

Physical Security
For Datacentres



Securing Your World





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The Context

With data centres having become a mission critical component of business operations, adequate security provision is clearly essential to reduce the risks of financial and reputational damage that can result from a security breach. Prospective tenants place huge value on auditing security controls when choosing a data centre provider.

With growing numbers of data centres available, tenants have huge buying power - security can play a key role in determining which colocation provider is chosen as the prime location for data storage or application hosting.

What's more, the risk of reputational and financial damage from a physical security breach is huge.

Therefore as a datacentre provider - security optimisation, simplification and standardisation are key.

Selecting the Right Partner

It is therefore essential that those involved in creating new data centres place huge importance on choosing a partner that:

- Understands datacentre operating requirements and the need to respect security protocols, but can still deliver new projects within demanding timeframes
- Has a clear and demonstrable client portfolio within the sector
- Offers technologies carrying the highest level of accreditation and approval
- Provides a broad product portfolio across People, Process and Technology to simplify the supply chain and provide clear accountability for project delivery.





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About G4S

With turnover of over £7bn and employing over 500,000 people in 85 countries worldwide, we are the world's leading security provider. We offer a broad range of security services combining people, process design and technology on a single, multi service and integrated basis.

Across the UK and Ireland, we employ 20,000 people and turnover over £460m . Our UK and Ireland technology division, G4S Fire and Security Systems, operates with a turnover of over £68m and employs over 150 engineers, based from strategic locations across the two regions.





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Why Choose G4S?

We believe that we represent the ideal partner for all data centre security projects. We truly believe that we are the only provider that can offer:

- The opportunity to integrate technology procurement from multiple manufacturers to a single source - simplifying the supply chain and placing clear accountability for project delivery
- Experience in selecting the correct technology to suit budget and performance specification
- Clear evidence of successful project delivery within the data centre space
- Project delivery teams who are used to delivering within demanding timeframes and with the highest levels of security clearance
- Unrivalled global presence to support those data centre providers who would like to replicate solution design, implementation and contract management across territories
- A commitment to use Suitably Qualified and Experienced Person (SQEP) staff to design, install and test the systems.
- A strong safety culture embedded in our ways of working, coupled with well-defined Safe Systems of Work (SSOW).

A COMMITMENT TO QUALITY

We operate according to NSI Gold standards, giving you peace of mind that we operate in accordance with industry specific standards and with a quality management system that is compliant with BS EN 9001.

Gold approval is recognised by industry, the police, fire and rescue services and insurers as well as other stakeholders.

Technology installations are carried out in accordance with each client's specific standards and specifications and other recognised data centre design criteria.

WITH SAFETY AT THE CORE

Prior to working on the job-site, all G4S's staff and subcontractors will go through the required site training, General Contractor training (if needed), and on-site pre-work safety sessions at a frequency to meet your compliance and best practice requirements.

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G4S Relevant Experience

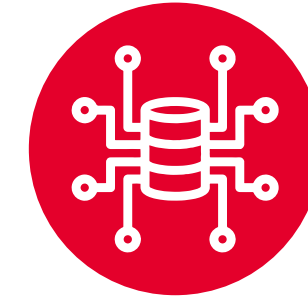
We offer credibility and experience from our catalogue of projects.

Some of our most recent projects are summarized here:



THE CLOUD STORAGE PROVIDER

Full supply, project management, installation and ongoing support of CCTV surveillance systems across multiple sites to leading global cloud storage provider.



THE INFRASTRUCTURE AS A SERVICE PROVIDER

Full supply, project management, installation and ongoing support of access control and CCTV surveillance systems to leading infrastructure as a service provider.



THE SOCIAL MEDIA PROVIDER

Full supply, project management, installation and ongoing support of access control technology and CCTV surveillance systems to leading global social media provider supporting Ireland's biggest data hall.



THE PRIVATE CLOUD FACILITY

Full supply, project management, installation and ongoing support of CCTV surveillance systems to leading Government data centre.



THE GLOBAL COLOCATION PROVIDER

Full supply, project management, installation and ongoing support of access control to leading provider of colocation services across multiple global locations.



