Sun Paradise Hotels Management
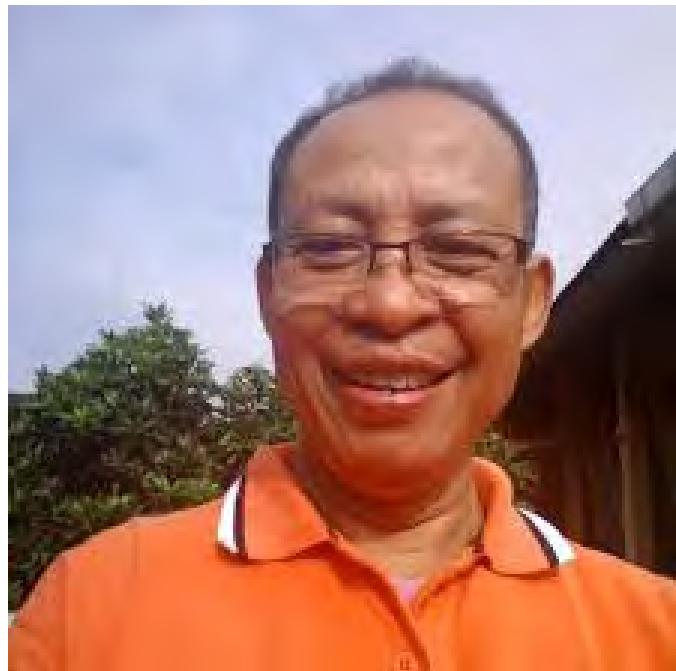
Sun Paradise Hotel Management **SPHM**

SPHM
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SPHM – PRE=OPENING ENGINEERING & IT

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Pre-opening Engineering & IT

HOTEL DESIGN GUIDE

COMMUNICATIONS

INDEX

Page 3

T I B U B E N E N G | K U T A U T A R A | B A L I 8 0 3 6 1 , I N D O N E S I A
P H O N E : (6 2) 8 1 2 9 4 4 4 1 2 2 4

1.   Centralised Radio System

The inclusion of a centralised radio system will depend upon hotel location conditions. In some hotels the distribution of music within the building is an extension of the MATV system, normally provided by AM/FM radio, incorporated within the televisions.

Emergency paging speaker system, when required by Code, shall be installed in guestrooms and/or corridors and stairwells in accordance with requirements of governing authorities.

2. General and Local Sound Systems

The extent and specific capabilities of the General and Local Sound Systems will vary from hotel to hotel and each installation must be analyzed on its own merit the following is a general outline of minimum requirements:

- All amplifiers shall be of the solid state design.
- All speakers (type and layout) shall be coordinated with the interior layouts.
- System description, equipment lists and shop drawings shall be prepared for SUN PARADISE HOTELS Management approval.
- General and local sound systems may be designed by a local sound equipment supplier who has established experience in design of sound systems for hotels or other similar buildings.

General Sound System (Background Music & Paging)

- Shall be a two-channel system designed to allow the distribution of music from a radio, tape deck, record player or leased music receiver.

    One Channel Music Only
    One Channel Music with Paging Override

- Central rack cabinet to be equipped with, at eye level, three (3) position speaker area switches, each with "Music/OFF/Paging Overrides Music" functions.

    Zoning to be recommended by designer
    Central rack cabinet shall have separate volume control for each channel
    Paging volume to be separately controlled

General Sound System (Background Music & Paging)

- Paging to originate at telephone operator's headset or handset.

    Contractor to supply empty conduit path from central telephone equipment to central rack cabinet
    Telephone equipment supplier to provide:
    1. Illuminated "in-use" display at each operator's switchboard position
    2. Automatic lock-out circuit to prevent other operators from paging
    3. Audio paging feed to central rack cabinet

- Leased music receiver will be provided by TSC

- The following areas should be covered by the General Sound System:

    1. Lobby (local volume control at Front Desk)
    2. Lobby Bar (local volume control at Bar)
    3. Public Corridors
    4. Public Elevator Lobbies
    5. Elevator Cabs
    6. Public Toilet Rooms
    7. Coffee Shop or Cafe (local volume control and paging override at Maitre D')
    8. Assembly Foyers for Ballroom (s), Function and Meeting Rooms
    9. Ballroom(s), Function and Meeting Rooms over 700 sq.ft. (music channel only with local volume control)
    10. Public Cafeteria

Local Sound Systems

- The Local Sound Systems should have the capabilities of interconnection with the General Sound System

- Music shall be provided for each space by a tape deck

- Volume controls shall be located at Maitre D' or Bar

Local Sound Systems

- Local paging shall automatically override the music and originate at the Maitre D' or Bar

- The following areas should have their own Local Sound System:

  1. Signature Restaurant
  2. Specialty Restaurant
  3. Roof Top Restaurant
  4. Cocktail Lounge
  5. Employee Cafeteria

3. Special Sound Systems

Design of Special Sound Systems shall be an independent Audio Consultant.

System descriptions, equipment lists and shop drawings shall be prepared for SUN PARADISE HOTELS Management approval.

Special Sound Systems shall be provided for the following areas:

1. Flexible Entertainment Facility, FEF (provide for live and/or disco entertainment)
2. Night Club or Show Lounge
3. Ballroom(s)
4. Function and Meeting Rooms over 700 sq. ft.
5. Seminar Room(s)
6. Theatre
7. Congress Hall
8. Board Room(s)
9. Exhibit Hall
10. Pool/Health Club (verify with TSC)

Emergency communication systems shall be provided when required by codes.

4. Paging Systems

General

There are several paging and intercom systems required in the typical hotel. Each has specific characteristics and requirements which must be defined in detail. The following systems will be discussed:

- Paging in public areas
- "Pocket Paging" for locating personnel

Description and Design Criteria of the Systems

Paging in Public Areas:

Paging should be provided in the Main Lobby In addition, it may be advantageous to extend the system to certain areas such as swimming pool, shops, food and beverage areas, elevators, ballroom, meeting rooms and exhibit hall.

The paging system should consist of the following features:

- A relatively large number of low level speakers located throughout the hotel. (The layout and type to coordinate with the interior decor.)
- Variable volume settings in each public area set in response to the ambient noise level.
- The use of multiple channels so that the spaces can be paged individually, as well as in combination.
- Paging from the front desk area.
- Additional features such as background music, taped messages, or emergency and alarm signals may be selectively added as required.

Wireless Radio Paging System:

A wireless radio paging system transmits a signal to portable pocket paging receivers. The portable pagers may present this signal in an audible mode, on a display screen, by vibration or combination of all three. Messages may be initiated from a dedicated transmitter (s) or the system may be accessed from the hotel telephone system by dialling a special code. Portable pagers are available in different degrees of sophistication and the final selection will depend on the user requirements and individual departments may have varying needs as well. Consideration must be given to the range and coverage of the system and the type of antenna required. There must be "Dead Zones" within the hotel and its surrounding property. If tests after installation reveal the presence of dead zones, additional repeater transmitters and/or antenna systems will be required. All equipment other than portable pager battery chargers are to be connected to the U.P.S. system.

2-way Radio Systems:

Hand held 2-way radio systems are required to provide instant voice communication between designated groups within the hotel, usually security, maintenance, telephone operators and selected managers. Each of these groups may have a dedicated channel with the ability to access all other available channels. 2-way radios are available in different degrees of sophistication and the final selection will depend on the user requirements. Departments may have varying needs including the ability to access the hotel telephone system. The area of coverage required is of prime importance and must be considered when selecting a system. The installation of a "repeater transmitter" may be a consideration as well as careful determination on the location and type of antenna system. All equipment other than portable radio battery chargers is to be connected to the U.P.S. system.

