



BEST PRACTICES FOR DATA CENTRE SECURITY AND EFFICIENCY.

A **WHITE PAPER** POWERED BY BOON EDAM


BOON EDAM
YOUR **ENTRY** EXPERTS.

UNDERSTANDING THE STRATEGIC APPLICATION OF SECURED ENTRY SOLUTIONS TO PROTECT DATA, MAINTAIN COMPLIANCE, AND IMPROVE OPERATIONAL EFFICIENCY.

In the dynamic world of data centre management, three pivotal imperatives steer the strategies and decisions of security professionals:

1. **Protect Sensitive Assets:** The protection of data centre assets extends beyond the safeguarding of data to include the physical security of people, property, and other critical assets within the data centre environment.
2. **Maintain Regulatory Compliance:** Adherence to industry and government regulations requires a multifaceted approach that ensures data centres not only meet current compliance standards but also remain adaptable to evolving regulatory landscapes.
3. **Overcoming Rising Costs:** The rising costs of energy, land, labour, and critical infrastructure supply chain, necessitate the identification and elimination of inefficiencies to ensure the availability of services, competitive pricing, and sustained profitability.

The convergence of these imperatives under a single budget line item is where the strategic application of secured entry solutions becomes invaluable.

Understanding the Various Types and Entry Processes for Data Center Security Entrances

As you move from the perimeter of a facility to the critical infrastructure, the redundancy of layering secured access points becomes exponentially more effective, and there are real opportunities to control labour costs. Implementing this “layered” strategy with increasing security levels protecting each step towards the most sensitive areas is the best way to protect a data centre’s assets and people and your compliance reputation. While every data centre and colocation is different, the following outline provides a foundation for a strong physical security entry strategy.

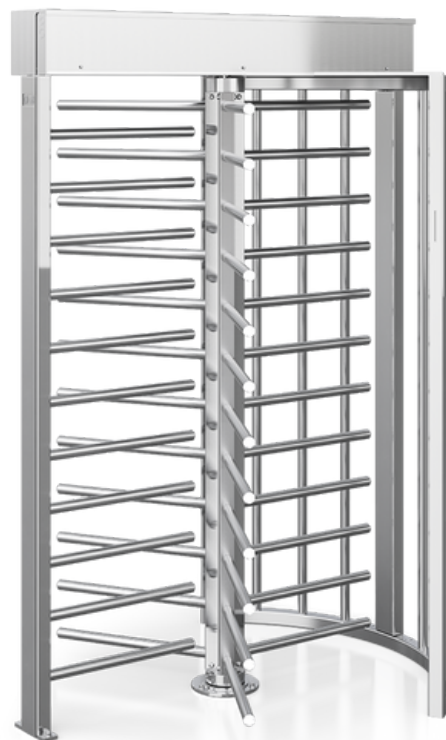
As all data centre operators know, redundancy costs money, and your secured entry process and design are no different. The goal is to provide as frictionless a process for customers and visitors as possible while incorporating layers of physical security that build on the previous layers. Let’s start by clearly defining where the layers are, what the process requires, and whether you can automate to do better what you do now, thereby yielding labour savings.



UNDERSTANDING THE VARIOUS TYPES AND ENTRY PROCESS FOR DATA CENTER SECURITY ENTRANCES.

LAYER 1: THE PERIMETER

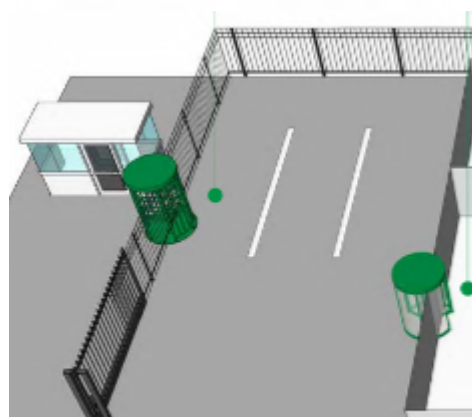
Physical security starts with keeping unauthorised pedestrians and vehicles outside the inner fence line premises altogether. Full-height turnstiles are ideal for this first layer, providing a physical deterrent against infiltration. Until recently, full-height turnstiles were susceptible to piggybacking, wherein two people would squeeze through in the same compartment. New robust outdoor-rated sensor technology now detects when two people attempt to enter the turnstile using one credential and locks the turnstile, preventing entry. These new sensors also feature “walk-away” detection that locks the turnstile if an individual presents their credentials for access authorisation, has been approved, allowing the turnstile to be unlocked, starts to enter the turnstile, and then backs out, allowing another unauthorised person to enter. This feature, combined with a completed rotation switch output, can determine, with certainty, mustering and pass back, always knowing who is or is not inside the perimeter and building.



