

ODOUR MANAGEMENT

Development

AOMC consists of a small team of specialists with the capacity to investigate the source of odour and to design, manufacture, and install process systems to contain and treat odour.

The company was formed in response to a growing demand for specialist technical services for the Wastewater Industry.

The focus of the team is to provide technical expertise across the entire field of odour management. In association with our industry partners, Corrosion Technology Australia we are able to offer complete systems including covers, extraction and odour control systems.

Key Services in Odour Management

- Site Auditing for Odour
- Site Sampling and Monitoring
- Sewer Network Modelling for Air Ventilation and Septicity
- Prediction of Site odorous air extraction rates and composition
- Process design of Biological and Dry Media odour control systems
- Determine the impact of covers and ventilation to the effective containment of odours
- Determine the overall site point and area odour source emissions before and after treatment strategies are applied.
- Atmospheric Dispersion Modelling impact of the overall site odour assessment including ADMS and AERMOD software.
- Process Odour Component inspection including Biological Treatment Systems, Wet Chemical Scrubbing Systems, and Activated Carbon Systems.
- Odour Control maintenance including media replacement, instrumentation inspection and repair, performance testing and evaluation of odour control systems.
- Commissioning of process odour control systems
- Specification for process odour control equipment and components.
- Performance Testing and Assessment
- Media design for Odour Control Systems – Organic and Inorganic.
- Organic Media Sampling and Testing for odour control systems
- Extraction Ductwork Sizing and Duct Network Design Pressure Drop Calculations

Core Skills

Odour is a major concern for all wastewater authorities. It impacts all aspect of wastewater operation including sewer networks and the wastewater treatment plants.

Our experience is that to achieve the successful management of odour on any site requires knowledge of:

- Source and nature of the odour
- Available methods of containment and treatment of odour.

The core skill within Australia Odour Management is the ability to manage all aspects of the process.

The object for any system of odour management is the elimination of nuisance odour from the surrounds to the extent that residents are no longer able to detect the smell, at the same time government regulations imposed to ensure that any process in operation does not adversely impact the local community.

Although statutory requirement for odour emissions are measured by way of Dynamic Olfactometry, when considering the treatment of odour by any process, the design of the process units can only take into account the removal of chemical species.

An understanding of the relationship between the two is necessary in order to be able to provide an effective service in odour management.

Our expertise includes:

- Identification of sources of odour from an installation
- Characterisation of the odour including the chemical composition
- Understanding the impact of the effects of different cover design on odour containment.
- Determining the appropriate minimum ventilation rates and the resulting contaminant concentration.
- Determining the minimum design requirements for the odour control system and the achievable odour emissions.
- Determining the site odour impact before and after odour measures were installed.

We can evaluate a number of separate design option, determine the capital and operating costs to assess the best whole life solution for the operations.

Site Auditing for Odour

It is our experience that a number of systems installed often do not meet their requirements in to containing odour or fail after a very short period of time. There will be a number of reasons that this has occurred and only a full site audit will determine the main cause.

A site audit will determine

- Cover condition and Containment efficiency
- Extraction efficiency and whether the extraction is properly balanced.
- The Performance Odour Control System
- Review of the Odour Control System limits of performance based on the system design

A recent project includes site ventilation audits and cover performance assessments for sites in Eastern Treatment Plant for Melbourne Water and on Biosolids Treatment Plants in the North West of the United Kingdom.

Design of Biological and Dry Media Odour Control Systems

AOMC has the capacity to Design and Construction of complete Odour Control systems. This includes full factory construction, site installation and commissioning. This is provided through our association with Corrosion Technology Australia Pty Ltd.

We are able to provide:

- In-house developed designs for BioFilters, BioTrickling Filters and Activated Carbon systems.
- Construction, installation and commissioning of complete odour control systems.
- Manufacture of BioFilter replacement media
- Inspection and Servicing of Odour Control Systems including parts replacement and commissioning.