5. Audio/Visual Systems

General

Generally, electrical power and mechanical ventilation only will be provided for the projection booth(s).

The projector will be rented as required.

Design Criteria

Special projection booth ventilation should be provided. Local code rules must be followed.

Adequate electrical power must be provided for projection equipment.

A projector audio input to the area sound system must also be provided.

Public Areas

Ballroom foyers:

Although Foyer areas are primarily used as pre-function facilities, provisions shall be made for their use as an extension of the Ballroom.

The speaker system shall be tied in with the master system for the Ballroom, and microphone jacks shall be located on the Foyer side of the Ballroom wall.

Master antenna system jacks shall also be provided in the foyer area for meeting information broadcasts via the closed circuit television system and possible overflow meeting coverage.

Ballrooms:

The audio visual systems for Ballroom areas are to be designed with the flexibility and capacity to support the various functions of the Ballroom.

Audio/sound reinforcement systems shall be of the permanent type with the components of the system (amplifier, pre-amp, mixers, and speaker control panel) installed in a sound/projection booth. Inputs to the system shall be located on the perimeter walls of the room and be placed in proximity to wherever a stage, head table, or dais may be expected.

Should the Ballroom have the capability to being sectioned off by means of moveable walls, it is necessary that each subdivided space have its own input panel. The speaker system shall be installed in the ceiling and arranged in such a manner that distributes the reinforced sound equally and with the any other condition where ceiling heights may vary. As with the input panels to the system, the speaker system shall have the capability of being subdivided at the audio control panel in the sound projection booth.

Master antenna TV jacks shall also be placed along the perimeter walls to provide closed circuit monitoring.

Ballrooms - Projection:

Provisions for Ballroom projection shall be made by means of at least one (1) sound/projection booth. It is required that the full capacity (schoolroom/theatre style) has 100% visibility of the projection screen for both horizontal and vertical slides. The useable seating area of the Ballroom is directly related to the ceiling height and type of decorative ceiling treatment in the space, and, therefore, it is required that all ceiling height standards be strictly adhered to.

Ballrooms will be used for theatrical productions and will require light booths.

Space required for the sound/projection booths is 80 sq.ft. for the first projector and 40 sq.ft. for each additional.

Storage space is required for microphones and portable speakers.

Media use - provisions shall be made for media use by running conduit from the Ballroom to the outside of the building to a location to be used by media vans.

Projection in the main Ballroom shall be suspended from the ceiling and be electrically operated from the sound/projection booth and from a local switch at the floor level.

The following equation will be utilized in determining the appropriate ceiling height for Ballrooms and meeting rooms.
Ceiling height = (1/8 x projection distances) + clearance to floor (1.5m).

Public Areas

Meeting Rooms:

Meeting Rooms require basically the same type of systems as the Ballroom, however, can be reduced in scope to meet the varying capacities of this type of room.

Function and Meeting Rooms which are 500 sq.ft. and larger are required to have permanent sound systems with sufficient amounts of microphone jacks on the perimeter walls to accommodate expected head table locations or speaker platforms.

Any Function/Meeting rooms capable of being divided shall have audio control to speakers to isolate the divided sections.

Portable equipment is acceptable for Meeting Rooms under 500 sq.ft.

Master antenna TV jacks are to be located in all meeting rooms.

6. Simultaneous Translation System

6.1 General

A simultaneous translation or interpretation system is almost always required for successful international conferences. In this type of system, interpreters translate the language spoken on the floor of the conference hall into other languages which are distributed to the audience, who can select the language of their choice and listen to it using headphones. Distribution can be done in tree ways: infra-red, inductive or wired. Wireless systems such as either infra-red or inductive will allow freedom or movement of users which is not available using a wired system.

Initially the number of languages must be determined in order to select the correct number of channels for distribution.

6.2 Design Criteria

The system should provide for the simultaneous translation of a minimum of five (5) languages.

The system should be provided in the main ballroom only. (Some hotels may require a system in another area. This will be determined by SUN PARADISE HOTELS Management)

Individual translator booths should be provided for each language being simultaneously translated.

Generally, the parts of the system affecting building construction only will be provided. The terminal equipment, such as headsets, will generally be rented by the hotel. (This may vary from project to project; the decision will be made by SUN PARADISE HOTELS Management on a project basis.)

In each case, an analysis should be made to determine what type of system should be used. This should include initial cost, performance and reliability of equipment and the type of rental equipment locally available if the terminal equipment is to be rented.

6.3 Infra-red Distribution

With infra-red distribution a transmitter generates a carrier's wave for each channel and each language is frequency-modulated to one of the carrier waves. All the modulated carrier waves are mixed and fed using coax cable to infra-red radiators, which are installed in the room(s). Each system user is provided with a pocket receiver which collects the infra-red light, decodes the signal and outputs a selectable channel to headphones. A typical infra-red system has a frequency range of 125 Hz – 12.5kHz. With current technology an infra-red translation system can accommodate up to 12 channel. These systems are more maintenance intensive due to using complex receivers which also require batteries.

From a security point, an infra-red system will allow reception outside of the main facility area by transmitting the signal through windows or other glass surfaces. This is the easiest system to expand into adjacent facilities as all that is required is the temporary installation of an infra-red radiator. For this purpose, temporary floor stands can be used to mount the radiator.

6.4   Inductive Distribution

With inductive distribution an antenna is installed, usually in the form of a continuous loop running around the inside of the room and connected to the transmitter.

The transmitter generates an inductive field throughout the room and each user has a pocket receiver, with a channel selector, which picks up this field and converts it into an audio signal. A typical inductive system frequency range of 100 Hz – 3kHz. A typical wired system has a frequency range of 125 Hz – 12.5kHz. Inductive systems are also maintenance intensive because the receivers require batteries. An inductive translation system can generally accommodate a maximum of 6-8 channels. From a security point an inductive system will allow reception outside of the main facility area. This system will not provide convenient service to adjacent facilities in a wired system the interpreted languages are distributed through wires installed in the room.

6.5   Wired Distribution

The distribution wiring may be multicore cable or by multiplexing the signal and using 2-core cable although the multiplexing option is generally the most expensive alternative and is hardware intensive. Jacks are provided at each seat and the user plugs the receiver into it. Wired systems are generally only used where the seating arrangement is permanent. This system is relatively

maintenance free and there is not limit other than practical to the number of channel which can be provided.

A wired system is best if security is a consideration as no signal can be obtained outside the wired facility. However, overflow users in adjacent areas cannot easily be connected to this type of system.

6.6   Headphones

Headphones are available in several different types ranging from the lightweight stethoscope type used by airlines, high quality dynamic models and single earphone adapters. All are available with replacement hygienic ear pads.

6.7   Transmitters/Amplifiers

Generally, only a single transmitter is required and will have a microphone input for each language it is desirable to translate. Microphones are to be equipped with switches and table stand. A separate sound proof room is required for each microphone and translator so that no cross talk interruption is allowed.

7. Structured Cabling

7.1 Structured Cabling

Structured cabling is designed to run anything, anywhere, at any time.
Structured cabling eliminates the need to follow one vendor's rules concerning cable types, connectors, distances or topology. It allows for the installation of cabling in a facility once and the adapting of that cabling for any application, from Telephony to a Local Area Network (LAN) or an emerging technology like ATM (Asynchronous transfer Mode) or ISDN.

Standard were developed and approved by committees of the American National Standards Institute (ANSI), the Telecommunications Industry Association (TIA) and the Electronics Industry Association (EIA). SUN PARADISE HOTELS Management uses the following standards:

ANSI/TIA/EIA-568-A: Commercial Building Telecommunications Cabling. The central standard that specifies a generic telecommunications cabling system to support a multi-product, multi-vendor environment. Establishes performance and technical criteria for various system configurations and components.

