

**ANNEX – Greenprint @ Yuhua Initiatives**

<p><b>Energy Conservation</b></p>	<p><b>Elevator Energy Regeneration Systems (EERS)</b></p> <ul style="list-style-type: none"> <li>• Implemented in the lift system to reduce energy consumption. When an elevator car is descending with a heavy load or ascending with a light load, it contains potential energy.</li> <li>• The regenerative drive recovers this energy and converts it into electricity for re-use without affecting the lift operations. The energy recovered is used to power up other services within the lift such as lift lightings.</li> <li>• Installed in 38 lifts (16 blocks), which use an average of 20% less energy compared to conventional lifts.</li> </ul>
	<p><b>Solar Photo Voltaic (PV) System</b></p> <ul style="list-style-type: none"> <li>• Introduced to convert the natural sunlight into solar power. The solar power generated is used to power lift, corridor and staircase lightings</li> <li>• Installed on the roof tops of 29 blocks</li> <li>• A total of around 1.36 GWh of solar energy (equivalent to powering up 280 units of 4-room flats) is generated annually</li> </ul>
	<p><b>Outdoor Light Emitting Diode (LED) Street Lighting</b></p> <ul style="list-style-type: none"> <li>• Replaced existing outdoor street lights with energy-saving LED lighting at 3 surface car parks and driveways to the car parks</li> <li>• Reduced energy consumption by at least 50% (i.e. 50% more energy efficient)</li> <li>• Increased residents’ safety as parking areas and driveways are now brighter due to higher lumens</li> </ul>
<p><b>Water Conservation</b></p>	<p><b>Rainwater Harvesting System (RWHS)</b></p> <ul style="list-style-type: none"> <li>• Allows collection of rainwater for common corridor washing and landscape irrigation. Rainwater will be harvested to a storage tank placed at the ground floor of the residential blocks</li> <li>• Installed at void decks of 17 blocks</li> <li>• 1700 m<sup>3</sup> of water (equivalent to households’ water consumption for 94 4-room flats per month) is saved per year for common corridor washing</li> </ul>
<p><b>Waste Management</b></p>	<p><b>Pneumatic Waste Conveyance System (PWCS)</b></p> <ul style="list-style-type: none"> <li>• An automated and enclosed waste collection system which uses high speed air suction to transport household waste via an underground pipe network to the Centralised Bin Centre. Also eliminates the need for manual waste collection, reduces pest issues and waste scattering</li> <li>• Brings about a higher quality of living environment which is cleaner, greener and more hygienic</li> <li>• Installed for all 38 blocks. This is HDB’s first and largest installation of an</li> </ul>

	<p>automated waste collection system in a mature estate, with a network of underground pipes running approximately 4.6 kilometres</p>
Green Commuting	<p><b>Secure Bicycle Parking Facilities (Dual Bicycle Rack System)</b></p> <ul style="list-style-type: none"> <li>• The Dual Bicycle Rack System optimises space as two bicycles can be securely parked using the same space required by a normal bicycle rack. This system also minimises theft, and creates neater and safer corridors</li> <li>• Installed at void decks of 28 blocks (total of 133 sets of the Dual Bicycle Rack System with 266 bicycle parking lots)</li> <li>• Encourages green commuting, and complements the enhanced cycling and pedestrian network in Yuhua</li> </ul>
	<p><b>Enhanced Cycling and Pedestrian Network</b></p> <ul style="list-style-type: none"> <li>• New cycling path and pedestrian path along Jurong East St 21 constructed to provide residents with better connectivity to transport nodes and public amenities, and encourage green commuting</li> </ul>
Enhanced Greenery	<p><b>Vertical Greenery</b></p> <ul style="list-style-type: none"> <li>• Brings about a more cooling and pleasant environment by reducing surface temperature of the block wall by up to 5°C, enhances greenery in the estate and reduces glare from the sun to surrounding buildings</li> <li>• Installed at the East-West facing façade of Blk 223 Jurong East St 21</li> </ul>
	<p><b>Green Roofs</b></p> <ul style="list-style-type: none"> <li>• Helps to reduce surface temperature by up to 15°C, creating a cooler and more pleasant living environment. Also provides visual relief for residents staying at the surrounding blocks by creating more green spaces in the neighbourhood.</li> <li>• Installed at 9 blocks</li> </ul>
Community Engagement	<p><b>HDB Greenprint Fund</b></p> <p>In 2013, HDB launched its first \$1 Million HDB Greenprint Fund (绿化社区基金) to support and finance the developmental and test-bedding costs of new and original green solutions co-created with the public. The solutions had to relate to savings in water and electricity, increasing recycling rates, reducing heat in the environment, and improving community bonding.</p> <p>Details of the <u>implemented</u> Greenprint funded projects are:</p> <p><b>(A) Hobby Farming</b></p> <ul style="list-style-type: none"> <li>• The uniqueness of this proposed community farming system is in the usage of recyclable materials (such as Styrofoam boxes) as planting receptacles and soya bean / coffee waste as fertilizers for planting. Courses and talks on farming and healthy cooking have been conducted by Mr Ronnie Chew (Greenprint Fund awardee) and residents have the opportunity to grow vegetables sustainably using this system.</li> </ul>

	<ul style="list-style-type: none"> <li>• Encourages residents to take ownership of their neighbourhood and increases social cohesion. A total of 41 residents have taken up hobby farming.</li> <li>• Hobby farming areas are located at: <ul style="list-style-type: none"> <li>i) Existing community garden located near Block 232 next to Shuqun Secondary School</li> <li>ii) Existing community garden located near Blk 217 next to Yuhua Community Club</li> <li>iii) Existing community garden located near Blk 223A next to Residents' Committee Centre</li> </ul> </li> </ul> <p><b>(B) Community Parklets</b></p> <ul style="list-style-type: none"> <li>• Mini parks created at HDB void decks for residents to relax and interact in, even on bad weather days. This helps to promote social cohesiveness and community bonding through the provision of more green spaces for residents to interact.</li> <li>• 11 residents have volunteered to serve as Parklet champions to help maintain the two community parklets at Yuhua (at Blks 218 and 229).</li> </ul> <p><b>(C) Ducted Systems LED Lighting</b></p> <ul style="list-style-type: none"> <li>• A lighting system that provides uniform distribution of artificial lighting along the common corridor via a single light source i.e. uses fewer light (LED) sources due to effective light management technology to transmit light efficiently. Residents feel more comfortable as light uniformity can be achieved.</li> <li>• Reduction of energy consumption by 8% for the common corridors installed with the ducted lighting system.</li> </ul> <p><b>Second Grant Call under HDB Greenprint Fund</b></p> <p>Rolled out in Feb 2015, winning ideas for the second grant call have been identified. More details are available at a later date.</p>
	<p><b>Community Engagement Programmes and Activities</b></p> <ul style="list-style-type: none"> <li>• Community Outreach &amp; Engagement programmes such as dialogues, visits, Eco-Learning Journeys and Heartland Ambassador Programmes have been organised to educate residents on the eco-features at Yuhua and encourage green living.</li> </ul>
<p><b>Resource Management – Backend Services</b></p>	<p><b>Electrical and Water Sub-meters</b></p> <ul style="list-style-type: none"> <li>• Electrical sub-meters are installed at existing switch rooms to monitor the energy consumption of the common services such as lifts, pumps etc.</li> <li>• Water sub-meters are installed at existing common area water taps to monitor common area water consumption, identify water leakage and theft.</li> <li>• The town council can monitor and better manage their energy and water consumption for common services.</li> </ul>