree Planting Day in the year under review. We also participated in Eco Expo Asia 2015 and the Community Chest's Green Day to showcase our green performance and disseminate green messages to the community.

As an active participant in the annual Hong Kong Flower Show, we had designed an “Art of Living @Home” garden for this year's event, echoing the Show's theme “Blossoms in Vivid Art 2016”. The landscape design won the Gold Award for Unique Feature (Landscape Display) in the Flower Show.



▲ Hong Kong Flower Show 2016



▲ Hong Kong Tree Planting Day



▲ Eco Expo Asia 2015



Social Performance

- Performance Overview
- 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) is committed to building a sustainable community through introducing socially and environmentally sound practices in both new estates development and exiting estates operations. During the year, we continued to work closely with our stakeholders, including tenants, contractors, and non-governmental organisations, to promote a harmonious culture and smart living style across all estates.

Performance Overview

After a decade of efforts, the Housing Department (HD) successfully attained the “10 years plus Caring Organisation Logo” for the first time in early 2016. Presented by the Hong Kong Council of Social Service, this honour recognises organisations with a strong commitment to corporate social responsibility and contribution to care for the community, employees, and the environment.



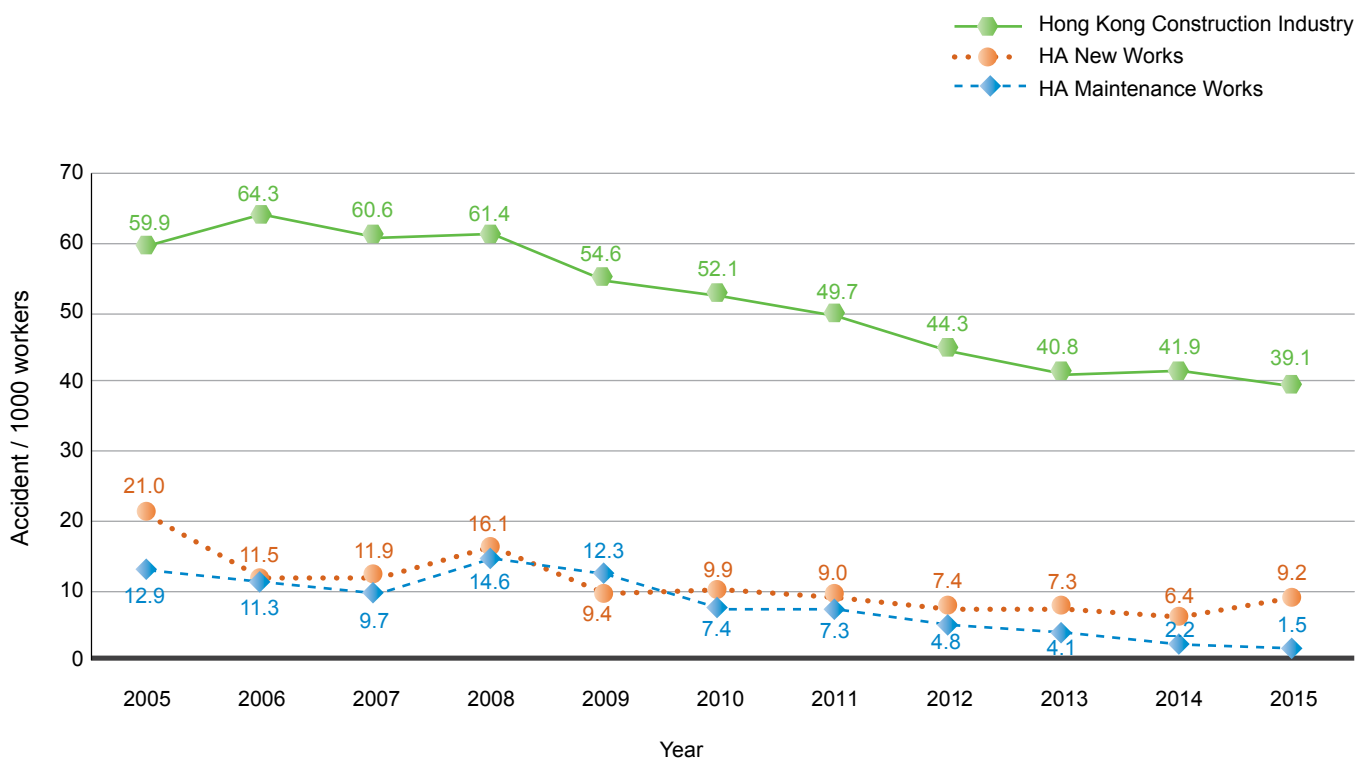
To benchmark our sustainability performance against leading industry standards and share good practice with interested parties, our Development & Construction Division and Estate Management Division have continued to participate in the annual performance assessment of the Hong Kong Quality Assurance Agency's (HKQAA) Corporate Social Responsibility (CSR) Index in 2015/16. The two divisions received the full score of 5.0, and were awarded the HKQAA CSR Advocate Mark. It demonstrates our commitment to be a socially responsible organisation.

- ▲ HD Attained the 10 Year Plus Caring Organisation Logo

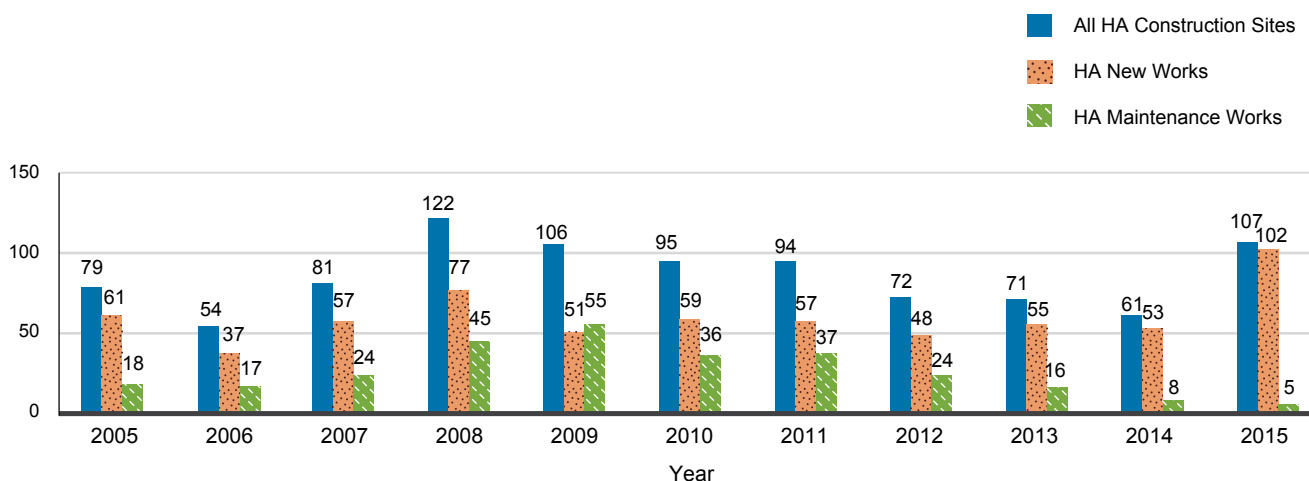
Across all our construction sites, the accident rates were 9.2 per 1 000 workers for new works contracts and 1.5 per 1 000 workers for maintenance contracts, based on the 2015 statistical data from Labour Department.

While no fatal accident recorded in maintenance works contracts during the year, two fatal accidents occurred in new works contracts in 2015, including one in a foundation contract in the third quarter and the other one in a new works building contract in the fourth quarter. Our Procurement Review & List Management Board interviewed both contractors involved in the fatal accidents to review their for tendering future HA projects. One of the contractors was subsequently suspended from tendering for all HA piling contracts (including large diameter bored piling and percussive piling categories) for three months. The other contractor confirmed to improve safety management control measures and promotion plan for the enhancement of safety execution of works and workers' safety awareness on HA's construction sites from December 2015 onwards.

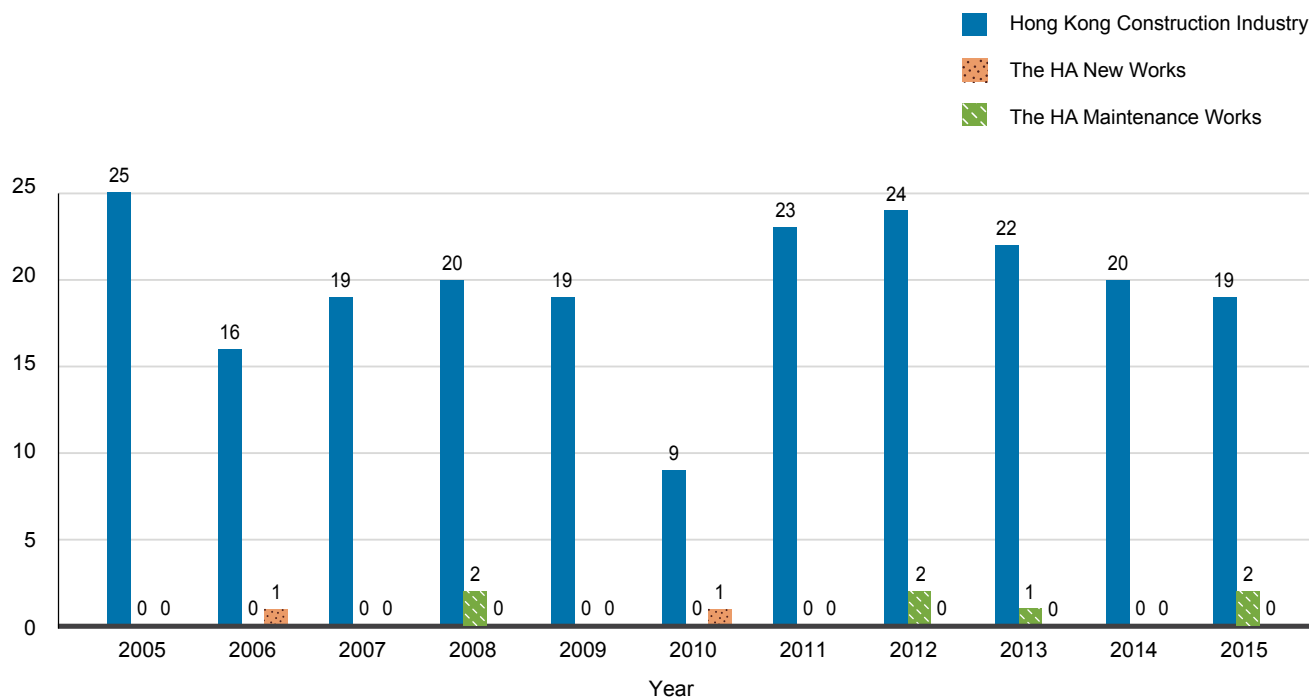
Accident Rate Compared to Local Construction Industry



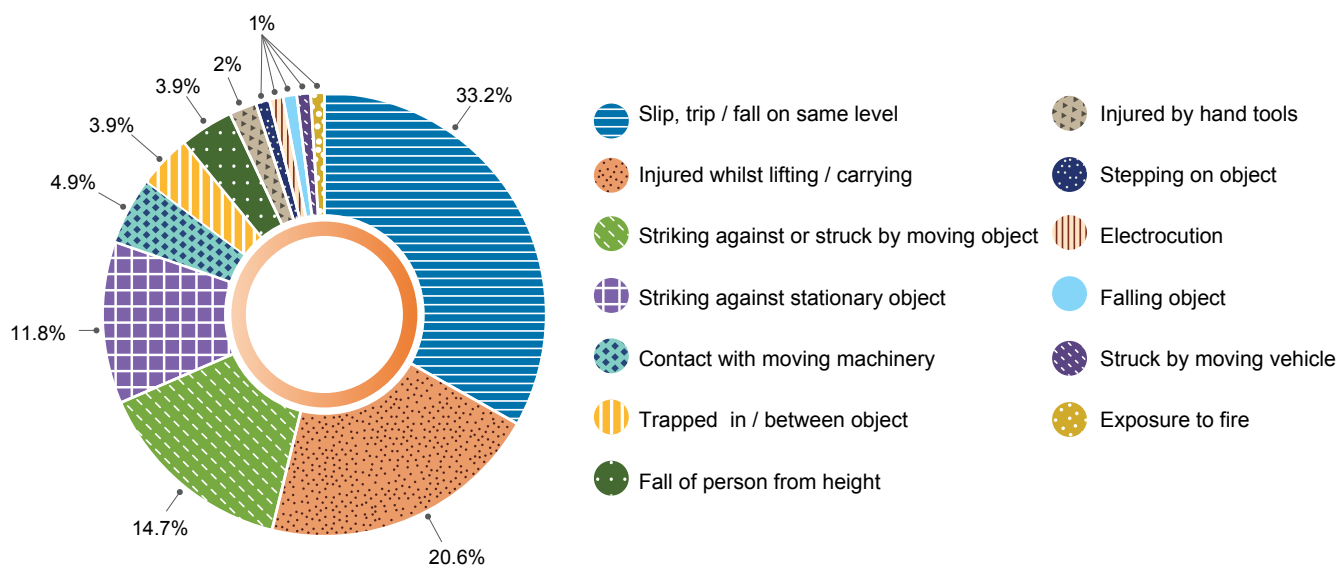
Number of Accidents at the HA's Construction Sites



