

## SECURITY 101:

By Lloyd  
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# Planning & Creating a Grand Master Key System



Multi-story buildings, such as this hotel in Dubai, that use contract cleaning crews often issue floor masters to housekeeping staff to restrict access to other parts of the building, thus keeping the building more secure.

**F**ROM SMALL COMMERCIAL buildings to the largest institutions, one of the most useful structures in master keying is the grand master key system. This system is built from four basic types of keys: The grand master key, master keys, changes under the grand and changes under the master.

Door hardware distributors are almost always involved in setting up the key system for a new facility. In order to set up the best possible system, you should know something about the way the building would be operated as well as the specifics about the door hardware.

### Complete Access: the Grand Master Key

The grand master key typically operates all of the locks in a building. This key is carried by the people who are responsible for the operation of the building like facilities maintenance or engineering personnel. The key can also be carried by people responsible for the safety and security of the building such as security staff. As a general rule, the grand master key is not

issued to custodial staff, who usually do not need access to the entire building.

The grand master key is often provided to the fire department, which may keep it in a secure key storage container on the outside of the building for ready access in case of emergency. A common misconception is that firefighters break down doors to reach fires inside. Although this sometime occurs, especially in residential buildings, fire officials often use a master key to access a burning commercial building. Firefighters frequently have to crawl through a building carrying heavy equipment, or even people. The time saved by using a key can save lives, not to mention millions of dollars in damage. In addition, the grand master key can also be used by fire inspectors during preventive audits.

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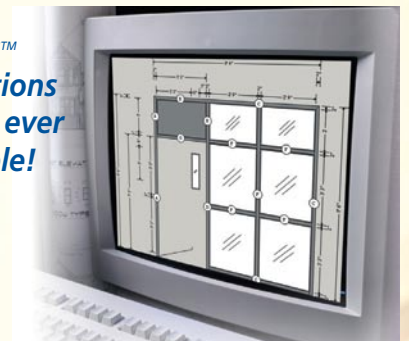
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## Restricted Access: Master Keys

Master keys operate only one section, floor or department of a building. The master keys are often used by custodial staff to access one part of the building. A common example is the floor master. Multi-story buildings that use contract cleaning crews often issue floor masters to housekeeping staff to restrict access to other parts of the building, thus keeping the building more secure. For example, if a person cleans three floors, he or she needs only three floor masters. For added security, master keys can be signed out by the cleaning crew at the beginning of the shift and collected at the end when they have finished. This avoids master keys getting into the wrong hands. The cleaning supervisor, who inspects areas after they have been cleaned, may carry either a grand master key or a ring of master keys to access all applicable areas.

Master keys can also be used as department masters, which are frequently found in schools and in hospitals. Although these facilities don't have much in common in terms of functionality, they are similar from a security lock standpoint. Both facilities usually maintain their own custodial staff. Therefore, it is rare for either one to use outside contractors to clean the facility.

Hospitals and schools have different reasons for keeping the cleaning function in house. With schools, student safety and security is a primary concern. Schools buildings are increasingly secure—complete with metal detectors and school issued ID cards. School custodians undergo rigorous background checks. As a result, the school custodian is often a trusted individual who may have access to the entire building. In a hospital, the housekeeping function is very specialized. Hazardous waste must be safely disposed according to govern-

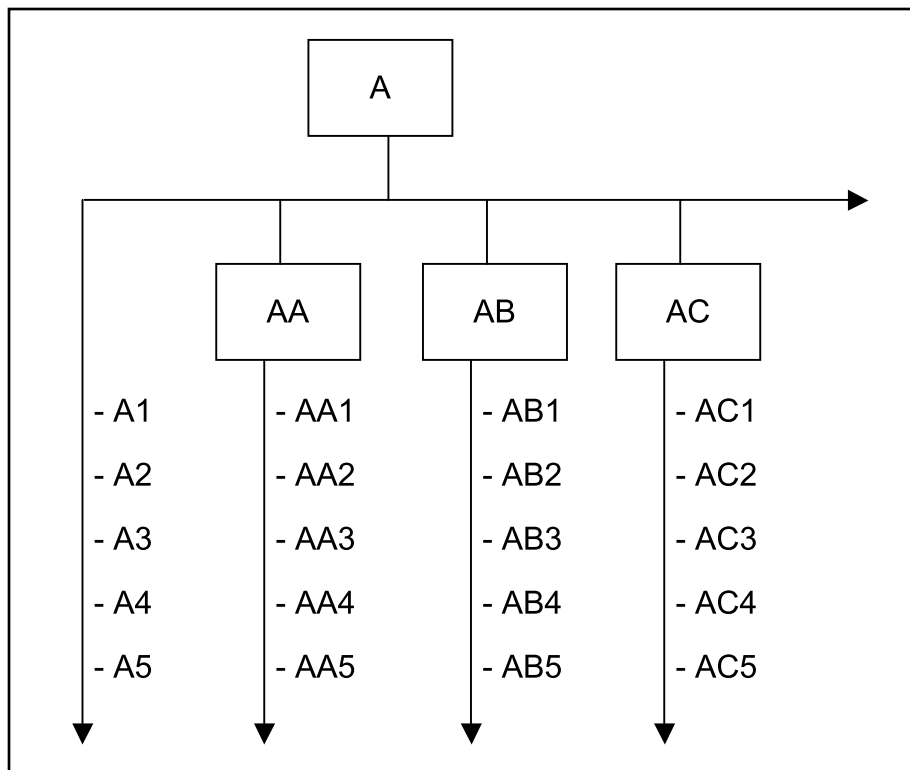
ment regulations. These procedures go beyond the common knowledge of a typical cleaning contractor; hospitals maintain specially trained personnel for this purpose.

