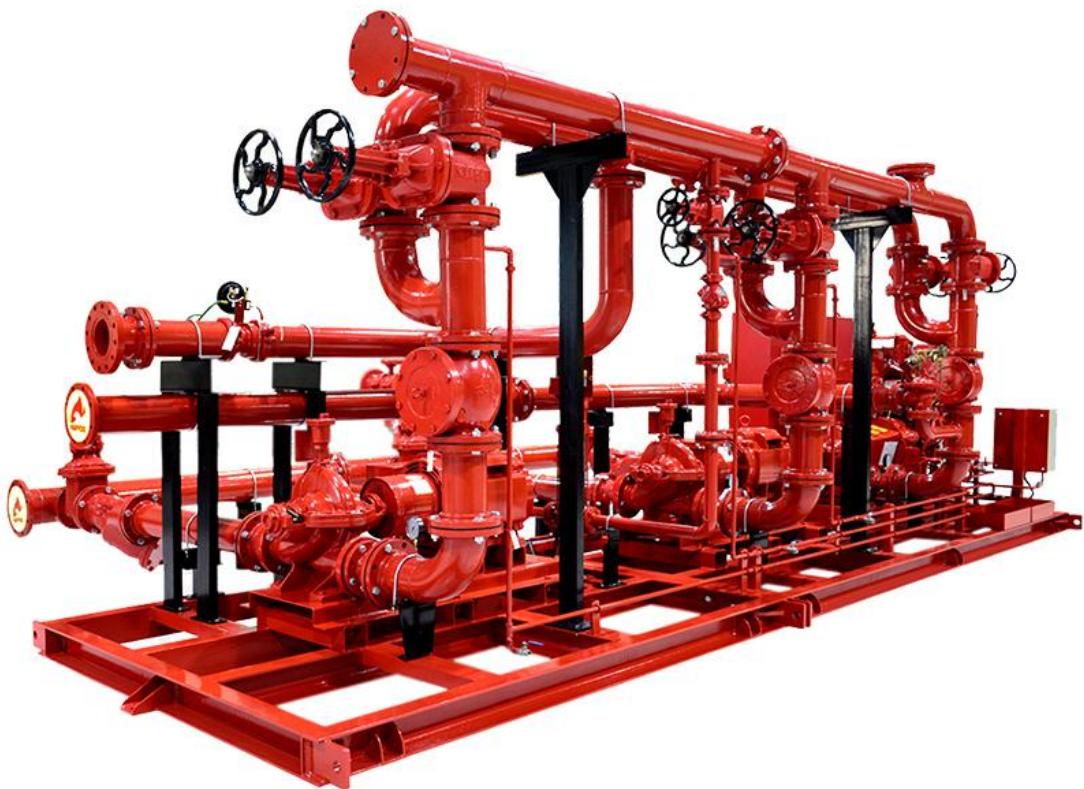




**RedSense®**  
First in Safety Engineering

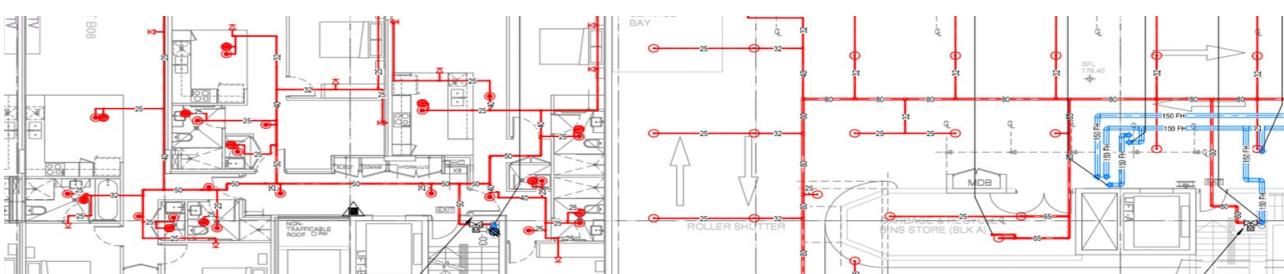


## Technical Capabilities

Prepared for: Project Clients  
Prepared by: RedSense Projects  
Last Updated: Friday, 2 September 2022

### **CONTACT**

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## PROFILE

RedSense is one of the country's leading Fire Protection Engineering organisation. We take pride in providing safety solutions and simplifying operational challenges for our clients in public and private sectors across the country + continent. At RedSense Fire, we understand that no two company problems are the same, we help each of our clients' design safety solutions tailored specifically to meet their asset needs. Our vast industry and engineering expertise, including safety partners across the globe, emergency technology, and robust installation and commissioning expertise, allows us to address problems in the continent, in unique ways that no one else can.

We design, supply, install, commission and service - Fire Fighting Equipment, such as, Fire Extinguishers, Fire Trucks, Fire Hose Reel, Fire Fighting Foam & Powders, Foam, Equipment Sprinkler System, CO<sub>2</sub> Total Flooding Systems, Fire Detection System (Smoke, Heat, Flame, Explosion Sensors), Fire Hydrant Equipment, FM 200, Argon, Inergen, Fog Water, Fire Fighting Systems, Dry Powder, Fire Fighting Systems, Portable and Trolley units.

We provide fire consultation, fire building designs, fire strategy, and training services of the highest quality to help you build stronger teams, install and commission - UL listed fire equipment. Our clients are fully involved in the processes since we provide personalised solutions to safety problems. Some of our major clients including but not limited to Total Energies, Exxon Mobil, SPDC, NNPC, Indorama, Notore Chemical Industries, a few State Fire Services, Rivers State Government, Akwa Ibom State Government, etc.

## CONCISE TECHNICAL RESOURCES

We have 15 safety professionals made up of Fire Safety Engineers, Fire Safety Technicians, and Intern Engineers. RedSense also has the most assured fire fighting equipment maintenance workshop in Port Harcourt with installations of CO<sub>2</sub> refilling, FM200 and DCP refilling, and servicing + maintenance of fire equipment.

**Phase 1 - Design** – Fire suppression systems are a critical component of a comprehensive fire protection system. Unique to the buildings for which they are designed, fire suppression systems can be incredibly complex involving an intricate system of wiring, piping, equipment, and other components. Our fire system design also allows us to ensure that in the event of a fire, the systems will function properly to suppress fire + fuel.

**Phase 2 - Supply** – With us as your safety partner, you are rest assured that the components, wirings + fittings for your fire systems will be of the Industries highest quality. We will also allow you the option of choosing between the industry leader and other safe options so you can make the best choice for your safety.

**Phase 3 - Installation** – From your design, we make the best recommendations for your office. When we finish installing your systems, we go through extensive checking procedures to ensure it works correctly and is installed to the correct design. We also make sure you know what work we have done and fully run through the system and your responsibilities under any fire or security regulation to ensure your compliance. This includes full witness testing and sign off of commissioning, handover procedures and any certification for your compliance.