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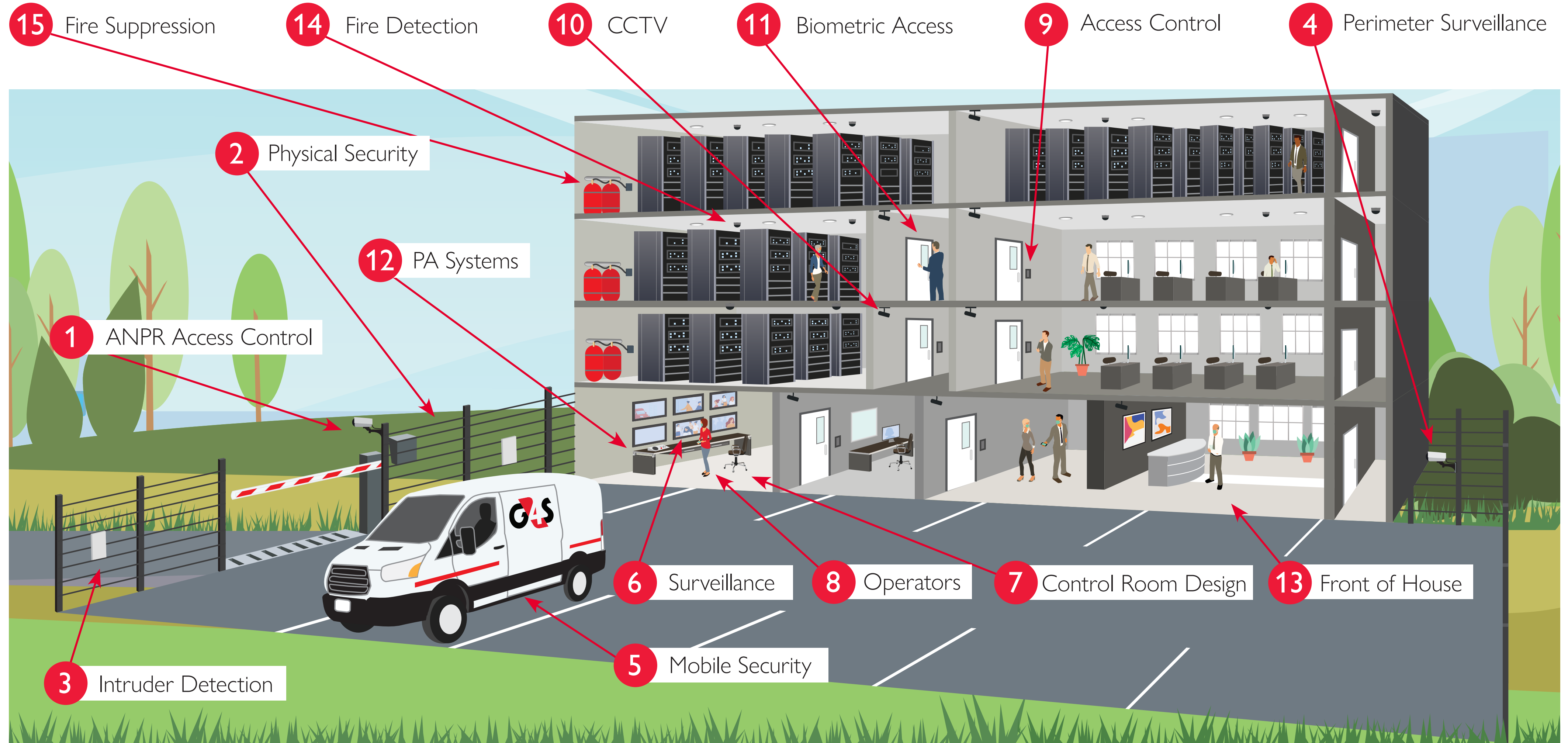
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G4S Datacentre Offering





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PERIMETER

1 ANPR ACCESS CONTROL

Our range of ANPR based access control facilitates access to your facility to pre approved vehicles using automatic number plate recognition.

2 PHYSICAL SECURITY

Our range of physical security products delay and deter potential intruders. Our range includes fencing, gates, physical barriers, turnstiles and more.

3 INTRUDER DETECTION

Our intruder detection alarms monitor your perimeter in real time and as an incident occurs trigger preventative actions such as lighting, loud speaker messages , music or alarm sirens.

4 PERIMETER SURVEILLANCE

Our range of external surveillance are ideal for high security sites and allow you to monitor your perimeter in real time and take proactive action as potential incidents occur. Surveillance uses artificial intelligence to notify of unusual activity or potential incidents.

