The top of security.

Correctional Infrastructure Enhancement

Retrofit Instead of New Construction

Replacing Old Correctional Facility Locks with Retrofit Versions

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Introduction

"Our mission is to support a transition—helping correctional authorities around the world move from legacy to longevity."

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Retrofit solutions combine the strength and familiarity of time-tested mechanical systems with the advantages of modern engineering. These solutions enable institutions to upgrade in a secure, affordable manner with minimal operational disruption. For many correctional facilities, this approach strikes the ideal balance between fiscal responsibility and security excellence.

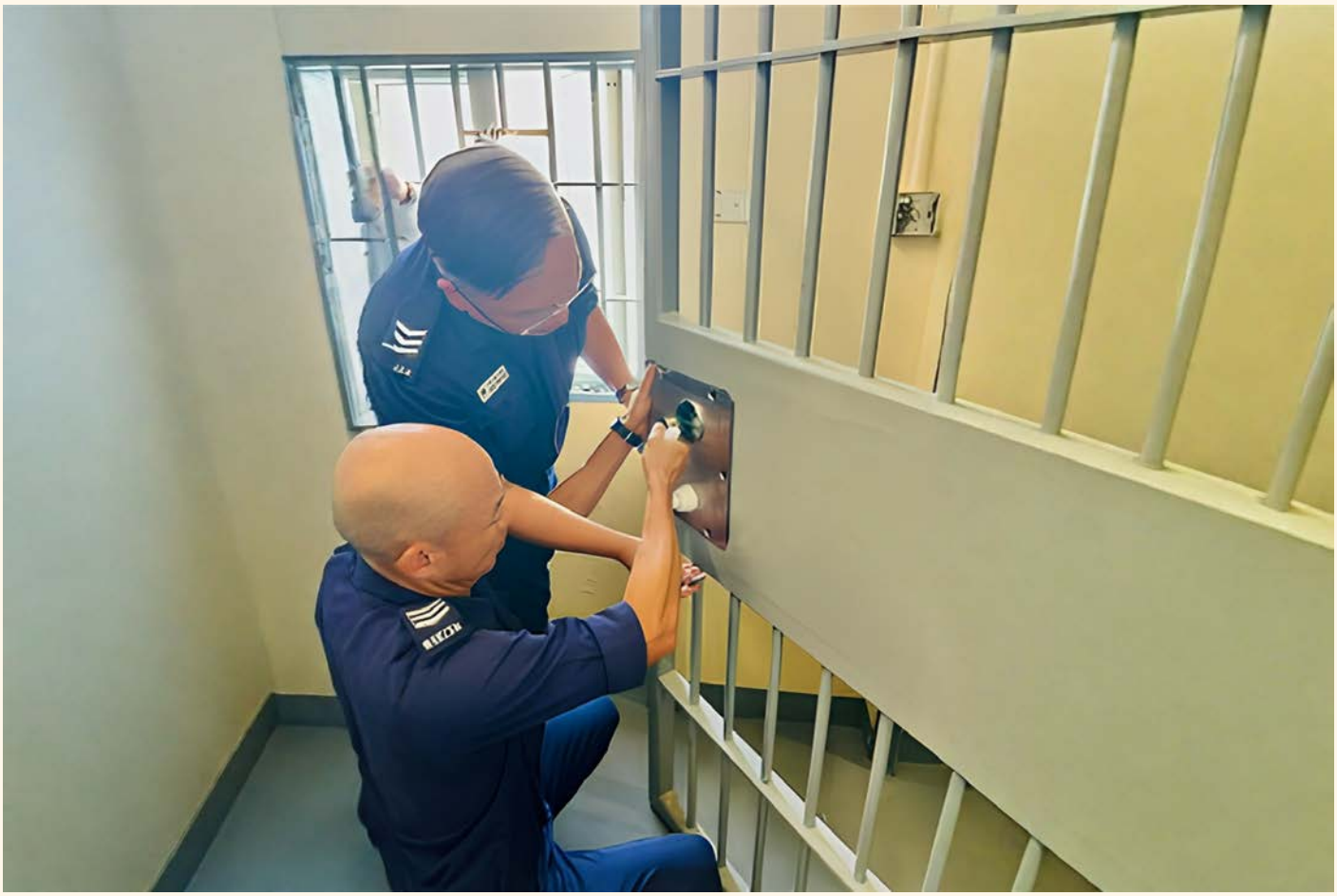
Our mission is to support this transition—helping correctional authorities around the world move from legacy to longevity. This white paper, designed to provide insight into retrofit programs, can deliver real-world results, including safer facilities and lower lifecycle costs and a smoother path toward future-ready correctional infrastructure.