**Ongoing Servicing Option** – It is with frequent serving that we can guarantee your fire systems will work when needed. Servicing also gives you peace of mind to carry-on with your daily business functions, with the assurance that your fire systems can kick in if and when needed. Our engineers are highly trained to design, assemble + install fire alarms + fire suppression systems. Alongside our installation, we will offer inspection, testing + maintenance for your fire systems to help you ensure they are always in good working condition all year round.

## OBJECTIVES

- Design a fire suppression system for your organisation
- Supply UL certified fire equipment + install equipment + systems to the highest industry standards
- Offer impartial advice on the best fire suppression solutions as RedSense isn't tied to any brand
- Provide any additional safety support your company may require (on-request) to successfully execute

Christian Reuben  
Managing Director





## FIRE EXTINGUISHING SYSTEMS

**Fire Extinguishers** – There are 5 main fire extinguisher types – Water, Foam, Dry Powder, CO2 and Wet Chemical. To ensure you're adequately protected, and you meet current fire safety regulations, you need to have the right types of fire extinguisher for your factory.

There are different classes' of fire that each extinguisher is designed to tackle. These classes are based on which fuels a fire starts with. It's the presence of these fuels within your business premises that will help determine which types of fire extinguisher you need and in which locations; as well as the right type of fire extinguisher, you'll also need the right size and weight of each extinguisher.

RedSense can assist you with every aspect of your fire extinguishers and other fire safety equipment including...

- Servicing fire equipment bi-annually
- Training your staff to use fire fighting equipment
- Training designated staff members to be fire marshals
- Regularly inspecting fire fighting equipment
- Carrying out fire drills
- Creating a written fire evacuation procedure

Our engineers, surveyors and fire safety consultants have the expertise and experience to provide you with the best possible service and advice when choosing your fire fighting equipment. From initial surveys to installing new extinguishers, we offer the correct solution for your premises.

### Fire Extinguisher Safety

All our extinguishers are fitted in accordance with BS 5306 Part 3 and 8 2000 and all units have a warranty of 12months or 5years if we carry out the bi-annual service for that period. Our onsite prices include fitting, the supply of brackets and fire extinguisher ID signs. All our engineers are qualified to provide advice on the suitability and positioning of extinguishers and to carry out maintenance and periodic servicing in line with British Standards.

**Fire Hose Reel Systems** — consist of pumps, pipes, water supply and hose reels located strategically in a building, ensuring proper coverage of water to combat a fire. The system is manually operated and activated by opening a valve enabling the water to flow into the hose that is typically 30 meters away.

**Fire Hydrant** — A fire hydrant is a connection point by which firefighters can tap into a water supply. The user attaches a hose to the fire hydrant, then opens a valve on the hydrant to provide a powerful flow of water, on the order of 350 kPa (50 pounds per square inch gauge (psig); this pressure varies according to region and depends on various factors including the size and location of the attached water main). This user can attach this hose to a fire engine, which can use a powerful pump to boost the water pressure and possibly split it into multiple streams. One may connect the hose with a threaded connection, instantaneous 'quick connector' or a Storz connector. A user should take care not to open or close a fire hydrant too quickly, as this can cause a water hammer, which can damage nearby pipes and equipment. The water inside a charged hose line causes it to be very heavy and high water pressure causes it to be stiff and unable to make a tight turn while pressurised. When a fire hydrant is unobstructed, this is not a problem, as there is enough room to adequately position the hose.

**Fire Risers** — Fire riser is a component of the fire suppression system. It is a pipe connected to a pressurised water source which supplies water to the sprinkler system in the building. It is where the gauges, valves, and alarm devices are located. The fire risers typically have a water flow switch that will activate the fire alarm system when a sprinkler head fuses. A fire sprinkler system is an active fire system and attacks fire at the infant stage. Since the sprinkler system attacks infant fire and need water to function, without the riser supplying the water, the sprinkler system will be ineffective.

This riser could be wet or dry.

All wet riser remain charged with water at system pressures. Dry riser has the iron pipes not pre-filled with water but are actually pressurised with air mainly to prevent freezing. A dry riser is a normally empty pipe that can be externally connected by firefighters to a pressurised water source. It is a vertical pipe intended to distribute water to multiple levels of a building or structure as a component of the fire suppression systems.



## FIRE SAFETY + QHSE TRAINING

Our fire safety training courses offer comprehensive, accredited training to individuals, managers and organisations. We offer fire safety courses in basic fire safety training, fire risk assessment, the principles of fire safety for the workplace, fire warden (fire marshal) training and fire risk assessment and management training. Today's most exceptional organisations take the safety of the people and assets very seriously. In this stead, they invite experts to train, equip and inform their team on how to stay safe and protect company assets in the event of a fire outbreak.

RedSense offers a host of fire training workshops to help organisations understand how to fight small fires, know when to evacuate and safely protect assets. It is also a legal requirement for certain members of staff to be trained in fire safety procedures in the workplace. Our Training includes: safety measures to proactively practice in the workplace to prevent fire, what action they should take on the discovery of a fire, know the difference between different fire classes, which extinguisher to use for which fire and what the evacuation procedure is.

**Fire Risk Assessment** – These inspections are crucial to the safety of a property; by ensuring an assessment is carried out properly, any risks or potential issues can be identified and the proper precautions can be taken to minimise the threat that stems from these areas.

### HSE + Fire Training Workshop

Companies usually take fire training for granted; underrating it - but it's actually a critical element for companies.

Fire + HSE training helps companies improve team safety acumen, create a safer working environment for its people + protect company assets + the bottomline in the case of a small fire. We can help you achieve your safety goals by working closely with your team in building a robust internal safety framework for operating. Key takeaways GACI should expect with your team include:

- Increase in the safety acumen of your teams
- Agility - utilising equipment in a safer + more effective way to avoid fires
- Correcting unsafe practices to foster safer + more conducive working environment throughout your company
- Logging injuries + hazards to prevent them from re-occurring

**How we work** we assess your team + premises to find out what safety challenges there are; then build out a proactive safety series that equips your team with the knowledge and skills they need to work safely in your establishment; with research from leading safety schools. This module is specifically tailored for your establishment.

### HSE + Fire Safety Workshop Module

One week training + workshop recommended /batch by batch/

- **The importance of fire safety** | *Expounds on why safety is important*
- **The significance of fire, health & safety** | *The importance of this course & why it will help your team*
- **The causes of fire** | *What causes fire and how do these causes contribute to ignition*
- **The Principles of health & safety** | *The major core principles of fire safety, health & safety*
- **The right way to fight fire** | *This module will explore the major flaws in fighting fire*
- **The behaviour of fire in buildings** | *Participants will explore how fire behaves in various buildings*
- **The behaviour of people in fire** | *Participants will learn how people react in fire and be proactive*
- **Evacuation techniques** | *Explores the best evacuation techniques tried and tested*
- **Evacuation drills** | *Showcases how teams can competently evacuate from fire buildings*
- **Case** | *A case showing how fire hampers a business + why safety is critical for success*
- **Workshop** | *Highlights all the critical content covered in the training to reinforce learning*

Fires destroy property, cause injuries, and take lives. A fire in the workplace can also mean the termination of jobs, as many of the offices and factories destroyed by fire in the country are never rebuilt. One of the key strategies to maintaining a safe workplace and preventing fires is fire safety training. With proper training workers can eliminate fire hazards and respond quickly and efficiently if a fire breaks out. Without proper training a small occurrence can quickly grow to become a major incident with devastating outcomes.



