iDAStech®

innovation, integration, inspiration

Fire Protection System
Engineered Smoke Control System
Service and Maintenance

Introduction

Introduction to iDAS Technology

In iDAS Technology our key personnel have more than 10 years of experience in the construction industry and have developed a fine-tuned and successful synergy between innovative technical solutions and inspiring architectural design, resulting in new dimensions for a sustainable environment.

iDAS Technology operates in four business segments: Architectural Green Solution, HPLED Energy Efficient Lighting System, Solar Energy System and Fire Safety Application.

Advantages of using iDAStech® service and maintenance

IDAS Technology has been involved in the Design, Supply and Install of Engineered Smoke Control System for more than 100 projects in Singapore over the last 8 years. We have cover over 100 sites for servicing of this equipment.

Wide Knowledge of products/equipments

We are well versed in the installation, testing, commissioning, service and maintenance of various certified and approved brands of smoke control system such as ASB, Brakel, Colt, Coopers, Esser, Gent, GST, Rosenburg, Connels-Aire, System Aire, etc.

Option for upgrading

With our in-house technical design team and QP, we are able to provide options when you plan any addition and alteration to your building.

Codes of practice

Our familiarity with the Authority requirements also enables us to provide first hand information about the fire safety compliance of your equipment with respect to latest Code of Practice or Authority standards like PSB, EN Standards and other local standards.

Our experience

Over the years, we have continuously serviced the projects completed by our project team as well as secured new contracts done by other contractors. These buildings include industrial, commercial, airport, educational institutes, hotels, condominium and many more.

24/7 Service

iDAStech® 24/7 services provides maintenance service solutions designed to maximize the lifecycle of your engineered smoke control systems and equipments.
In order to maintain a high level of reliability of the engineered smoke control system, it will need regular service and maintenance throughout the life cycle.

Commitment

At iDAStech®, our commitment to providing exclusive support to clients has led to the creation of a portfolio of maintenance service solutions that are qualified to deliver this support at a level of excellence throughout the life span of the system.

iDAStech® Solutions

Service and Maintenance Solutions		
Services	**Non-Comprehensive**	**Comprehensive**
Hotline Helpdesk	✓	✓
Service Call		✓
Reporting		✓
Spare Parts		✓
Service Visits	✓	✓
Extended Support		✓

Master Smoke Control Panel

Hotline Helpdesk

When you contact our hotline helpdesk, we will record your incident, assign one of our qualified engineers and allocate you a unique incident reference number with which you can enquire any time about the status of your request. Our hotline helpdesk will contact you as soon as possible to provide further assistance.

Service Call

Situations can occur when our service engineer is urgently required to attend the source of an error and to fix the problem. In such cases, your needs and demands define our response time commitment in a service level agreement. IDAS tech service engineers are on-site within the agreed number of hours.

Reporting

IDAS tech provides regular detailed and comprehensive reports on the status of your installed base and the fulfilment of our contractual obligations. The findings of our report will be discussed during operational meetings at your location.

Spare Parts

Our well-managed spare parts inventory maximises the uptime of your engineered smoke control system and ensures that it continues to operate reliably throughout the life cycle. We provide spare parts for the complete range of systems and equipment.

Service Visit

IDAS tech schedule regular visits according to the requirements of your smoke control systems or equipment, the product quality guidelines, applicable regulations or level of usage. A corrective visit includes troubleshooting, analysis, diagnostics and resolving problems on-site by our service engineers.

Extended Support

For products that have reached the end of their life cycle, IDAS tech offers extended support. Extended support is for clients who need additional time to make the transition to the latest version of our engineered smoke control products.