Executive Summary

Across the world, many correctional facilities rely on legacy mechanical lock systems that are often decades old and no longer supported by manufacturers. These traditional systems, commonly supplied by brands such as CHUBB and other heritage manufacturers, have served their purpose but now pose increasing challenges: spare parts are difficult and expensive to source, maintenance costs continue to rise, and the locks no longer meet current security and operational standards.

Replacing locks with standard models available on the market requires extensive modification work on doors or their complete replacement, as screw-on dimensions and lock case sizes are not standardized and are therefore extremely expensive, time-consuming, and very disruptive to daily operations. A more sustainable and cost-effective solution is retrofitting—the targeted replacement of outdated locking mechanisms with modern, compatible retrofit versions.

Retrofit locks offer state-of-the-art security, lower costs, and faster implementation, while maintaining existing infrastructure and minimizing operational disruptions caused by replacement.



Traditional vs. Modern Correctional Locking Systems

An initial overview shows the differences between old and new prison locks.

Feature	Traditional Locks	Modern High-Security Retrofit Locks
Tamper & Attack Resistance	Standard hardened components; moderate protection	Advanced anti-pick, anti-saw, and anti-vandal features, stainless steel components
Recoding Process	Requires tools, locksmith, downtime or complete replacement	Tool-free recoding within seconds
Response to Lost Key	Replacement of all locks– facility is at risk for days or even months	Instant recoding of the entire facility in a maximum of a few hours
Master & Group Feature	Rarely available	Master-, Group, and Guard Key Feature (MK1, MK2, MK3) available
Retrofit Compatibility	Usually requires costly door modifications or replacement	Fully compatible with existing fittings and dimensions, door remains intact
Operational Impact	Downtime, external assembly teams, dust, and disruption during upgrades	No operational interruption; clean and fast installation by own staff
Lifecycle Cost	Higher cost due to replacements and labor	Lower cost through the reuse of doors and simplified maintenance

Modernizing Correctional Facility Locking Systems

The Case for Upgrading High-Security Locks

1. Enhanced Mechanical Security

Modern mechanical and mechatronic locks, which have been specially developed for correctional facilities, offer the reliability of conventional systems while also featuring new functions and significantly improved resistance to breaking, drilling, and physical attacks. Stainless steels, precision-manufactured key guides, and tamper-proof mechanisms ensure significantly higher resistance to forced opening or tampering attempts.

In addition, these locks can be recoded at any time without tools, so that areas can be immediately secured again if a key is lost or compromised. Regular, scheduled recoding can be integrated into the facility's security protocol, providing additional protection against unauthorized key copying attempts or insider threats.

2. Enhanced Master and Group Key Functions and Access Rights

Modern systems support structured key hierarchies and configurable access rights, so that each guard can only access specific areas. STUV`s HSL-C series support a master/group key function using notched plates. The master key has access to all (up to 21 different) subgroups. The group key has access to selected subgroups. Each subgroup has its own subgroup key.

3. Retrofit Compatibility and Cost Efficiency

A common problem when modernizing prison infrastructure is the disruption and expense caused by the necessary conversion or replacement of doors and frames, as new locks do not fit the existing pre-fittings. New HSL-C high-security locks are now available in retrofittable formats that match the dimensions, mounting points, and mechanical interfaces of older locks.