## FIRE SUPPRESSION + ALARM SYSTEMS

When choosing a fire alarm, that the type of system you select is one that is well suited to your company needs. With many types of fire alarm systems available, different methods of fire detection, legislation to comply with and British Standards to meet the whole process can be overwhelming. RedSense offers a bespoke service, which does all this for you. Insurance companies require that fire alarm systems are regularly maintained, meaning they must have a maintenance contract in place from an approved company. BS 5839-1:2013 recommends systems are checked 2 or 4 times a year.

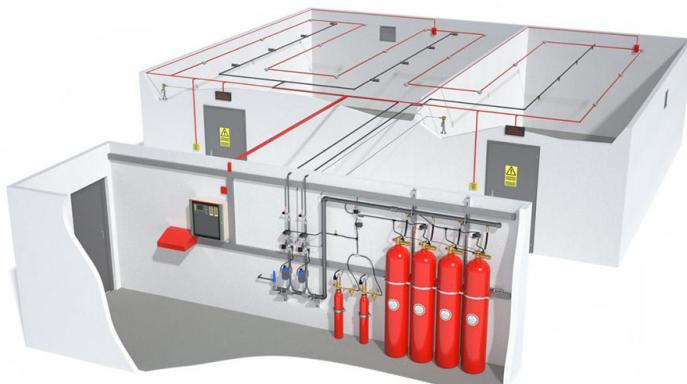
With Suppression Systems, FM200 is the most used suppression in the industry at the minute and it is what we recommend for our clients in similar industries. The chemical name for FM-200 is 1,1,1,2,3,3,3-Heptafluoropropane. It is also referred to as hydrofluorocarbon (HFC) 227ea and is manufactured by Chemours under the trademark FM-200. FM-200 is a colourless, compressed liquefied gas used to extinguish fires and is a popular replacement for Halon fire suppression systems. FM-200 fire suppression systems are pressurised with nitrogen, waterless, and upon activation, FM-200 discharges as a gas to suppress the fire.

**Design** – Fire alarm systems are a critical component of a comprehensive fire protection system. Unique to the buildings for which they are designed, fire alarm systems can be incredibly complex involving an intricate system of wiring, equipment, and other components. In addition, they must be designed in accordance with a stringent set of rules, laws, and codes to ensure that in the event of a fire, the alarms will function properly to help get everyone out of the building safely.

Fire suppression systems are a critical component of a comprehensive fire protection system. Unique to the buildings for which they are designed, fire suppression systems can be incredibly complex involving an intricate system of wiring, piping, equipment, and other components. In addition, they must be designed in accordance with a stringent set of rules, laws, and codes to ensure that in the event of a fire, the systems will function properly to suppress fire + fuel.

**Supply** – With us as your safety partner, you are rest assured that the components, wirings + fittings for your fire alarm will be of the Industries highest quality. We will also allow you the option of choosing between the industry leader and other safe options so you can make the best choice for your safety. With us as your safety partner, you are rest assured that the components, wirings + fittings for your fire alarm will be of the Industries highest quality. We will also allow you the option of choosing between the industry leader and other safe options so you can make the best choice for your safety.

**Installation** – When we finish installing your system we go through an extensive checking procedure to make sure it works correctly and is installed to the correct design. We also make sure you know what work we have done and fully run through the system and your responsibilities under any fire or security regulation to ensure your compliance. This includes full witness testing and sign off of commissioning, handover procedures and any certification for your compliance. When we finish installing your system we go through an extensive checking procedure to make sure it works correctly and is installed to the correct design. We also make sure you know what work we have done and fully run through the system and your responsibilities under any fire or security regulation to ensure your compliance. This includes full witness testing and sign off of commissioning, handover procedures and any certification for your compliance.





## MAINTENANCE SERVICE LEVELS

**Ongoing Servicing Option** – Our engineers are highly trained to assemble + install fire alarm + fire suppression systems. Alongside our installation, we will offer inspection, testing + maintenance for your fire systems to help you ensure they are always in good working condition all year round. Insurance companies require that fire alarm systems are regularly maintained, meaning they must have a maintenance contract in place from an approved company. BS 5839-1:2013 recommends systems are checked 2 or 4 times a year.

### Maintenance Plans

- Engineer call out to sites - 98% of our callouts are reached within 72hours, and most dealt with over the phone
- Minor adjustments as required during inspection
- 12month warranty for additionally fitted equipment
- Free review of your fire and security requirements

**Ongoing Servicing Option** – Our engineers are highly trained to assemble + install fire alarm + fire suppression systems. Alongside our installation, we will offer inspection, testing + maintenance for your fire systems to help you ensure they are always in good working condition all year round.

**Commissioning and handover** – When we finish installing your system we go through an extensive checking procedure to make sure it works correctly and is installed to the correct design. We also make sure you know what work we have done and fully run through the system and your responsibilities under any fire or security regulation to ensure your compliance. This includes full witness testing and sign off of commissioning, handover procedures and any certification for your compliance.

**Checking our work** – quality to ensure your peace of mind. For every installation we complete, we send you a customer quality questionnaire to ask you how we did. This is a bespoke online questionnaire that is issued within one week of the handover date and followed up by our quality manager to ensure we get your feed back so we can immediately address any issues or improve our long term performance.

**Approved engineering expertise** – To ensure your installation goes smoothly our installation manager will contact you and specify an engineer who will carry out the work and look after the installation, if required we will issue a method statement and risk assessment to ensure the work is carried out correctly and safely. All of our engineers have a high level of customer liaison skills which means you will receive exceptional customer service. Our engineers are trained to the relevant technical codes of practice and in health, safety and care standard so you can be confident that the work will be completed in an efficient and professional manner.

Our engineers will update you daily or weekly on the progress of the installation, making sure you know exactly what is happening and when the work will be complete. All of our engineers are smartly dressed in RedSense uniform with security cleared identification, they carry cleaning equipment and vacuum cleaners so you can be assured that we will leave your workplace and business clean and tidy.

**RedSense CRM** — Our Customer Relationship Management (CRM) and project costing system enables our installation team to track every cost and time spent on your installation, this enable us to monitor the progress of your project and keep a keen eye on any potential overruns or cost issues.