Our staff monitor the perimeter and are a physical presence used to deter potential intruders and also coordinate initial response as and when an incident occurs.

5 MOBILE SECURITY

Our teams of mobile security professionals provide random or scheduled Property inspections, incident response and lock and unlock services.

CONTROL ROOM

6 SURVEILLANCE

We facilitate real time surveillance of key building locations across your access control, CCTV and reception and coordinate initial response as and when an incident occurs.

7 CONTROL ROOM DESIGN

We can assist with control design to create the optimum working environment for your security staff.

8 OPERATORS

We draw from our security expertise to provide experienced security staff to provide surveillance and deliver a professional and proactive response should an issue occur.

INNER DATACENTRE DESIGN

9 ACCESS CONTROL

We provide fully networked access control to manage access to key areas. Access can be managed according to time intervals or specific zones. We use frictionless control to provide secure, contactless passage around the building.

10 CCTV

Our surveillance systems use artificial intelligence to detect unusual motion and activity

11 BIOMETRIC ACCESS

As a further level of authentication, we use biometrics such as fingerprint or Iris recognition to facilitate secure access and ensure access is adequately managed into key areas.

12 PA SYSTEMS

We use sophisticated voice messaging systems to inform occupants what to do in an emergency and allow security staff to take proactive action in the event of a security breach.

RECEPTION

13 FRONT OF HOUSE

We offer an ambassador service which provides a merged reception and security service. Technology includes check in on arrival using tablets and mobile visitor pass printing.

SERVER ROOM

14 FIRE DETECTION & ALARMS

Our fire detection systems combine intuitive controls with intelligent devices and monitor and alert on potential fire.

15 FIRE SUPPRESSION

We provide sophisticated suppression systems to extinguish or prevent the spread of fire using a combination of dry chemicals and wet agents.



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Our project approach

WE SPLIT OUR PROJECTS INTO CLEAR STAGES.

This provides early identification of risks and timeline challenges and ensures we meet the stringent operating conditions, safety controls and timelines required of datacentre construction projects.

PART 1 - PREPARE



CONSTRUCTION READY DESIGN



COORDINATED DESIGN TEAM



PRE-INSTALLATION SURVEYS COMPLETE



DETAILED INSTALLATION PLAN



COMMISSIONING



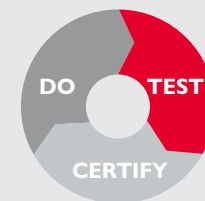
TRAINING PLAN

PART 2 - EXECUTE

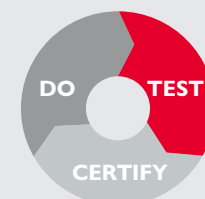
EXAMPLE SUB-SYSTEMS INSTALLATION

SYSTEMS COMMISSIONING

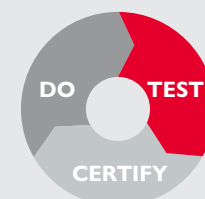
INSTALLATION VERIFICATION



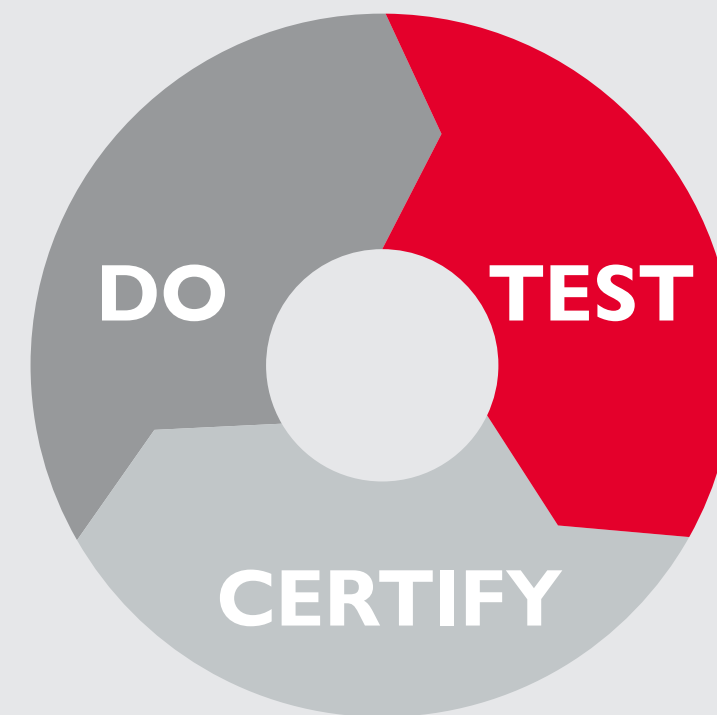
ACCESS CONTROL



CCTV



ASSOCIATED SYSTEMS



DESIGN TEAM PRODUCE 'AS INSTALLED PACK' (AIP)

