NATIONAL OPEN UNIVERSITY OF NIGERIA

HCM 234

Facility Maintenance

Module 3

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Module 3

Unit 1Maintenance Procedure

1.0 Introduction

The UK Bureau of Labour Statistics define hotel maintenance as personnel that perform general, preventative and emergency maintenance for the given hotel facility. Maintenance procedures are performed in guest rooms, lobbies, elevators and restroom areas to ensure all equipment and materials are in proper working order. Hotel buildings face constant and heavy traffic, so it is important to keep everything running smoothly for the guests.

2.0 Objectives

At the end of this unit, you should be able to:

- explain the meaning of maintenance in the hotel industry
- state the various maintenance procedures.

3.0 Main Content

3.1 General/Scheduled Maintenance

General maintenance of a hotel includes the upkeep of the outside of the building, parking lot, lobby, front desk and lobby restrooms, and keeping equipment in guest rooms functional. The staff tackles a variety of tasks, from mowing grass to painting, and air conditioning repair to light carpentry work. Hotel maintenance also performs scheduled pest exterminations and safety inspections. The timely replacement or maintenance on a major piece of equipment could involve shut downs of other departments or blocks of guest rooms. Projects such as building of walls or complete painting of areas could also come under scheduled maintenance. Indeed, any project requires scheduling and planning.

3.1.1 Preventative Maintenance

Preventive Maintenance, as its name implies is the intent to perform timed inspections, minor adjustments, lubrication based on manufacture's recommendations with the ultimate goal of preventing unscheduled breakdowns and prolonging the life and efficiency of the equipment. During the course of the inspection if it is determined that major work may be required, then work orders are generated to schedule the maintenance.

Room maintenance, both guest and meeting rooms again follows the above with inspections and generating work orders to schedule and correct deficiencies. The frequency of inspections should be determined to happen sometime before the area slow periods.

If guest rooms' occupancy is peak in summer then schedule the inspection just prior to the downturn as it will give time to order necessary materials and schedule the labour to accomplish the tasks. The importance of inspections cannot be over emphasised because room attendants or banquet staff hardly report deficiencies adequately.

Contract maintenance is mandated in some instances such as for elevator service, kitchen hood exhaust cleaning and fire systems. The reasoning behind this is to ensure that the work is performed by qualified technicians, and may also require licenses and special knowledge. Local regulations and insurance companies usually require these contracts. It also serves the purpose of making sure the work gets done regardless of budget restraints. Maintenance contracts or contracting out is almost always necessary to complement an engineering department that is undersized.

3.1.2 Emergency Maintenance

If necessary, hotel maintenance staff responds to emergencies that need immediate attention. Floods, lock-outs, alarm system problems or vandalism issues require members to be on-call 24 hours a day. Breakdown maintenance can be both negative and positive. Negative if it has an impact on guest comfort, safety, or is detrimental to the smooth flow of production that keeps other departments operational. Breakdowns can be very expensive if it happens after hours and outside contractors are required, or the main chiller shuts down and all your guests walk out. Positive as you would not want to spend N1000.00 a year on preventive maintenance on a blender worth N500.00. Also, in maintenance repairs do not waste N200.00 worth of time to repair something only worth N100.00.

3.2 Maintenance Policy

The purpose of maintenance policy is to outline the roles and responsibilities of property and facility, and to define funding allocation responsibilities to achieve effective maintenance of assets.

Objectives of the maintenance policy
The objectives of this policy are to:

- clarify maintenance responsibilities for land and building assets
- specify the minimum requirements for the management of maintenance
- ensure that assets are adequately maintained
- ensure that associated risks are effectively managed
- ensure statutory compliance
- ensure that land and building assets perform effectively and efficiently throughout their service life
- make appropriate decisions in selecting maintenance strategies; and ensure that a sound basis exists for the allocation of maintenance funds.

3.3 Maintenance Process

The basic phases of the Facility Management process are discussed below.

3.3.1 Manage the Property

Property management is the operation, control, and oversight of real estate as used in its most broad terms. Management indicates a need to be cared for, monitored and accountability given for its useful life and condition.

Property management is also the management of personal property, equipment, tooling and physical capital assets that are acquired and used to build, repair and maintain end item deliverables. Property management involves the processes, systems and manpower required to manage the life cycle of all acquired property as defined above including acquisition, control, accountability, responsibility, maintenance, utilisation and disposition.

Property management covers a wide range of activities in facility management. Consequently, the functions of property management vary from entity to entity, as well as from private industry to the public sector. Since the scope of property management is so broad, only the functions with the most risk from an audit standpoint will be discussed here. The specific areas of property management discussed are strategic property management, property acquisition, disposal of real property, risk management, lease management, and financial and data management.

Functional areas of property management include the following:

- Strategic Property Management
- Real Estate Acquisition
- Disposal of Real Estate
- Risk Management
- Lease Management
- Financial and Data Management.