ANSI/EIA/TIA-569: Commercial Building Standard for Telecommunication Pathways and Spaceways. This standard provides guidelines for rooms, areas and pathways through which telecommunications equipment and media are installed. It also details some of the considerations to be addressed when designing and constructing a building what will include a telecommunications system.

ANSI/TIA/EIA-607: Commercial Building Grounding and Bonding Requirements for Telecommunications. Prescribes practices for installing grounding systems to ensure a reliable ground reference level for all telecommunications equipment subsequently installed.

ANSI/TIA/EIA-606: Administration Standard for the Telecommunications Infrastructure of Commercial Buildings. This provides standards for color-coding, labelling and documenting an installed cabling system.

7.1.1   The Six Subsystems of Structured Cabling

The elements of a structured cabling systems are:
    Building Entrance (Location where the cabling enters the building)
    Equipment Room
    Backbone Cabling
    Telecommunication Closet
    Horizontal Cabling
    Work Area, Guest Room, Meeting Room

7.1.2   Building Entrance

The entrance facility consists of the telecommunications service entrance to the building, including the entrance point through the building wall. Antenna entrances may also constitute part of the entrance facility.

All carriers and telecommunications provider involved in providing service to the hotel shall be contacted to establish their requirements. The location of other site utilities, such as electrical, water, gas, and sewer, shall be considered in the site selection of the communications entrance facility.

Permits or right-of-wags might be required for construction.

7.1.3   Equipment Room

The equipment room is a centralized space for telecommunications and computer equipment. (PBX, Servers, Interfaces, Video etc.). The room shall house only equipment directly related to the systems and its environmental support systems. In now way, the equipment room should be the office for the Systems Manager.

Site Selection

When selecting the equipment room site, avid locations that are restricted by building components that limit expansion such as elevator, core outside walls or other fixed building walls. Accessibility for the delivery of large equipment to the equipment room should be provided.

Water Infiltration

The equipment room shall not be located below water level unless preventive measures against water infiltration are employed. The room shall be free of water or drain pipes.

HVAC

The equipment room shall be located with ready access to the main HVAC delivery. HVAC shall be provided on a 24 hours-per-day, 365 days-per year basis.

The temperature and humidity shall be controlled t provide ranges of 20-25 degree Celsius with 20% - 80% relative humidity.

Interior Finishes

The floor, walls and ceiling shall be sealed to reduce dust. Finishes hall be light in color to enhance room lighting. Floor materials having anti-static properties shall be selected.

Lighting

Lighting shall be a minimum of 540 lx, measured 1 m above the floor. The lighting shall be controlled by one or more switches located near the entrance door of the room.

Power

A separate supply circuit serving the equipment room shall be provided and terminated in its own electrical panel.

Fire Extinguishers

Appropriate portable fire extinguishers shall be provided and maintained within the equipment room. They shall be located as close as practical to the entry or exit.

Size and spacing

The equipment room shall be sized to meet the known requirements of specific equipment. This information can be obtained from the equipment provides.

Size   : 50 square meters
Minimum Clear Height   : 2.5 meters

7.1.4 Backbone Cabling

The function of the backbone cabling is to provide interconnections between telecommunications closet, equipment room and entrance facility. Backbone cabling consists of the backbone cables, the cross connects, mechanical termination and patch cords or jumpers used for backbone to backbone cross connections. Backbone cabling also includes cabling between buildings.

It is typically not possible or justifiable to pre install backbone cabling for the entire life of a building. The useful life is therefore expected to consist of several planning periods (5 years). Prior to the beginning of each planning period, the maximum amount of backbone cabling during the period should be projected. For each telecommunications closet, equipment room and entrance facility, the maximum number of connections over the planning period should be estimated. Sufficient backbone cabling for both copper and fiber media should then be installed to accommodate the maximum number of connections.

The backbone cabling shall use the conventional hierarchical star topology as illustrated by the figure on the next page wherein each cross connection in a telecommunications closet is cabled to the cross connect in the equipment room. There shall be not more than two hierarchical levels of cross-connects in the backbone cabling.

Cabling Types and Maximum Backbone Distances

Copper 100 ohm S/UTP Category 5 (24 AWG): 90 meters (295 ft) for data

Copper 100 ohm UTP (24 AWG): 800 meter (2625ft) for voice

Fiber Multimode 62.5/125 μm optical fiber: 2000 meters (6560 ft0 for voice and data

Current state-of-the-art distribution facilities usually include a combination of both copper and fiber optic cables in the backbone.

7.1.5   Telecommunications Closet

The telecommunications closet is located on each floor and is where the horizontal distribution cables are terminated. Similarly, recognized backbone cables are also terminated in the closet. Cross-connection is done with jumpers or patch cords to provide flexible connectivity for extending various services to users at the telecommunications outlets. The telecommunications closet shall be able to contain telecommunications and computer equipment.

Site selection

The communications closet shall be located as close as practicable to the center of the area served and preferably in the core area.

Design considerations

Telecommunications closet space shall be dedicated to the telecommunications and computer functions. Should not be shared with electrical installations other than those for telecommunications and computer.

Size and spacing

There shall be a minimum of one telecommunications closet per floor. Additional closets should be provided when:

1. the floor area to be served exceeds 1000 square meters
2. the horizontal distribution distance for cabling exceeds 90 meters

The minimum size for a telecommunication closet must be approx. 3-5 square meters.

Floors, walls and ceiling shall be treated to eliminate dust. Finishes shall be light in color to enhance room lighting.

Power

A minimum of two dedicated 15A duplex electrical outlets, each on separate circuit, shall be provided for equipment power. In addition, convenience duplex outlets shall be placed at 1.8m intervals around.

HVAC

HVAC shall be included in the design of the telecommunications closet.

7.1.6 Horizontal Cabling

The horizontal cabling system is the portion of the cabling systems that extends from the telecommunication outlet to the telecommunications closet. In addition to satisfying today's telecommunications requirements, the horizontal cabling should facilitate ongoing maintenance and relocation. The horizontal cabling contains the greatest quantity of individual cables in the building. After construction of the building, the horizontal cabling is often much less accessible than the backbone cabling. The time, effort and skills required for changes can be extremely high. In addition, access to the horizontal cabling causes disruption to guests and employees. These factors make the choice and layout of horizontal cable types very important to the design of the building cabling. Consideration should be given to accommodation a diversity of applications in order to reduce or eliminate the probability of requiring changes to the horizontal cabling as user needs evolve.

The horizontal cabling shall be a star topology as shown in the figure on the next page. Each telecommunication outlet in guest rooms, meeting rooms and work area shall be connected to the cross connects in the telecommunication closet.

Cable types and maximum distance

The media type to be used for horizontal cabling is 4-pair 100 ohm Category 5 S/UTP cable, 24 AWG solid conductors.

The maximum horizontal distance shall be 90 meters (295 ft) independent of media type. This is the cable length from the mechanical termination of the media at the horizontal cross-connect in the telecommunication closet to the telecommunication outlet in the guest room. Meeting room and

workplace. For each horizontal cable, a total of 10meters (33 ft) is allowed for cords in the work area and for patch cords or jumpers in the telecommunication closet.

Pathways (Dusts, Conduits)

The horizontal pathways such as ducts or conduits facilities for the installation of cables from the telecommunications closet to telecommunications outlets.
The pathway must be designed to handle all types' cables and when determining the size of the pathway, the quantity and size of the cable, with an allowance for growth, must be considered.