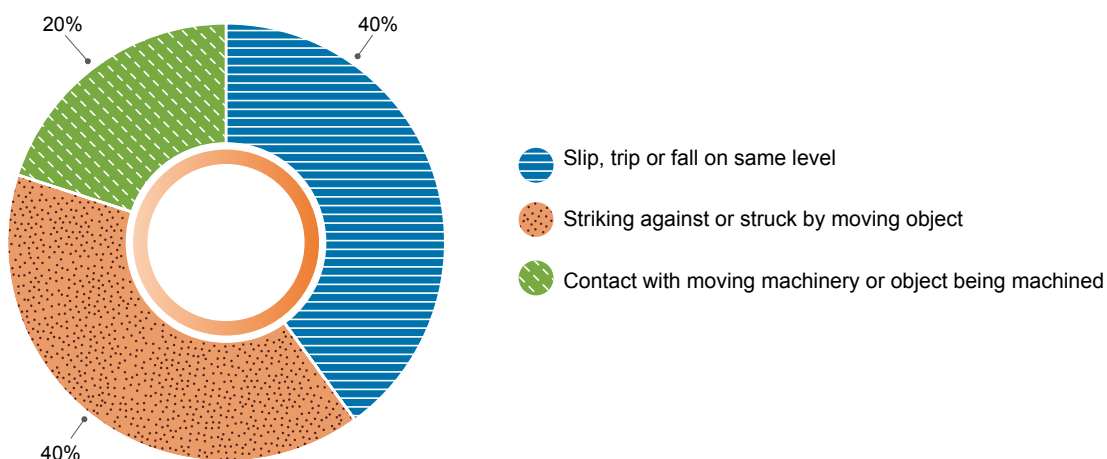
Number of Fatalities Compared to Local Construction Industry



Distribution of Accidents at the HA's New Works Construction Sites



Distribution of Accidents in Maintenance Works



Initiatives in Planning and Construction of New Housing Estates

When planning and constructing new housing estates, we place a great emphasis on ensuring site safety. To this end, we conduct regular monitoring and evaluation, providing support and recognition to encourage contractors' performance, as well as focusing on building for the community by maintaining interactive communication with stakeholders.

Site Safety and Evaluation

We regard construction site safety as a priority of our social responsibility, and continued to enhance safety training and site monitoring during the reporting year.

We keep emphasising on safe operations and safeguard site workers throughout the construction of new housing estates. We concern, for instance, the control of temporary works, the loading of vehicles, the transportation of materials, the use of tower cranes, static and mobile cranes, the operation of site vehicles and mobile plant, the application of work platforms at height, and the use of ladders. Under the HA's Site Safety Strategy for both new and maintenance works, all our property service agents, cleansing service contractors, and security contractors are required to comply with the corresponding safety requirements. We also implemented a health care plan in new works building, foundation, and demolition contracts, under which contractors were requested to provide workers with necessary health care programmes.

Through Performance Assessment Scoring System (PASS), we are able to implement and monitor the performance of various types of new works contracts. We made further enhancement to the system in the third quarter of 2015, including improving the safety requirements and revising the programme milestone dates.

We previously upgraded the Surprise Safety Inspection Programme (SSIP) in two major areas to strengthen the safety controls. These include-

- 1) linking the performance of contractors in SSIP with the PASS, which is used for evaluating future tendering opportunities, and
- 2) considering the performance of contractors in SSIP as a part of the criteria for assessing the payment amount under the Integrated Pay for Safety, Environment, and Hygiene Scheme.

In addition to the implementation of SSIP in on-going new works contracts, we developed a new web-based tool in the past year, namely, Occupational Injury and Disease Surveillance System (OIDSS), to strengthen accident and incident reporting. It has been fully implemented from May 2016.

Support and Training to Contractors

To assist our contractors in delivering quality service and achieving safe site performance, we offered guidance and training, organised seminar and forum, and issued circulars to them regularly during the year. We issued alerts and promoted safety through our site safety website. A total of 61 safety circulars were issued in the financial year, covering alerts, new guidelines, good practice, advice and information related to site safety and health from the Labour Department, the Occupational Safety and Health Council (OSHC), and the Construction Industry Council (CIC).

To enhance work environment and work practices, we regularly review and improve our contract requirements. In the past year, we promulgated new specification clauses for lifting, working at height, vehicular safety, personal protective equipment, training and temporary electrical installation to comply with Code of Practice for Electricity (Wiring) Regulations, and provision of automated external defibrillator.

Together with OSHC, we promoted the use of the Pointing-and-Calling practice among contractors to reduce human errors when conducting lifting operation and other high risk activities at construction sites. We, based on their best practices, formulated the standardised oral commands for lifting operations and promulgated them for use in the third quarter of 2015.

Since the introduction of the HA's version of Contractor Cooperative Training Scheme (CCTS) in 2012, it has been implemented in 29 building contracts. Under the requirement, over 300 CCTS trainees from the contractors of these contracts completed the training, with 85 contractors completed and another 60 commenced during the year. Starting from April 2015, we have included CCTS in the tenders of all building services sub-contracts. Working with CIC, the Hong Kong Construction Association (HKCA) and all active contractors, we carried on the pilot scheme to train workers for the rigger/metal formwork erector trade in four building contracts. To quickly bridge the training gap for new staff, we have implemented a caring programme for new workers, requiring contractors to assign mentors to workers who newly join to the construction industry, and to provide proper safety orientation programmes for all new comers to construction sites.

Collaborating with over ten other organisations, we continued to co-organise the large-scale annual Construction Safety and Health Promotional Campaign in 2015, promoting the occupational safety and health standard to the construction industry. In July 2015, we co-organised the annual Site Safety Forum with OSHC. The theme of the forum was "Process Control Programme: Strictly follow work procedures to prevent accident", with an aim of strengthening site safety compliance by contractors and calling for "0 incident" as our common goal. The event was well attended by over 600 participants, including representatives from new works and maintenance contractors, property services agents, cleansing and security contractors.



▲ Representatives from Hosting and Supporting Organisations at the Site Safety Forum 2015



▲ Site Safety Seminar for New Capital Works Contracts

Besides large scale annual events, we also arranged site safety seminars for new works contracts during the year. We collaborated with the Labour Department, and OSHC, to organise a Site Safety Seminar for New Capital Works Contracts in April 2015. Covering an array of topics on promoting safety in construction sites, the seminar attracted over 200 representatives from contractors and our staff.

In October, another Site Safety Seminar was held for Capital Works New Works Contracts. More than 110 participants, including works and service contractors, our HA staff, attended the seminar, sharing knowledge and experience on promoting safety on construction sites. During the seminar, we announced the launch of the HA Occupational Injury and Disease Surveillance System, upgrading of the HA Safety Auditing System (HASAS) to version 1.5.1, and the revised Safety Auditing Checklist for Building Services Contractors. The representative from OSHC shared the application of Pointing and Calling to increase workers' alerts for high-risk activities.



▲ Site Safety Seminar

The videos of these seminars and related information were also uploaded to our e-Learning Portal and Site Safety Website to facilitate easy access by contractors.

Recognition to Contractors

As usual, we encouraged our contractors to participate in safety campaigns and awards through different channels. On top of winning accolades, they benchmarked their performance and shared their practices with peers.



At the Construction Safety Forum and Award Presentation Ceremony held in July 2015, our contractors won a total of 15 safety awards, recognising their excellent performance in enhancing site safety.

▲ Construction Safety Forum and Award Presentation

Our new works and maintenance works contractors joined the Construction Industry Safety Award Scheme 2015/16, and received 20 awards in March 2016. The winning projects came from categories such as Building Sites (Public Sector), Renovation and Maintenance Works, Minor Renovation and Maintenance Works, Building Sites (Sub-contractor), Renovation and Maintenance Works (Sub-contractors) and Safety Teams. The scheme has been organised annually by the Labour Department to arouse general safety awareness and promote safety culture in the industry.



▲ The Assistant Director of Housing (Development & Procurement), Mrs Irene Cheng (Sixth from Left), with Other Officiating Guests at the Ceremony.

The Development Bureau and CIC jointly organised the annual Considerate Contractors Site Award Scheme to recognise contractors' great efforts to ensure work safety, care for their workers and minimise the impact to the environment and the community. During the award ceremony of the 21st Considerate Contractors Site Award Scheme held in May 2015, three HA new building sites were bestowed five awards under the category of non-public work sites, including three Considerate Contractors Site Awards and two Outstanding Environmental Management & Performance Awards.



▲ 21st Considerate Contractors Site Award Scheme Award Presentation Ceremony

To promote the use of “Pointing and Calling”, we introduced a new recognition scheme to contractors during the reporting year, namely, Pointing and Calling Awards. The awards were presented to a number of new works contractors to recognize those with excellence in promoting ‘Pointing and Calling’ command practice in Lifting Operation and/or Other High Risk Activities in their workplace as a continuous improvement effort to ensure that employees fully understand their work instructions and strengthen their safety awareness in a bid to avoid human error during the Site Safety Forum 2015.



▲ Awardees of the Pointing and Calling Awards

Building for the Community

To develop sustainable housing for the community, we planned and designed new estates according to site characters to foster their unique identities. We also paid special attention to design suitable common areas, in order to promote social interaction and neighbourliness. We also maintained close liaison with other Government departments, including the Civil Engineering and Development Department and then, contractors, to regularly monitor the progress of infrastructure works and co-ordinate relevant interfacing works that may affect us.

For all new developments, we continued to consult district councils, organised community engagement activities to present development proposals, and obtained feedback on the planning and design of projects. During the construction and close to flat intake stage of all Public Rental Housing (PRH) building contracts, we implemented the “Action Seedling” activities to foster social interaction. Surveys were carried out ten months after the population intake. During the reporting year, we conducted surveys to collect residents’ reviews in three newly completed estates. In addition, we held the Post Completion Review Workshops for five projects last year, where the survey results were shared with stakeholders.



◀ Action Seedling Activities

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Initiatives in Existing Housing Estates

When maintaining and improving existing housing estates, we continued to adopt sustainable practices in line with industry standards, improve the accessibility of estate facilities, enhance public awareness of safety, provide supportive programmes for families, connect with the community, and strengthen the partnership with contractors.

Standardised Practices

We strive to adopt international best practices for the management of the existing estates. During the reporting year, we continued to implement ISO 26000 Social Responsibility (since 2012), ISO 19011 Auditing Management System (since 2012), ISO 31000 Risk Management System (since 2012), and OHSAS 18001 Occupational Health and Safety Management System for the maintenance and improvement (M&I) works in PRH estates (since 2014).

To identify room for improvement through peer benchmarking, we took the initiative to conduct a review by enrolling ten selected pilot estates to the HKQAA Sustainable Building Index (SBI), with an aim to evaluate our building sustainable performance against industry best practices. All of the selected estates obtained the HKQAA SBI Verified Mark in March 2016.

To evaluate improvement opportunities for existing estates according to the development of the community, we implemented the Estate Improvement Programme (EIP) at different estates. Through a collaborative and consultative process, we conducted consultation with residents and studied the demographic trend of an estate to serve the basis for our enhancement of estate facilities, for example, installation of ramps for elderly and playgrounds for the youth.

Facility Accessibility

To provide a comfortable and accessible environment for residents in the PRH estates, we adopted the Universal Design principles and the Government's Barrier-free policy in the design and planning of community facilities and domestic flats. Integrated community play areas and barrier free access (BFA) facilities such as footbridges, lifts and escalators, were provided in new estates for enjoyment of residents regardless of their ages or abilities.

In view of the challenges to improve BFA in existing HA premises and facilities, we had completed majority of the BFA retrofitting works in 2014/15, in which about 240 HA premises and facilities were brought up to the standards stipulated in the Government's Design Manual: BFA Barrier Free Access 2008 as far as practicable. The remaining small portion of BFA improvement works tied in with the Lift Modernisation Programme, has been scheduled for completion in 2016/17.