Maintenance Checklist

Scope of work to check various major equipment of ESCS is as follows

1. Automatic Smoke Curtain

- Check that there are no obstructions preventing the automatic smoke curtain from descending.
- Visually inspect all automatic smoke curtain. Ensure all electrical connections are sound and correct.
- Activate the smoke detector to check that the master smoke control panel received a fire signal to descend the automatic smoke curtain (if requested).
- Check that the automatic smoke curtain fabric is not chaffing on any part of the building structure and that there is no a tear or holes.
- Check that the operational position of the automatic smoke curtain is correct.
- When reset, check that the automatic smoke curtain retracts fully.
- Check that the bottom bar fit neatly into the ceiling slot provided.
- Disconnect the mains power supply to the electrical power unit and check that the standby batteries will come into operation and keep the automatic smoke curtain retracted (annually).

2. Smoke Curtain Electrical Power Unit

- Check standby battery condition of smoke curtain electrical power unit.
- Check voltage of standby battery per zone per servicing.
- Replace standby battery if necessary.
- Upon completion of testing and checking, it is essential that the smoke curtain electrical power unit and smoke curtain zone control panel to be switch to their auto/normal mode position.

3. Master Smoke Control Panel

- Check that only the green power-on indicator is illuminated.
- Check that all LED should be off and panel should be silent.
- Check that the time and date are correct.

- Activate at least 1 smoke detector in a smoke control zone to ensure correct signal is send to the corresponding smoke control equipment (upon request by client).
- Check that the required sounder operates.
- Check that the signal is also send to the fire alarm panel.
- Accept the alarm and press the silence alarm button.
- Ensure that the MSCP exterior is clean.
- Check standby battery condition of MSCP.
- Check voltage of standby battery.

4. Motorised Smoke Damper

- Remove any debris from internal rain channels in louvers and base to prevent blocking and rain entering building.
- Check operation of dampers and clean oil leakages.
- Examine Hinges and operating arm anchorages.
- Listen for signs of air leakage.
- Check security of glazing.
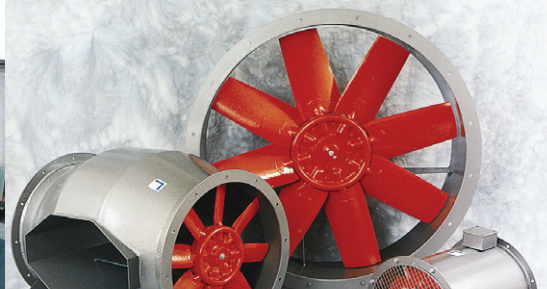- Check operation of Smoke Shield.

4. Motorised Smoke Damper Panel

- Isolate panels, open and clean accumulation of dust from inside.
- Check connections to ensure that all wires are secured into their respective connectors, sockets, etc.
- Conduct Functional Test.
- Upon completion of checking and testing, it is essential that all panels and key switches are returned to the auto/normal position.

4. Smoke Extraction Fan

- Visually check all fastenings for tightness and check the integrity of the rotating items.
- Fan accessories should be checked, cleaned and replaced as necessary.

| Smoke Extraction Duct | Smoke Extraction Fans | Fire Curtain |

7. Fan Starter Panel

- Ensure all electrical connections are sound and correct.
- Activate the Smoke Detector remotely to check that the master smoke control panel received a fire signal and send a signal to activate the smoke extraction fan.
- Check that the fan duty selector switch is in order.
- Ensure that the Fan Starter Panel exterior is clean.

8. Smoke Detector

- Smoke detector will be analysed from MSCP first.
- If any fault found, the following operation procedure is to be conducted:

- Check Smoke Detector for visual damage and secured in its mounting.
- Ensure that the protective mesh is not clogged by dust etc.
- Activate the smoke detector to check correct operation. (upon requested by client)
- Check that the built-in LED flashes when activated.
- Clean smoke detector by using compressed air line with suitable attachment to blow through the chamber housing in the same direction as the angled vents or by using recommend solvent if found dirty.