**Client Understanding** — We have a well established and trusted relationship with our clients in delivering fire safety and security services and have always been transparent in our information, the good and bad is delivered and discussed to address all issues with all our clients to ensure a trouble free installation. Although our engineers and team are highly experienced and regularly trained from a technical point, the advantage to our clients is that we understand the challenges of working in different environments, whether it be manufacturing, high security, buildings where people have learning difficulties, or other unique environments; we know that entering and working in different sites can be totally unique and we are under a duty of care and obligation to adapt.

**Protection - NOT Profit Policy!**

## TANK PROTECTION SYSTEM

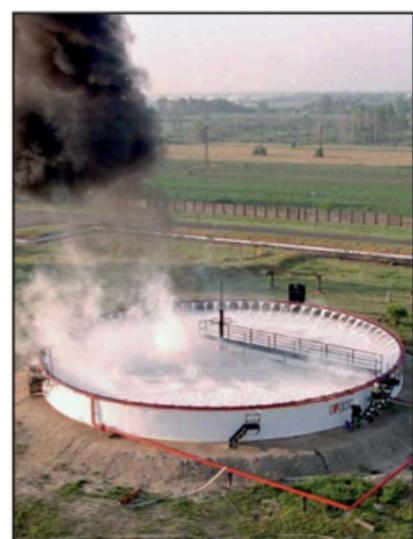
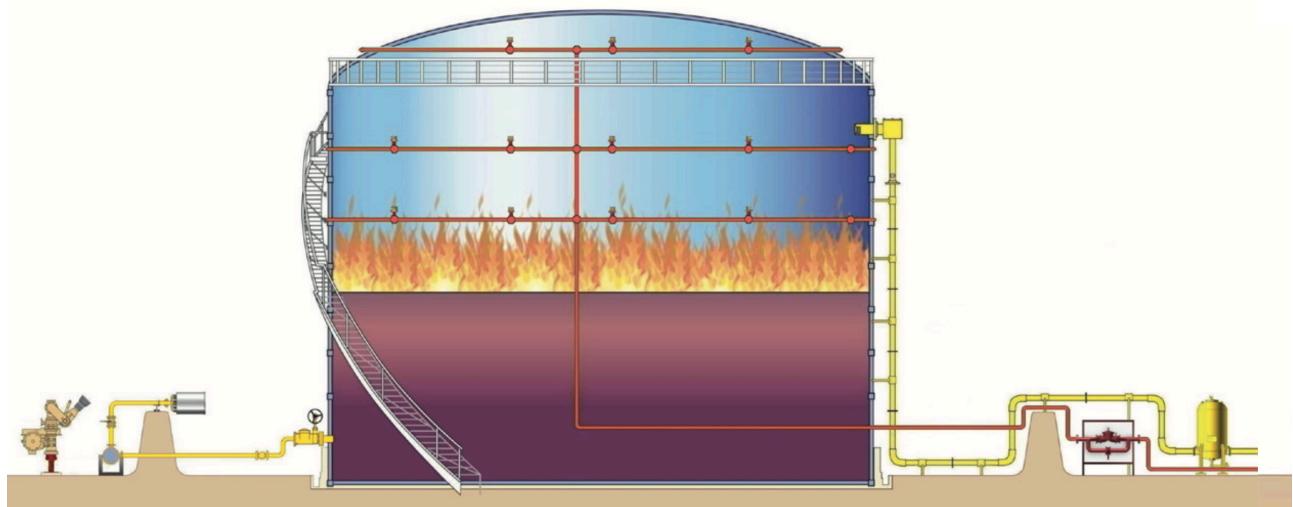
Fire in a storage tank, or in the surrounding bund, is a challenge to both fire fighters and tank operators. The value of the contents makes the provision of fire protection commercially viable, while the risk to life makes it essential. The fire protection options available to tank operators and designers are wider than ever before, and the selection of the right combination of equipment can mean the difference between safe operation and disaster. Many factors influence the decision making: the type/design of atmospheric storage tanks, the layout and spacing of the tanks, the construction of the bund walls and the product stored in the tanks.

### Standards

From the fire protection perspective EN 13565 Part 2 Section 6.1 and in the US, the NFPA (National Fire Protection Association) publish guidelines for tank fire protection. These classify the product stored by fire hazard and specify the foam delivery rates, layout, and spacing of foam delivery systems. Foam application rates depend on the tank contents, and start at 4 litres/m<sup>2</sup>/min typically and could rise as high as 12 litres/m<sup>2</sup>/min for foam destructive products such as Polar Solvents, where fixed foam systems are installed.

### Foam Concentrates

Firefighting foam is an essential component of all tank protection systems. Our partners manufactures a range of foam concentrates to suit differing application systems and tank content. These range from general purpose foams for hydrocarbon based risks – preferably Fluoroprotein foams (FP) with their excellent heat resistant properties and slow drainage – to specialised foams for polar solvent or other water miscible risks, such as Alcohol Resistant Aqueous Film Forming Foam (AR-AFFF) or AR-FFFP (Alcohol Resistant Film Forming Fluoroprotein).



## Water Cooling

Provision should be made for the application of cooling water to fixed roof tanks, to minimise the effect of radiated heat. For the roof itself our international partners offer a Mushroom Nozzle and the tank walls can be cooled with the Tank Cool Nozzle. Oscillating Monitors can be used to provide additional cooling to the tank surface. Water cooling for adjacent tanks is vital to minimise the effect of radiant heat and the possibility of fire spreading to other tanks in the same bund. Medium velocity water spray nozzles are often specified for this purpose.

## Foam Induction

At the heart of tank protection is the choice of the foam induction proportioning system, or in other words, mixing the foam and water in the correct proportions. The foam delivery device, such as a Top Pourer or a Rimseal Pourer, dictates the amount of foam solution required. For systems where the foam solution demand is constant, fixed inline inductors can be used. For systems with variable foam solution demand, two options are available, either balanced pressure foam proportioner(s) with a bag tank, or balanced pressure proportioner(s) with a balanced valve on a foam skid.

Foam Skids can be powered by water, electric or diesel driven motor foam pumps. Single or multiple skids can be sized to feed all the foam system on the site. Thus foam skids (and water deluge skids) are bespoke items which are not readily available off the shelf.

## Approvals

The engineering and design of foam skids and entire fire systems is a service provided by our UL manufacturing partners. AFE's team of dedicated engineers are specialists in systems design for high value, high risk applications. They are familiar with the details of the international standards that are specified by most insurance companies and major international oil companies. However, the system design is no good if the equipment connected to it (top pourers, rim seal pourers, etc.) does not perform to specification.

To overcome this, many insurers and operators insist that the equipment is approved by an independent body. Our partners manufacture products certified by international organisations such as UL (Underwriters Laboratory) in the US, and in Europe test protocols such as LASTFIRE. UL is the most widely recognised approvals body that tests both the foam concentrate together with the delivery equipment that it will be used with, making it a true 'systems' approval.