Recommendation:
Plan the pathway for the double size of the cabling

Guest Rooms

Each guestroom will be cabled for a minimum of 4 x 4 pairs of category 5 cable coming from the distribution point. The 4 pair cables will terminate at the primary jack (information outlet) in the guestroom, which most likely will be near the work desk. Each additional jack (i.e. nightstand, bathroom) will receive feeder cables from the primary jack. As an alternative feeder, cables can run direct from the distribution rack in the telecommunication closet. Feeder cables are to be run preferably in the wall along baseboards.

Meeting Rooms

Each meeting room or boardroom will be cabled for a minimum of a 10 x 4 pairs of category 5 cable.

Workplaces

Each workplace will be cabled with 3 x 4 pairs of category 5 cables.

7.2 Local Area Network (LAN)

7.2.1 Topology and Media

An important part of designing and installing a LAN is selecting the appropriate medium and topology for the environment. SUN PARADISE HOTELS Management uses star topology for it's Local Area Network. In a star topology, each station is connected to a central wiring concentrator, called hub or switch. The cable is connected via the telecommunication outlet to the workstations network Interface Card (NIC) at one end and to a port on the hub at the other> The hubs or switches are placed in telecommunications closets or in the computer room, centrally located in a building.

Media	Maximal Distance
Copper 100 ohm S/UTP (24AWG)	90 meters (295 ft)
Fiber Multimode 62.5/125 μm optical fiber	2000 meters (6560 ft)

In addition to the 90 meters of copper cabling, 10 meters are allowed for patch cores or connection cables from the telecommunication outlet to the workstation. Current state-of-the-art installations usually include a combination of both copper and fiber optic cables, depending on distances. For more details on cabling refer to the chapter of Structured Cabling.

7.2.2 LAN Segmentation

Dividing up the network is a process known as segmentation, which allows you to shift traffic load and to optimize performance. Each segment logically comprises a single network for communication and resource sharing.
Segmentation is an important strategy for growing networks, particularly in PC LAN environments.

Planning network segments is a critical step in the success of this strategy. Networks are segmented according to communities of interest or work groups. A work group is a group of people located in the same office area and sharing the same resources on the same LAN segment. The 80/20 rule is a good way to confirm that you have defined work groups correctly.

Page 24

T I B U B E N E N G | K U T A U T A R A | B A L I 8 0 3 6 1 , I N D O N E S I A
P H O N E : (6 2) 8 1 2 9 4 4 4 1 2 2 4

This rule suggests that your network design is optimized when approximately 80 percent of traffic remains local while 20 percent is destined to other segments in your network.

Segmentation also offers other benefits which have a less direct effect on performance. For instance, segmented networks tend to be reliable because they establish manageable boundaries, thus preventing problems on one segment from crossing over and affecting other segments.

7.2.3 Network Segmentation with multiple network cards

The simplest technique to segment a network is to install multiple network interface cards (NIC) on a Netware server. Each LAN segment has a direct path to the server, and the server routes packets between the LAN segments. Segmenting the network varies from hotel to hotel but we always recommend a separate segment for the Front Desk area.

7.2.4 Network Segmentation with Switches

Switches are another type of device used to link several separate LANs and provide segmentation. A LAN switch is a device with multiple ports, each of which can support a single workstation or an entire Ethernet LAN. With a different LAN connected to each of the switch's ports, it can switch packets between LANs as needed. Switches are used to increase performance on an organization's network by segmenting large networks into many smaller LANs, while still providing necessary interconnectivity between them.

Each server contains at least 2 network cards which each lead to one of the two switches. If both switches are located together (preferably in the server room), then if there is a problem with one of them, the most important workstations (e.g. of the front desk) can via patch panel easily be plugged into the other switch.

From the switch, wires lead either to another switch, to a hub or directly to a workstation that needs high speed.

A hub is a repeater, i.e. it simply regenerates and re-transmits the electrical signal. All the devices within that segment form one collision domain, i.e. the same data is sent to all those devices.

A switch, on the other hand, waits till an entire packet is received, then examines the address and sends it to only the device it is addressed to. In this way a switch segments the network (one segment is one collision domain). In the BIND-statement in the autoexec.ncf the frame type can be defined. Make sure to use frame type 802.2. only, if you also use the older 802.3, you will create a higher internal load. In a WAN it is crucial to use the same frame type everywhere.

7.2.5 Specifications

Bay 2803 / 2804 Ethernet Hub - They provide 16 10Base-T ports. They can be used as standalone hubs or together with Bay 2813 / 2814 to create a cluster of up to 80 10Base-T ports. The model 2803 hub has a front-panel AUI interconnect port.
The model 2804 hub includes a 10Base-FL (fiber optics) compatible interconnect port.

The existing ones are our company can easily be integrated in a switched network. However, Bay now brought out the Bay Stack 10Base-T. Instead of sharing only 10Mbps among all the PCs connected to the hub, this new hub is sharing 100Mbps and is therefore recommended for new segments and networks.

Bay 2813 / 2814 Ethernet Hub - They correspond to the Bay 2803 / 2804 hubs and in addition they enable full network management to the entire cluster of System 2000 Ethernet hubs.

Bay Stack 100Base-T hub - It delivers 10 times the performance of a 10Base-T hub. The attached workstation share 100Mbps. It requires Intel Ether Express Pro / 100 Smart Adapters in the workstations and thus provides an end-to-end Fast Ethernet solution.

Although it is possible to cascade several Bay Stack 100Base-T hubs, we highly recommend wiring each directly to a port on the switch, which grants a much higher speed.

Bay Stack 301 Workgroup Ethernet Switch - This product came out later than the above mentioned 100Base-T hub. It is a switch for a workgroup with 22 ports of 10 Mbps and 2 ports of 100 Mbps to connect to servers, shared Fast Ethernet hubs and backbone switches.

Page 26

T I B U B E N E N G | K U T A U T A R A | B A L I 8 0 3 6 1 , I N D O N E S I A
P H O N E : (6 2) 8 1 2 9 4 4 4 1 2 2 4

Because its 10 Mbps ports are dedicated, it is much faster than a 2803 / 2804 / 2813 / 2814 hub, where the 301 switch was also faster than the 100Base-T hub: it depends on the users, if all users attached to the hub create about the same amount of traffic, then the 301 switch will be faster. However, if the traffic varies, i.e. if one user creates more and them another, the 100Base-T hub is faster, since it can deliver up to 100Mbps to one user if the other ports are not being used at a specific moment. For the 100Base-T hub you need network cards in the PC that can handle 100Mbps, for the 301 switch the old cards which can only handle 10Mbps can still be used.

Bay Stack 350T Workgroup Ethernet Switch - Its 16 ports each support both 10 Mbps and 100 Mbps and automatically sense the speed of the attached device. In contrast to the Bay 28115 switch, its backplane is much slower and therefore the whole switch is slower. In other words it is meant for a workgroup and not for a backbone switch.

Bay also brought out additional low cost switches, which do not have two 100 Mbps uplinks and are not manageable. We do not recommend buying those. The two uplinks are important; they enable a so called Spanning Tree Protocol to be implemented later on: i.e. having 2 backbone switches, they would each lead to the workgroup switch. In case one backbone switch fails, the users get a message on the screen, can hit ENTER and work on without even losing their connection because they would automatically be serviced by the other switch and the other uplink connection.

Bay 28115 Fast Ethernet Switch - This is the fast backbone switch. It provides 16 RJ-45 ports, which can be configured either as 10Mbps or 100Mbps. Each of these ports creates an individual segment.
Moreover it has 2 expansion ports for additional 100 Mbps lines to other 28000-series switches, repeater, servers, or workstations.
Such a dedicated 100Mbps line can lead from the switch to another switch, hub or even directly to a power user's workstation where such high speed is required.