Addressable Smoke Control System
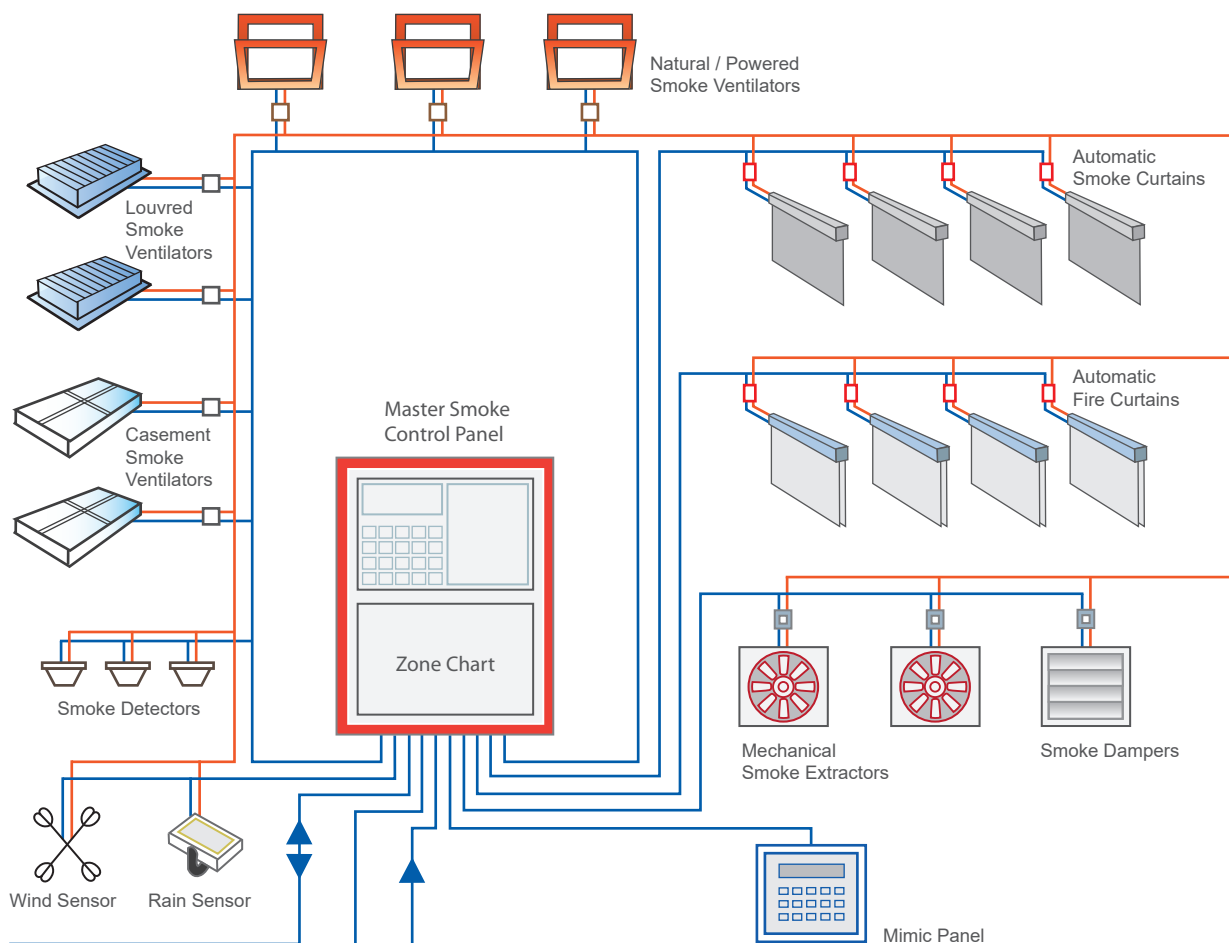
Service Standards

Fire Certificates

Under the Fire Safety Act Section 20, the owner or occupier of any public buildings such as offices, hospitals, shopping complexes, industrial buildings and private residential buildings that fall within the following criteria is required to apply and obtain a Fire Certificate -

a. Public building that has an occupant load of more than 200 persons
b. Industrial building having an occupant load of at least 1, 000 persons, a gross floor area (GFA)* of at least 5, 000 square metres or exceeds 24 metres in habitable height
c. Private Residential Building that exceeds 24 metres in habitable height (or more than eight storeys) and is, or is required to be installed with either a wet riser system, an automatic fire alarm system or a sprinkle system.