Quality Audits (HSQC Manager)

PART 3 - OPTIMISE & SUPPORT



TRAIN



INSPECT



DIAGNOSE



RESPOND



RESOLVE



MEASURE



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Our Project Approach PART 1 PREPARE

We'll listen carefully to your requirements and produce the optimum design, plan carefully for installation and make provision for training.

We put risk and safety at the heart of what we do.



CONSTRUCTION READY DESIGN

- Assessment of installation impact
- Risk assessments and method statements
- Compliance with datacentre and building standards
- Detailed drawings



CO-ORDINATED DESIGN TEAM

- Subject matter experts for individual technologies
- Project team assembled to agree integrations
- Assess and communicate key considerations
- Involve client wherever possible



PRE-INSTALLATION SURVEYS

- Site assessment audits
- Assess delivery or installation constraints
- Complete visitor approval process
- Make access requests



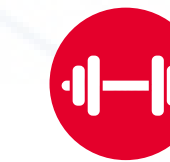
DETAILED INSTALLATION PLAN

- Signed by both parties
- Fully documented scope
- Highlighting roles and responsibilities
- Deployment and training timelines



COMMISSIONING

- Led by experienced project lead
- Clearly defined "Do, Test, Certify" methodology
- Acceptance testing completed
- Formal handover



TRAINING PLAN

- End user or Train the Trainer formats
- Detailed schedule provided
- Attendance monitored
- Pass / fail course completion



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Our Project Approach PART 2 EXECUTE



A G4S Installation Project Engineer will lead the physical installation, supported by other G4S engineers and the G4S supply chain. In all cases, G4S will follow the appropriate Method Statements, adopting the ‘Do-Test-Certify’ sequence:

DO – part of the installation work is undertaken, e.g. pull cables, fix camera. The appropriate Method Statement is used to identify the steps needed and quality requirements

TEST – the work undertaken will be tested to ensure that it meets the design documentation and defined quality standards, identifying and rectifying any shortfalls

CERTIFY – the work will be formally certified as having passed the design and quality checks. Each step of the installation is tested as the installation progresses, allowing any faults to be rectified as soon as possible – minimising any rework, the consequence of rework on others and avoiding latent errors. If a check fails, we will halt the installation, and rectification work is undertaken. Although very unlikely, this may include starting the entire installation again. As subsystems (i.e. part of a system) are installed, they will be tested as a sub-system. When entire systems are installed, the installation team will undertake end to end tests. All testing will be certified.

COMMISSIONING



Once our project management team has validated that all equipment has been shipped as expected, our technicians will arrive on site with the correct skills and security clearance to ensure your installation takes place with minimum disruption.

Throughout the installation process, the Installation Team managed by the Project Engineer, provides relevant information to the Design Team who verify that the installation is progressing in accordance with the design. This approach maintains the ‘golden thread’ from Design documentation, to commissioned equipment, through to operational systems.

VALIDATION



We run a series of validation exercises to ensure that the equipment is left in full working order and operating to maximum effect. These include:

Factory Acceptance Testing – this helps us prevent equipment being classed as dead on arrival

Integrated Site Acceptance Testing – we’ll validate systems integrate together successfully and operators are able to use equipment to maximum effect

Testing validation – we’ll perform formal documented user testing against the key operating criteria in order to prove equipment is working as intended



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Our Project Approach PART 3 SUPPORT



TRAINING PLAN

We'll arrange the necessary level of training on an end user or 'train the trainer' basis to ensure that your staff are equipped to operate equipment with maximum effect.

Where appropriate a detailed schedule will be agreed to give you the level of confidence that staff will be equipped to operate technology and you'll maximise the return on your investment with G4S.



Post Sales Support

Our approach to successful execution of reactive and fault based support for systems is a coefficient approach that starts with the design of the system; utilising the latest systems capabilities to report faults, includes on-site user training including elements of fault recognition and goes on to ensure an adequate engineering coverage with well laid and tested methodology around call handling, management, stock levels and execution.