▲ Kwai Shing West Estate Access Ramps



▲ Kwai Shing West Estate Lift Addition

Lift and Escalator Safety

We completed the inspection on 65 new lift installations in existing estates, and carried out 438 inspection on existing lift installations and 35 escalator installation. Audits on safety aspect of 36 lifts works under lift addition / modernisation contracts were also carried out. Regarding the accidents involving five lifts and two escalators, we conducted thorough investigations. In addition, HD's employed independent body, OSHC, has completed 40, 65 and four inspection of site safety audits for lift maintenance, lift modernisation and lift addition projects respectively.

Community Engagement at Estates

In order to achieve better building development and management, we constantly liaised with external stakeholders, including local communities, District Councils (DC), the Hong Kong Construction Association Limited (HKCA), through different platforms such as partnering workshops, DC meetings, and consultation sessions.

To establish a proactive and caring corporate image of the HA and strengthen communication with our staff, tenants, partners and the general public, various community activities have been organised, covering themes such as fire safety, public hygiene, in-flat maintenance, epidemic prevention, environmental protection, healthy ageing. We continued to join hands with the Estate Management Advisory Committees (EMACs) and non-governmental organisations (NGOs) to promote a safe, healthy and sustainable life style to tenants. Approximately 450 community building campaigns and activities were co-organised by EMACs and NGOs at estates during the year. Among these, 17 estates worked with the Department of Health and NGOs in launching a community health programme under the primary themes of “Healthy Eating” and “Regular Physical Activity” with focus on primary prevention of colorectal cancer. “Food Safety” was also incorporated to echo the theme of 2015 World Health Day.



▲ Promoting Family/Neighbourhood Harmony



▲ Health Promotion Programme



◀ Community Engagement Workshops

All EMACs collaborated with NGOs to deliver outreach services for elderly tenants. About 190 functions were held in which some 1 800 home visits to elderly tenants have been conducted under the programme of Healthy Ageing in PRH Estates 2015/16.



◀ A Partnering Function Promoting “Caring for the Elderly” through Home Visits

We have been placing a great emphasis on safety issues in PRH estates, and adopted a variety of safety measures to protect personal and property safety. In recent years, we organised the Safety Campaign for tenants, and upgraded our Closed Circuit Television Security System to strengthen monitoring and surveillance within estates. We replaced the electrical wirings for around 1 716 flats built between 1986 and 1992 through the Rewiring inside Domestic Flats (RDF) programme. Safety related messages and videos were also developed and broadcast throughout all estates. Furthermore, detailed illustration was also posted beside every fire hose reel and inside all lift cars in the housing estates, while a number of fire hose reel demonstration kits and training sessions were offered to tenants to promote fire prevention.

The 9th EMAC Award Scheme on Estate Fire Safety Promotion was held in 2015/16 and its award presentation ceremony was arranged at the EMAC Seminar in March 2016. We appealed to all EMACs to support and participate in the regular fire drills organised by individual estates and to promote safety awareness to the public. The 18 winning EMACs were granted with additional funding for organising their own fire safety activities.



▲ Fire Safety Promotion Activities



▲ Mr. Stanley YING, the Director of Housing, (Central) Pictured with Representatives of the Award Winning EMACs

To connect people in the neighbouring area and promote harmony in the society, we continued to support a wide range of social programmes organised by different NGOs and government departments, and hosted 1 900 hours of public events in the shopping centres at PRH estates.

Support to Families

Over the years, we have introduced various programmes to help PRH residents address special challenges due to family changes. A number of the harmonious families schemes, including the Harmonious Families Priority Scheme, the Harmonious Families Transfer Scheme, the Harmonious Families Addition Scheme, and the Harmonious Families Amalgamation Scheme, were designed to encourage young generations to live near to and take care of their elderly parents or dependent relatives. By the end of 2015/16, the total number of the benefit households has reached about 39 160.

When experiencing overcrowding condition with Internal Floor Area (IFA) per person being less than 7 square meters due to various situations, existing PRH tenants may be eligible to apply for adjustment through the Living Space Improvement Transfer Scheme, or through the Territory-wide Overcrowding Relief Transfer Scheme for households with IFA below 5.5 square metres per person. Around 2 100 households were benefited from the two schemes in 2015/16.

We also provided assistance for individuals/ families who were affected by the clearance activities of squatter housing or illegal rooftop structures by the Government. By the reporting year, we have arranged PRH units for around 70 households through the rehousing assistance programme.

Collaboration with Contractors

During the year, we continued to monitor the safety management system including the effectiveness of the enhanced Pay for Safety Scheme, streamlined and reviewed the audit system to include more items on high risk activities in the HA Safety Auditing System (HASAS)(M&I). The on-going implementation of the Surprise Safety Inspection System for M&I contracts helped contractors tighten vigilance on operations that entail high risks.

For the M&I works conducted in existing estates, we have applied a Preferential Tender Award System (PTAS) to our Building Maintenance District Term Contracts, which evaluated contractors' past performance. We continued to implement the Maintenance Assessment Scoring System (MASS).

The performance of cleansing and security services contractors was under review by the Contractors Review Committee (Services) on a quarterly basis. Under the current assessment mechanism, if service contractors were given "Adverse" reports on their performance, they would be placed under "Restriction from Tendering" for a three-month period, or barred from at least one service tender.

We implemented contract requirements for Statutory Minimum Wage in all cleansing and security service contracts, management contracts for commercial properties and property services contracts. To monitor contractors' performance in wage payment to workers, we continued to apply our Wage Monitoring System (WMS) to works, M&I contracts, and service contracts, during the reporting year. The WMS guidelines were recently revised to allow a simplified submission process from main contractors of building works and foundation works for direct labour. The composition of the WMS Corporate Score was also modified to include "Timely Wage Payments" as a factor. A working group meeting was held in the second quarter of 2015 to monitor and review the effectiveness of WMS. To maintain the compliance

and enhance the performance related to timely wage payment to workers, we also deployed Labour Relations Officers (LRO) in relevant new works and maintenance works contracts. Their verification process underwent our regular checking as well.

We maintained a close liaison with labour unions for early detection of employment-related irregularities. In 2015/16, we have conducted surprise checks to 36 estates on 45 service contracts, with some 1 200 non-skilled workers being interviewed, in order to detect and prevent exploitation of non-skilled workers. A seminar with the Labour Department and the Independent Commission Against Corruption (ICAC) was held on in November 2015 to increase non-skilled workers' awareness of the Minimum Wage Ordinance, Employees' Compensation Ordinance, Prevention of Bribery Ordinance, and other employment related rights.



▲ Anti-corruption Seminar

In recognition of services contractors, estate managers, and front-line staff at estates with outstanding performance in the past year, we organised the Estate Management Services Contractors Awards in 2015/16 and held its presentation ceremony in March 2016. Recognising the challenges of growing demands of residents, we encouraged all services contractors to make continuous efforts to enhance their service quality. A total of 38 awards were presented to 12 property management, cleansing, security services contractors and car park operators, eight estate managers, and ten front-line staff at the ceremony.



▲ Estate Management Services Contractors Awards Presentation

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Initiatives in Office at Work

We strive to protect the well-being and safeguard workplace health and safety for our staff. We ensure that our staff members are entitled to equal opportunities and various training programmes for their personal development. As a major housing developer in Hong Kong, the HA is also active in exchanging professional knowledge and experience with external stakeholders.

Staff Health and Safety

After introducing an occupational health and safety management system (OHSMS) in our Materials Testing Laboratory in 2013, we assessed workplace risks and applied preventative measures more systematically, in order to achieve continual improvement in health and safety performance. To arouse awareness and knowledge among our staff, we provided diverse training opportunities, e.g. courses, workshops, and seminars, during the year. We also offered site safety training courses to in-house staff to align with the requirements of the Construction Industry Council. We organised about 230 occupational safety and health (OSH)-related training courses and seminars with over 10 000 staff attendance in 2015.

Through the dedicated OSH website on intranet, we shared latest guidance and publications from the OSHC and the Labour Department with our staff. We launched a web-based safety refresher course for our staff in the third quarter of 2015, so as to upkeep their safety awareness and to maintain site safety standards.

To upkeep staff safety awareness and to identify area for improvement in the workplace, our annual office safety inspection for over 350 offices was completed in May 2015. A number of follow-up actions have been taken to enhance OSH practices across all offices. Five training classes (including refresher courses) were organised in March 2016 for Office Safety Inspection Assessors to equip them with the knowledge for conducting a new round of annual office safety inspection exercise commencing in March 2016.

Meanwhile, we have been developing the “smart” Safety Alert Apps to make use of mobile and RFID technologies for site safety matters, enhancing safety and high-tech application on site. By the reporting year, we have implemented the Development and Construction Site Mobile System (DCSMS) Phase 1 to use mobile devices and apps to facilitate site inspection of building works and building services works during construction, and to alert accidents / incidents related to site safety. In particular, the Building Works and Building Services Site Inspection Apps could enable site staff to take inspection photos and notify contractors for rectification immediately. We will commence the second phase for developing the mobile apps in wider applications which will include site staff of other disciplines, streamline the inspection process with contractors, and enhance the Occupational Injury and Disease Surveillance System (OIDSS) for incident reporting.

Equal Opportunities

The HA has adopted and promoted equal opportunities through its employment policies, providing necessary assistance for persons with disabilities to perform their duties. We also participated in the Labour and Welfare Bureau's "Talent-Wise Employment Charter and Inclusive Organisations Recognition Scheme", as well as the Social Welfare Departments' Sunnyway Programme to provide physically-challenged youngsters (aged 15-18) with job attachment opportunities. Some of our purchased services, such as catering, office cleansing, and car washing were procured from rehabilitation social enterprises and NGOs, as a way for us to support their employment of disadvantaged individuals in the society.

Training and Development

To support business objectives and needs, we have arranged local and overseas management development and leadership programmes for staff to enhance their diversified competencies. During the year, we have held a few executive talks on the topics of driving innovation and embracing change for success. Some bite-size leadership training/ experience sharing sessions were also organised for directorate officers.

To facilitate knowledge and skills transfer, we have started the preparation work to establish the DCD (Development and Construction Division) Academy which would provide timely, continuous and comprehensive training packages to personnel engaged in public housing development and construction, in particular new recruits of in-house staff and external service providers. The DCD Academy would be launched in 2016/17.

We encouraged our staff to join various activities to enhance morale and nurture a highly motivated workforce. The success stories of exemplary teams were publicised for sharing among staff. Experience sharing sessions to reinforce the HA's core values among staff were also organised. New activities to promote physical, emotional, social and occupational wellness of staff were also introduced. For example, a "Collection of Healthy Recipes" activity was launched to promote healthy diet. Our staff were also invited to join seminars on various topics to boost their well-being, including stress management, Chinese medicine, knee pain, and harmonious family relationship. Through our Health Portal, we shared latest health articles and tips among our staff.

In addition, all staff are subject to performance appraisal at financial year end, during which employees' performance are appraised against common targets to aid their personal development, which contributes to both skills management and the development of human capital within the organization.

Knowledge Exchange with External Parties

We have promoted our work through the HA Exhibition Centre, arranged tours, and site visits for media, local, the Mainland and overseas visitors.

We exhibited our work entitled "Fundamentally Hong Kong? - Delta Four 1984-2044" in the 14th Venice Biennale International Exhibition in 2014. Then, we showcased the exhibits under the theme of "Home and Community" in the Hong Kong Heritage Discovery Centre from March to May 2015, followed by a re-staged session at our headquarters between May and June. The display inspired visitors to re-think the social and cultural facilities in Hong Kong and the urbanisation of the Pearl River Delta.



▲ Opening of the Exhibition Section of “Home and Community” Re-staged at the HA Headquarters

In March 2016, we arranged a special visit for a youth supporting programme entitled “CLAP for Youth”, developed and funded by The Hong Kong Jockey Club Charities Trust. Under the programme, 30 senior form students from SKH Tsang Shiu Tim Secondary School visited our headquarters building. They were guided around the HA Exhibition Centre and Building Information Modelling Centre, and invited to participate in discussion after the briefing. As the first local cross-sectoral support platform that facilitated students and on-engaged youth aged from 15 to 21 to plan for their future, the programme could help students gain a better understanding of different job disciplines and develop their own career prospects.