Penalty

Under the Fire Safety (Building Fire Safety) Regulations 1994, any person who :
- without lawful excuse refuses or neglects to do anything which he / she is required to do;
- without lawful excuse fails to comply with the requirements of any notice served on him;
- without lawful excuse acts in contravention of or fails to comply with any provision; shall be guilty of an offence and shall be liable on conviction to a fine not exceeding $10,000 or to imprisonment for a term not exceeding six months or to both.

The above can be found in the following link:

http://www.scdf.gov.sg/content/scdf_internet/en/building-pro-fessionals/fire-safety-permit-and-certification/fire-permit.html

Servicing (Ventilators)

The supplier of the equipment shall be able to provide a regular maintenance contract and or to recommend one or more servicing companies.

NOTE: it is recommended that after the installation the ventilator should be serviced at least once per year. The frequency may have to be increased if the application is in a particularly sensitive or dirty environment, i.e. such occupancies as bleach works and electroplating shops.

For life safety (i.e. means of escape applications the smoke ventilation system should be tested once per week.

~~ BS 7346: Part 1 : 1990 Page 4 Clause 7

Smoke Curtain Testing

Note 2. To ensure continued reliability, automatic smoke curtains should be tested once per week and a log of testing maintained. In addition they should be serviced and tested annually by a competent person.

~~ BS 7346: Part 3 : 1990 Page 2 Clause 5

Maintenance schedule (Mechanical Ventilation & Air Conditioning in the building)

Clause 13.9 at such inspection, service and maintenance of the completed installation the following minimum item of work should be considered:
- inspect and check the condition and operation of smoke control system and car park ventilation system and components.
- record should be kept of all maintenance work – when and what was done.

~~ CP 13 :1999 Singapore Standard. Page 46

Smoke Ventilators - CET at Paya Lebar

Testing and Commissioning

Hot and Cold smoke test

Hot and Cold smoke test verifies that the systems work properly together, so a smoke detector in alarm or a sprinkler flow switch causes the smoke control systems to activate and the appropriate dampers to position properly in response to that alarm. These are the "process" and "system" parts of the earlier definition.

This test will checks how well actual system performance delivers the design concept. These are the "assessing" and "performance" parts of "the process of assessing system performance. "Commissioning begins with design - A clear expression of the design criteria or the design intent is a key tool for successful commissioning. It tells everyone what performance they can expect the smoke control system to deliver during commissioning and, therefore, during a fire.

Australian standard AS 4391-1999

Because of their special geometry and sufficiently complex smoke control systems, buildings to which the hot smoke test is ideally applicable include: atriums, factories,

warehouses, department stores, shopping & other complexes, multi-storey office buildings or sporting and entertainment centres. The hot smoke test provides a means by which a specified quantity of smoke is generated by a test fire to assist in the assessment of the performance characteristics of a building's smoke management system. The test fire provides a dynamic buoyant flow of smoke representative of real fire plumes.   *~~~ Page 5 --*

This test method is intended for use as a tool in the commissioning process of a building's smoke management system to verify that the operation of the system, under simulated test fire conditions, is as approved by the regulatory authority.

C1.2 This test is intended to verify the correct performance of a smoke management system including operation, sequence of control and, where practical, specified smoke layer depths. It is not intended as a means of establishing smoke obscuration levels or system integrity under real fire conditions.   *~~~ Page 6 clause 1.2*

Advantage of using cold smoke test is that it will not create sooth stains on the wall and ceiling in a building that is already in operation.