We operate a 24/7/365 fully manned Customer Service Centre (CSC) from our base in Tewkesbury. This utilises the latest Tesseract Software to route required visits in the most efficient manner.

Our service engineers are trained and experienced professionals. They visit several different types of establishment during their working day and are used to working unobtrusively whilst the building occupants go about their daily business. They work quietly, quickly, and efficiently.

We recognise that there may be challenges for engineers working on datacentre premises but due to our experience in mobilizing high demand, KPI driven, public facing contracts with quality metrics this is an area in which we excel.

Given the secure nature of the sites that we operate in, we recognise that maintenance troubleshooting via remote authentication is not an option

We recognise the fact that our staff are entrusted to work on your premises, often without direct supervision or accompaniment. In addition, we recognise that many of our employees have access to information and areas that are considered sensitive and as such it is imperative that both you and we have the confidence that they can be left alone to complete their task, without fears that they will disrupt your operations or divulge sensitive information.

The basis of employing trustworthy staff commences with the recruitment process, when we security screen all new employees that we employ.





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Our Project Approach PART 3 SUPPORT (continued)

Your staff are able to contact the CSC via telephone or email. Upon receipt of a call the call is logged and will instantly appear on the live log with the required response time. The CSC operative will assess the nature and type of call and where possible pass to the technical support team to utilise remote diagnostic tools in order to access the systems and in cases where it is possible provide a remote fix.

The live log instantly feeds into our 'Unallocated Jobs' board which includes a count down timer for reaction time and the Service Co-Ordinator (Planner) will then look to allocate the job to the best placed engineer within the contracted SLA.

We use TOM TOM tracker technology to track our engineers location so as to ensure the most efficient allocation of resources in order to meet reaction SLAs.

Engineers receive work orders via a handheld device this allows the engineer to view the call, the call out response time and either accept or reject the call based upon his own local knowledge and his/her current workload. Rejected calls are then rerouted to the next available engineer with the help of the local Operations Manager.

We base the quantity of required engineers not only on guidelines laid down by the NSI but also on known factors such as

complexity of systems and geographical locations of customer sites. As such wherever possible we are able to utilise the same engineer for reactive and PPM calls, which allows an in depth understanding of the customer site, systems and any specific customer needs or requirements. Our response to site within agreed reaction times for the entire business is 91% of target.

For major projects, we will develop a spares holding plan that meets the requirements of the contract regarding first time fix rates and minimising down time. This could possibly include a stock held on site by the client that could be replenished automatically upon use. We regularly assess our required van, stores and accessible stock levels based on our experience of failure rates on these systems ensuring that these allow our engineers to exceed Target Fix Times and ensure that our first time fix rate is as high as can be.

Currently the businesses first time fix rate is 92%. This is regularly reviewed and engineers with sites that have particular requirements are able to address their van stocks to align with site requirements. The spares and van stocks would typically include items that are more likely to fail or become damaged, items that are utilised regularly but not often are held in our stores for next day delivery. Items that rarely fail are held within our managed supply chain.





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Governance

For major projects, contract governance forms an integral element within the overall process, with representatives from both G4S and the client organisation invited to join.

The governance board provides a robust mechanism for providing G4S with the necessary communication and controls through a clear escalation structure and facilitates faster decision-making.

THE GOVERNANCE BOARD WILL:

- Meet quarterly or more frequently if required
- Ensure all operations are undertaken safely and securely and in accordance with site specific instructions
- Ensure that the Project team is working towards an agreed vision and strategy that reflects principal stakeholder requirements
- Ensure that corporate governance is being followed
- Ensure that risks are being controlled
- Ensure that issues are highlighted and addressed as early as practical
- Ensure the delivery of partnering ethos and behaviours.

Resource

We operate with a clearly defined project team who have well defined escalation paths that are used when necessary.

Our project resource teams are comprised of:

Project Teams – led by an experience systems integration project manager and including representatives from our design, technical support and installation and commissioning functions

Oversight - projects are sponsored by internal 'heads of' across health, safety and compliance, installation and technical design to ensure executive escalation can take place quickly and effectively when required

Governance – our governance process is explained in greater detail. Governance is led by executive sponsors from our operations and technical personnel. We encourage participation from our clients in project governance.