7.3 SUN PARADISE HOTELS Management IT Infrastructure Hardware Standards

Prior to purchasing, please always check latest standards/versions with SUN PARADISE HOTELS Management.

LAN Type	Ethernet 10Base-T, Ethernet 100 Base-T
Topology	Structures wiring with twisted pair category 5 cable in a star topology
Cabling	For distance up to 100m: 4 pair 100 ohm category 5 S/UTP, 24 AWG solid conductors
	For distances up to 2000m: Multimode 62, 5/125 μm optical fiber
Switches	Bay Networks, Fast Ethernet Switch 28000 series
	Bay Networks, Workgroup Fast Ethernet Switches 300 Series
Hubs	Bay Network, 100 Base-T Stackable Hub
Application Server	Compaq ProLiant 2500 Rack Version or Tower Model, Pentium Pro/200, 128 MB RAM, 4x2.1 GB RAID or 3x4.3 GB RAID HOP (hot plugable). Netflex PCI 100 Mbps Ethernet Adapter
Desktop Workstation	Compaq Deskpro 200 Pentium/166, 32 MB RAM, 1,08 GB HDD, 17" SVGA Monitor
Notebook	Compaq LTE 5xxx is the recommended brand and series. Exceptions can be made. Min. Pentium/133, 32 MB RAM, 1,08 GB
Printer	Hewlett Packard Laser Jet. If directly connected to the network, use JetDirect Ethernet.
Backup Device	DAT Drive 4/16 GB. We recommend using the original Compaq internal DAT.DLT under evaluation.
Modem	Tobit FaxWare: US Robotics Courier
	Hayes Smart modem Optima 288 V.FC
UPS	APC (American Power Consumption), 90 – 1200 VA, software and interface cable to Novell server

7.4 SUN PARADISE HOTELS Management IT Infrastructure Software Standards

Prior to purchasing, please always check latest standards/versions with SUN PARADISE HOTELS Management.

Network System	Novell Netware Version 4.11 – Intranet Ware
Operating System	DOS 6.2
	Windows 98
Backup Software	Server: Cheyenne Arc Serve for Netware
	Workstation: Cheyenne Arc Serve Solo
Virus Protection	Cheyenne Inoculant Version
Communication	Netware Connect.
Server	Novell 3.x or 4.x
Electronic Mail	Microsoft Mail for PC Networks with AT&T Gateway providing mail connectivity to Internet.
Scheduling/ Calendering	Microsoft Schedule+
Remote Control/ Dial In	Fidelio: Carbon Copy, will change to pcAnywhere
Utilities	PC Tools, Norton, PKZIP
Fax Gateway	Tobit FaxWare Version 4
Internet access	Through CompuServe

7.5 SUN PARADISE HOTELS Management Business Applications Standards

Prior to purchasing, please always check latest standards/versions with SUN PARADISE HOTELS Management.

Front Office	Fidelio
Yield management	YopLine
Sales & Catering	Fidelio
Central Reservations	ResStar including interface to Fidelio Front Office
Central TA Commission	Fidelio Travel Agent Processing Module
Finance	-------
MIS	FDC Commander
Point of Sales Control	Micros
Engineering Software	------

7.6 SUN PARADISE HOTELS Management Office Application Standards

Prior to purchasing, please always check latest standards/Versions with SUN PARADISE HOTELS Management.

Office Suite	Microsoft Office XP
Word Processing	Microsoft Word
Spreadsheet	Microsoft Excel
Presentation	Microsoft PowerPoint
Database	Microsoft Access
Project Management	Microsoft Project
Desktop Publishing	Microsoft Publisher

Page 30

T I B U B E N E N G | K U T A U T A R A | B A L I 8 0 3 6 1 , I N D O N E S I A
P H O N E : (6 2) 8 1 2 9 4 4 4 1 2 2 4

8.   Computer System

8.1   General

A number of sophisticated systems are available which provide the housekeeping and Front Desk staff an up-to-date display of current room availability. A series of illuminated lamps shows the progression of check-out, maid in room, room ready for inspection, room inspected and ready, check-in.

The degree of sophistication of the system will vary according to the location, size and financial status of each hotel.

8.2   Design Criteria

Generally, a hotel of more than 300 guest rooms will require a room management system.

The sophisticated system should have a display panel at each of the following locations: Main Desk, housekeeping, telephone switchboard. The display should indicate for each room whether it is occupied, being prepared or ready for occupancy.

On hotels of approximately 300 guest rooms, a computerized room status system should be considered.

Computer facilities required:

Large hotel computerized room status system will generally be part of an overall computer based room management system. This system may cover, in addition to the room status as previously described, such items as : reservations, deposits, arrivals/check ins, checkouts/departures, cancellation, restaurant charges, telephone charges, messages, wake-up, etc. The system may be extended to the mechanical-electrical operations and functions within the guest rooms and throughout the building.

The degree and extent of computer control must be fully established and approved by the SUN PARADISE HOTELS Management at the earliest possible date and be included in the schematic design phase.

Page 31

T I B U B E N E N G | K U T A   U T A R A | B A L I   8 0 3 6 1 ,   I N D O N E S I A
P H O N E :   (6 2)   8 1 2   9 4 4 4   1 2 2 4

8.3   Computer Safety Guidelines

Install fire detection devices (ionization-smoke detectors). This installation should include detectors located:

- At the ceiling.
- Under any raised floors.
- In return air ducts.
- Connected to the fire alarm system.

Portable fire extinguishers of carbon dioxide or Halon 1301 to be provided for electrical fires. (portable fire extinguishers to be located at the entrance of the computer room with location markers clearly visible over computer equipment.)

20-pound ABC dry chemical fire extinguishers to be provided outside of the computer room and maintained for ordinary combustible materials, such as paper, plastic, etc.

One of the following protection systems should be installed:

Automatic sprinklers with "Central on/off" heads. (If a sprinklers system is used, it should be valve separately from other sprinkler systems.)

Halon 1301 system.
(If a Carbon Dioxide or Halon system is used, it should be linked :)
1. To an audible pre-discharge alarm
2. To the main fire alarm system

Waterproof covers for the computer(s) and peripherals should be readily available in the event of water entering the computer room from above.

Computer room to have:
- An independent air-conditioning system.) The air-conditioning system for the computer room - whether separate from or part of the central system - should be able to be quickly and easily shutoff from within the computer room.)

- Connections to the emergency generator (included are air-conditioning, emergency lighting, computers, vital CRTs, fire protection systems and de-watering pumps).

Page 32

T I B U B E N E N G | K U T A U T A R A | B A L I 8 0 3 6 1 , I N D O N E S I A
P H O N E : (6 2) 8 1 2 9 4 4 4 1 2 2 4

- An electrical supply to the computer utilizing a low-voltage drop-out switch so that if power is interrupted, it does not damage the equipment when it comes back on.

The floor of the computer room should be equipped with a gravity feed drain or a pump system that will prevent in-depth water accumulation.

The walls of the computer room should extend from true floor to true ceiling with all penetrations being sealed.

The computer room walls, floor and ceiling should have fire rating of no less than two hours.

Self-closing doors with a one-hour fire rating should be provided at all entrances and exits to the computer room.

The ceiling above the computer room must be watertight.

The computer room should be constructed so that steam or water pipes do not penetrate or pass over the computer room. All penetrations of the ceiling must be sealed watertight.

Provisions should be made for smoke removal from the computer room after a fire.

All wiring in the computer room (not including wiring within the equipment or connecting various units of equipment) must conform to accepted national electrical codes.

A master power shutoff switch (clearly marked) must be located near a computer room entrance.

