TWCE PLANTECH

+27(0)12 665 1138
info@twce.co.za
www.twce.co.za
TWCE Plantech (Pty) Ltd

Fire Protection Engineers

Our mission

To reliably provide progressive solutions with integrity, quality and value for money through effective communication and high trust relationships with all role-players.

Contents

CONCEPTUAL/ RATIONAL FIRE DESIGNS

Our design services start at the very outset of a project with the conceptual/overall design of the fire protection systems.

Designs would take into consideration inputs such as:

- Fire risk analysis results;
- Comparison with regulatory standards and requirements;
- Best practices, and;
- Client requirements.

The National Building Regulations make provision for two design approaches, which can be adopted when designing the fire protection measures for a building. These are:

- Compliance with prescriptive rules as laid down in SANS 10400-T: 2011 Code of Practice; or
- Performance-based design (Rational Design).

As part of our service offering, we also conduct risk assessments of our clients' premises, along with audits of any existing systems which may be installed.

Typically, the outcome of our work is a risk assessment report, which includes a prioritisation of items requiring remedial action, a budget estimate and proposed implementation methods to address and reduce these risks.

FIRE RISK ASSESSMENT

CONSULTING

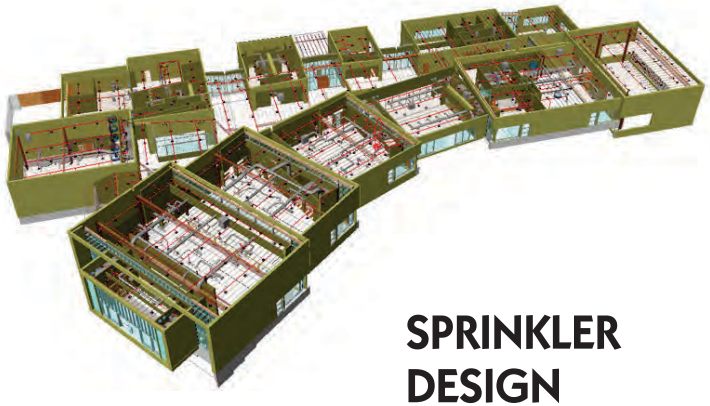
Through the sound analysis of any project, ranging from a new multi-storey building, large distribution centre or small office renovation, we provide comprehensive advice. We have a professional team, highly experienced in dealing with fire protection issues, focused on addressing the cause rather than symptoms. Attention to detail and good communication are attributes we pride ourselves in, creating a professional relationship with our clients and relevant stakeholders.

What we do best

Want to ensure that your developed or acquired building remains up to standard? Will the systems perform in accordance with the design intent in case of an emergency? At TWCE Plantech we assist with:

- Surveying existing premises to verify fire safety compliance then reporting on any recommended remedial work;
- Re-designing any required corrective work;
- Preparing specifications and quantifying the work required for pricing by suitable contractors; and
- Adjudicating, advising, supervising and signing off the work on completion.

MAINTENANCE



SPRINKLER DESIGN

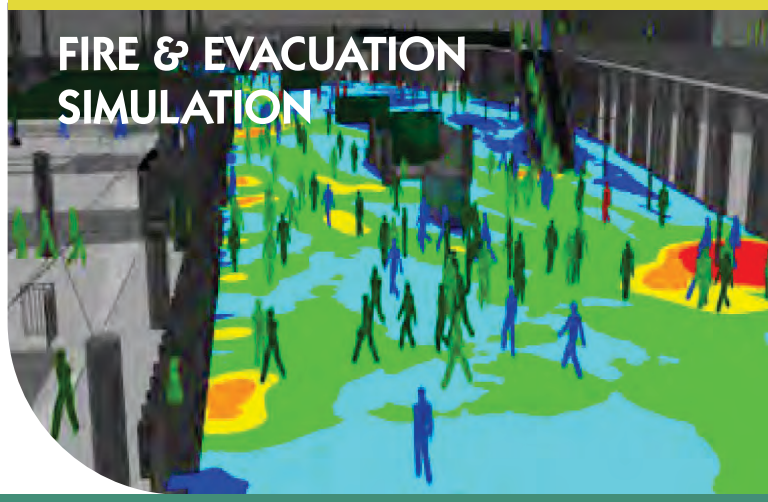
A sprinkler system is generally the most proficient, cost effective automatic fire extinguishing system. To ensure the success of such a system, a good design is crucial. Our proficient and certified sprinkler designers will draught a system suitable to your level of risk.