▲ Visit HA Exhibition Centre



▲ Visit Hosted for the CLAP for Youth Programme

Driving for excellence in site safety and innovative technology, we collaborated with business and industry stakeholders to organise forums, seminars, and awards. We also published and presented papers, and gave talks regularly in both local and international arenas to share the HA's initiatives. In November 2015, at the 20th Conference of the Housing and Urban Public Corporations in Asia (A-HUC) hosted by the Korea Land and Housing Corporate in Seoul, we shared experience with the delegations of housing organisations from Japan, Singapore, and South Korea, with regard to “Housing Welfare Improvement Based on the Public-Private Partnership”, partnership with EMACs and NGOs, and letting and converting the HA premises. The conference was co-founded by the HA, the Housing and Development Board of Singapore, and the then public housing organisations of Japan and South Korea in 1995.



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 operate in a cost-effective manner while continuously enhancing our housing services to cater for the public needs. This is achieved mainly through optimising management and operational practices, and implementing innovative measures for both existing and new housing estates.

Financial Performance

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 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 2015/16 financial statements are provided in the HA's Annual Report 2015/16. Summary of our financial performance is highlighted below:

Consolidated Income Statement in 2015/16

Item Description	HK\$M
Consolidated Operating Account Surplus	3 116
Funds Management Account Surplus	1 022
Agency Account Surplus	9
Surplus for the Year	4 147

Consolidated Operating Account in 2015/16

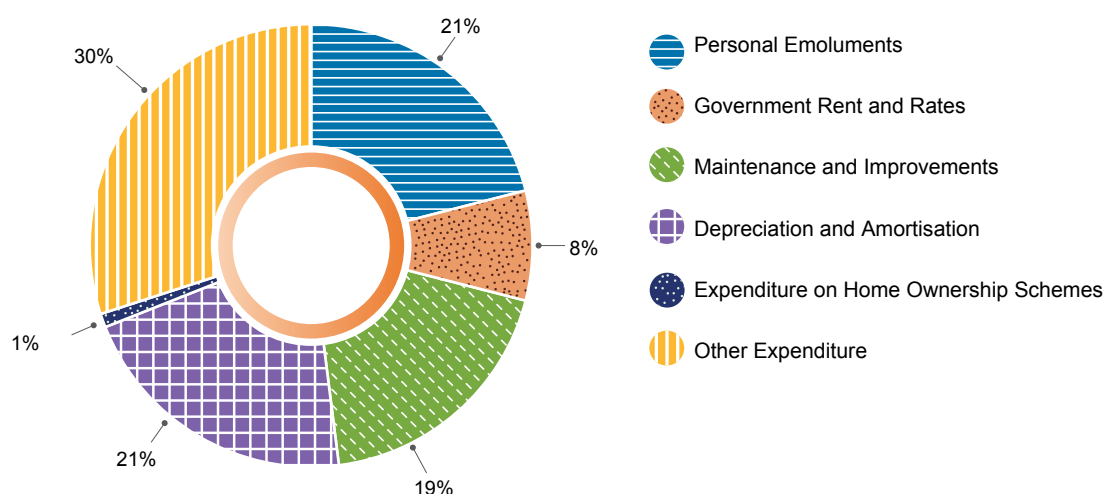
Item Description	HK\$M
Rental Housing Operations Deficit	(11)
Commercial Operations Surplus	1 086
Home Ownership Assistance Operations Surplus	1 985
Consolidated Operating Surplus before Non-operating Items	3 060
Net Income on Non-operating Items	56
Surplus Including Non-operating Items for This Year	3 116

Capital Expenditure for the Fiscal Years 2011/12 – 2015/16

	HK\$M				
Items	2011/12	2012/13	2013/14	2014/15	2015/16
Construction	7 291	8 639	8 911	11 945	17 411
Improvement Works	666	682	657	646	812
Computer Systems	192	189	153	134	129
Total Capital Expenditure	8 149	9 150	9 721	12 725	18 352

As at 31 March 2016, our available investment funds stood at HK\$56.6 billion, which was decreased by HK\$9.7 billion as compared to 31 March 2015. During the year, our recurrent expenditure of the HA was HK\$16 449 million, which was HK\$535 million higher than that of 2014/15.

Analysis of Recurrent Expenditure 2015/16



Initiatives in Planning and Construction of New Housing Estates

The primary mission of the HA is to develop and implement a public housing programme to achieve the objective of Government's policy in meeting the housing needs of low-income families that cannot afford private accommodation. In 2014, the Government promulgated the Long Term Housing Strategy (LTHS) with a view to gradually averting the supply-demand imbalance in housing. Among the strategies stipulated in LTHS, building more Public Rental Housing (PRH) units and providing more subsidised sale flats hinge on us. We are dedicated to implementing these strategies.

In December 2015, the government set a housing supply target of 460 000 units within the ten-year period from 2016-17 to 2025-26. A 60:40 split between public/private housing supply was maintained, with the provision of PRH units and subsidised sale flats targeted at 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 77 100 PRH units and 10 600 subsidised sale flats in the five-year period from 2014/15 to 2018/19.

Provision of Public Rental Housing

In 2015/16, we completed the construction of around 14 300 PRH units in a total of twelve projects, including Long Ching Estate, Shui Chuen O Estate Phase 2 and 4, So Uk Estate Phase 1, Lower Ngau Tau Kok Estate Phase 2, On Tat Estate Phase 1 and Phase 2, Hung Fuk Estate Phases 1 to 3, Po Heung Estate, and Lei Yue Mun Estate Phase 3 etc. We also completed 25 100 square metres of retail facilities, and 530 private car parking spaces and commercial vehicles.



▲ Lei Yue Mun Estate



▲ Hung Fuk Estate

Managing the Home Ownership Scheme

Under the Home Ownership Scheme (HOS), the HA offers subsidised sale flats to eligible applicants at selling prices below market value, with an aim to assist low to middle-income families to own their flats. This scheme also provides an avenue for better-off PRH tenants to purchase subsidised flats, thereby releasing their PRH units for others in need.

In August 2015, the first batch of 2 160 new HOS flats (scheduled for completion in 2016/17) were sold. In February 2016, a pre-sale of the second batch of 2 657 new HOS flats (scheduled for completion in 2018) was launched. The upcoming batch of HOS flats is expected to be ready for pre-sale in the first quarter of 2017.

Apart from providing new HOS flats, we selected a PRH development at San Po Kong in May 2015 as the site for the Green Form Subsidised Home Ownership Pilot Scheme (GSH). The flats under GSH would be sold to Green Form applicants, i.e. existing PRH tenants and successful PRH applicants who eligible for allocation of PRH, with prices set at a level lower than those of HOS flats. The project will provide a total of about 857 flats and pre-sale would be launched in October 2016. As GSH is a pilot scheme, we will conduct a review on GSH after the San Po Kong project to decide on its future.

We launched an Interim Scheme in early 2013 which allows White Form applicants, i.e. households living in private housing or family members of households living in PRH or any subsidised housing scheme units, to purchase our HOS and the Housing Society's Flat-for-Sale Scheme flats with premium not yet paid in the Secondary Market. The first round of this Interim Scheme was launched in January 2013 with a quota of 5 000. It was concluded in April 2015, with a total of more than 2 400 White Form buyers achieving home ownership. We implemented one more round of the interim scheme with a quota of 2 500 in August 2015. Over 400 applicants successfully achieved home ownership by end March 2016. The new round of the Interim Scheme will be completed in the first half of 2017. We shall conduct a comprehensive review of the Interim Scheme thereafter to decide on its future.

Optimising Use of Resources

Management and Procurement Practices

As an on-going measure to enhance operational efficiency, and to ensure our business partners' service quality, we have continued to improve our management and procurement system. During the year, the HA lists of contractors, sub-contractors and service providers have been maintained per our pre-qualification requirements. We reviewed the monitoring mechanism for contractors who are not on the HA-list and formulated a set of management procedures to review and report their service quality. We also conducted and monitored the success of the following to expedite the process of procurement:

- Apply two-envelope or three-envelope tender system where appropriate;
- Implement tender scoring system involving a price-to-technical ratio;
- Implement "Quarantine" system to opt for supplier with better track record in their services;
- Implement General Conditions of Contract for capital works contracts for new works and collect feedback;
- Apply on-demand bond requirements to new works contracts and nominated sub-contractors;
- Implement "Guide to Registration of Works Contractors and Property Management Services Providers";
- Revamp the Schedule of Rates for Term Contracts for electrical, water supply and fire services maintenance.

We actively upkeep our procurement initiatives to match industry practice. To address labour shortage, we have continued to monitor and review the requirements for Trade Tested Worker in response to the industry trends, and to implement the streamlined Supplementary Labour Scheme (SLS) in our new works contracts. In the year under review, our active contractors had made ten applications to the scheme and two were successful.

Enhance Efficiency of Building Design and Construction with Information Technology

To improve the design and construction process of new housing development, we adopt advanced information technologies where applicable.

- **Building Information Modelling (BIM)**

Through generating 3-dimensional (3-D) data, the BIM is an effective tool to aid visualising the planned building, which enables planning with higher levels of accuracy. During the year, we have implemented the application of BIM in 45 active projects. We have continued to explore innovative BIM applications including 5D BIM to add two more dimensions: “time” and “cost” into the model to facilitate project management.

- **Geographic Information System (GIS)**

The use of GIS facilitates search and enquiry for a range of spatial and textual data required the identification of potential building sites. During the year, we have used GIS to carry out potential and feasibility studies for 43 sites. We have also continued to adopt GIS in the maintenance of centralised drawing records and for location identification in maintenance works orders.

- **Housing Construction Management Enterprise System (HOMES)**

We operate an online collaboration and knowledge management platform, namely HOMES, to enhance the efficiency in managing construction projects. During the year, we commenced a new round of 18 enhancements of HOMES to improve the functions of budget, payment and contract management.



▲ Using RFID in Construction Sites

- **Radio Frequency Identification (RFID)**

RFID offers an efficient way to track the delivery of construction materials and the locations of building services equipment. We have continued to apply RFID to track the delivery of concrete cubes and selected building components as pilot trials. We completed a trial application of RFID on major building services equipment, including water pump, switchboard, generator and lift, in the development at Tung Tau Cottage Area East.

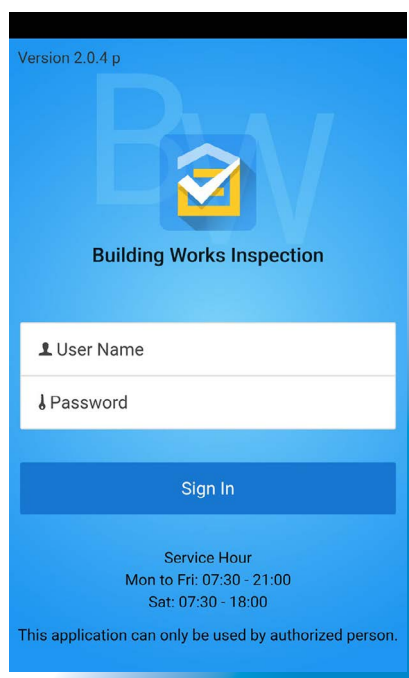
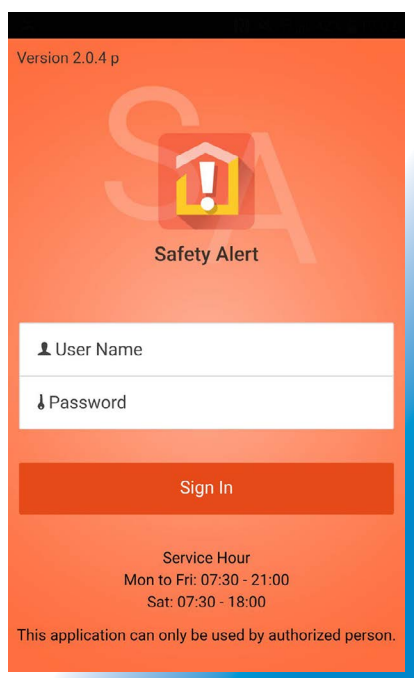
This year, we have conducted the pilot trial on the integration of RFID with BIM through Cloud technology in the development project at Tuen Mun Area 54 Site 2 (Yan Tin Estate), for enhancing the efficiency of logistic and supply chain management of precast construction. The “RFID-enabled BIM Platform” could provide real-time construction data and service-oriented decision support systems for the prefabrication production life cycle. The research achieved notable outcomes including real-time tracking and monitoring of precast construction progress, as well as automated and optimised production and delivery planning to achieve “Just-in-time” management.



▲ BIM Model in Web-based Operating Platform
- nD BIM Showing Façade Installation

▪ Development and Construction Site Mobile System (DCSMS)

During the year, we started to deploy Phase 1 of the Development and Construction Site Mobile System (DCSMS) which adopted a mobile application to assist users in carrying out site inspections and provide site staff with safety alerts. We will enhance the mobile applications of DCSMS to support a wider range of functions in Phase 2.