The electrical system should incorporate lighting suppression equipment (gas tubes).

The computer room and peripheral equipment should be isolated from ground faults (such as lighting, device failure, etc.)

The entire system should employ a UPS system to prevent power outage and surges during a power blackout.

The remote CRTs must contain three-wire grounded plugs and ground fault protected outlets.

9. Telephone System (PABX)

Introduction

The purpose of this section is to define the technical, operational and spatial requirements for the hotel telephone systems: namely, the specific intra-hotel, local and long distance dialling capabilities of the several phone groups as well as the space and equipment needs.

It is necessary that an engineer determine for each project the trunking and equipment requirements in order to provide an adequate system which will accommodate the communications services. The architect needs to provide sufficient spaces for equipment and operations and for the telephone conduit as outlined in this section or detailed by the consultant.

The architect or interior designer will select the model and color of the instruments so that they will complement the interior design.

Description and General Design Criteria

9.1 Technical Requirements

All systems will be stored program type/computer controlled.

The switching equipment should enable the property to have matching room and extension numbers, direct local and direct long distance dialling, separate administrative group, and single (or multi-digit) guest service numbers.

9.2 Operational Requirements

Telephone dial - In general the following telephone dial should be used in the hotel.

- Digit 1   Message/Mail
- Digit 2   Bell Captain
- Digit 3   Room Service
- Digit 4   Reception Desk
- Digit 5   Laundry/Valet
- Digit 6   Mail Service
- Digit 7   Intra-hotel, to guest rooms
- Digit 8   Long Distance

- Digit 9   Local
- Digit 10   Operator

9.2 Operational Requirements

The final digit coding and room numbering will be by SUN PARADISE HOTELS Management with the exception of digits seven through zero which are standard in all properties.

9.3 Telephone Equipment

Special Requirements

Number of PBX Lines*	Typical Number of Cabinets	Typical Length	Switchroom** Width
400	2-3	10'	12'
600	3	12'	15'
800	4	15'	20'
1000	8	15'	20'
1200	9	15'	20'
1400	12	15'	28'

* To determine the approximate PBX line requirements, use the following formula: number of rentable units x 1.25. When determining space requirements consider the possibility of future expansion.

** Battery reserve can require up to an additional 6' x 12'.

- Must have no overhead steam, water or gas pipes
- Must not be adjacent to or under laundry, kitchen or washroom
- Must be at least 20 feet from motors of more than 1/4 horsepower having commutations to prevent noise interference
- Must not be located in the same or adjacent to a room with copying machine
- Must be free from strong electromagnetic fields
- Must be free from vibration
- Must support loading of 115 pounds per square foot
- Should not be on ground floor, on a below ground level, or on top floor
- Should not be in a public access area

9.3 Telephone Equipment

Electrical

Must be supplied with clean, transient-free power, with up to three phases available at the telephone room electrical box.

Line Size	Typical Requirements (KVA)1	Number of Power Recept. for Switch2	Number of Ancillary Receptacles3
400	10.4		32
600	13.8		42
800	17.3		52
1000	17.3		53
1200	20.7		63
1400	24.2		73

1. Exact peak KVA load requirements are supplied by the vendor.
2. Typical Switch Power Receptacle is 115VAC plus or minus 10%, 30A, 60HZ plus or minus 1% with hubble type connector located no more than 10 feet from the switch.
3. Typical Power Receptacle for ancillary devices is 115V, 15A 50/60HZ with duplex outlet in the switchroom

Each power source must be wired and fused independently of all other receptacles.

Must provide an AC panel.

Must provide a direct earth ground*

We will show the cost of battery reserve and you should look into the potential for using a stand by generator.

- Must provide AC line regulators where sags in the primary voltage cause the input voltage to fall below 105VAC (typical).
- Must provide emergency generator power with electronic measurement to time delay to prevent surges. Generator capacity must be equal to the peak KVA load defined by vendor.
- Must provide adequate space and ventilation.
- Should have protection against power surges in commercial power line(s).

Page 36

T I B U B E N E N G | K U T A U T A R A | B A L I 8 0 3 6 1 , I N D O N E S I A
P H O N E : (6 2) 8 1 2 9 4 4 4 1 2 2 4

*Typical water pipe ground acceptable in most instances.

Conduit and Wiring

Must not run telephone wiring in return air plenum per National Electrical Code.

Must run conduit and wiring at least 4" away from electrical wiring.

Each guest telephone line requires 2 pair (4 wires).

Each key telephone (button type) requires 25 pair (50 wires) per telephone.

Meeting Rooms and Ballrooms must have adequate conduit and wiring to support one telephone (minimum) per 250 square feet.

All suites must have, in addition to guest telephone line requirements described above, a separate conduit to be wired with 1 pair (2 wires) for private line service.

All guest room in Executive floor should have, in addition to guest telephone line requirements described above, a separate conduit to be wired with 1 pair (2 wires) for Fax line provision.

Must provide a 2 1/2" conduit to the teleprinter.

Must provide a 2 1/2" conduit (typical) for each attendant console.

Conduit is **mandatory** for telephone company services such as pay telephone.

SYSTEM LINE SIZE	TYPICAL CONSOLE REQUIREMENT
400-600	2
600-1000	3

Unless specified otherwise, for all locations/areas outlined in this section, the conduit run shall be from the telephone switch room to that location/area.

Should have a 2 1/2" conduit between the front office computer room and the telephone switch room (for telephone computer interface), and should have a 2 1/2" conduit between the teleprinter and the computer room (for telepinter - computer interface).

Air-conditioning

Must be provided and must maintain 70°F with maximum fluctuation plus or minus 5°F.

With any phone system, we strongly recommend house system air conditioning and a separate backup room type unit on standby hotel generator.

SYSTEM LINE SIZE	TYPICAL SYSTEM REQUIREMENT RANGE *
400	3/4 ton - 1 ton
600	1 ton - 1 1/2 tons
800	1 1/4 tons - 1 3/4 tons
1000	1 1/2 tons - 2 tons
1200	1 1/2 tons - 2 1/2 tons
1400	1 3/4 tons - 3 tons

* Exact specifications are provided after system selection.

Relative Humidity

Must be maintained between 20% and 60%; non condensing.

Floor Covering

Must not be carpeted. Tile flooring or concrete covered with sealant is acceptable.

Security and Safety

- Must have a lock on the switch room door.
- Must not store any cleaning fluids in the switch room.
- Must not store other than telephone system replacement parts in the switch room.

Telephone Operator Room

Page 38

T I B U B E N E N G | K U T A U T A R A | B A L I 8 0 3 6 1 , I N D O N E S I A
P H O N E : (6 2) 8 1 2 9 4 4 4 1 2 2 4

- Must provide desk or counter space of 5 feet length and 4 feet depth (minimum) per operator console.
- Must provide typical office lighting and ventilation.
- Should be situated in a room adjacent to the front desk area especially in system of 600 lines or less.

Switch room Miscellaneous

- Must have standard office lighting.
- Must have one (minimum) wall telephone.
- Should have storage for space parts.
- Should have worktable for conduit and wiring print updates.

Required Features
- Touch-tone calling
- Room to Room calling
- Night Service (incoming and dial '0' calls to station line(s)
- Message Waiting Service with lights on the telephone
- Single or Double Digit Access Codes to Guest Services
- Message Registration (guest local calls) preferably electronic with hard copy printout of charges
- Dial Access to 6 (minimum) separate trunk groups
- Classes of Service (deny or allow access to any or all trunks groups and features)
- 0/1 Toll Restriction with diversion to attendant
- Do not disturb Operator (only) initiated
- Station initiated call transfer (incoming and outgoing calls)
- Should have a back-up Central Processing Unit (CPU) in system of 400 lines or more
- Should have battery reserve for DC powered switches (2 hours minimum) or generator tie-in for AC powered switches.