DUE DILIGENCE INSPECTIONS

TWCE Plantech is excellently placed to assist in assessing the suitability and condition of the fire protection measures for a building you propose procuring. This would typically take the form of a desktop study, site survey(s), reporting and budgeting for any remedial work.

Life safety is the main objective for most buildings' fire design. In areas of considerable population load such as high rise buildings or stadiums, evacuation is a major component in the rationale. Evacuation models aid in optimising the layouts which are fundamental in planning for occupants to escape safely. We juxtaposed the layouts with smoke and fire calculations which allow us to envisage whether conditions are plausible for possible safe occupant escape.

We provide engineered solutions using techniques such as CFD (Computational Fluid Dynamics) and evacuation modelling. With in-house expertise and modelling programs we make your architectural design safer for occupants in the case of a fire disaster.



FIRE & EVACUATION SIMULATION

What we do best

EMERGENCY EVACUATION PLAN

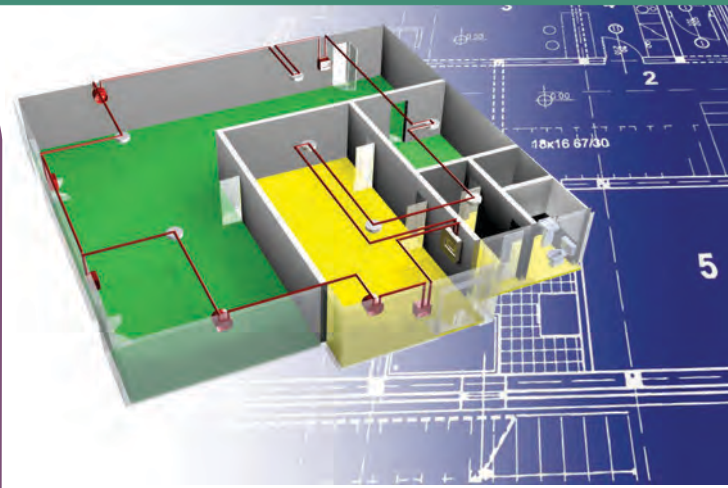
It is the responsibility of each tenant to provide an emergency evacuation procedure. With our expertise, we can assist with these procedures and contingency plans to deal with fire scenarios appropriate to your building. A key factor in conducting an effective evacuation is the provision of sufficient and appropriate signage; including the emergency evacuation plans.

We assist you in providing occupants with Emergency Evacuation Plans in key areas, so that they can evacuate in an organised and efficient manner.

With the arrival of more complex and efficient buildings, performance based design has become the norm in designing Fire Safety provisions. Current prescriptive codes typically fail to address these adequately. Considering this, peer review of performance-based designs has become an internationally accepted means of verifying that these designs meet the required Fire Safety objectives.

Having expertise in multiple projects, in various fields, makes TWCE Plantech qualified to produce a highly-respected peer review.

PEER REVIEW



FIRE DETECTION & GASEOUS SUPPRESSION SYSTEM DESIGNS

Fire detection is one critical measure for protecting building occupants from the threat of fire. These systems provide an early warning to all occupants within the building, allowing additional time to escape. An effective design and installation is vital in the effectiveness of the system.

Our compliant and effective designs, followed up by the supervision of the installation, produce the best possible solutions.

Kathrine Towers

Sandton, Johannesburg
23 000m² A-Grade offices
28 000m² parking levels

- Performance-based design
- Sprinkler design
- Fire detection
- Voice evacuation systems

Mall of the South

Glenvista, Johannesburg
69 000m² shopping centre
99 000m² parkade

- Performance-based design
- Sprinkler design
- Fire detection
- Voice evacuation systems

Menlyn Maine Central Square

Menlyn, Pretoria

- 30 000m² shopping centre
- 70 000m² parkade
- 14 000m² office

- Performance-based design

Longlake, Modderfontein, Jhb

6 500m² Warehouse

- Performance-based design
- Sprinkler design
- Fire detection system
- Alarm system
- Smoke ventilation

Some of our success stories

Sasol Head Quarters

Sandton, Johannesburg
75 000m² GBA offices
99 000m² parking levels

- Performance-based design
- Sprinkler design

Alexander Forbes Head Office

Sandton, Johannesburg
40 000m² A-Grade offices
60 000m² parking levels

- Performance-based design
- Sprinkler design
- Fire detection
- Voice evacuation systems