◀ Interface of the Mobile Applications under DCSMS

Enhancing Building Standards, Quality and Productivity

To align our management and operations with international practices, we conduct regular internal audits and documents reviews according to relevant standards including those published by the International Organization for Standardization (ISO). We continued to adopt the European Foundation for Quality Management (EFQM) Excellence Model in development and construction works, and would consider obtaining certification in future.

The Independent Checking Unit (ICU), reporting directly to the Office of the Permanent Secretary for Transport and Housing (Housing), provides third-party checking of the building and structural plans for the HA's new development projects, as well as processing submissions for alterations and additions in

the existing buildings under HA's purview. In 2015/16, the ICU processed 1 180 building submissions, 1 546 structural submissions, 1 076 consents for New Construction Projects, 2 422 submissions for Alteration and Addition Works and 31 607 submissions under Minor Works Control System within the statutory or pledge period. The ICU have also issued 21 occupation permits and 193 structural certificates of completion for new works projects. To achieve better risk management for new developments and alteration works, we have issued Quarterly Site Monitoring Reports for the active projects. The ICU also held several experience sharing sessions on alteration and addition works for professional services providers in June 2015 to explain building control feedback.

Apart from structural safety, our Lift Inspection Focus Team (LIFT) conducts inspection to the operational safety and reduce the risk of accidents in lifts and escalators managed by the HA.

We also conduct research and development (R&D) activities to improve the quality and productivity of our development projects. During the year, a new R&D study was completed, with the total number of research studies recorded in our database reaching 245.

With an objective to improve the choice of construction materials in our construction projects, we regularly update the General Specifications for Maintenance Works to upkeep with the latest trend in the construction industry. In 2015/16, we reviewed the specifications for metalwork, drainage and plumbing. We also promulgated new specifications for direct application of wall tiles on concrete surfaces, and upgraded the requirement for lock cylinder.

Since 2010, we have spearheaded the development and implementation of Product Certification for selected building materials. In 2015/16, we consulted paint suppliers for the implementation schedule of the Product Certification for paint products. Currently, we have already specified that product certifications are required for ten types of building products in our 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
- Close-coupled water closet suites
- Mesh reinforcement

To improve our productivity, we have actively derived innovative construction methods from the concept "Lean Design and Construction" to save labour, time and resources. During the year, we explored the wider use of precast elements, self-compacting concrete and Ground Granular Blast Furnace Slag (GGBS).

We realise that cost of our construction projects is one of the key indicators to demonstrate our effectiveness and operation efficiency. We therefore closely monitor the construction cost per flat as early as the feasibility study is conducted for each development project. According to the latest trend of return prices, the construction cost of the superstructure of PRH was on average about 45%. For maintenance and improvement (M&I) works, we updated the corresponding cost indicators in November 2015.

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

- Adopt separate advance hoarding contracts
- Prepare major Excavation and Lateral Support Works plans
- Submit piling record plan and consent for pile cap construction simultaneously
- Liaise closely with Direct Testing Contractors
- Adopt draft or preliminary pile test reports for more efficient project management
- Implement streamlined joint survey for foundation contract and building contract interface
- Streamline the checking and approval of material sample submissions
- Implement streamlined inspection procedures
- Explore the streamlining of building services inspections and audits
- Apply standardised falsework details for precast facades and semi-precast slabs
- Explore the use of standardised precast elements
- Explore and implement the use of labour saving installation methods

During the financial year, we promulgated the 2015 version of Modular Flat Design for adoption in projects to further enhance the design of modular flats.

In response to the incident of excess lead in drinking water in some estates, we have taken expeditious and vigorous steps to remove the hazard, rectify the situation, identify the external causes and enhance our specification and inspection procedures. It is our aim to ensure that we learn from the lessons of this incident, enhance our alertness to risk. For more information, please refer to our [Annual Report 2015/16](#).

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Initiatives in Existing Housing Estates

Rent Adjustment and Assistance Policies

As at March 2016, the rents of PRH flats ranged from \$315 to \$4 264 per month, which includes rates as well as management and maintenance costs. The average monthly rent was about \$1 700. We conducts the PRH rent review every two years, with the last review completed in mid-2014 and the next review would be in mid-2016.

The HA operates the Rent Assistance Scheme (RAS) to help PRH tenants with temporary financial difficulties pay their rent. Eligible tenants can receive a 25% or 50% rent reduction depending on their income situations.

Optimising the Allocation of Housing Resources

In 2015/16, we allocated approximately 14 300 PRH units 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 8 100 were allocated to existing PRH households who requested transfer, households affected by clearance, and those in special need as recommended by the Social Welfare Department, etc.

Curbing Tenancy Abuse

To ensure our precious PRH resources are allocated to those with genuine needs, the HA has established stringent policies and tenancy management to prevent tenancy abuse. In 2015/16, our frontline staff completed the checking of some 211 500 biennial declarations of income/assets under the Housing Subsidy Policy, Policy on Safeguarding Rational Allocation of Public Housing Resources and other tenancy management policies. The Public Housing Resources Management Sub-section (PHRM) also carried out rigorous checks on some 5 000 randomly selected and suspected cases. In addition, our frontline staff visited some 442 000 flats in the current biennial inspection cycle which commenced in November 2014, and PHRM conducted in-depth investigation on some 6 100 occupancy-related cases. The deployment of the Special Team has further been extended for another two years up to 2017/18. This year, the Special Team worked with the regional management staff to conduct checking on some 9 800 additional occupancy-related cases.

To arouse public awareness on cherishing PRH resources, we have all along been launching publicity programmes and outreaching activities through various channels, such as advertisements at public transport, audio/video broadcast on radio channels/buses and HA/HD Website etc.

To reinforce deterrence and encourage reporting of abuse, a “Fight Tenancy Abuse Campaign” was launched in October 2015. Two thematic characters, the “Housing Protector” and “Housing Abuser” made their debut. We had visited 40 public housing estates to disseminate the message of cherishing public housing resources and combating tenancy abuse to our tenants and the general public.



▲ Cherish Public Housing Resources Campaign 2015



▲ Advertisements at Public Transport

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

To improve the living environment of overcrowded families living in PRH, an exercise of the on-going Territory-wide Overcrowding Relief Transfer Scheme was completed in 2015/16. In addition, a transfer exercise under the Living Space Improvement Transfer Scheme was carried out to relieve those households that occupy less than seven square metres internal floor area per person. In 2015/16, about 2 100 households were rehoused under the two schemes.

Maintenance and Enhancement of Buildings

The HA devotes substantial resources to maintaining and enhancing existing housing estates, with an aim to enhance building safety and quality, as well as lowering operation cost. As an on-going initiative, we have commenced the Total Maintenance Scheme (TMS) for over 15 estates during the year. Under the TMS, 214 PRH estates received our Responsive In-flat Maintenance Service (RIMS) as at March 2016. To ensure structural safety and extend service life of aged estates, we have continued to implement Comprehensive Structural Investigation Programme (CSIP) and Estate Improvement Programme (EIP) for older estates as scheduled. Repair and improvement works under the EIP in some older estates are in progress.

In 2015/16, we continued to implement the Stage 2 Lift Addition Programme, with two lifts completed in the year and 11 lifts under construction. We also achieved the target set for Lift Modernisation Programme 2015/16, and had replaced 101 lifts of over 25 years of service.

Other maintenance programmes carried out during the year include the following.

- Completed surveys for improvement works to satisfy the Fire Safety (Buildings) Ordinance requirements in 30 PRH estates
- Replaced 140 000 units of laundry pole under the Laundry Rack Enhancement Programme
- Continued conducting surveillance laboratory tests for selected items of building materials and components, with 26 maintenance alerts issued in 2015/16 for information of regional building works colleagues.
- Since early 2014, we have applied the RFID technology for projects and facilities in seven pilot estates such as the maintenance of basketball stands, pressure release valves and gauges for flushing water system. In 2015, the use of this technology was expanded to the maintenance of entrance gates, external gates to ball court, garden and refuse collection point or dump point.

Redevelopment and Adaptive Re-Use

As set out in the LTHS, while redevelopment may increase PRH supply over the long term, it will in the short term reduce PRH stock available for allocation. Redevelopment could at best serve as a supplementary source of PRH supply. Given the current strong demand for PRH, it is not advisable to carry out any massive redevelopment programme, which result in freezing a large number of PRH units that may otherwise be allocated to needy households. In line with the Government's policy, we will examine the redevelopment of individual estates on an estate-by-estate basis.

The redevelopment intention of Wah Fu Estate was announced via the Policy Address 2014. During the year, the Government's engineering feasibility study for the five sites in Pokfulam South was underway. The proposed public housing in the Pokfulam South sites would serve as the main reception resources for the redevelopment of Wah Fu Estate.

For the transformation of Chai Wan Factory Estate to PRH, the completion was deferred to the second quarter of 2016 due to unforeseen underground obstruction and labour shortage.

Optimising Utilisation of Commercial Properties

The HA maintains a wide network of retail premises and community facilities such as retail shops, car parking spaces, factory premises, community, education and welfare facilities. When we plan for and manage these premises and facilities, it is our prime concern to better support the day-to-day needs of our PRH residents.

Measures to Better Suit the Community Needs

To better suit the community needs, we have enhanced trade and tenants mix of retail facilities, provided mobile facilities and arranged trade fairs in response to local demands, and converted less popular retail facilities into other beneficial uses.

- Enhancing Trade and Tenant Mix

Service trades such as education centres and banking services were strengthened to better serve our PRH residents.

- Enriching Shopping Choice and Atmosphere

Trade fairs and promotional sale activities were held periodically to enrich the shopping choice and atmosphere.

- Converting Less Popular Stores Facilities

Strategic letting arrangement was adopted to achieve successful letting of less popular retail facilities.

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

We gauged the views of local management and strengthened the measures for better monitoring of SOMs.

Measures to Enhance Shoppers' Experience

Over the years, we have actively implemented measures to provide enjoyable shopping experience for customers. Strategies adopted include arranging seasonal decorations during major festivals/events, organising promotional events or sponsoring venues for charity, cultural, and other community building programmes.

- Organising promotional activities during festivals

Strategic letting arrangement was adopted to achieve successful letting of less popular retail facilities.

- Sponsoring venues for community building programmes

A total of 84 community events/activities were held.

We have conducted a strategic relocation of some existing tenants in Domain, our largest shopping centre in Kowloon East. After relocation, a light refreshment zone on LG2 floor and a sports & beauty zone at secondary corridor on the ground floor were created. Kiosks, roadshows, festive trade fairs, festive promotional activities and cultural events were also held to enhance shopping choices and diversity of products. To strengthen customer loyalty, we also run a special redemption programme for around 18 200 Domain Club members during the year.



▲ Sports & Beauty Zone in Domain



▲ Light Refreshment Zone in Domain

We are currently undergoing a five-year rolling programme for asset enhancement. We have prioritised the major asset improvement works to enhance the attractiveness and business potential of our commercial properties. For more information, please refer to the chapter – [About the Hong Kong Housing Authority](#).

Performance of Our Commercial Operations

To identify room for continuous improvement, we have defined a set of key performance indicators (KPIs) to monitor performance of our commercial portfolio. These parameters, including the vacancy rate, rent arrears rate, and operating expenditure to income ratio, help gauge our effectiveness on managing our commercial portfolio.

Achievements as related to KPIs as at 31.3.2016

	Percentage	
	Targets	Actual
Vacancy Rate for Retail Premises (Shops)	Below 2.5%	1.9%
Rent Arrears Rate	Below 2.5%	2.1%
Operating Expenditure to Income Ratio	Below 60%	53.3%

Initiatives in Office at Work

Apart from incorporating green elements into our construction projects, PRH estates and commercial premises, we strive to achieve better management at the organisational level and in our offices to improve the overall sustainability performance of the HA. Over a decade, we have actively established various international management systems to uphold management best practices and align with international trends. The certifications or verification acquired are tabulated below.

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

We realise the engagement of supply chain can help achieve a larger impact on sustainable development in Hong Kong. We therefore require our contractors to attain relevant certifications including ISO 9001, ISO 14001, OHSAS 18001 and ISO 50001 standards in order to be registered in the HA lists of contractors. To step up our monitoring on the statutory compliance of contractors, we have required our contractors to sign a “Statutory Declaration” for list admission or on contract renewal starting from the second quarter of 2013. Apart from technical competence, we also care about the financial capability of tenderers. We continued to conduct writ search for the lowest three tenderers or the top three scorers of works contracts to ensure their financial viability.