## AIR COMPRESSION SYSTEMS

RedSense is also a leading name in Air Compression. We have proven experience in Air Compression projects, and Breathing Air Compression projects. When an application requires storage, either in the form of a single cylinder or multiple cylinders, arranged either for bulk or banks of cascading, a properly sized storage system offers many benefits to the compressed air/gas system.

The purpose of storage is to serve as a reservoir to handle constant, sudden or unusually high demands for air/gas that can exceed the capacity of the compressor. Storage protects the compressor from the direct demand of the system as well as serving to dampen or eliminate pressure pulsations to the system. We trust Bauer, because, is knowledgeable in the application of storage to medium and high pressure applications. We offer storage systems that meet the code requirements of the ASME and ISO/UN.

A breathing air compressor is used to fill up the oxygen bottles used for fire fighting or entering enclosed spaces. The breathing air compressors, as they are known, needs to be operated in a special way. They are smaller than the conventional compressors found on ship. While operating the breathing air compressor, there are certain points that should be followed in order to ensure smooth starting and operation of the compressor

### Our Pre-Starting Procedure

- Fill water in the filling tank to keep the bottles cooled as heat is generated while filling the air
- Check oil level in compressor-sump through indicator glass fixed on the side of the compressor
- Check O-ring is placed in DIN-coupling male part and is in good condition and also no O-ring is there in the female-part of the valve on the bottle
- Place bottle in water tank
- Connect hose to the bottle and do not tighten too firmly as the pressure will ensure a proper fit
- Open the valve on the hose by turning counter clockwise
- Open the valve on the bottle by turning it counter clockwise

### Procedure for starting the compressor

- Even though the unit has automatic condensate draining you should drain the condensate frequently while filling by turning the knob
- The compressor will stop on reaching 300Bar. If not you must stop it immediately
- Close the bottle valve (1) by turning clockwise
- Close the hose valve (2) by turning anticlockwise
- After filling all bottles open the hose valve carefully to relieve pressure from hose
- Drain condensate from the compressor and water from the filling tank

RedSense has the most assured Fire Fighting Equipment maintenance Workshop in Port Harcourt with installations of Carbon Dioxide (CO2) Refilling, FM200 and DCP Refilling. We are able to fill all sorts of Fire Fighting Gases and Chemicals. Our company has been servicing the fire industries for more than 20 years in Nigeria. Our CO2 refilling rig is capable of reclaiming CO2 from existing Cylinders and Tanks and transferring it to other Cylinders, big or small with high Compression. We fill CO2 Cylinders ranging from 1Kg to 45Kgs. Our DCP refilling rig can handle a lot of extinguishers. We also have Powder Transfer Pumps that we use for both outdoor and indoor maintenance to reduce the spread of fire fighting powder within our work environment. We fill all types of FM200 Cylinders. We also refurbish both FM200 Cylinders and Valves. Our FM200 refilling rig is capable of recovering FM200 from customers' cylinders for maintenance purpose and to recycle it to remove moisture down to 10ppm and dirt down to 20microns.

Our refilling capacity is huge and even exceeds by far the requirements of the Nigeria market. This is to ensure that our customers' valuable assets are not left for a long time without protection after a discharge.





## FACTORIES + INDUSTRIAL FIRE PROTECTION

**Factories and warehouses** around the country and the world are responsible for the manufacture and storage of countless items that we use on a daily basis, from cardboard boxes to sports cars. With the processes that take place in these factories, and the materials stored and used within warehouses, the risk of fire can be greater than that of a domestic or commercial property. As long as you have the appropriate fire safety equipment and practices in place, you can help minimise this risk.

### Major Risk Areas

There are a variety of fire risks in factories and warehouses. The processes that take place in factories that use flammable materials are extremely risky without proper precautions, and even then, a fault with machinery can cause a fire to break out. Electrical equipment present in factories and warehouses can be a fire risk, through misuse or faults. In warehouses, where lots of equipment is stored, be it clothes, furniture or building materials, the presence of flammable material is very likely, and improper care or misuse can result in fires. The often large volume of items stored means that should a fire start, it can spread rapidly.

### Recommendations

**Factories and warehouses** around the country and the world are responsible for the manufacture and storage of countless items that we use on a daily basis, from cardboard boxes to sports cars. With the processes that take place in these factories, and the materials stored and used within warehouses, the risk of fire can be greater than that of a domestic or commercial property. As long as you have the appropriate fire safety equipment and practices in place, you can help minimise this risk. Most common causes of factory fires include - heavy machinery, kitchen/break rooms, stock, poor fire training and electrical faults; to

**Fire risk assessment** – These inspections are crucial to the safety of a property; by ensuring an assessment is carried out properly, any risks or potential issues can be identified and the proper precautions can be taken to minimise the threat that stems from these areas.

**Fire safety training** – Should a fire break out, it's vital that those present know what to do; training staff on evacuation procedures, safety precautions and risk management is something all businesses should do in order to maximise the safety of their employees, their visitors and their property.

**Fire safety equipment: design, supply + installation** – Extinguishers, fire alarms, fire doors and sprinklers: this is just some of the fire safety equipment that can be installed in a factory or warehouse; no matter what equipment you have, ensure it is tested regularly and any faulty systems are replaced or repaired immediately.

### Safety Audit

A safety audit is a structured process whereby information is collected relating to the efficiency, effectiveness, and reliability of a company's total health and safety management system. Safety audits serve one broad purpose: to identify safety weaknesses in programs and processes. These audits are then used as a guide for designing safety plans or to identify corrective actions that should be undertaken. The following are just a few of the most common reasons:

- **Legislative Requirements** - There are many local, state, and federal laws in place that require facilities meet certain safety standards. A safety audit can help ensure those standards are met
- **Safety Concern** - Keeping employees and the workplace safe is ethically very important
- **Injuries** - If someone has been injured in a specific area of the factory, it is often necessary to perform a safety audit of that area to determine whether the injury was a one-time occurrence or there is a risk of it happening again
- **Bottom Line** - While safety improvement in the workplace is often looked at as an expenditure, in the long run it can positively improve a company's bottom line
- **Safety Culture** - Employers that want to promote a safety-focused culture need to set the tone by engaging in safety related activities such as a safety audit

**Fire risk assessment** – These inspections are crucial to the safety of a property; by ensuring an assessment is carried out properly, any risks or potential issues can be identified and the proper precautions can be taken to minimise the threat that stems from these areas.

**Room Integrity Testing** – These inspections are crucial to the safety of a property; by ensuring an assessment is carried out properly, any risks or potential issues can be identified and the proper precautions can be taken to minimise the threat that stems from these areas.



## **WET CHEMICAL SYSTEMS - RESTAURANT PROTECTION**

Wet Chemical Restaurant Fire Fighting systems are ideally suited to meet the demands associated with today's busy catering facilities an important characteristic of grease fires is auto-ignition. Cooking grease at room temperature is not a problem. Its vapours, for example, are not easily ignited.