Ellerines DC

Boksburg
56 500m² Distribution Centre

- Performance-based design
- Sprinkler design
- Fire detection system
- Alarm system

Discovery HQ

Sandton, Johannesburg
100 000m² offices
200 000m² parking

- Performance-based design
- Sprinkler design
- Fire detection system
- Voice evacuation systems

21 Scott Street

Sandton, Johannesburg
16 000m² GBA offices

- Performance-based design
- Fire water design
- Fire detection and alarm

Commerce Crescent Precinct

Sandton, Johannesburg
#27, #37, #33 and #39
5 000m² to 10 000m²
Showroom buildings

- Performance-based design
- Fire water design
- Fire detection
- Smoke ventilation

UP Javett Centre

University of Pretoria
12 000m² GBA art gallery

- Performance-based design
- Fire water design
- Sprinkler design

Rand Merchant Place

Sandton, Johannesburg
1,2,3,4 Merchant place buildings

- Site audits and compliance checks
- Performance based design
- Technical motivation documents with evacuation modelling allowing increased population per building

Some of our success stories

Sasol Head Quarters

Sandton, Johannesburg
Total protected volume: 1900 m³

- Protection to state-of-the-art Central Equipment Room (Data Centre) and High Value Art Store
- Detailed design, testing, commissioning and handing over of a 300 bar Inergen Gas (IG–541) Gas Suppression System with High Sensitivity Smoke Detection (HSSD) System
- Project value ~R1.2m
- Completed in 2016

Netcare Projects

Various across South Africa

- Fire protection upgrade of more than 10 Netcare hospitals across Gauteng and Northwest project – such as Pretoria East Hospital, Akasia Hospital, Ferncrest Hospital, Rosebank Hopsital etc.
- Site due-diligence inspections and report
- Performance-based fire engineering design
- Detailed design of systems such as fire water, fire detection and statutory emergency signage (varies per project)
- Fire Department negotiations and obtaining fire clearance for each hospital
- Various internal alterations

University of Pretoria (Main Campus)

Pretoria, Gauteng
Total protected volume: 2200m³

- Information Technology Department data centre protection upgrade
- Detailed design, testing, commissioning and handing over of a 200 bar Pyroshield (IG-55) Gas Suppression System combined with a High Sensitivity Smoke Detection (HSSD) System
- Project value of ~R3.5m
- On-going

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Lebalelo Water Users Ass

Burgersfort and Steelpoort Region, Limpopo Province
Total protected volume: average 1650m³/pump station

- Special risk protection of various pumping stations across the Limpopo Province
- Detailed design, testing, commissioning and handing over of a 200 bar Pyroshield (IG-55) Gas Suppression System combined with a High Sensitivity Smoke Detection (HSSD) System
- Project value of ~R5m
- On-going

Project power

TWCE Plantech adopts an innovative approach to the deployment of staff on projects. The depth and diverse nature of our staff expertise this means we can utilise someone's strength in hydraulics and calculations on one portion of the project and someone who specialises in detailed designs on another. Splitting our projects enables one person to do the concept design and another to do the site work. This approach means that each person runs a portion of the project that allows them to focus on their area of expertise. It also results in a range of views and knowledge feeding into our overall vision for the project.

The results of this approach speak for themself:

- ABSA Capital, Sandton - The standard code required them to build additional emergency stairs. By thinking out the box, TWCE Plantech came up with a solution that was just as safe if not safe than what prescriptive Code requires and also saved time and money.
- Unusually shaped Katherine Towers, TWCE Plantech has managed to integrate the fire safety systems into the structure with challenging floor plate configurations.
- UP Visual Arts – Javett Centre : A new art gallery with integrate design features regarding life safety, property and asset protection located at the University Of Pretoria.
- Menlyn Main Central Square – Mixed use shopping centre with multiple super basements and high rise office component presented new challenges to the TWCE Plantech Team.
- 54 Glenhove – New office block with multiple tenants, featuring a basements and various atria without the installation of a sprinkler protection system.
- Rand Merchant Place Complex (Sandton) – TWCE Plantech successfully conducted an evacuation model and proofed that the increased population proposed for the buildings are still safe without introducing additional staircases (Performance Engineering).
- Various buildings in the Menlyn Maine Precinct.