We maintain close partnership and collaborations with key stakeholders to facilitate project delivery and enhance operational performance. To enable better understanding of HA's procurement principles and system, we have conducted regular briefings, seminars and experience sharing sessions with industry peers. Through continuous communication with our business partners, we have collected their feedback to ameliorate our procurement practices. In addition, we have conducted briefing and debriefing sessions, and site visits for both active and wildcard contractors in order to disseminate the HA's latest requirements.

Enhance Efficiency with Information Technology

Over the past few years, the HA has continued to invest in IT with the aim of providing world-class IT services and software products in all our business operations and enhancing operational efficiency. With the aid of latest IT services and software products, we have achieved accreditations in three main areas, namely application software development maintenance, IT services management, and information security management.

Years attained	Accreditations
2008 and 2012	Capability Maturity Model Integration (CMMI) Development Maturity Level 3 (CMMI-DEV ML3)
2012 and 2013	IT Services Management (ISO/IEC 20000)
2014	Information Security Management System (ISO 27001)
2014	CMMI Acquisition Maturity Level 3 (CMMI-ACQ ML3)

We have utilised various advanced IT solutions to help improve operational efficiency, maintain service quality and enhance customer experience in the public housing estates. For instance,

- We have continued to apply RFID to track the delivery of concrete cubes, selected building components and major building services equipment.
- We have continued to use electronic forms in ERP to facilitate procurement procedures.
- The “electronic tender booklet” system was enhanced in new works foundation and building contracts.
- We completed the full implementation of Housing Electronic Plan Submission System (HePlan) in the ICU.
- We installed adequate number of CCTV cameras at strategic locations for site security as well as surveillance of site testing and building works.
- We finished review of the operation of the e-transfer of structural, building and geotechnical documents submission to ICU.
- We launched the Human Resource Management System in August 2015.
- We completed the upgrade of the aged network at Data Centre in March 2016.
- We established a common e-Services platform to provide internet services for the general public, public housing tenants and applicants. The migration to the new e-Services platform and decommission of old platform were completed in June 2015.



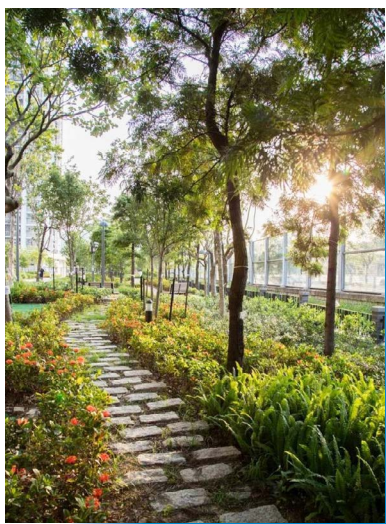
Case Study 1: Hung Fuk Estate – Transformation from Rural Habitation to Sustainable Community



▲ Overview of Hung Fuk Estate

Hung Fuk Estate is located in a low density rural area of Hung Shui Kiu, Yuen Long. The site area is 6.4 hectares comprising nine domestic blocks. Comprehensive planning consideration including geotechnical complexity, visual impact on the surrounding, wind environment, natural ventilation, daylight, traffic noise impact and its connectivity to the as-built surroundings were made. The development includes social welfare and recreational facilities such as kindergarten, youth centre, elderly centre and ball courts etc. Wide range of retail services are also provided to support the daily living of the residents.

Green Landscape



We aim to create a pleasant countryside community for sustainable living of the residents. We planned for over 30% green coverage area with 675 trees and 182 708 shrubs. Most of the trees and vegetation are native species, attracting birds, butterflies and other insects, enhancing ecological value of the area. We have provided over 5 000m² green roof and 400m² vertical greening with automated drip system for irrigation. We have also introduced “all-sand” rootzone profile design for community lawn. The sand layer under the lawn provides excellent drainage and is resistant to compaction. It also minimises maintenance.

◀ Transplanted Trees in Nature Walk

Energy Conservation

To promote the use of renewable energy, we installed 213 pieces of photovoltaic panels to produce renewable electric power in communal areas of residential blocks; we installed solar poles at landscape garden for external lightings. About 2.4% of electric power can be saved.

Apart from renewable energy, we have implemented various energy saving measures in the estate, including the installation of LED lights, solar tubes at car park and activity area, two-level lighting system at common lobbies and corridors, and photocells at typical floors. We have also adopted free-cooling operation mode and heat wheel energy recovery system in the air conditioning & mechanical ventilation system in wet market, which can save 83% and 13% of energy respectively when compared to traditional air-conditioning system.



▲ Photovoltaic Panel



▲ Solar Pole in Landscape Garden

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Wind Environment and Natural Ventilation

We maximised the building separation, designed wind corridors and ventilation ground floor bay. Two view corridors of 30m and 15m in width viewed from the Tin Hau Temple on top of a small hill on the East of Hung Tin Road to the West of Hung Yuen Road are provided within the development. All domestic blocks are orientated in response to the prevailing easterly wind to enhance wind environment. We designed windows at typical lift lobbies and corridors to enhance natural ventilation of the common area.



▲ Two View Corridors

Noise Mitigation

The estate is surrounded by highways and main roads with severe traffic noise impact. We implemented various noise mitigation measures, such as positioning a 3-storey carport and a single-storey commercial centre abutting the main road as noise screening structures, providing a 3m high noise barrier above carport to screen traffic noise from main road, setting back domestic blocks from main roads and adopting single aspect design for those blocks facing highways, etc. With adoption of all these measures, we achieved 99% noise compliance rate.

Another major noise source is the Public Transport Interchange (PTI). Roof cover of the PTI comprises solid and transparent panels which are tilted at an angle to screen off noise impact from bus lanes to residential flats. Each roof covering is not more than 230m², so that mechanical ventilation system and sprinkler system are not required. The roof cover design not only allows natural ventilation and penetration of natural lighting but also, provides shelter in wet weather.



▲ Semi-covered Public Transport Interchange

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Waste Management

We have implemented various waste management measures at different stages of the development. At design stage, standard flat modules were adopted to facilitate the use of pre-fabricated products thus reducing construction waste and pollution; rotational symmetry in layout of domestic floors enhanced the buildability; Building Information Model (BIM) was used for clash detection to minimise abortive works. During construction, under the 'Pay for Environmental Management and Site Hygiene' scheme in the building contracts, the contractor has implemented a series of effective environmental protection measures in the construction sites. In addition, we have a pilot program to recycle 200 felled trees. The felled trees were cut and shredded into wood chips at foundation works stage. With the collaboration of building contractor and neighbouring school on food waste and garden waste recycling program, the wood chips were mixed with food and garden wastes, and decomposed into soil conditioner. Finally, 2 623kg of compost was produced for community farming. To eliminate nuisance from daily operation of refuse collection, we have installed central compactor system, odour removal system and mechanical ventilation and filter system in the Domestic Refuse Collection Chamber.



▲ Refuse Collection Chamber (RCC)

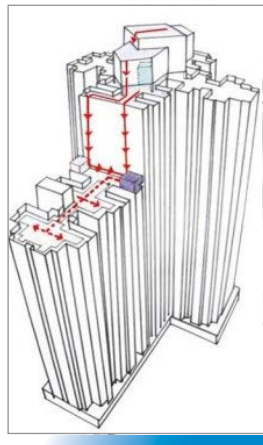


▲ Micro-climate Study at RCC

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Water Conservation

We have carried out water conservation study in irrigation system, for example, zero irrigation system (ZIS), modular ZIS, root-zone irrigation system, drip irrigation system. We have adopted rain water harvesting system at roofs of domestic blocks, and air-conditioning condensation water recycling system at wet market for green roof irrigation. A friendly reminder on “Save Water” is printed on the mirror inside the bathroom of every flat.



▲ Rain Water Harvesting System at Roofs of Domestic Blocks



▲ Warm Reminder in Every Flat

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Material Conservation

We have reused 1 565 granite blocks which were finishing materials of the old planter walls, fence walls and landscape paving and, this helps to reduce landfill burden. We have also reused building materials such as concrete tiles, steel frames, precast volumetric bathroom and façade mock up as educational display in the Recycle Garden.



▲ Reuse of Granite Blocks as Pavers



▲ Precast Components in Recycle Garden



Case Study 2: Wah Ha Estate – An Adaptive Re-use of Heritage

Wah Ha Estate is converted from the historical Chai Wan Factory Estate (CWFE), which was granted Grade II Historic Building status by the Antiquities Advisory Board. The conversion was announced in 2012 to increase and expedite the short-term public housing supply. The conversion is completed in 2016, providing 187 flats on five domestic storeys, with about 12 500m² of total gross floor area.



1964



2013



2016

▲ A 50-year Change from Chai Wan Factory Estate to Wah Ha Estate

Conserving the Heritage

CWFE was constructed in June 1959. It is the last H-shaped factory building remained in Hong Kong, with an area of 0.4 hectare located in close proximity to the MTR station. With the purpose of enhancing public awareness of heritage conservation and sustainable housing development, the existing industrial building was retained for adaptive redevelopment.

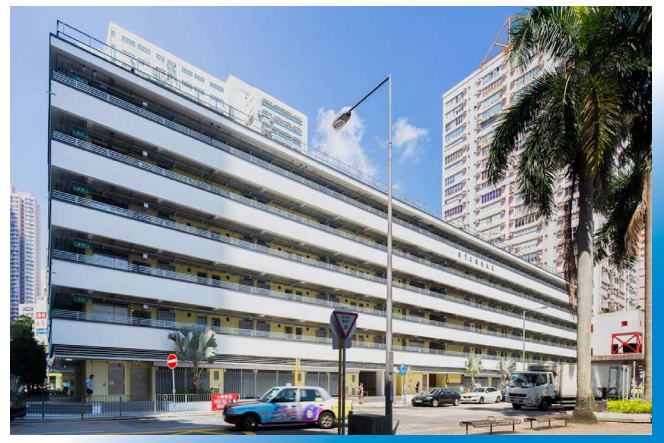


▲ Before (Left) and After (Right) the Conversion

With dual considerations of safety and structural stability, health and environmental issues, as well as the compliance of statutory requirements, conversion of this listed historic industrial building into public rental housing is a challenging task throughout the whole planning, design and construction process. Building clearance was required before the commencement of actual construction works, during which a large number of artifacts were salvaged. Existing floor slabs were tested and verified that the retained structure and materials can fulfil the latest fire safety requirements. As the test results were satisfactory, the original appearance of the building with about 70% of the building structure can be retained, which significantly reduced the demolition and re-construction of floor slabs, and thus building materials, energy consumption and carbon emissions in the construction process. Soil decontamination was carried out before commencing the construction works in order to ensure that future tenants of the estate can live or operate their business in a safe environment, and free from potential health risk arising from contaminated land. A number of “Character Defining Elements” have also been retained, including “H-shape” building form, strong horizontal lines formed by the balconies and slabs, paint characters of “柴灣工廠邨大廈” and floor loading capacity, ramps with concrete grilles and chimneys stacks.



▲ Floor Loading Capacity

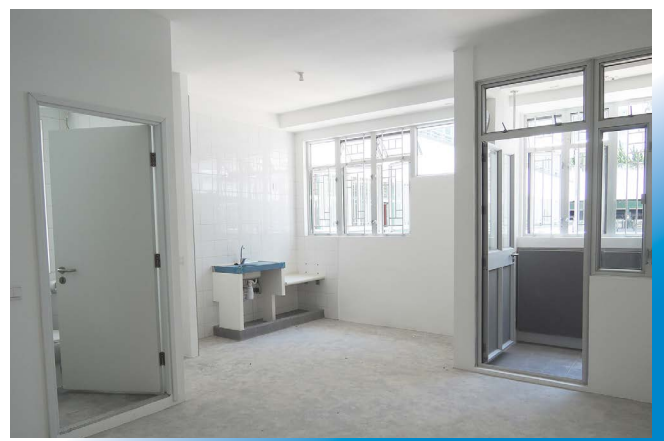


▲ Strong Horizontal Lines Formed by Balconies

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Thoughtful Building Design for the Residents

The building block is carefully redesigned to suit the needs of public rental households and communities. As it is originally an industrial building, the floor plan varies depending on the intended use and scale of the occupants. During the conversion, each floor was redesigned and modified into domestic flats to fully utilise the floor space in the building.



▲ Interior of a Standard Flat (Left) (Right)

To minimise traffic noise impact on the tenants, all domestic flats overlook the courtyards. Acoustic balconies, with noise absorptive panels and noise screens are designed to attenuate the noise impact.