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Solution Overview

SECURING THE PERIMETER

To secure the perimeter, we work closely with our partners to supply fencing and barriers to deter potential intruders and delay those intending to intervene.

Our perimeter intruder detection technology further secures the perimeter by monitoring the perimeter in real time, automatically notifying of a potential intrusion attempt and then providing the option to remotely activate deterrent devices such as speakers, sirens or lights.

MANAGING ENTRANCE

We'll work hard to limit the entry points to the data centre and will follow best practice by establishing one main entrance for customers and employees and keep other entrances to a minimum i.e. for loading docks.

We'll ensure that adequate provision is made to monitor the limited entry points for the main entrance, loading docks, fire exits, and any other sensitive areas of the facility.

Where an intercom is used, we'll look to integrate the intercom with the Access Control System. By providing two-way voice supported by one-way video communication to the master station located in the Security Operations Centre, an operator can make a decision on whether to permit access remotely.

MANAGING PASSAGE

All events and alarms shall be archived daily to support compliance. In line with the requirements of many modern datacentres, door "open and closed" statuses shall be classed as an event/activity. Activity and event retention shall be archived and stored in line with

INNOVATIVE ACCESS

To support secure and controlled access, we may include biometric identification which allows you to control access to only pre approved individuals and supports a contactless passage through the premises. Iris identification precisely identify an individual based on these factors.

HIGH SECURITY ACCESS

Our solution may include additional measures for premium security areas such as mantraps . These typically consist of two separate doors with an airlock in between. In many cases a combination or card and biometric authentication is required in order to secure onward passage.





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Solution Overview

INTELLIGENT ACCESS

Our preferred access control technology will hold the detail of each authorized individual with access into the facility. Your operators will access a simple interface to issue access control cards and determine access rights by day of the week and time of day.

The access control technology will also be supplied inclusive of a comprehensive analytics suite to provide real time and historical reporting on who has accessed which part of the facility, when and for how long. This will provide a valuable audit trail and ensure compliance and also provide confidence for the colocation tenants who occupy the data centre space.

CENTRALISED CONTROL

Finally, the preferred technology should provide the opportunity to consolidate visibility across multiple locations to a centralised location to support troubleshooting and allow clients to implement centralised Security Operations Centres where appropriate.

MONITORING & SURVEILLANCE

We'll assist with the initial design of a control room from where security monitoring and surveillance will operate.

It is well recognised that the majority of operator time is spent looking for suspicious activities, with less than 5% detection rate after the first 20 minutes. Our surveillance systems use artificial intelligence and the latest analytics to simplify the role of the operator and provide visibility of potential suspicious incidents and unusual motion as and when they occur - all without the operator having to scroll through multiple screens or footage.

Working with a number of the leading manufacturers, we will select from our pool of vendors according to the size and type of installation.

Our latest surveillance systems will provide added value by checking for compliance with PPE policies and notify of potential groups or social distancing breaches - all essential activities within the context of the new normal.

Operators are able to set discrete rules for specific events that they want to be alerted to, including types of motion detection, and set watchlists for the appearance of a particular face or license plate.

In addition, we'll look to integrate the access control system with the monitoring platform for event based camera call-up, image retrieval, and PTZ camera preposition targeting to support operators in a swift issue diagnosis and resolution.

Staff can let AI take over and detect unusual activity . When an incident necessitates footage to be found and reviewed, the embedded analytics enable them quickly conduct an appearance-based search for a person, vehicle, license plate or face based on a reference frame in a video or a description.

All this means your operators are empowered to act swiftly and decisively should the situation demand.

BUSINESS CONTINUITY

Supporting our technology, we are also able to provide remote monitoring and overlay services from our Alarm Receiving Centre in Belfast.

This provides a level of business continuity should resources at your prime site become stretched or to assist for periods of time when resource is light (such as early in the morning).





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More Reasons to Choose G4S

As security experts, we provide a host of added value services to our customers including:



Our G4S Academy providing a monthly security bulletin on potential activity as well as a repository of white papers, webinars and other continuous professional development material



Our Events and Seminars where guest speakers debate the latest market evolution and trends



Our Innovation Forum where we work closely with our customers to discuss new security issues and how best to address emerging trends and technologies



Our Podcasts where we support continuous professional development through engaging debate - available at your leisure



INTRODUCTION by Noah Price

To find out more subscribe with our G4S Academy at <https://www.g4s.com/en-gb/what-we-do/academy>





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