Hot smoke test - National Heart Centre

Add-On Services

We also provide maintenance of the following systems:

- Fire Alarm System (Conventional & Addressable)
- VESDA and HSSD System
- Fixed Sprinkler System (Wet Pipe, Dry Pipe, Pre-Action)
- Fixed Water Mist System / Fixed Wet Chemical Suppression System
- Fixed Gas Extinguishing System (FM200, Novec, NN100, Inergen, Argonite, etc)

- Portable and Fixed Foam System
- Fire Hose Reel System
- Fire Hydrant System
- Dry and Wet Riser System
- Portable and Trolley Fire Extinguishers
- Voice Communication System (One-Way & Two-Way)

Fixed Sprinkler System

Fixed Gas Extinguishing System

Dry and Wet Riser System

Fire Extinguisher

Fire Hose Reel System

Fire Alarm System

Track Records

Track records of the completed projects with ongoing service and maintenance.

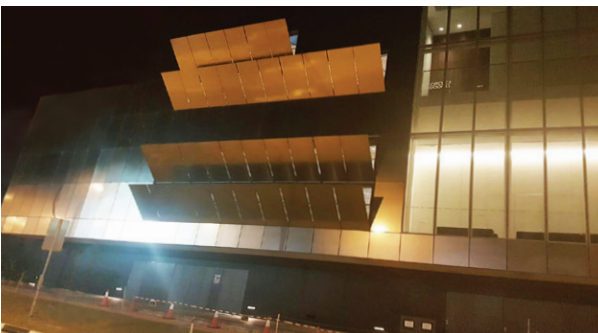
Smoke Control System - Singapore Sports Hub

Smoke Control System - Capitol Development

Smoke Ventilators - Duo at Ophir Road

Automatic Smoke Curtains - Orchard Hotel

Smoke Ventilators - Media Corp Building

Automatic Smoke Curtains - Junction Nine

Smoke Control System - Raffles Holland V

Smoke Ventilators - Waterway Point

Track Records

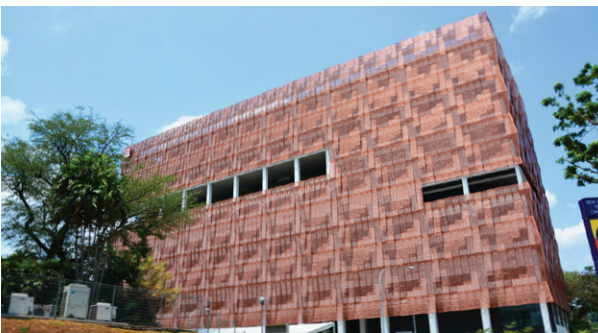Smoke Control System - Ocean Financial Centre

Smoke Control System - Zhongshan Park

Smoke Control System - North Spring BizHub at Yishun

Smoke Control System - Chinatown Point

Smoke Control System - National Heart Centre

Smoke Control System - CET at Paya Lebar

Smoke Control System - Westgate

Hot Smoke Test - Compass One

Track Records

Smoke Control System - Halliburton

Smoke Ventilators - Zion Bishan Bible-Presbyterian Church

Smoke Ventilators - Lee Kong Chian School of Medicine

Smoke Control System - Singapore Expo

Smoke Ventilators - Jewel Changi Airport

Smoke Control System - Marina Bay Financial Centre

▪ CET at Paya Lebar ▪ Westgate ▪ Ngee Ann Polytechnic Blk 51, Campus Ext. Phase 7 ▪ Halliburton ▪ Singapore Expo ▪ Capitol Development ▪ Ten Mile Junction ▪ National Heart Centre ▪ Zion Bishan Bible-Presbyterian Church ▪ Chinatown Point ▪ Compass One ▪ Media Corp Building ▪ Orchard Hotel ▪ Junction Nine ▪ Casa Merah Condominium ▪ Paragon ▪ One Marina Boulevard ▪ Marina Bay Financial Centre ▪ Zhongshan Park ▪ Duo at Ophir Road ▪ North Spring Biz Hub ▪ Plaza Singapura ▪ Suntec City ▪ Lee Kong Chian School of Medicine ▪ Riverside Point ▪ LTA Woodsville Interchange ▪ Jewel Changi Airport ▪ Singapore Sports Hub ▪ CWT Warehouse ▪ Qantas First Lounge at Changi Airport Terminal 1 ▪ Great World City ▪ Paya Lebar Quarter ▪ Eunoia Junior College ▪ Century Square ▪ GSK Asia House ▪ North Point City ▪ 76 Pioneer Road ▪ Changi Airport T4 ▪ Food Hub at Senoko Drive ▪ ▪ ▪