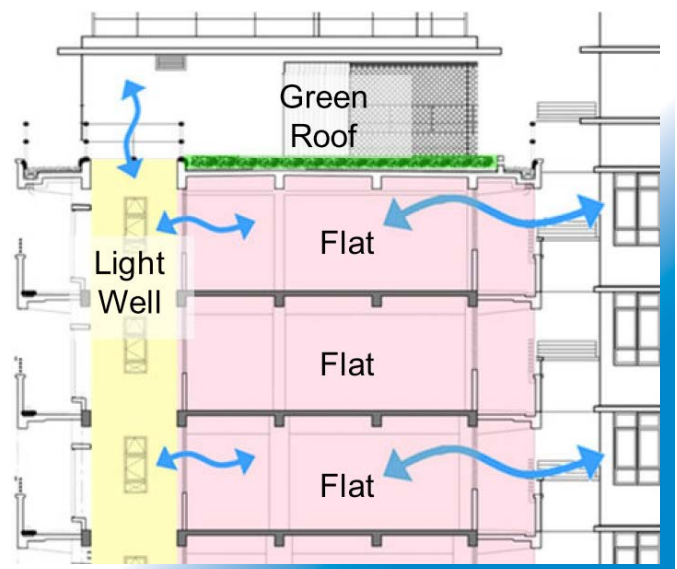


▲ Acoustic Balcony

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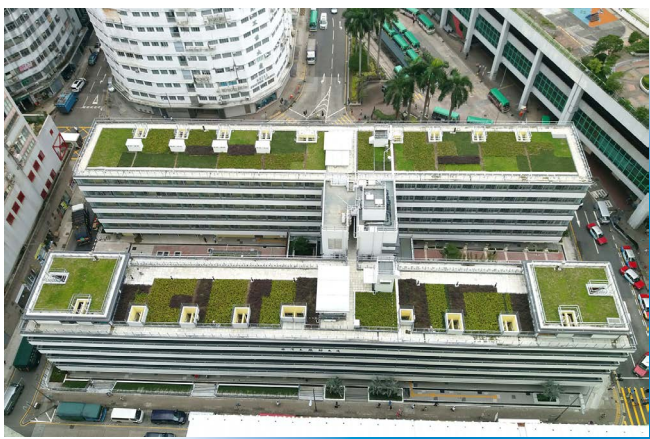
Protecting the Environment

Other than saving a large amount of construction materials by retaining most of the original structure, the estate was also modelled to be 46% more energy efficient than the specification in the Electrical and Mechanical Services Department's Performance-based Building Energy Code. We have adopted passive design in this development. We designed additional light wells to enhance natural ventilation and capture daylight for the flats.



▲ Interaction between Light Well and Flats

We have provided extensive landscaping with over 40% greening ratio to create a comfortable environment as well as a “green-lung” within the congested industrial area.



▲ Green Roof at Wah Ha Estate (Taken in August 2016)



▲ Green Roof

We have conserved precious water resources used in gardening. Rainwater harvesting system, together with the drip irrigation system, is installed to collect rainwater for irrigation, and projected to save over 50% of irrigation water annually. We also use eco-friendly recycled block pavers at the external areas.

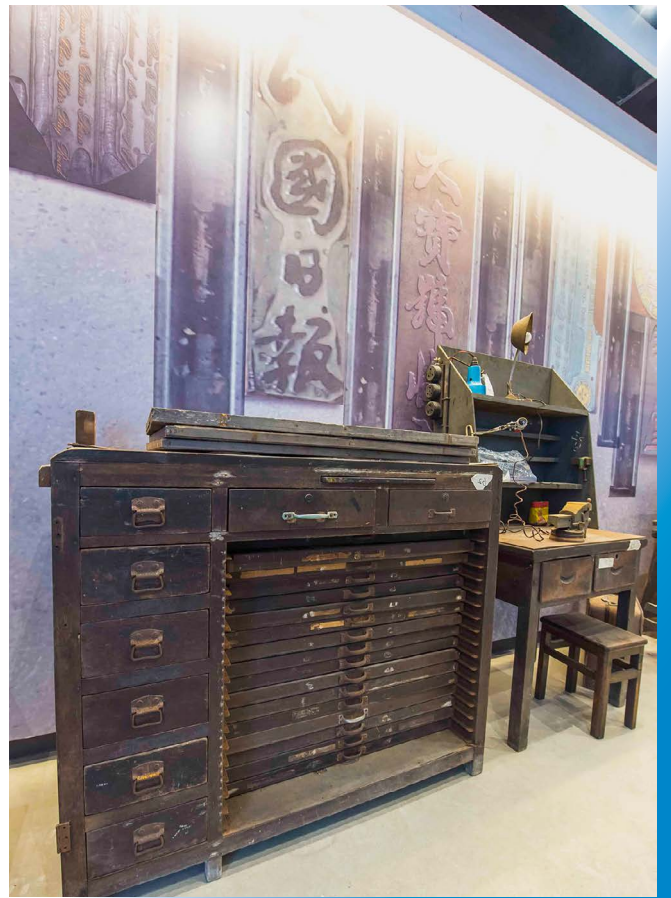


▲ Vertical Greening

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Interaction with the Community

HA adopts a people-oriented approach in delivery of the development project. We invited the ex-tenants and stakeholders to join the community engagement workshops. We incorporated their views and memories in the design process. In particular, a display area was setup to display the artifacts salvaged during building clearance, which include movable type printing machine and wardrobes, wooden carved chests, furniture, toys, daily supplies company signage, etc.



▲ Artifacts from CWFE Being Displayed



We have also reserved the ground floor of the building to provide courtyard, commercial, car parking and estate management facilities to satisfy the daily needs of the tenants as well as blending the building into the sustainable neighbourhood.

▲ Courtyard

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Conclusion

Wah Ha Estate has successfully demonstrated the adaptive re-use of existing building structure to public rental housing. We strive to take a holistic planning and design approach in addressing the public and create a sustainable community in delivering the public housing production.

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List of Awards & Community Recognitions

We are committed to enhance 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 2015/16 are listed below.

Environmental and Social

Hong Kong Green Awards 2015

Corporate Green Governance Award
– Grand Award

Corporate Green Governance Award
– Corporate Leadership Award

Green Management Award (Corporate)
– Platinum Award

Green Purchasewi\$e Award (Large Corporation)
– Platinum Award

Outstanding Sustained Performance 6 Years

Green Management Award (Corporate)
– Project Management – Silver
– Construction of Home Ownership Scheme at
Wang Yip Street West, Yuen Long



Organiser:

Green Council

Development Bureau, 21st Considerate Contractors Site Award Scheme

Construction of Home Ownership Scheme at Wang Yip Street West, Yuen Long

Non-Public Works (New Works) Group A
- Bronze

Outstanding Environmental Management & Performance Award
– Bronze

Organiser:

Development Bureau



World GBC Congress 2015

– Recognition to BEAM Plus Projects

BEAM Plus Platinum Rated Project

Project Team Attaining the Most BEAM Plus Platinum Projects
– Developer

Project Team Attaining the Most BEAM Plus Platinum Projects
– Project Manager

Project Team Attaining the Most BEAM Plus Platinum Projects
– Architect

Organiser:

Hong Kong Green Building Council Limited



Hong Kong Awards for Environmental Excellence

- Environmental Labels 2015

Top 3 Organisations Achieving Cumulatively
the Most Number of Goals in Wastewi\$e Certificate

Wastewi\$e Label

– Class of Excellence

Organiser:

Environmental Campaign Committee



Caring Organisation 2015/16

10 Years Plus Caring Organisation Logo

– Housing Department

Organiser:

Hong Kong Council of Social Service



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Development and Construction

Innovative Safety Initiative Award 2015

Construction of Home Ownership Scheme at Wang Yip Street West, Yuen Long

RFID Contactless Access Controlling and Recording System

Safety Management System, Training and Promotion Category

– Bronze

Organiser:

Development Bureau, Construction Industry Council and Hong Kong Construction Association

Autodesk BIM Awards 2015 – Hong Kong, Macau and Taiwan

Winner (BIM Culture)

– A New Paradigm Towards Partnering for Change

Organiser:

Autodesk



The Derek Smyth Safety Leadership Awards 2016

Client – Developer Category

– Gold Award

Organiser:

Lighthouse Club, Construction Industry Council



buildingSMART Hong Kong International BIM Awards 2015

Pioneering BIM for Quantity Surveying (Shui Chuen O Phase 1)
– Team's Award

Best BIM Application Prize
– Enterprise

(Driving BIM Development in HA

Fast-track Development of Home Ownership Scheme Projects

BIM for Safety – Demolition for Redevelopment of
Lower Ngau Tau Kok Estate

Transforming Business Practice in the Delivery of Public Housing
– Tung Tau Cottage Area East

Successful Transformation of Revit Model to DIALux for Lighting
Simulation and Rendering
– Development of Hin Tin Street, Shatin Area 31

Pioneering BIM for Quantity Surveying – Shui Chuen O Phase 1
Integrated Use of BIM & GIS

Organiser:

buildingSMART Hong Kong



Recognition(s) / Award(s) / Winning Project(s) :

Structural Excellence Award 2015

Tak Long Estate Residential
- Commendation Merit

Organiser:

Hong Kong Institution of Engineers, and Joint Structural Division,
Institution of Structural Engineers, UK



Estate Management

Recognition(s) / Award(s) / Winning Project(s) :

Civil Service Outstanding Service Award Scheme 2015

Ping Shek Estate (Estate Revitalisation Scheme)

General Public Service Team Award

Special Citation (Responsiveness to Customer Needs)

Organiser:

Civil Service Bureau



Hong Kong Flower Show 2016

Unique Feature (Landscape Display)

- Gold Award

Organiser:

Leisure and Cultural Services Department



Final Platinum Rating of BEAM Plus (Existing Buildings Version 1.2)

Kwai Shing West Estate

Organiser:

Hong Kong Green Building Council

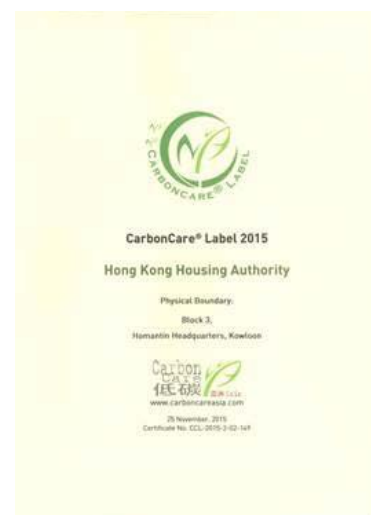


CarbonCare Label 2015

Block 3 of The Hong Kong Housing Authority Headquarters

Organiser:

Carbon Care Asia Limited



Hong Kong Awards for Environmental Excellence 2015 and Hong Kong Green Organisation Certification

Certificate of Merit in the Property Management (Residential)
Sector of 2015 Hong Kong Awards for Environmental Excellence
– Lam Tin Estate

Hong Kong Green Organisation
– Lam Tin Estate, Lai On Estate

Organiser:

Environmental Campaign Committee



Corporate

ERB Manpower Developer Award Scheme 2015/16

“Manpower Developer” (Government Department, Public Body and NGO)

Organiser:

Employees Retraining Board



Best .hk Website Awards 2015

Honourable Mention (Government Department stream)

Organiser:

Hong Kong Internet Registration Corporation Limited

ISO/IEC 20000-1:2011

Information Technology Service Management System Certification

Organiser:

Hong Kong Quality Assurance Agency



ISO/IEC 27001:2013**ISO/IEC 27001:2013 Information Security Management System Certification****Organiser:**

British Standard Institute

**Capability Maturity Model Integration****Software Development Maturity Level 3 (CMMI-DEV Version 1.3)****Organiser:**

Software Engineering Institute, Carnegie Mellon University, USA



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Previous Targets

For the fiscal year 2015/16, we have set 66 sustainability targets in relation to environmental, social and economic aspects. Over 95% targets (63 out of 66) are fully met. Details and progress of these targets are provided below.

