KEY SYSTEM PLANNING

Our staff is professionally able to design a practical and efficient keying system for a facility. Because the principles of keying are not commonly understood by those outside the field of locks we are your best resource to ensure the key system will **1) Function properly, 2) Be easy to understand, 3) Be practical enough to survive years of usage, 4) Provide the security required by the user.**

The following **basic facts** apply regardless of the manufacturer, type of cylinder, or key involved in the system.

Security versus Convenience

The most secure type of cylinder is operated by a single key. Each additional key operating the same cylinder increases the number of shear lines and this reduces the security of the cylinder by making it easier to pick or possibly be opened by unauthorized keys.

Levels of Keying versus Durability

A cylinder operated by a single key will last longest. For each additional key operating the same cylinder more master pins of different increments are required and the number of master pins increases with each successive level of keying. These additional pins cause greater wear and increase the possibility of the cylinder malfunctioning.

Limitations

There are a limited number of change, master, and grand master keys that can be established within a key system. This limitation is physical and mathematical in nature. Systems designed to be expanded the least are generally the most secure. It is important to be realistic in establishing the degree of future expansion.

Keys Relate to Each Other

Not only do keys relate to the system they also relate to each other and this relationship restricts keying options and the flexibility of the system design.

Keep It Simple

The more complicated the key system is designed the shorter its usable life. It is a mistake to design a key system to individuals or a chart as individuals' positions can change rapidly. Building/facility functions survive for many years; therefore, `systems must be designed to allow the building/facility to perform its function. Complicated systems are often misunderstood, they
degenerate quickly, leave little flexibility with regards to future expansion/changes and often result in too many employees having master keys and therefore reducing security, the very purpose of the system.

Security directors and physical plant administrators should not let themselves be swayed by housekeeping supervisors who feel that the janitorial staff should not have to carry more than one key. Each time an exception is made or favour is granted, the security value diminishes.

Break up Very Large Systems

It is unwise to tie too much together under one "top" master key. If the "top" key is compromised (loss, theft, duplication, decoding), the entire system must be rekeyed.

STEPS TO STRUCTURE A KEY SYSTEM

Research the Building/Facility Function

Establish how, when and by whom the building/facility will it be used. Buildings are designed to serve a function. This function must be established as well as flow of traffic and the purpose of various areas. Visualize the different types of employees and departments by their function, the areas they must reach to perform their duties and the different times in a working day when they perform specific duties. Try to imagine where they must move, when and how. Work with the principals to design the key system to work with these findings.

It is critical to remember that a proper key system is based on building function, not personnel. Key the building and not the people. Do not be concerned with some key holders having two or more keys. This is much better than having a system where a key operates cylinders under different masterkeys. If uncontrolled cross keying is permitted, it rapidly eliminates available change keys which must be discarded and not used in the system. Intricate systems often prove to be unnecessary and difficult to maintain.

Most key systems have relative degrees of security that must be considered in the system design. A hospital narcotics lock-up and operating room facilities carry a high security classification. This security is partially achieved by greatly limiting the number of keys to these areas and in some cases, limiting operation of a cylinder to a single change key that may be a special high security cylinder.

System design must take into consideration any relationships to other existing and possible future structures. It is important to keep areas of the same function keyed similarly.

If there is an existing system, it must be researched and understood. Can the existing system be expanded upon, is it worthy of expansion. If so, what is the existing system (keyways, type, ect). Is the existing product in good working order and in compliance of current codes? Or will the existing be keyed into the new. Regardless of which is chosen all the doors must be reviewed and noted in detail.

Consideration must be given to other types of locks that may be required to properly complete the system; padlocks, cabinet locks and other specialty locks.

Prepare a Draft/Proposal

Prepare an appropriate keying system, based on building function. Bring the system into focus and conceptualize how it will work. It is very easy to configure a complex system. All parties must remain diligent and continue to attempt to make it as simple as possible and this will ensure a quality system that will be more secure, longer lasting and easier to expand in the future.

Layout the system on paper, using architectural floor plans for this can be helpful. Use the same change key on as many doors as possible, ensuring that doors have similar purpose and users are keyed alike.

It is very important to use the lowest amount of levels as possible. Only add a level when the system forces you to. In situations where no change key will be used it is appropriate to **masterkey only (no change key)** these doors. Remember the limited availability of different change keys and use them sparingly. The owner will thank you in years to come as this will leave flexibility in the system. Minor additions and modifications can be made under these conditions without redoing the entire system.

Don't start out with a preconceived notion over the necessity of a great grand or grand masterkey. Build from the bottom up and let requirements dictate where it is appropriate to establish higher key levels.

Present the Proposal

Present the system to the owner's representatives. Explain the concept of the function and traffic flow of the building as it has been analyzed and conceived. Typically, there will be attempts by the owner to introduce "people keying". This must be dealt with carefully and discourage whenever possible. Usually an owner can understand that people and their relationship to the building are temporary in nature. There is no quicker way to nullify a keying system than have it oriented around existing people. The presentation must include options available in keying systems such as visual key control, interchangeable or removable core cylinders, and construction keying. Present both the advantages and disadvantages of these options, and then let the owner decide those of importance.

It is very important to **accept input**. Constructive corrections are valuable. It is important to remember that the building is the owners, not yours. Reasonable suggestions, that will make the system more workable from an administrative standpoint, must be accommodated.

Final Detailed Keying Schedule

This data must be entered into software to ensure that the hardware schedule is complete and accurate. This will ensure that the consulting company has accurate information on file and available to the owner. In addition, this will be used to purchase the system and/or perform in house keying. Therefore, it is critical that it be finalized and very accurate.

The locksmith(s) performing the keying should review the schedule to assure its practicality. It is very important to include all references and registry numbers of any existing keying if the project includes extension to a system which is in existence. This is particularly necessary if previous orders placed using different group or keying designations from the schedule currently being prepared.

If there may be future expansion/buildings added to the system this information should be noted on the keying schedule.

Key Control

It is very important to ensure that keys are handled in a formal fashion from supply to the owner and then once in the owner's position. *Keys should always be controlled by responsible individuals.*