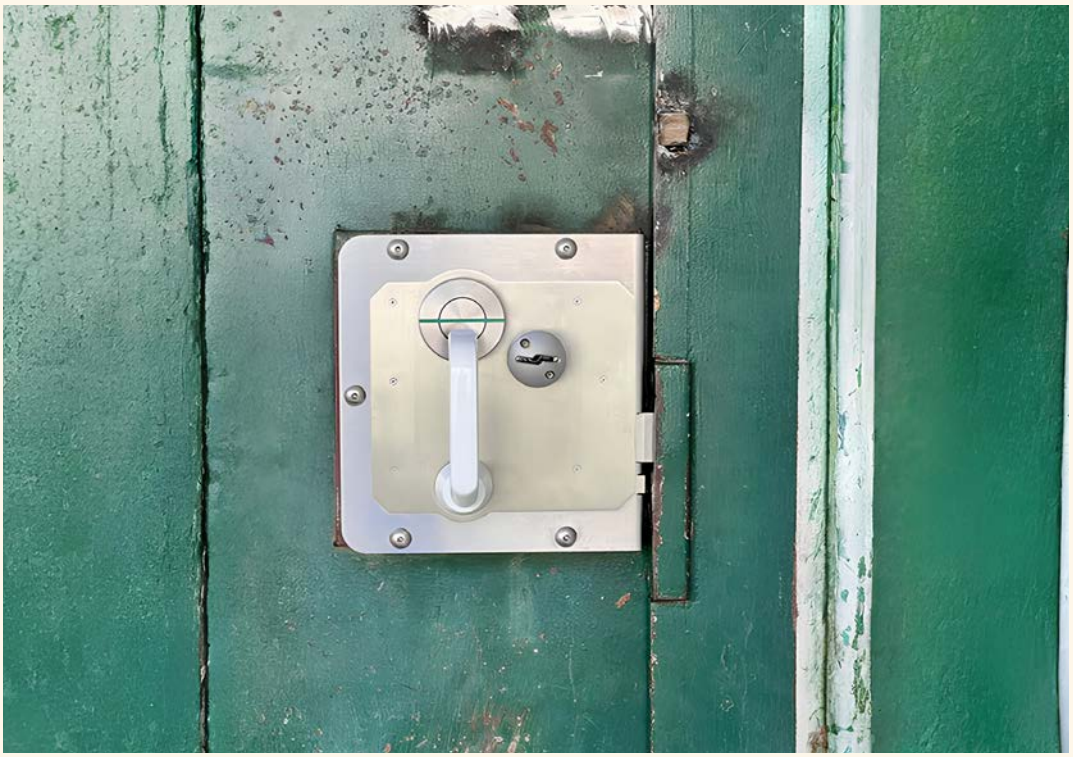
This allows facilities to upgrade their locking systems with minimal construction work, avoiding dust, noise, and interruptions to daily operations. Installation can be carried out progressively, maintaining full operational continuity.

Addressing Aging Infrastructure and Increasing Security Requirements

Upgrading to modern locking systems yields multiple benefits:

- Instant recoding without tools when a key is lost or compromised
- Regular recoding routines as part of a proactive safety plan
- Improved tamper and vandalism resistance, extending service life
- Greater accountability through structured access rights
- Cost-efficient retrofitting with minimal operational disruption
- Service life: approximately 60 years

These advantages strengthen both the physical and procedural layers of prison security, reducing risk while improving staff efficiency and confidence.



Customized Security Solutions

The HSL and HSL-C system from STUV offers protection for prisons, forensic facilities, and police stations and has been specially developed for these structures—flexible, efficient, and future-proof systems.

HSL
Standard Locks

HSL-C
Retrofit Screw-on Locks

HSL-C
Retrofit Hybrid Mortise Locks

HSL-C
Retrofit Mortise Locks

STUV high-security detention locks are trusted and proven in more than 500 facilities worldwide, delivering reliability, durability, and long-term operational safety. Headquartered in Germany, STUV maintains a global presence with branches in Australia, South Africa, Dubai, Spain, China, and Singapore, supported by integration partners in over 30 countries. This expansive network ensures expert support, streamlined implementation, and consistent performance—making STUV one of the most trusted names in modern detention security.

PYPROTECT®
Access Control

CELL
Terminals

Accessories

Training &
Consulting

HSL-C Retrofit Project Structure

The HSL-C Retrofit Project is designed to modernize and enhance the reliability of existing locking systems within correctional facilities. This structured process ensures that the retrofit solution is technically sound, cost-effective, and sustainable. Each stage of the project—from initial evaluation through to final implementation and staff training—emphasizes collaboration between STUV and the Correctional Service. The process is outlined as follows:

1) Sample(s) of the lock type(s) to be replaced is provided to STUV.

2) STUV will provide a price indication

3) STUV will prepare and install a test lock

4) Correctional Service will thoroughly test the lock

5) After procurement, STUV will train the technical team of Corrections to perform the retrofit independently

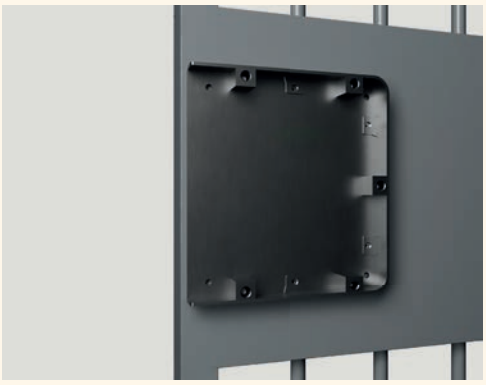
Guide: Retrofitting Prison Locks

The HSL-C modular lock system allows old locks to be replaced with modern high-security locks in minutes. There is no need to rebuild the detention room doors. STUV provides you with the new detention room lock in exactly the same box dimensions as your existing old locks–as a mortise and screw-on version.