However, when heated to autoignition temperature extinguishing the fire alone and removing the heat source may not prevent re-ignition. Re-ignition can occur until the liquid is cooled below its auto-ignition temperature. It is the principal requirement of fire extinguishing and the prevention of re-ignition that makes the Wet Chemical system the ideal solution.

### **Wet Chemical - Extinguishing Action**

The Wet Chemical Extinguishing agent is a potassium carbonate based solution which is discharged as fine droplets into a protected area. The main extinguishing action is by cooling caused by the heat of vapourisation. The fine spray discharge prevents the dangerous splash of hot grease or thermal shock damage to cooking appliances.

Re-ignition is prevented by saponification, a process in which the wet chemical agent combines with the grease to form a soapy layer at the surface of grease to seal off the fuel from the oxygen, allowing the grease to cool to below its auto-ignition temperature.

### **Installation**

The Installation of fixed fire fighting equipment in busy catering facilities requires extensive experience in the scheduling and performance of this type of work. Our experience in the installation of restaurant fire fighting systems ensures a minimum of disruption. Pipework for Wet Chemical systems may be black, chrome plated or stainless steel to suit the particular requirements of the application.

### **Application**

The system operates at a nominal pressure of 12 bar (175p.s.i.) providing a fine spray discharge lasting for a nominal 45 seconds. The unique nature of the Wet Chemical Extinguishing Agent eliminates many of the piping limitations commonly associated with dry chemical systems.

### **Clean-Up**

Wet Chemical agent unlike Dry Powder may be quickly cleaned up following a discharge resulting in shorter down time of the cooking range.

### **Storage**

Wet Chemical system utilise storage containers in a range of sizes to suit the individual requirements of the hazard.

### **Controls**

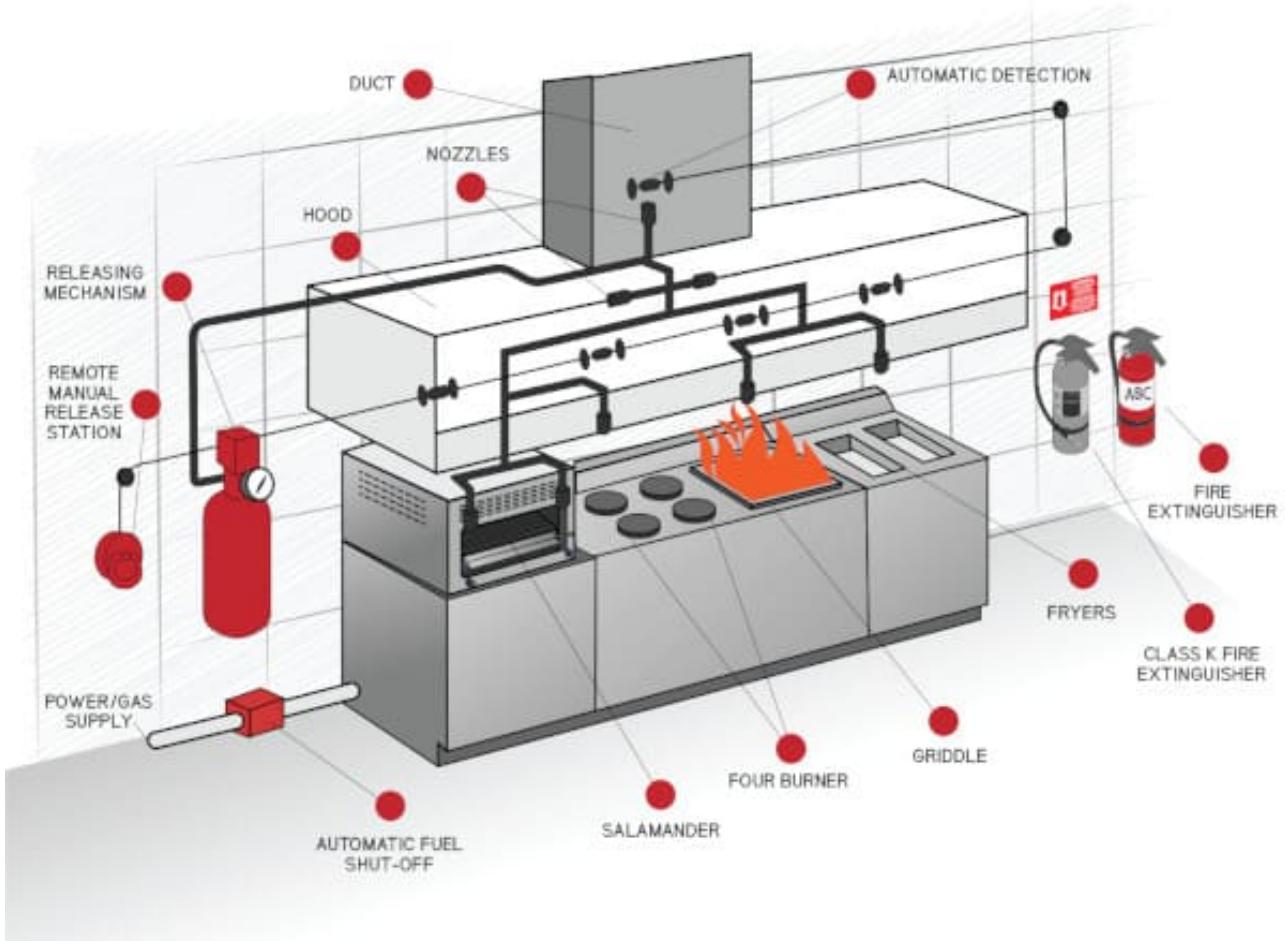
The Wet Chemical system may be controlled manually or automatically using electrical detection equipment or mechanical fusible link devices.

### **Restaurant Fire Suppression Systems**

Our Wet Chemical System installation offers 24-hour automatic or manual protection for commercial cooking areas; ducts, plenums, hoods and cooking surfaces. Wet chemical agent designed for quicker flame knockdown and faster suppression.

### **Features + Advantages:**

- Safe and reliable fire protection
- Ease of design and flexibility of installation
- Flexibility and reliability of important safety system



## COMPANY POLICY STATEMENT

RedSense LTD is also engaged in Civil / Building related work, supply of chemical, safety tools & security Services. Using our optimal resources. Equipment and current business practices, the company is determined to work safety and efficient in accordance with the clients requirement and standards.

The Quality Management Department has the full support of the management to implement all measures contained in the quality system or program. Quality management Department is directly responsible to the Managing Director and has no functional primary responsibility or conflict of interest with any department. It is required of all personnel to operate in strict accordance with the system, performing their tasks correctly and contribute to the application and continued improvement of the Quality Management System. The Company's policy remains as follows: 'All activities by individuals or teams will be planned and executed in such a way that our customers requirements as well as RedSenseProtection, business objective are met safely, efficiently and cost effectively.'