What makes us tick?

We've followed the philosophy of always providing a quality service, engaging in open communication and consolidating highly-valued customer relationships. In the face of a many fly-by night operations who merely dabble in Fire Protection, TWCE Plantech differentiates itself with rock solid credentials, attention to detail, world-class skills and training with cutting edge innovation.

What makes us tick?

Overview

TWCE Plantech's design services start with the conceptual/overall design of a particular fire protection system; based on inputs such as fire risk assessment results, comparison with regulatory standards and requirements, best practices and client specifications. Advising clients to the required fire protection measures required for a building, in terms of the SANS 10400 Code of Practice, international standards or alternatively the results of a performance-based assessment of the building or risk.

These requirements are detailed at a conceptual level in the form of documents, details and notes providing an overview of the design solution selected.

In detail

This includes Automatic sprinkler installations; fire detection systems; smoke ventilation systems (mechanical or natural); gaseous suppression systems (e.g. Inergen, Argonite, FM-200 etc.), special risk protection; fire water reticulation systems and statutory emergency signage.

We also oversee the following typical passive fire safety measures: Adequacy, geometry, positioning and distribution of means of escape; statutory emergency signage provision; and the specification of locking devices and special risk fire protection (hazardous substances, flammable liquids, etc). Each of these systems are designed to meet with the applicable local or international standards as required by our clients and their insurers.

Profile and history

TWCE was founded by Trevor Williams in 2003, in response to the growing need in the construction industry for reliable and dependable Fire Protection Consulting.

The practice provides a range of services pertaining to Fire Prevention and Protection as well as safety, related training, legal compliance and risk management.

In 2011, the South African insurance industry reported fire loss figures in excess of R5.7-million per day, that's a staggering
R238 000.00 per hour!

This, added to the recent boom in the South African building industry has resulted in a situation, where fire protection systems, alongside other essential project components, may be compromised.

TWCE designs complete fire safety systems and develops comprehensive protection programmes for their clients, who wish to limit the ever increasing risk of fire and resultant causalities as well as contain spiralling costs associated with fire losses.

Since its inception TWCE has enjoyed substantial success in establishing itself as a leading fire safety engineering consultancy in South Africa.

The origin of TWCE Plantech

In 2018 TWCE decides to spreads its wings and becomes part of a larger group - TWCE Plantech is born.

Through this transformation, the founder Trevor Williams pursues personal and professional growth overseas and hands over the reins of the company to new leadership in particular the new Managing Director Jaco Prinsloo.

Plantech, TWCE's sister company have expanded throughout South Africa, Lesotho, Nigeria, Mauritius and India. Plantech's head office which is situated in Pretoria employs more than 20 engineers, technicians and support personnel.

With a strong work ethic and dedication to exceptional client service and professionalism, Plantech's extensive electrical, electronic and mechanical engineering knowledge and experience is applied to delivering optimum and viable solutions ensuring that clients projects are completed on time, within budget and of the best quality possible.

With benefits of increased technical, drafting and support staff resources TWCE Plantech is set to grow and flourish providing clients with an even better service.

The bigger picture

Advancing knowledge

One of the biggest issues that professional Consulting engineering firms face, is a lack of competence with no tertiary education qualification available specifically for Fire Engineering. What sets us apart are the decades of combined fire consulting experience, garnered by our management team. This project experience, as an invaluable resource permeates the systems we design.

TWCE Plantech also supports further education and training of its staff whenever it can. For example, sending key staff to attend various training courses locally and abroad.

Who we are and why we care

Jaco Prinsloo *(Managing Director)*
PrEng; Eng(Mech); AIFire
6 years

Our niche, skilled and focused team benefits from being part of a larger group of companies through shared resources and skills transfer. To ensure the highest quality service in all aspects of our business, we are never shy away from complementing our in-house strengths with specialists in their own fields.

Matt Stallwood
BEng(Mech), *3 years*

Wayne Atansiu
Various draughting courses, *13 years*

Wynand Schoeman
IFE Student, *16 years*

Willem Rossouw
Various draughting courses, ASIB competent sprinkler designer, *13 years*

TWCE
PLANTECH

+27(0)12 665 1138
+27(0)74 166 2158

jacop@twce.co.za
www.twce.co.za

17 Quintin Brand Street,
Persequor Park, Pretoria,
Gauteng, South Africa