Boon Edam Products Best Suited for the Perimeter Layer Include:

- **Turnlock 100 Pedestrian Security Turnstile** - A rugged full-height turnstile designed for harsh outdoor environments. *
- **Turnlock 150 Turnstile Security Gate** - A versatile solution that combines durability with aesthetics, ideal for indoor and outdoor applications. *

**Only available in the USA*



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LAYER 2: THE BUILDING ENTRANCE

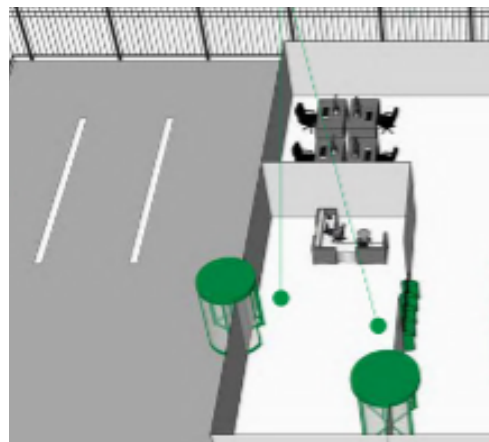
Once inside the facility perimeter, in some designs, a traditional swing door with a card reader is used to enter the reception area of the data centre and is usually equipped with an intercom. Authorised people should either be staff, customers or confirmed contractor visitors. Approved, meaning registered in advance, but do not have a badge will have to register typically providing a driver's license or passport. This is the point that you have a decision to make. What do you want the customer experience to look like? Do you select a detection strategy which utilises speed gates, or do you deploy a piggybacking prevention strategy that utilises security revolving doors? Let's look at the pros and cons.

Security speed gates cannot by themselves prevent tailgating. Therefore, you must depend on governance and manpower to enforce policies. A prevention strategy is critical if governance is tied to compliance and audit requirements. However, if you are a Colo who does not cater to regulated industry clientele, then using security speed gates provides a great customer experience. If you decide to automate compliance and deploy staff more focused on performing service level agreement revenue generation, then security revolving doors are preferred, as they prevent any visitors from slipping by the reception desk and collusion and allow customers and contractors to simultaneously come and go freely. In addition, you still benefit from all the advantages of humidity and dust air filtration and brute force protections that you cannot achieve with a detection strategy without deploying a vigilant guard force.



Boon Edam Products Best Suited for Exterior or Interior Access Points:

- **Tourlock 180 High Security Revolving Door** - The ideal solution when you need to prevent unauthorised entry while supporting high traffic requirements cabinet width in the industry with swinging panels.
- **Lifeline Speedlane Swing Speed Gate** – A slim, feature-rich security barrier that acts as a sleek boundary between public and private environments.



UNDERSTANDING THE VARIOUS TYPES AND ENTRY PROCESS FOR DATA CENTRE SECURITY ENTRANCES.

LAYER 3: THE CRITICAL INFRASTRUCTURE (SERVER ROOMS)

For the protection of the most sensitive areas in a data centre, the critical infrastructure (server rooms or white space) and interlocking high security portals enforce the one-person rule, and the verified right person is critical for maintaining compliance. The most important design aspect of an interlocking portal design is the user substitution prevention. This is an automated enforced sequence of operations that guarantees that the identity verification does not allow for collusion and substitution. It is not enough to guarantee one person at a time, you must make sure that it is the right person.

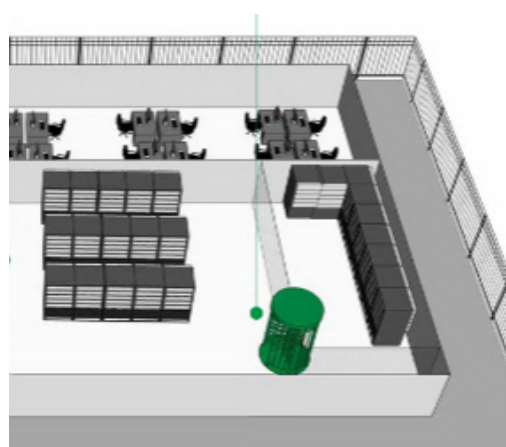
Once a user presents their credentials the first door opens. As you enter the portal a sampling to confirm the one-person rule takes place. If those samples are good, the first door closes. As it completes its closure, the portal redundantly re-samples. If those samples are good, only at that time the biometric device is turned on. This is how you prevent substitution, delaying the operability of the biometric device, combined with redundant one-person rule samplings.