Environmental Awareness Raising Targets	Progress
Review and monitor environmental awareness in Public Rental Housing (PRH) by partnering with green groups and our Statistics Section to conduct survey on PRH residents.	Fully Met
Monitor environmental awareness and enhance general awareness of Hong Kong Housing Authority (HA) staff by reviewing and implementing training and publicity strategies.	Fully Met
Collaborate with green groups to conduct environmental awareness programmes in the PRH.	Fully Met
Enhance environmental performance of contractors on site.	Fully Met
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 Channels and other joint activities with green group.	Fully Met
Enhance staff environmental awareness and knowledge by organising seminars related to Waste Management Plan, legislation updates and environmental issues, displaying environmental issues at the HA Headquarters' (HAHQs) Green Corner and organising campaigns to promote environmental protection.	Fully Met
Enhance community awareness on environmental protection by organising programmes to promote environmental protection messages.	Fully Met

Energy Efficiency Targets	Progress
Reduce electricity consumption of landlord services installation in new domestic blocks by adopting Energy Codes and obtaining energy certificates for completed blocks.	Fully Met
Explore and study the application of more energy efficient equipment, monitor the performance of the lift system with regenerative power at Kai Tak Sites 1A and 1B (Kai Ching Estate and Tak Long Estate), monitor the performance of the trial installation of Light Emitting Diode (LED) bulkheads at Kai Tak Site 1A (Kai Ching Estate) and pursue certification of LED bulkhead lightings under the “LED lighting product certification scheme” for mass application in HA’s 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 Met
Enhance electricity saving in existing PRH blocks by studying and evaluating the replacement of existing light fittings equipped with electromagnetic ballast by more energy efficient lighting source and/or electronic ballast.	Fully Met
Conduct carbon audit in 14 typical PRH block types for monitoring and benchmarking purpose.	Fully Met
Reduce energy consumption of the HA office premises by performing various energy saving initiatives.	Fully Met
Adopt green design for building services equipment by installing the solar-powered lights in each new estate for educational purpose, and conducting carbon emission estimation and energy estimation of domestic blocks at detailed design stage.	Fully Met

Greening and Landscaping Targets	Progress
Provide green treatment to newly formed slopes, such as providing hydroseeding, planting or other appropriate green treatment to soil or rock slopes.	Fully Met
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 Met
Promote local residents and the community to participate in early plant raising for new housing estates.	Fully Met
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.	Fully Met
Re-landscape and upgrade the existing landscape facilities in the selected PRH estates by improving soft landscaping through Landscape Improvement Programme.	Fully Met
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 Met
Improve the slope appearance in the existing PRH estates by providing green treatment to hard surfaced slopes and improving existing vegetated slopes. Chunam surfaces will be improved through hydroseeding, stone pitching and toe planters.	Fully Met
Promote staff involvement in greening activities by arranging staff/tenants to participate in Tree-planting Day.	Fully Met

Material Usage and 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 Met
Use softwood timber from sustainable sources for all types of timber door cores in the new public housing estates.	Fully Met
Use timber from sustainable sources for temporary construction works.	Fully Met
Enhance the use of "green" materials and components.	Fully Met
Maintain the remaining asbestos containing materials (ACM) 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 Met
Use environment-friendly paper for printing of all publicity materials.	Fully Met
Control of hazardous materials to minimise harm to environment by collecting all disposed mercury-containing lamps in the HAHQs for special waste treatment.	Fully Met

Waste Management Targets	Progress
Promote recovery of domestic waste for paper by arranging publicity activities in PRH estates.	Fell Short ¹
Promote recovery of domestic waste for aluminium cans by arranging publicity activities in PRH estates.	Fully Met
Promote recovery of domestic waste for plastic bottles by arranging publicity activities in PRH estates.	Fully Met
Promote recovery of domestic waste for used clothes by allowing charity organisations to collect used clothing and promote used clothes recovery in PRH estates.	Fell Short ²
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 Met
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 Met
Reduce A3 and A4 paper consumption in the HA offices by performing various initiatives to reduce paper consumption.	Fell Short ³
Collect waste paper in all HA offices and implement various initiatives to encourage paper recycling.	Fully Met

Notes:

- [1] The descent in paper waste recycling was probably due to the change of residents' habit on reading printed newspaper. We will continue to monitor and review the progress of the domestic waste paper collection.
- [2] The drop in collection of used clothes was probably due to the HA's keen promotion on waste reduction, and up-cycling within the estates, or the fact that tenants were making better use of their clothes, resulting in the reduction of used clothes available for recycling. We will continue to monitor and review the progress of the collection of used clothes.
- [3] The Department was successful in reducing paper consumption gradually from 2003/04 to 2014/15. However, there had been a general increase in paper consumption in nearly all offices in 2015/16 as a result of the increase in manpower as well as business activities, such as more construction projects, new initiative of conducting regular checking of eligibility on Quota and Points System applicants, new rounds of sale of Home Ownership Scheme flats and excess lead found in drinking water incident, etc. We will critically review the position and set the future saving target under comparable operating conditions. We will continue to implement paper saving measures, such as wider use of e-reports and e-operations, to control paper consumption.

Water Conservation Targets	Progress
Reduce flushing water consumption by using 6-litre single or dual flush water-closet suite.	Fully Met
Reduce irrigation water consumption by providing low maintenance rain water harvesting system (RWHS) or other types of root-zone irrigation system in new PRH developments.	Fully Met
Study the performance of the RWHS by reviewing the effectiveness and maintenance/ electricity expenditure of the RWHS system for all commercial centres and PRH estates where the system was installed, and analysing the overall performance of conventional and newly developed simplified RWHS in existing commercial centre and estates.	Fully Met
Reduce water consumption at the HAHQs by recording and monitoring water consumption.	Fully Met

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

Safety Targets	Progress
Incorporate a safety pledge with commitment to site safety through listing requirements of service providers. Fully implement the accreditation of OHSAS 18001 on provision of cleansing service in property services agents contracts and cleansing contracts as a listing requirement.	Fully Met
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 Met
Continue to tighten monitoring of contractors with high accident rates. Introduce the occupational injury alert and warning triggering system for property, cleansing and security services.	Fully Met
Strengthen safety training on site management for contractors and supervisory staff.	Fully Met
Explore enhancements in contract controls for site safety, e.g. provision of gates at vehicular ingress / egress for traffic control, safe delivery of materials by vehicles to sites.	Fully Met
Continue to tighten control measures for high-risk operations on site.	Fully Met

Safety Targets	Progress
Streamline Safety Auditing System to focus resources on high-risk activities and fine-tune safety audit criteria for building services installation.	Fully Met
Continue to hold regular seminars and forums on best safety practices with the participation of contractors and project teams.	Fully Met
Continue to partner with industry stakeholders in territory-wide safety campaigns and publicity.	Fully Met
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 Met
Enhance personal protective equipment for contractors' site personnel and our works staff.	Fully Met
Continue to develop the Occupational Injury & Disease Surveillance System for capturing accident and incident data on site.	Fully Met
Continue to develop mobile applications to streamline management of safety, quality and productivity on site.	Fully Met
Continue to update the Site Safety Website with site safety information and multi-media materials. Improve the website to comply with Web Content Accessibility Guidelines (WCAG) requirements and migrate the website to HA / Housing Department (HD) website by mid-2016.	Fully Met
Continue to issue best practice alerts to contractors, service providers and frontline staff.	Fully Met
Foster safety awareness of safety use of lifts and escalators in public estates.	Fully Met
Implement measures to enhance road / roadside work safety for cleansing and security service providers.	Fully Met
Improve safety of office operations with potential health and safety risks.	Fully Met

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



Targets and Outlook

We endeavour to meet our quantitative flat production target and enhance the sustainability of the 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 2016/17, we have set 66 targets which are detailed below.

Environmental Awareness Raising Targets
Review and monitor environmental awareness in Public Rental Housing (PRH) by partnering with green groups and the Statistics Section to conduct survey on PRH residents.
Monitor environmental awareness and enhance general awareness of Hong Kong Housing Authority (HA) staff by reviewing and implementing training and publicity strategies.
Collaborate with green groups to conduct environmental awareness programmes in the PRH.
Enhance 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 and rolling text in Housing Channels and other activities with green group.
Enhance staff environmental awareness and knowledge by organising seminars related to Waste Management Plan, legislation updates and environmental issues and organising campaigns to promote environmental protection.
Promote environmental message to HA staff by displaying environmental issues at HA Headquarters' (HAHQs) Green Corner.
Enhance community awareness on environmental protection by organising programmes to promote environmental protection messages.

Energy Efficiency Targets

Reduce electricity consumption of building services installation in communal areas of all domestic new 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 18kW or above in all new projects under design.

Conduct carbon audit in 14 typical PRH block types for monitoring and benchmarking purpose.

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

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

Greening and Landscaping Targets

Provide green treatment to newly formed slopes, such as providing hydroseeding, planting or other appropriate green treatment 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 the community to participate 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.

Re-landscape and upgrade the existing landscape facilities in the selected PRH estates by improving soft landscaping through Landscape Improvement Programme.

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.

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.

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

Material Usage and Hazardous Materials Management Targets

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.

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.

Use timber from sustainable sources for temporary works during construction.

Enhance the use of “green” materials and components.

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.

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

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

Waste Management Targets

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

Promote recovery of domestic waste for aluminium cans by arranging publicity activities in the 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 the 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 sundries for exchange.

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.

Water Conservation Targets

Reduce flushing water consumption by using 6-litre single or dual flush water-closet suite.

Reduce irrigation water consumption by providing Zero Irrigation System (ZIS) or other types of root-zone irrigation system in new building projects.

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.

Reduce water consumption at the HAHQs by recording and monitoring water consumption.

Social Targets

Continue the implementation of the Marking Scheme for Estate Management Enforcement in all the 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 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.

Continue to tighten monitoring of contractors with high accident rates through occupational injury alert and warning triggering system.

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 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.

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.

Safety Targets

Continue to issue best practice alerts to contractors, service providers and frontline staff.

Implement measures to enhance road / roadside work safety for cleansing and security service providers.

Improve safety of office operations with potential health and safety risks.

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

Explore enhancements in contract provisions for safety innovation/measures. e.g. anti-heat stress uniform, safety waist belt and hitch for hand tools.

Review the Integrated Pay for Safety, Environment and Hygiene Scheme to cascade payment down to the subcontractors and to include lunchtime safety talk and provision of step platform/ platform ladder.

Explore enhancements in contract requirements for identifying fatal zone by cordoning off during hazardous operations.

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

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

- Scope and Objective
- Methodology
- Conclusion

Scope and Objective

Hong Kong Quality Assurance Agency (HKQAA) was commissioned by the Hong Kong Housing Authority (hereinafter referred to as “HA”) to conduct an independent verification of its Sustainability Report 2015/16 (hereinafter called “the Report”). The Report stated HA’s Sustainability performance and achievement towards sustainable development for the period from 1 April 2015 to 31 March 2016. The verification team did not partake in the compilation of the data and information of the Report.

The aim of this verification was to provide assurance on the completeness and accuracy of the information stated in the Report. The Report covers the standard disclosures defined in the Global Reporting Initiative (GRI) Sustainability Reporting Guidelines Version 4 (G4) with “Core” option.

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Methodology

The process used in this verification was based on current best practices. The Report was reviewed 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) G4 Guidelines

The verification procedure included reviewing relevant documentation, interviewing responsible personnel with accountability for preparing the Report and verifying the selected representative sample of data and information consolidated in the Report. Raw data and supporting evidence of the selected samples were thoroughly examined.

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Conclusion

Based on the outcome of the verification process, it is opined that the Report is in accordance with the GRI G4 Guidelines – “Core” option.

The information presented in the Report provided a structured, balanced and consistent representation of the performance of HA in the context of sustainable development. We are satisfied that the Report includes factual statements and the data contained within the Report is accurate and reliable. It is a fair and honest representation of initiatives, targets, progress and performance on the sustainable development achievements of HA.

Opportunities for improvement on the reporting structure and content are separately submitted to HA for their consideration on the compilation of future sustainability reports. It does not affect our opinion on the Report.

Signed on behalf of
Hong Kong Quality Assurance Agency



Jorine Tam
Director, Corporate Business
January 2017



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Our Performance and Sustainability Report 2015/16

The Sustainability Report 2015/16 detailing our sustainability principles and summarising our performance during the fiscal year of 2015/16 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 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

Thank you for reading our Sustainability Report 2015/16, **Smart Living in Sustainable Community**. Please take a moment to give us your valuable feedback and return to us via email or post before 30 September 2017.

- | | | | | | |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 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 |

*Note:

- | | |
|--|--|
| 1. About This Report | 7. Case Study 2 - Wah Ha Estate |
| 2. About the Hong Kong Housing Authority | 8. List of Awards and Community Recognitions |
| 3. Environmental Performance | 9. Previous Targets |
| 4. Social Performance | 10. Targets & Outlook |
| 5. Economic Performance | 11. Verification Statement |
| 6. Case Study 1 - Hung Fuk Estate | |

5. Which aspect of the Report do you find most useful?
Please specify
- | | | | | | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
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6. Which aspect of the Report do you find least useful?
Please specify
- | | | | | | | | | |
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| ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
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7. Which aspect(s) of the Report would you like to have more information on?
Please specify
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| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
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8. What improvement(s) would you recommend for our next Report?
Please specify
- | | | | | | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
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-
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: _____ Contact Number: _____

E-mail Address: _____ Mailing Address: _____

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