In addition, both are characterized by special use spaces. Both facilities use department masters because of specialized spaces that require frequent access by a department manager. In schools these include multimedia resource centers and kitchens. In hospitals, there are usually departments defined by medical specialty, for example radiology and oncology, and a central supply store and food services department.

## Complete Security: Changes Under the Grand Master Key and Master Key

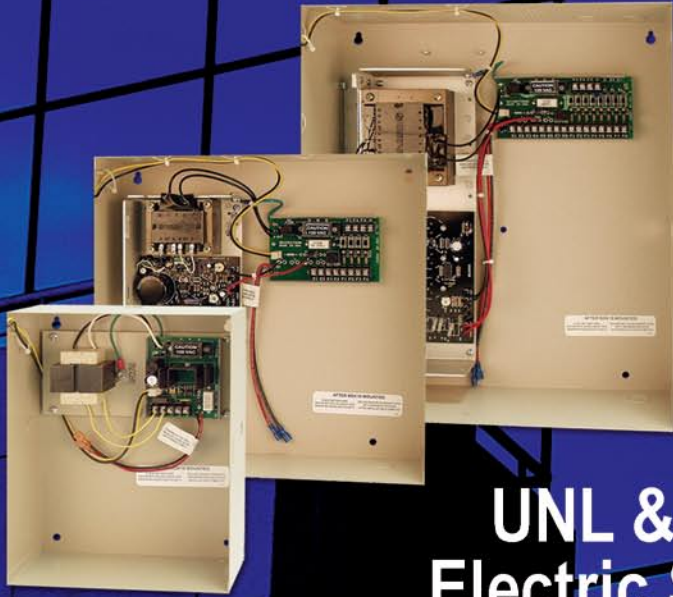
Whether the masters are used for cleaning or operations purposes, some areas are best left off of the master key. For example electrical closets, mechanical rooms and elevator control rooms should not be accessible by custodial staff or by the building tenants. Maintenance staff, and in special instances contractors, are the only people who need access to such facilities. Commonly, one can key these core areas of the building alike by function so service crews have access to only the areas applicable to them. For example, key all of the electrical rooms to one key for the electrical contractor and all of the telephone closets to another key for cable service. This will allow the facilities manager to give keys to contractors for ongoing projects or major renovations without compromising security elsewhere.

Another common use for changes under the grand master key involves key-operated locks on the perimeter of a building. The trend in today's facilities is to control tenant access



By understanding the organization and logic behind a grand master key system like the one pictured above, door hardware distributors can make informed recommendations to their customers.

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outside of normal work hours with electronic access control. However, small buildings with only limited after-hours access can use mechanically operated locks. One door can be selected for after-hours use and can be keyed to a change under the grand master key. Other perimeter doors can be keyed to a different change under the grand master key. With the correct hardware, people who need after hours access can enter the building through a single door without leaving the building unsecured.

The use of changes under the master is intuitive. When a person is responsible for the contents of a single room, that room should be keyed to its own change. When there are multiple doors to a room, for example a gymnasium in a school or a conference room with partitions, key them alike.

### Planning the system is as easy as 1,2,3

There are three simple steps in laying out a grand master key system. First, determine the master key structure taking into account building floors and departments. Next, detail the core of the building with changes under the grand including such restricted access rooms as electrical closets, mechanical rooms and elevator control rooms. Finally, meet with the tenant departments and decide what to key alike and key differently.

If a building is being keyed during new construction, it may not be possible to meet with the facilities department or the tenants. In this case use logic and some common sense. Try to layout the master keys by geographic area for cleaning by floor or wing for example. Then, key the individual doors, keying alike wherever possible. Key core areas of the building alike by function. Also key alike when there are multiple doors to a room.

By giving the master key system some forethought, future changes can be minimized. However, it is unrealistic to expect a building to operate as planned with no changes. By creating a well-laid out key system, it makes it easier for tenants to learn which keys work which doors. If you are not sure about keying alike or keying different, it is better to err on the side of caution and key alike. The tenants will let you know if they need doors rekeyed. If too many locks are keyed differently, tenants will solve the problem themselves by handing out master keys, greatly compromising security.

In the end, grand master key systems are logical, useful tools in keying a building. By understanding how a grand master key system works, door hardware distributors can make informed recommendations to their clients and serve as resources for future projects. ■



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