The scope of this manual is to outline the quality assurance system to be applied to company operations/project activities undertaken, and also to define the general quality assurance policy of the company. It is worthy to note that the Quality System requirements outlined in this manual comply with BS EN 9001: 2015 Standard. If there should be a differential in a client's expectation regarding quality aspect of a project, a project quality plan will be drawn to reflect modifications required by client. It is the intent of the company that the Quality Assurance Program outlined in this manual shall apply to all activities and contracts to be carried out by RedSenseProtection; as well as to any supplier/sub-contractor engaged for the execution of company's operations.

The implementation and compliance of the company quality system is based on a documented system, which consists of three levels. The first level is made up of the Quality Assurance manual. This is a policy document, which does not include any procedures. Administrative documents that specify the organisational basis of system and key quality management procedures form the second level of quality documentation. The third tier consists of specific operating procedures and work instructions. For more details of approved procedures on how the quality of operations could be achieved, always make reference to second and third level documents.

Christian Reuben  
Managing Director

## **QUALITY OBJECTIVES**

The Quality objectives of the company are list below but not limited to:

- Provide services and products which comply with all relevant statutory requirements, Company Standards, National and International Standards and are capable of achieving the performance and availability targets of the service and product specification for their duration in the most cost-effective and timely manner
- Ensure that safety of personnel, services and products, and the environment has been carefully considered, and that appropriate measures have been implemented to achieve these objectives
- Obtain a certificate of fitness and all other necessary certificates for the establishment and operation of the services and products. Without causing any delay in the planned progress of the orders of services
- Comply with the letter and spirit of the relevant statutory requirements and guidance notes
- Minimise scrap and re-work in the course of rendering services and products
- Improving quality through quality training that enables employees' do his/her job right the first time

## **QUALITY CONTROL AND SYSTEMS**

- Management Responsibilities
- Quality System
- Contract Review
- Document Control
- Procurement
- Client Supplied Materials
- Process Control
- Control of Non-Conformances
- Corrective Action Request
- Handling and Storage
- Quality Records
- Audits
- Training

### **Management Responsibilities**

The General Management of RedSenseLTD, being aware of the changes in the demand situation and increasing make expectations in quality, has defined and implemented a quality policy specific to the company operation including those of its sub-contractors. This Quality Policy aims to support the company in its quest for continuous improvement in the context of national and international competition.

As such, this manual is designed to meet the international and local standard requirements such as based on BS EN ISO 9001 families. The organisation, objective and quality requirements are described herein. The management hereby authorises the Quality Assurance Management to verify and duly apply the Quality Assurance Programmes: All staff is mandatory required to adhere to and implement the requirements of this manual. The management with a view to ensuring that all quality requirements are adapted to the grassroots will monitor this constantly.

### **Quality System**

The management of RedSenseProtection, has developed quality system purpose of realising the quality objective and the quality policy as formulated in this manual. The quality system is laid down in the quality manuals, plans procedures and work instructions, quality programmes and the content specified therein.

### **Contract Review**

Prior to commencement of any contract activities, as well as prior to compilation of any bid, provision shall be made for a detailed review of all contract documents.

The review shall verify the following:

- Work Scope
- Contract requirements
- Client philosophies
- Regulatory Requirements and Laws
- Relevant in-house, national and international standards and procedures

If as a result of the review, any of the above items should require clarification or amplification, the respective project of Bid Manager shall inform the Client accordingly and maintain all queries pending until satisfactorily resolved. Following the review of contract requirements and prior to the start of the project of Bid activities all assigned lead personnel shall prepare a design criteria summary for each discipline. Each summary shall contain details of the work scope and list the applicable client specifications and philosophies, regulatory requirements and laws, and in-house National and International Standards. It shall be the responsibility of the respective Bid Manager to ensure that all the reference documents are maintained up to-date and are accessible to all parties concerned. Each discipline shall either maintain a file of all pertinent documents, or have free access to documents relevant to their scope of work in the central contract files.

## **Document Control**

The purpose of the document Control System is to provide control of validity, registration, filing and distribution of all documents and drawings, such system is designed to ensure that undated and approved documents/drawings are available at the time and place of the activity performance.

The system embraces all documents for the total duration of the RedSenseLTD, activities or as may be specified and contract, which will include but not limited to:

- Receipt of documents
- Issue of documents
- Registration and filling
- Updating of documents status

At commencement of an activity or receipt of any document, the person responsible for the Document Control System shall establish a general of the filing system and of the related "log in" and "log out" document registration forms; such system shall be kept and maintained for the duration of the organisation.

All outgoing or incoming documents (including correspondences) shall register on the appropriate "Documents Registration Form", and shall transmit with a formal Transmittal Form.

## **Procurement**

The following applies to the procurement of materials, equipment services subject to Quality Management System. The potential suppliers of such services, materials and equipment, shall evaluated and approved by the QA and purchasing Departments prior placing them on the acceptable suppliers list. A current list of acceptable suppliers shall be maintained and distributed by the Purchasing Departments.

All relevant Purchases Requests shall be reviewed by the Quality Assurance personnel in order to ensure that all pertinent standards, specifications and information related to the items(s) to be procured are listed and that the supplier will have in his possession all the date required to supply goods an/or services of an acceptable quality. The assigned staff in conjunction with the Purchasing Department shall decide the supplier's name. The quality officer in accordance with standard in-house Procedures as well as the requirements of the contracts shall establish the extent of control over procurement; this may include quality audits and addition in-process inspections and final tests.

## **Client Supplied Materials**

All materials and equipment supplied by the client for incorporation in the given project shall be inspected on receipt for identification, quantity damage and completeness. They shall be stored, transported and handled in accordance with the appropriate client instruction.

Special care shall be taken at the receiving inspection to ensure that the documentation received with the materials is correct and that all deficiencies and defect are reported immediately to the client for verification and action. If required, periodic inspections shall be carried out to confirm the materials conditions and adequacy of their storage and preservation. The results of such inspection shall be recorded in the relevant reports. In case of deficiencies, the reports shall be followed by a proposal of remedial action. Materials shall be re-inspected for damage during preparation for use. Investigation shall be carried out, where required to determined cause of damage or malfunction. The client shall be advised of all cases where a material is found unsuitable for use.

## **Process Control**

This outline measures to control management processes and other company activities as applicable to RedSenseLTD or its Sub-contractors.

All activities shall be performed in a planned manner, according to the company requirements, contractual specifications and the operating manuals to be used in the work execution. For some of the more complex activities included in the contractual scope of work the concerned department shall prepare (when required) the supporting documentation (procedures, drawing, diagrams, etc.) describing the activities and the work execution, relevant responsibilities, means and equipment to be used, values and/or acceptance criteria to be adhered to. Such documentation shall be collected into manuals and be distributed/kept, to be reviewed when required by the system.

## **Control of Non-Conformance**

The non-conformances control system is applicable to all activities of the company, including its suppliers and sub-contractors, and may pertain to any hardware items (materials, products, document) or software activities (inspection, testing, engineering, purchasing, etc.)