Structural Glazing	HPLED Streetlights	Photovoltaic Cells	Fire Rated Glass Door
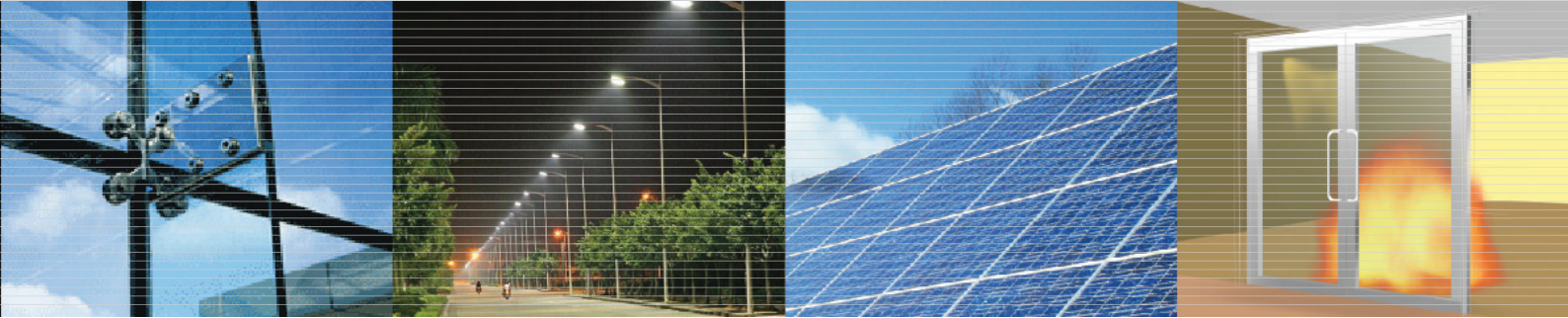
- Glass Solar Shading Systems
- Single Bank Ventilation Louvres
- Double Bank Rainproof Ventilation Louvres
- Triple Bank Stormproof Ventilation Louvres
- Structural Glazing
- Curtain Wall
- Skylight
- Canopies

- Streetlights
- Projection Lights
- Flood Lights
- Highbay Industrial Lights
- High Performance Industrial Lights
- Wallwasher Industrial Lights
- T8 and T5 LED Tube Lights
- Classic Bulbs
- Reflector Bulbs
- Par Bulbs
- RGB Bulbs
- Corn Bulbs
- Soft Panel LED Lights
- Light Fittings

- Fixed / Controllable Solar Shading System with Photovoltaic Cells
- Solar Powered LED Lighting Systems
- Solar Cell Roofing Systems

- Automatic Smoke Curtains
- Automatic Fire Curtains
- Fixed Smoke Barriers
- Fire Rated Glass Doors
- Natural / Powered Smoke Exhaust Ventilators
- Smoke Exhaust Fans
- Smoke Dampers
- Smoke Detectors
- Smoke Control Systems
- Water Monitoring Systems
- Computational Fluid Dynamics Simulation

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Shanghai
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Hong Kong
Philippines
Thailand
Malaysia
Brunei
Singapore
Indonesia

iDAStech®
innovation, integration, inspiration

iDAS Service Private Limited
11 Kallang Place #06-04 Singapore 339155
TEL +65 6745 9766 | FAX +65 6745 9726
www.idastech.com.sg

Service Hotline +65 9299 1800
Office +65 6745 9766

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We Save Lives NFPA

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SMEs ASIA AWARD SINGAPORE 2014/2015

SINGAPORE GREEN BUILDING COUNCIL MEMBER