

Melbourne Docklands, Harbour Town Precinct

The Harbour Town precinct (previously known as Waterfront City), located along the Melbourne Docklands, is home to over 120 specialty and outlet stores, around 17 restaurants, cafes and fast food dining venues and several large entertainment facilities including the Melbourne Star (nee Southern Star) Observation Wheel. A combination of open spaces and laneways, this popular destination is open 7 days a week and attracts thousands of visitors every year.

Since the development of Melbourne's Docklands began in the late 1990's this area has attracted more than \$10B private sector investments and has more than 10,000 residents in various high-rise apartments and townhouse developments.



Equipment Supplied

11 x PowerClean large-scale auto wash ESP systems of various single pass configurations, including safety filters and activated carbon filters. These units have given over a decade of reliable operation, and are still functioning as installed without any operational, mechanical or electrical failures.

Multiple AirePleat G4 pleated panel filters.



Special Considerations

The various restaurants, cafes and fast food dining venues in Harbour Town include the following cooking process types (per AS1668.2:2012):

Cuisine (Kitchen Exhaust Emissions)	Cooking Process Type
Traditional Asian (medium grease, low smoke, high odour)	Type 2 - Low-grease, medium-heat-producing equipment such as griddles, ranges, conventional fryers, tilting skillets, steam kettles and gas ovens
Café's with fried food (high grease and odour, low smoke)	Type 3 - High-grease, low-heat-producing equipment such as electric deep-fat fryers, grooved griddles, hot tops and hot top ranges.
Fried Chicken / Burgers or Fish & Chips (very high grease and odour, medium smoke)	Type 4 - High-grease, medium-heat-producing equipment such as countertop barbecues and gas-fired deep fat fryers.
Steak House / Charcoal Chicken (very high grease, smoke and odour)	Type 5 - High-grease, high-heat-producing equipment such as salamanders, and open flame charcoal equipment utilising solid fuel
Modern Asian (high grease and odour, medium smoke)	Type 6 - Oriental cooking tables and/or woks
Coffee houses / Bakeries (low grease and smoke, medium odour)	Type 7 - Bread ovens and steam producing combination ovens

Given the various specialty shops, executive suites, residential apartments and open space recreation areas surrounding these dining venues, there was requirement to neutralise offensive commercial kitchen exhaust emissions (including grease, smoke and odour) to maintain acceptable air and noise quality in and around the precinct. Due consideration was also given to ongoing operation and maintenance requirements and costs.

PowerClean large-scale auto wash ESP systems, manufactured by Air Scrubbers Inc. were selected.

Ideal for multi-kitchen exhaust applications, these superior and dependable electronic air cleaning systems maintain a constant airflow resistance that prevents unwanted fluctuations in the system air volume. This ensures that all exhaust contaminant particles are captured efficiently and effectively in a single pass.

Additional features of the PowerClean systems include:

- Superior ESP collector cells with sturdy ionizing electrodes made from rigid stainless steel to remove the smoke and grease particles from the air. The Harbour Town PowerClean systems have provided over a decade of reliable operation, and are still functioning on their original ESP cells.
- Dependable power supply with robust electronics delivers split second recovery from momentary arcing and ensures a constant and reliable ongoing airflow resistance stream from the moment the system initiates.
- High efficiency safety filters as backup for your peace of mind.
- Bonded activated carbon filters for effective odour control.
- Automatic wash-in-place cleaning system with user friendly programmable logic controls

Ten (10) PowerClean systems were installed in 2004 to service the commercial kitchen exhaust emissions of the various dining venues. Up to three PowerClean systems are housed within each of dedicated plant rooms at various locations around the Harbour Town complex. Following the construction of the Melbourne Star Observatory Wheel, another single (1) PowerClean system was installed within the Star Piazza in 2007 to service a catering kitchen and specialty food outlets.

AirePleat high capacity G4 rated pleated panel filters have also been supplied to service the multiple indoor VRV air conditioning units and residential ducted split air conditioning units throughout the Harbour Town precinct.

Mechanical Consultant: WSP Group (Lincolne Scott)

Contractor: Entire Mechanical Services