



1 PEKING COMMERCIAL BUILDING – A COMMERCIAL DEVELOPMENT WITH ENVIRONMENTAL AND ENERGY EFFICIENCY CONSIDERATIONS



One Peking is a new landmark at Tsimshatsui and was completed in May of 2003. It immediately located behind the two-storey former Marine Police Headquarters building with a design that merging the surrounding landscape and integrating the adjacent heritage site visually and spatially with a strong contrast between old and new.

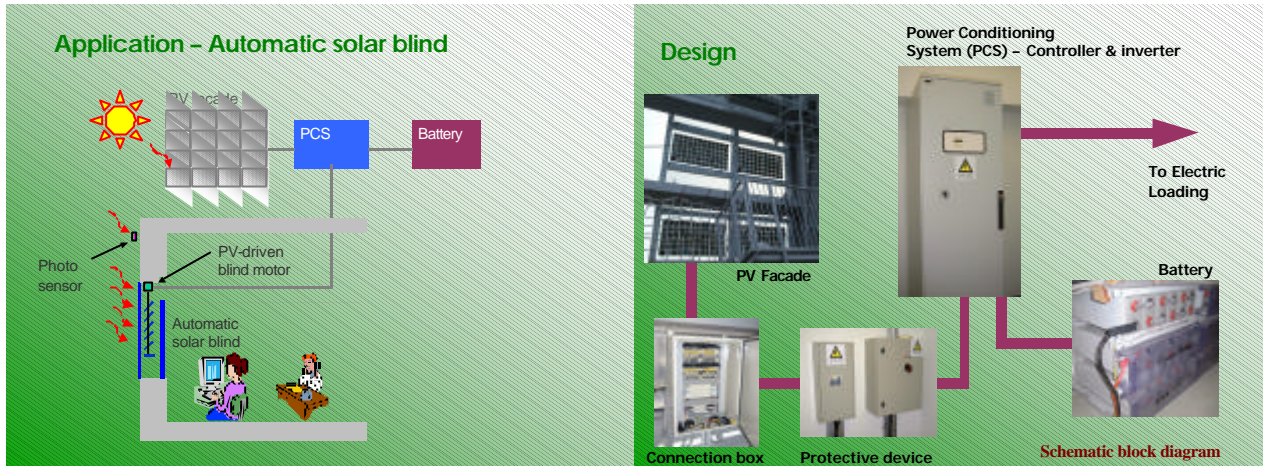
Moreover, One Peking has a visual connection with the former Marine Police Headquarters building's green platform at the main lift hall with a 7.3 m high wall at foyer and bamboo on second floor to establish a physical connection of the public space. Sky court, landscape at podium roof and a underground pedestrian walkway system for the convenience passage to the public demonstrate the contemplation of the environmental awareness needed in today's building development.

One Peking is a multi-tenants commercial building with the first five levels above the main foyer accommodated by restaurants, followed 14 floors of offices spaces and 3 levels of restaurants at the top. To achieve the transparency in structure; laminated glass with cantilevered glass beams were chosen for constructing the canopy whilst the environmentally sensitive cladding system was fulfilled by adopting a triple-galzed active wall system that combining three layers of low-E clear glass with a ventilated cavity to enhance the light transmission but reduce the OTTV. It also applies inclined ceiling rise at perimeter zone to strengthen the spatial effect. Outside the windows, aluminium sunshading fins serve as reflectors bouncing light up onto the angled ceiling to transmit more natural light inside while limiting the entry of direct sunlight at the same time.



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Window blinds are enclosed in an air gap of the glazing system and are operated by a computer system that controlling the descending of blinds and blind's blade angles to cut glare and heat gain in the interiors through photo sensors installed at building's envelope. The power for the operation comes from the photovoltaic panels at roof.

Building Integrated Photo Voltaic, (BIPV) panel module is a double laminated 8 + 8 mm heat-strengthen glass with 100 x 100 mm silver colour polycrystalline silicon cell fixed on the surface. A total number of 144 modules that covering 200 m² in area with an inclined angle of 67° at the top of the building and facing the south east have been employed. It is the first large scale commercial "BIPV" building in Hong Kong and China and is a milestone of "BIPV" development in Hong Kong.

The project team for the construction of One Peking commercial development are : Glorious Sun Properties Ltd. as the developer; DTZ Debenham Tie Leung Project Services Ltd. (DTZ) as the project manager; Rocco Design Ltd. (RDL) as the design architect; WMKY Architects and Engineers Ltd. (WYMK) as the project architect and structural engineer; J Roger Preston Ltd. (JRP) as the electrical and mechanical engineer; and Gammon Skanska Construction Co. Ltd. (GSCL) as the main contractor.

As the first "BIPV" commercial building in Hong Kong, other sustainable environmental features was also integrated into the building design. These innovative and sustainable design achievements accomplished the highest HK-BEAM rating of *Excellent* upon building completion. Examples of these environmental building design features are shown overleaf.



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“Building Integrated Photo Voltaic, BIPV” Panels



These BIPV panels are erected at the top of the building, connected with the grid electricity. Each panel is a 100x100mm silver color polycrystalline silicon cell and used to absorb the solar energy that is converted into electricity and supply to the building.

HEAT RECOVERY SYSTEM

A air-to-air heat wheel was employed at mechanical floor to make use of the released energy from general office areas. The heat wheels are interlocked with the extraction systems and the fresh air intake fans to recover the cooling energy from the office exhaust air.

REUSABLE FORMWORK SYSTEMS

Steel formwork for flooring construction was employed during construction period to reduce the use of waste timber generation. The benefits of adoption of reusable formwork systems are to reduce the waste timber and save operating cost for the metal formwork could be reused for other projects.



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RECYCLING FACILITIES



During the construction period, designated areas were provided for segregation of inert and non-inert waste for recycling.

Metal and timber wastes were collected for reuse and recycling whilst the non-inert wastes were delivered to landfill sites.

WATER CONSERVATION DEVICES



Water conservation devices such as motion sensors for faucets and urinals are installed in the toilets of office levels and food & beverages floors of the development.



No.1 Peking Road – A COMMERCIAL DEVELOPMENT WITH ENVIRONMENTAL AND ENERGY EFFICIENCY CONSIDERATIONS (Case study Summary)

As the first Building Integrated Photo Voltaic (“BIPV”) commercial building in Hong Kong, other sustainable environmental features were also integrated into the building design of One Peking. These innovative and sustainable design achievements accomplished the highest HK-BEAM rating of *Excellent* upon building completion. Examples of these environmental building design features including : application of “Building Integrated Photo Voltaic, BIPV” panels; heat recovery system; reusable formwork systems; recycling facilities; and water conservation devices.



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