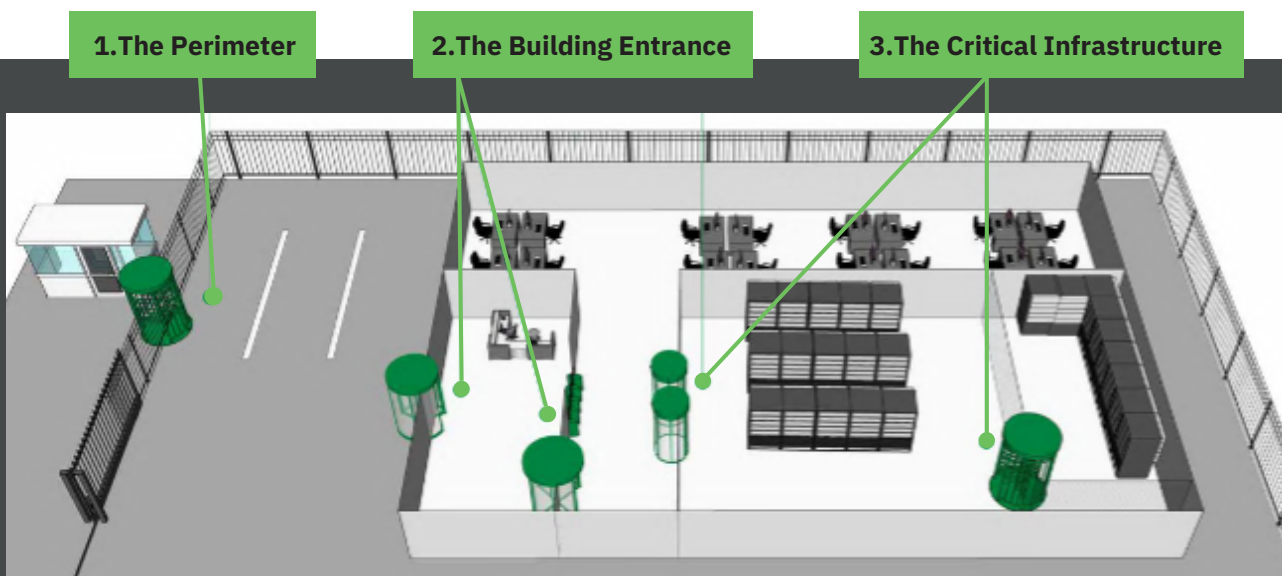
By using an unattended secured entry interlocking portal design that utilises the same sophisticated sampling algorithms used by the security revolving doors, you now measure risk again, which is how you exponentially reduce the threat surface by layering and measuring at each point. The significance of these algorithms is that you can then measure and predict the level of risk, which many data centre operators do not currently do. In addition, the interlocking portal is always closed even during use and, as a result, further supports building air makeup and humidity and dust filtration environmental systems. These interlocking portals can be reinforced with vandal-resistant or bulletproof glass as well.

Many applications require interlocking mantrap portals to be incorporated into fire-rated walls, which can be easily accomplished by securing one directly to a fire-rated swing door. Half portals that attach to an existing fire-rated swing door also make it easy to transform an ordinary door into a high-security entrance.

Boon Edam Products Best Suited for Exterior or Interior Access Points:

- **Circlelock Solo Security Portal** - The ultimate single-entry security portal.
- **Circlelock Combi** - A practical half portal that attaches to an existing swing door, transforming an ordinary door into a high security entrance.





LAYERED SECURITY FOR DATA CENTRES.

THE OPTIMISATION OF STAFF AND LABOUR DEPLOYING UNATTENDED SECURED ENTRY

While deterring, detecting, and preventing unauthorised entry are the primary functions of secured entry solutions, there are a number of other important benefits afforded by security entrances related to cost-savings, operational efficiency, and alarm management.

SECURED ENTRY FOR ENERGY EFFICIENCY

Power usage effectiveness (PUE) isn't the only operational improvement initiative available to data centres. But with rising energy and water resourcing costs, designing a security entrance that is always open and always closed, minimising air make-up and filtration costs, without eating up valuable square footage, is a unique challenge.

Conventional swing and sliding door entrances create a hole in the building envelope every time someone passes through, allowing outside air to rush in to displace the controlled internal atmosphere. In fact, as much as 50% of the total energy loss in a well-insulated building occurs through and around doors and windows, partly because data centres are constructed with only NFPA72 minimal requirements and rarely have windows. However, air quality is critical, so preventing air loss and filtration is both operationally beneficial and cost and energy-efficient. Security revolving doors and interlocking portals provide energy-efficient entrances that are always closed, thus driving efficiency and assisting with contamination control during everyday use. Boon Edam piggybacking and tailgating prevention solutions utilise 20% to 50% less square footage and provide superior air filtration performance to traditional vestibules.

"...On average, eight times less air is exchanged with a revolving door than with a sliding or swinging door, thus driving efficiency and reducing loss and filtration."