Page 39

T I B U B E N E N G | K U T A U T A R A | B A L I 8 0 3 6 1 , I N D O N E S I A
P H O N E : (6 2) 8 1 2 9 4 4 4 1 2 2 4

9.4   Telephone Groups

The telephone system should be designed so that a series of different "phone groups", with different dialling characteristics exist. These are outlined below:

Phone Group A - Guest Room

Located at : All guestrooms and suites

Dialling features:
- direct dialling to all guestroom and suites
- direct dialling of local numbers
- direct dialling of long distance
- direct dialling of specific hotel services
- incoming calls through operator
- restricted dialling to the administrative groups, through operator

Phone Group B Service, Administrative

Located at: Food and beverage control office, purchasing, clinic, accounting office, general cashier, credit manager, reservations office, front office, front office cashiers, registration clerks, concierge, sales office, Executive Chef, F & B office, Housekeeping office

Dialling features:
- direct dialling local numbers
- direct dialling to administrative groups
- direct dialling of specific hotel services
- incoming call only through operator
- restricted dialling of long distance numbers, through operator
- restricted dialling of guest rooms, through operator

Phone Group C - Service, Administrative

Located at: Telephone PABX room, valet, laundry, main mechanical rooms, garage, receiving, timekeeper, F&B storage, employee's cafeteria, bar pantry, service bar, pool service counter, health club, marina, maid's rooms on Guest Room floors, restaurant/bar reception, Guest Relation Manager's desk, Lobby.

Dialling Features:
- Same as Group B, except: restricted dialling of local numbers, through operator

Phone Group D - Executive

Located: General Manager, Deputy General Manager, Asst. General Manager, Executive Secretary, Deputy General Manager's Secretary, Asst. General Managers' secretary

Dialling Features:
- two phone lines, same as Group B, also:
- direct intercom and buzzer to secretary
- hold button

Phone Group E - Executive A
Located at: Director of F & B, Director of Rooms, Human Resources Manager, Director of Engineering

Dialling features:
- same as Group B, also:
- direct intercom and buzzer to secretary
- hold button

Phone Group F - Executive, with Private Outside Line

located at: General Manager, Deputy General Manager, Asst. General Manager

Dialling features:
- same as Group D, also:
- one private outside line (separate number)

Phone Group G - Administration: Staff Manual

Page 41

T I B U B E N E N G | K U T A U T A R A | B A L I 8 0 3 6 1 , I N D O N E S I A
P H O N E : (6 2) 8 1 2 9 4 4 4 1 2 2 4

Located at: Guest elevators; service elevators, radio and television room, air-conditioning rooms, every third landing of Guest Tower fire emergency stairway.

Dialling features:
- no dial, lifting handset calls operator

Phone Group H - House Phones

located at: Electric switchboard, mechanical rooms, projection room, and maid's room on guest room floor.

Dialling features:
- direct dialling of specific hotel services
- restricted dialling to the administrative group, through operator
- no outside dialling

Phone Group I - In House Phone

Located at: Main Lobby, Second Floor

Dialling features:
- no dial, lifting handset calls operator
- no outside dialling

Phone Group J - Public Pay Phones

Located at: Main Lobby, Second Floor, Back of the House area, loading Dock, Employee Cafeteria

9.5   Call Accounting System

Spatial Requirements

Should be located in telephone switch room
requires floor space for 1 cabinet 4' x 4'.
Requires space for 1 printer within 3' of system 3' x 3'.
If not located within telephone switch room, the following environmental requirements must be met:
- Temperature shall be 10 to 40°C. with maximum of 90% humidity (no condensation).

Page 42

T I B U B E N E N G | K U T A U T A R A | B A L I 8 0 3 6 1 , I N D O N E S I A
P H O N E : (6 2) 8 1 2 9 4 4 4 1 2 2 4

- Should not be in public access area.
- Should not be on below ground level location.
- Air conditioning must be provided.

Electrical

One duplex AC outlet, separately fused, non-switched, 115 volts at 10 AMPS minimum. Outlet to be located within 3' of system cabinet. Outlet to be used exclusively for call accounting system cabinet.
One duplex AC outlet 115v. at 10 AMPS for system printer

Conduit and Wiring

1 2 pair connection from system cabinet location to operator's area for remote system alarm.

1 2 pair connection from system cabinet location to Accounting/Audit area for audit printer.

Conduit to establish above connections.

Security and Safety

Must be located in locked area.
Must have near access to telephone.

Additional System Hardware

1 Receive Only Printer - located in front desk area for call details.
1 High Speed Printer - Located in accounting area for report generation.
1 High Speed Printer - located in switch room for maintenance and Log Printing.
1 Cashier Terminal - at front desk

Page 43

T I B U B E N E N G | K U T A U T A R A | B A L I 8 0 3 6 1 , I N D O N E S I A
P H O N E : (6 2) 8 1 2 9 4 4 4 1 2 2 4

10. Security System for New Construction

10.1 Options

Internal hotel security can be in a number of different formats. Closed Circuit Television (CCTV) may be used to constantly monitor entrances, elevator lobbies, exits, front desk, swimming pools, loading docks, parking garages, areas where money is accumulated or stored or the personal safety of guests and staff is a consideration.

Passive infra-red sensors (PIR's) can be used in areas of the building where is desirable to detect activity during unoccupied times and magnetic or mechanically actuated switches on doors and windows can be used to detect unauthorized passage at these points. All systems will usually be monitored from a central point(s) within the building, usually at a dedicated security centre, telephone operators' area or other location which may be staffed on a 24 hour basis. Wiring and devices included in this section should generally be inaccessible and tamper-proof to prevent the device or presence of faults.

All security system components should be connected to the U.P.S. or provided with their own back-up power supply so the entire system will continue to function normally in the event of a power failure.

10.2 CCTV Systems

A Central CCTV system should be provided to allow real time observation, play back as well as recording for later investigation.

The CCTV system should cover the following areas:

- Parking Entrance
- Access for parking to the hotel
- Elevators lobby and the reception area
- The main entrance of the hotel
- The main lobby and the reception area
- The unloading platform
- The backyard and service parking
- Employee entrance
- Safety deposit boxes

Page 44

T I B U B E N E N G | K U T A U T A R A | B A L I 8 0 3 6 1 , I N D O N E S I A
P H O N E : (6 2) 8 1 2 9 4 4 4 1 2 2 4

Cameras must be selected for the duty they are to perform and the location at which they are to be installed. Exterior cameras may be fitted with ultra-low lux lenses or additional lighting (either normal or infra-red) may be required. In any case, a qualified manufacturer should be consulted to ensure the correct lens is selected. Exterior cameras may require special housings to protect them from dust; wind or rain and wipers/washers are also available to ensure that the glass is kept clean. Unobtrusive housings or recessed installations may be preferred for interior cameras. Interior and exterior cameras may be equipped with pan, tilt and zoom controls so that one camera can survey a larger area.

Cameras for a CCTV system will usually be monitored from a central point within the building and the camera controls, VCR's and monitors will usually be located at a dedicated security centre, telephone operator's room or other area which will be staffed on a 24 hour basis.

If space does not permit the installation of one monitor per camera, accessories are available which allow multiple cameras to use a single monitor, either in rotation or as multiple pictures. Additional accessories which may be required are dedicated time lapse video recorders (VCR's) which can take the input from a number of cameras simultaneously a display them back individually. If a number of cameras are in single remote location, such as a parking garage, consider the use of video multiplexes to reduce the amount of home run wiring required. Line amplifiers may also be needed on extended cable runs.