Recent projects include the provision of package Activated Carbon systems for sewer networks for Yarra Valley Water to design of full BioTrickling Filter & Activated Carbon system for Sydney Water Wollongong S.T.P



Site Sampling and Monitoring for Odour

Where an existing site is subject the odours, accurate data is required in order to determine the emission levels and devise the best strategy in terms of treatment and to obtain accurate measure of odour profile for the site. AOMC has been involved with a number of site odour surveys which include acquiring gas samples for chemical analysis and supervising sampling for odour in accordance to AS/NZS 4323.3: 2001 Stationary source emissions – Determination of odour concentration by dynamic olfactometry.

- Odour sampling utilising flux hood or wind tunnel from area sources, or direct extraction from point sources (exhaust stacks or ventilation holes)
- Chemical species analysis utilising site or laboratory analysis techniques.
- Selection and use of comparable site data where current treatment site does not exist.

Recent projects include supervision of simultaneous site sampling of liquid phase and gas phase on the Hobson Bay Main for Melbourne Water including measurements of sewer levels and flow velocity.

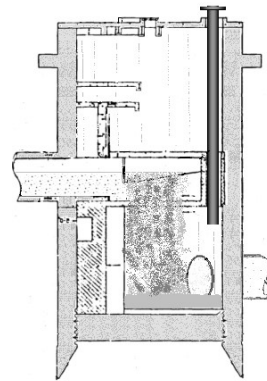
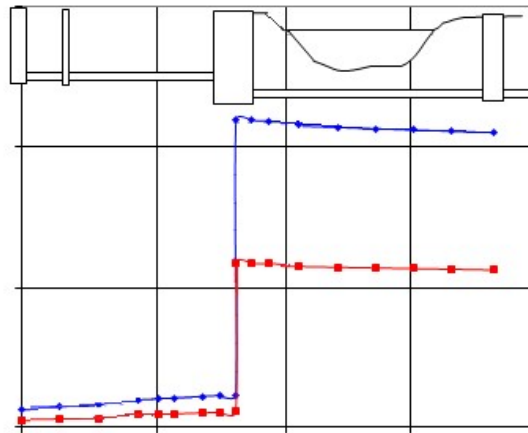


Sewer Network Modelling

Sewer Networks have a significant impact in the local community. In areas where due to land profile and construction costs Pumping Stations or Pressure systems operate, due to the nature of submerged sewer lines it is common to generate elevated levels of Hydrogen Sulphide within the sewer pipeline and cause a substantial odour release at the end of line. It is also possible to have multiple points of release in gravity and combined pressure and gravity sewer networks.

AOMC has considerable experience in modelling sewer networks including determining rates of formation of Hydrogen Sulphide in solution and determining the release rates of hydrogen sulphide from vent stacks.

Recent projects included ventilation modelling of the main sewer networks on the west side of Melbourne City including drop structures and pump stations



Design and Construction of Odour Control Systems

The team at AOMC have over 18 years' experience in designing and constructing Biological and Dry Scrubber odour control systems. All designs for BioTrickling Filters and Activated Carbon units are generated using design tools developed in-house. This permits flexibility in the final design and internal control and management of the design process.

In conjunction with our design partners, Corrosion Technology Australia we are able to undertake full detail design of entire package Odour Control System, Installation and Commissioning.

Overhaul and Repairs to existing Odour Control systems

AOMC has undertaken media replacement of number of operating odour control systems. This includes:

- Inspections of Vessels
- Inspection, sampling and testing of BioFilter Media
- Tailored design media to enhance system performance
- Supply and installation of replacement media and activated carbon
- Inspection and repair to odour control systems

AOMC can provide repairs to Fibreglass Reinforced Plastic fabricated vessels, including internal supports, spray lines and grating. Inspection, testing, repairs or replacement of instruments installed on Odour Control Systems.

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Services that we are able to offer

AOMC has undertaken media replacement of number of operating odour control systems. This includes:

- Odour investigations including site sampling, and systems auditing.
- Sewer Network Investigations including odour "hot spots" identification
- Covers and Extractions system design, construction, installation and commissioning.
- BioTrickling Filter and Activated Carbon system design, construction, installation and commissioning.
- Anaerobic Digester Biogas desulphurisation and siloxane removal systems including design, construction, installation and commissioning.
- Site odour emission studies including Dispersion Modelling