SECURED ENTRY FOR COMPLIANCE

Beyond security, secured entry solutions empower staff with the infrastructure and tools they need to meet certifications and demonstrate absolute customer audit compliance. With a layered secured entry strategy, you can:

1. Automate compliance for physical barrier entry / exit points.
2. Better sustain continual operations.
3. Protect customer's data, shareholders, and insurance policies.
4. Produce immutable 90-day archived records and alarm retrieval records for customers, shareholders, insurance, and compliance audits.
5. Design entry / exit performance capabilities that utilise segmentation, redundancies, and analytics to build trust.

"...The ability to comply with Gramm-Leach-Bliley-Act (GLBA), 2022 Safeguards Rule Compliance, FISMA, ISO 27001, HITRUST, PCI DSS, SOC 1, SOC 2, SOC 3, and ITAR, is all part of your automated physical security deployment strategy for customer acquisition and retention."



SECURED ENTRY FOR ALARM MANAGEMENT

Boon Edam full-height turnstiles, security revolving doors and security interlocking portals prevent all of these security violations and, therefore, eliminate all alarms generated by them at conventional swing doors. Compliance benefits include:

1. Automated user notifications are confined locally at the entry / exit and resolve all user interfacing and error issues without alarms.
2. Policies and procedures are enforced automatically without alarms.
3. 100% Elimination of DHOs for compliance reporting.
4. DFO alarms will only occur when the unit is subjected to a brute-force attack.

Most importantly, secured entry solutions consistently force compliance and automate the issue resolution process. As a result, employees do not perform remedial tasks such as false alarm responses and manual entrance checks but can focus on customer-facing objectives that generate revenue.

Boon Edam tailgating and piggybacking secured entry solutions can virtually eliminate 100% of Door Forced Open (DFO) and Door Held Open (DHO) alarms.

SECURED ENTRY FOR EFFICIENT LABOR ALLOCATION

Many data centres employ guards as part of their security strategy. While guards provide a strong physical deterrence, the recent talent shortage has challenged sourcing reliable staff. Like other industries, more is being asked of employed talent to compensate for a reduction in staff. The resulting imbalance between guard supply and demand has effectively changed how data centres leverage their available resources.

Security entrances successfully fill the gap between labour supply and demand by offering solutions that operate independently of or in tandem with security guards. These solutions reduce the current strain on human capital by offering a technology-based alternative. Give your staff the right tools for the job.

Take, for instance, a manned security entrance that requires guard services to check in employees and prevent any possible tailgating attempts. Consider the guards' salary, benefits, etc., then multiply this by all other facility entrances utilising this solution. The costs quickly add up. Now imagine a full-height turnstile, security revolving door, or high security portal installed at the same entryway. These solutions, too, can check in employees and prohibit instances of tailgating and piggybacking with far less associated overhead and risk.

"...Instead of employing multiple staff to maintain secure entrances, organisations can now rely on unmanned security entrances that function 24/7/365."



RAGINGWIRE DATA CENTRE : A CASE STUDY

Challenge: At RagingWire colocation data centres in Virginia and California, controlling access and preventing unauthorised entry is critical, while allowing unsupervised access to authorised personnel 24/7. RagingWire provides data centre services for some of the most demanding hyper-scale cloud and enterprise companies, and they are recognised as a leader in part because of their commitment to securing their customers' mission-critical equipment and data.

Solution: Boon Edam provided Tourlock security revolving doors to support RagingWire's sophisticated, multi-layer security system. The security revolving doors provide efficient passage for customer change control, while preventing tailgating and piggybacking during both entry and exit. The door systems detect such violation attempts and prevent unauthorised passage, supporting RagingWire's defence-in-depth security strategy.





PHYSICAL SECURITY IS CYBERSECURITY.

Lastly, to protect data centres and their critical data, it is essential to think of cybersecurity and physical security as working hand in hand to protect critical data. Installing security entrances can help ensure that only people entering the building are credentialed employees or authorised visitors, providing the highest levels of security for facilities housing sensitive data.

When mitigating risk in your physical and cyber security planning, remember that security entrances reduce your liability by demonstrating a plausible degree of effort to prevent infiltration. They protect the personal safety and security of staff, visitors, and anyone else in your facility, as well as your organisation's IT and computer systems and data. In addition, security entrances can also help reduce costs related to security personnel and false alarm management while helping to maintain compliance with various government and industry-imposed regulations and internal security policies.

OUR REACH IS GLOBAL.

We have been in business for more than 150 years manufacturing premium aesthetic and security entrance solutions in the Netherlands, United States of America and China. We can confidently say that we cover every corner of the globe with subsidiary companies in major cities across the globe. Furthermore our global export division not only partner with our distributors, but also offer direct sales and service to every territory. This wide net allows us to have a strong global footprint as well as a personal grasp of local markets and their unique entry requirements.

To find your closest Boon Edam expert, please go to:
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