The following steps are examples of how to replace a screw-on lock.

Step 1 – Remove Existing Lock

- Unscrew and remove the existing lock assembly from the door.
- Detach any key guides, faceplates, or mounting hardware as required.
- Clean the mounting surface to ensure it is free from debris or damage before fitting the new components.



Step 2 – Install Base Plate and Frame

- If the old base plate or lock frame is being replaced, install the new base plate and/ or frame in accordance with the HSL-C specifications.
- Ensure the plate is level and securely fixed to provide proper alignment for the lock mechanism.

Step 3 – Fit New HSL-C Lock

- Position the HSL-C lock on the prepared base plate or directly in the door recess.
- Secure it firmly using the supplied screws.
- For mortise versions, install and align the key guides to ensure smooth key operation.
- Test the lock function to confirm correct alignment and operation.

Case Study

Eswatini (Replacement of Old Padlocks)

Challenge:
The Eswatini prison faced an urgent need to modernize its security infrastructure. The existing system of padlocks on cell doors and passage doors was outdated, prone to wear and tear, difficult to operate, and offered only limited protection against tampering or forced entry. Maintenance had become increasingly difficult, and the inability to recode or rekey locks led to operational inefficiencies and potential security breaches. The facility needed a durable, tamper-proof solution that could be implemented quickly without extensive remodeling.

Solution:
STUV provided a complete retrofit solution, utilizing stainless steel lock boxes designed for direct welding onto existing doors:

- Custom-engineered boxes allowed for seamless installation of HSL-C high-security locks, eliminating the need for external padlocks
- The system's recodable technology provided flexibility– locks could be reconfigured or reassigned internally without the need for replacement

Result:
The retrofit delivered an immediate security upgrade across all affected areas:

- Enhanced physical security with tamper-proof, integrated lock systems
- Simplified maintenance and key management through recodable technology
- Improved aesthetics and uniformity of door hardware

Case Study

UK Police Department (Replacement of Old Cell Locks)

Challenge:
The UK Police Department required an upgrade of their existing CHUBB lock systems across multiple secure access points. The department needed a modern locking solution that would seamlessly integrate into their current systems while meeting stringent security and operational standards.

Solution:
STUV provided the HSL-C Retrofit Lock, designed as a direct replacement for the legacy CHUBB models. The retrofit process ensured:

- 1:1 compatibility—allowing direct installation into existing door preps, eliminating the need for drilling or structural adjustments
- 100% stainless steel construction—delivering superior strength, corrosion resistance, and longevity in high-use environments

Result:
The installation was completed with minimal disruption to daily operations, thanks to the lock's precision engineering and compatibility:

- Seamless installation with no door modifications required
- Significant reduction in installation time and cost due to the plug-and-play design
- Improved security management through internal recoding capability, allowing a quick response to access control changes

Conclusion

The demands placed on correctional facilities worldwide are constantly increasing, while many of the old security systems on which they rely have remained unchanged for decades. Facilities that use outdated locking technologies face increasing operational burdens, higher security risks, and rising lifecycle costs. As outlined in this document, the ability to deploy fail-safe and reliable locking technology and respond quickly to incidents is no longer just a matter of efficiency, but also of security, accountability, and long-term operational safety.

The transition from legacy systems to state-of-the-art, flexible locking solutions represents a strategic shift toward proactive security. Modern solutions offer secure access control, optimized operation, and flexible scalability, enabling facilities to operate with greater security and lower risk.

Ultimately, it is not just about replacing old hardware, but about building future-proof security infrastructure. By modernizing their locking systems, correctional facilities increase security, support staff, reduce operating costs, and maintain the highest standards for safe and humane detention.

Outlook

Would you like to know what you can improve in terms of lock replacement in your facility?

Take the first step toward greater security now. Contact us today.

— Together, we will determine your needs and offer you an innovative solution tailored to your requirements.

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We look forward to meeting you.

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