All wiring, coaxial and power, for a CCTV system is to be protected from damage whether intentional or natural. All camera mountings must utilize vandal-proof fittings and consideration may even be given to fitting tamper alarms to remotely located pieces of equipment.

10.3   Motion Detection Systems

Passive infra-Red (PIR) detectors may be installed in areas where it is desirable to monitor the unauthorized movement of people. These detectors can be installed in locations which permit the monitoring of movement over a wide area, such as a loading dock or store room. A PIR system will usually be monitored from a central point within the building, usually at a dedicated security center, telephone operator's area or other location which may be staffed on a continuous basis. Wiring for these systems must be protected from damage, either accidental or international.

10.4   Magnetic and Contact Switch Systems

Doors or windows may be fitted with alarm switches which will activate an alarm if they are opened. This magnetic contact should be installed on the following doors:

- All emergency exits of the hotel.
- All external doors that are normally closed.
- Doors of facility rooms those are normally unmanned.
- Doors of some sensitive areas in the hotel such as food and beverage stores.

Signals generated by these switches will usually be monitored from a central point within the building, usually at a dedicated security center, telephone operator's area or other location which may be staffed on a 24 hour basis. The reset of these alarms can only be accomplished by a local switch to ensure that someone attends to determine the reason for the alarm.
The system will be battery backed-up with monitored detection lines.

10.5   Employee Entry Systems

It may be desirable to either restrict or monitor the entry and exit of employees at certain locations on the property. This could include employee entrances where a key card might be assigned to each employee which would allow them to gain access to the building. These systems can also be interfaced with the payroll system and used in place of a time clock. Other areas where employee activity could be controlled or monitored might be store rooms.
Generally, all these systems can produce a hard copy of the transaction at each card-key reader point.

10.6   Security Alarm Guidelines for New Construction

Hold Up Alarm - Silent

- Dual push buttons are to be located in the following areas:
- Each front desk station
- Cash room
- Vault room

1. The Hold Up Alarm upon activation will:
    - Notify a central station (UL listed)
    - Sound an alert in the Security Office

2. Hold Up push buttons will be locking-dual push button type.

3. Wire runs will be open circuit, supervised, minimum 22-gauge wire.

4. Zoning of Hold up Alarm to be by area (i.e. front disk, vault room, etc.)

Burglar Alarm - Door Contacts

1. Sealed reed switches/magnetic, normally closed type are to be located in the following areas:

   - All roof doors
   - All exterior doors, except main entrance(s), to be specified by individual hotel property
   - Vault door (use UL listed safe contacts)
   - Meat locker
   - Liquor storeroom door (s)
   - General Storeroom door (s)

2. Upon activation (open circuit), the Burglar Alarm will sound an audible alarm in the Security Office.

3. Zoning of the Burglar Alarm will be by each contact location.

4. Opening of any wire will sound Burglar Alarm (minimum wire size 22-gauge).

Electronic Detex

1. An electronic Detex System with electronic key locations will be located in the following areas:

   - All roof doors
   - All exit doors
   - Two mist remote staircases in each building. The Detex stations will be staggered every other floor level (i.e. stairwell #1, station locations: floors 1, 3, 5, 7, 9, etc.; Stairwell #2 station locations: floors 2, 4, 6, 8, 10, etc.).
   - Liquor locker
   - General storeroom

Page 47

T I B U B E N E N G | K U T A U T A R A | B A L I 8 0 3 6 1 , I N D O N E S I A
P H O N E : (6 2) 8 1 2 9 4 4 4 1 2 2 4

- Meat locker

2. Activation of each Detex station will cause a printer, located in either the Fire Command Centre or the Security Office, to printout the date, time and location of the punch.

3. All Detex wiring will be run in steel conduit where exposed, or in cable where concealed.

4. All wiring will be supervised.

General Alarm System Specifications

1. All equipment will have UL listings

2. All equipment will be provided with 60-hour battery back up.

3. An LED display panel will be provided in the Security Office (red LED for alarm, amber for trouble). A resounding alarm will be provided for trouble conditions and an electronic siren (yelp tone) for alarm condition.

4. All alarm and trouble activity will be recorded on a printer.

5. The main alarm control unit and battery back-up will be located in the Fire Command Centre. Remote controls will be provided in the Security Office.

11. Electronic Door Locking System

The system consists of basically two main components.

- Stand alone (non-wired) battery powered Electronic Card Locks for the rooms. Locks have audit record and low consumption clock/calendar.

- Magnetic stripe card encoding station (s) at the front desk, interfaced with Fidelio Front Office System.

Options

- The locks are available in 5 different standards to fit any door.

- A variety of designer levers and knobs and finishes are available to fit hotel décor style.

- All-weather-lock for extreme outdoor conditions, water resistant, dust and sand resistant, advanced corrosion protection.

- Back Office Card Locks: Exclusive for staff use

- In-room Energy Saving Devices: Operated by cards

- Card readers to control access at: parking, pool, health club, elevator etc.

- Card verifiers to control guest services (breakfast, buffet etc.)

12.   Antenna Systems

12.1   General

The antenna systems addressed in this section should be selected to provide optimum performance under all atmospheric and climatic conditions. The locations should be as unobtrusive as possible while ensuring that they are readily accessible for service. Proper spacing must be considered between all antennas t prevent any interaction. External antennas should use stainless steel hardware and the antenna elements should be manufactured from non-corrosive material or provided with an impervious protective coating. All antenna system must be property grounded to protect the components from lighting damage.

12.2   Terrestrial Television Antennas

Before selecting UHF and VHF television antennas, a determination on the number of VHF and UHF channels wanted must be made. Antennas must be installed in line of site of the transmitters. Depending on the height of the antenna, bracing wires or support should be considered.

12.3   Satellite Dish Antennas

Satellite dish antennas may be of the fixed type or provided with a drive system that ensures continuous automatic positioning. Local expert assistance should be solicited when selecting a system of this type to ensure that antenna location allows an unobstructed view of the target satellite. Large sized dishes may require concrete mass stabilizing bases or other mounting systems that could have structural implications. Antenna down lead coaxial cable to the head end should be specified by the system supplier but in general should be low loss, minimum 1.0 mm internal conductor, of tape and braid construction and installed in a way that will minimize signal loss and reject interference.

12.4   AM, FM and short Wave Radio System Antennas

Radio antenna system will generally be required to access AM, FM and short wave bands. Cabling from the antenna to the head end should be selected and installed in a way that will minimize signal losses and reject interference.

Page 50

T I B U B E N E N G | K U T A U T A R A | B A L I 8 0 3 6 1 , I N D O N E S I A
P H O N E : (6 2) 8 1 2 9 4 4 4 1 2 2 4

12.5   Paging System Antennas

Careful consideration must be given to ensuring that the system is usable throughout the building and property. Special radiating type (leaky) antennas may be required to guarantee the necessary coverage in basement areas, car parks and elevators. Cabling from the antenna to the transmitter(s) should be selected and installed in a way that will minimize signal losses and reject interference. If tests after installation of the paging system reveal the presence of dead zones, additional repeater transmitters and/or antenna systems will be required.

12.6   Two-way Radio System Antennas

Careful consideration must be given to ensuring that the system is usable throughout the building and property. Sometimes long distance two-way communication may also be a consideration. Cabling from the antenna to the transmitter(s) should be selected and installed in a way that will minimize signal losses and reject interference.

Page 51

T I B U B E N E N G | K U T A U T A R A | B A L I 8 0 3 6 1 , I N D O N E S I A
P H O N E : (6 2) 8 1 2 9 4 4 4 1 2 2 4