Non-conforming items and activities shall be identified and properly marked to prevent unauthorised use of implementation or mixing with conforming items. Applicable forms shall be completed, identifying the non-conforming item or activity, deviation or discrepancy and necessary corrective actions will be taken.

Objective evidence of the corrective action implementation shall be recorded and maintained to substantiate that repaired, reworked or corrected items have been re-inspected and/or re-tested according to the applicable procedures. Records shall also be kept of all definitely rejected items or services no longer re-workable, repairable or required.

### **Corrective Action Request - CAR**

Quality system and production processes deficiencies shall be addressed by means of a Corrective Action Request (CAR). The necessity to raise a CAR may be identified by QC/QA personnel either during performance of an audit or as a result of a document review. The purpose of a CAR is to induce the audited organisation to take all necessary remedial actions(s) in order to correct the identified deficiency and to prevent such deficiency occurring again. Implementation of such remedial action(s) and their effectiveness shall be verified by a follow-up audit.

### **Handling and Storage**

A system shall be maintained for preservation, warehousing and handling of all materials and equipment throughout the entire duration of services to clients and to the benefit of the company. All precautions shall be taken to protect materials from abuse, damage, deterioration and unauthorised use. All materials subject to deterioration or corrosion due to environment shall be kept cleaned and fully protected at all times in accordance with approved procedures. The responsible inspector in the particular area shall monitor Handling and storage of materials and equipment during construction and installation.

Unsatisfactory condition of material and equipment shall be brought to the attention of the Site Superintendent for corrective action. Suspect items shall be placed on "Hold" and marked properly until acceptability is established or other disposition arranged.

### **Quality Records**

Records shall be generated and maintained to adequately support and substantiate inspections and tests performed. These records shall provide evidence of the quality of the item and testify directly and indirectly its compliance with the contractual requirements. Records to be maintained shall pertain to the following:

- Inspections performed as per respective Quality Control Plans including system audits.
- Appraisal of procurement sources
- Material Certificates
- Records of in-process inspections during construction (if any) installation
- Control of non-conforming items, including follow-up actions
- Testing, approvals and audits by third parties, sub-contractors and clients
- Certificate regarding approval of personnel and processes
- Functional test reports and data
- Installation reports and commissioning test reports (if applicable)

Inspection records shall identify their subject, applicable requirements, inspections performed, dates of inspections performed; date of inspections and inspector's name, results obtained, and the feedback of corrective action generated by previous inspections. For projects, records shall be kept for the minimum period specified in each contract and shall be made available upon request to the client's representatives. Records shall be stored in a suitable environment to minimise deterioration or damage and to prevent loss.

### **Audits**

The QA Department manager shall establish document and implement plans for audit, which shall objectively evaluate the adequacy of the functions, systems and procedures. The audit plan shall define:

- Functions, systems and procedures to be audited
- Personnel allocated to perform audits
- Dates of audits

Audits shall include an evaluation of:

- Activities, processes, work areas, items and service
- Quality, systems, procedures and instructions
- Certification, documents and records

Appropriately trained personnel who are not directly responsible for the area being audited shall carry out audits. Audits shall be performed in accordance with documented audit procedures and/or checklists, which identify essential items to be investigated. Each deficiency found during the audit shall be addressed by means of 'Corrective Action Request.' The management responsible for the area audited shall review, agree and correct deficiencies revealed in the relevant audit report. Any action taken to correct deficiencies shall be re-audited to verify compliance with relevant 'Corrective Action Request.' In general, the company has a vast list of procedure established for the execution of the company's activities.

## Amendment and Re-use

This manual shall be periodically reviewed to re-affirm its adequacy in conformity to the current company practices resulting from technological and international standards advancements. When changes affect a considerable number of pages and in any case after more than ten amendments to one issue, the manual shall be reissued with all the previous amendments incorporated.

## QA Responsibilities Outlined in Project Quality Plan

On larger projects, there may be QA Personnel in the project team in which case their description will be documented in the quality plan. In smaller projects, there may be no project team and duty the project consultant, who should simply write down exactly how QA and QC will be achieved on the project. For all Projects: The Project Consultant will develop the listing of quality activities, according responsibility to him/herself for those activities reasonable with his/her resources and capabilities. Where appropriate, he/she will liaise with the QA Department to agree which activities they can resource, and include them in the Quality Plan. At the appropriate time during execution, the Project Engineer liaises again to arrange the necessary QA resource.

## HUMAN ENERGY

### The Board of Governors

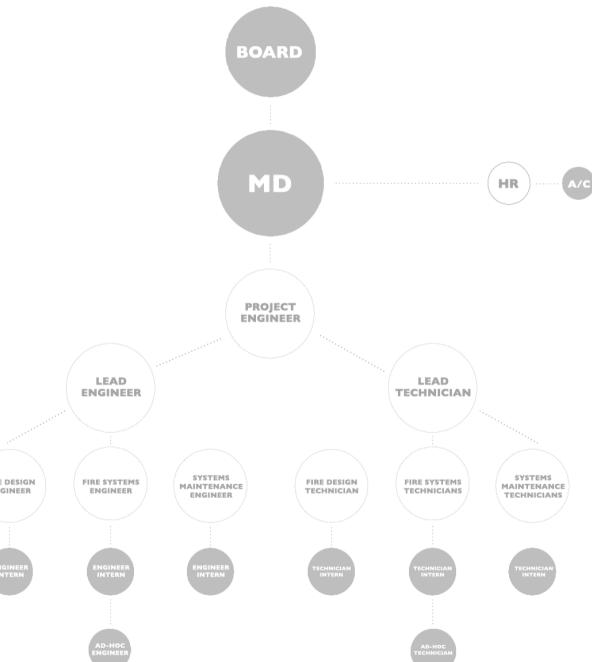
The Chairman - 1  
The Chartered Auditor - 1  
The Directors - 2

### The Company

The Managing Director - 1  
The General Manager - 1  
The Executive Assistant to the MD - 1  
The Accountant - 1  
The HR Personnel - 1

### The Team

The Project Engineer - 1  
The Lead Engineer - 1  
The Lead Technician - 1  
Fire Protection Engineers - 5  
Fire Protection Technicians - 5  
Contractual Qualified Engineers - 12



### TOTAL Field Human Energy - 25

All our staffs are skilled and professional in their field of work. Our Engineers and Technicians receive training on various systems periodically from technical partners. We also have regular HSE and CASHES training for all our workers.

Our installations + commissions come with a 12 month equipment, installation + commission guarantee; unless the equipment / systems are tampered / touched by engineers outside of RedSense - we will fix + repair all faults relating to our UK suppliers or our in-house engineers. This is outside of our servicing + maintenance fees for dispensed equipment / systems + standard wear. Kindly note that this project profile is proprietary and only allowed for internal use.

Christian Reuben  
**MD/CEO**

## CONTACT

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