Strategic property management

Effective strategic property management must include input on the following activities, for which the noted divisions within the facility management function of the entity are generally responsible:

- Master planning (Facilities Planning and Construction, Strategic Planning)
- Feasibility studies of land use or building alternatives (Facilities Planning and Construction)
- Inspections of existing structures (Facilities Planning and Construction, Physical Plant)
- Preliminary architectural and engineering designs and cost estimates(Facilities Planning and Construction)

- Analysis of regulations for land use, zoning, environment, and building codes (Facilities Planning and Construction)
- Operations and maintenance costs (Physical Plant)
- Support services costs: telecommunications, special
- transportation needs, parking, and security.

Real estate acquisition

Three phases of site acquisition:

- Develop several feasible alternatives
- Reduce the feasible alternatives to the best three or four candidates
- Select the preferred site
- Steps in the real estate acquisition process should include:
- Ensuring that a fair market value has been determined through appraisals from competent professionals
- Ensuring that the State's interests are protected
- Assessing the environmental impact cost; will there be any environmental remediation required on the property, and have these cost been included in the overall analysis to make the decision whether or not to purchase?
- Determine if the proposed acquisition aligns with the entity's mission, goals and objectives. The entity should have assessed why it really needs the property.
- Determine where this project fits into the master plan.
- Assess the community-related issues to determine how this project will affect the entity's neighbors or how the neighbors will affect the entity.
- Determine where the funds for the purchase will come from, or how the entity will pay for the property.
- For an institution of higher education, ensure that all of the State's/Local Authority requirements have been met.

Disposal of real estate

Under most circumstances, the General Land Office has the responsibility for disposition of all state-owned real estate. Institutions of higher education may dispose of their own real estate (purchased, donated, etc., with non-general revenue funds). Otherwise, the General Land Office has authority to make the property disposition.

General criteria applicable to the disposition of real estate include:

- Determine applicable legislation and rules pertaining to the disposition of state-owned property
- Obtain appraisals to determine the fair market value - except for small value property, more than one appraisal should be obtained and each appraisal should include more than one methodology to determine the fair market value

- Maintain a written land disposition policy
- Perform a space utilisation analysis
- Involve entity's attorney in title transfers
- Dispense proceeds of the sale to the proper account

Risk management
Risk management is a process that has the purpose of minimising losses or injuries in the entity. Steps that should be included in the risk management process are:

- Identify the perils and risk exposures
- Assess the significance of the exposure
- Select an appropriate risk management method
- Implement the chosen risk management method
- Evaluate the risk management programme
- Safety and health management programmes should be developed and encompass these areas:
- Safety training - lack of training or inadequate training is the cause of many accidents
- Risk prevention and loss control focus on methods to prevent a perilor loss from occurring
- Programme design, which includes management's commitment to a successful programme and incorporates a team or committee with diverse membership from the entity
- Motivational programmes or incentive programmes for safety.

Lease management
Leasing is a Contract whereby one party agrees to give on Lease an Asset to other party for the specified period on specific terms and conditions for the use of that Asset. In technical terms, Lease is a contract in which one party conveys the use of an asset to another party for a specific period of time for a predetermined payment amount.

In leasing there is mainly involvement of three parties: Lessor, Lessee and Vendor.

Lessor
The person owning the Asset/Equipment which is being leased

Lessee
This is the person to whom Lessor gives on Lease the Asset. Lessee is the user of equipment being leased

Vendor
The person from whom the Lessor has acquired the Asset for the purpose of giving on Lease to Lessee. The relevant Authority has responsibility for securing all leases for property for state agencies and institutions of higher education that use state-appropriated funds for leasing facilities, unless that authority has been delegated to the specific agency.

Financial and data management
Annual maintenance and repair budgets should be prepared to consist of two components:

1. Routine expenditures for maintenance, repairs and planned replacement.
2. Expenditures of deferred maintenance or backlog reduction.

These two components should be separated in the budget.

Routine expenditures are related to the physical nature of the facilities and their uses, including design, age, intensity of use, and climate of the region where the building is located. These factors influence the rate at which a building deteriorates.

The second component, backlog reduction, or deferred maintenance, is related to the level of funding available for routine maintenance and repair and the effectiveness of the entity's maintenance efforts. Funding and backlog are inversely proportional: the less funding available, the larger the backlog. These two components are important factors in the cost of ownership.

3.3.2 Plan for Renovation and New Facilities

Like property management, facilities planning also cover a wide range of functional areas in many different types of organisations. The emphasis in this module will include a discussion on:

- Strategic facilities planning
- Building design and construction
- Energy management

Strategic facilities planning
An entity should have a strategic facilities plan. The plan may be part of the entity's master planning process. Issues that need to be addressed in the strategic facilities plan include:

- Capacity requirements forecast
- Facility location, relocation, expansion, and consolidation
- Facility acquisition, utilization, and divestiture
- Life-cycle costing and productivity incorporating perspectives onpotential trade-offs
- Facilities financing, including the capital budget plan
- Facilities standards

Building design and construction
The entity should carefully consider selection of building materials since this decision will directly impact on the cost of future maintenance. Design and material selection should take the following conditions or considerations into account:

- Decisions made in a building's design to use short-lived materials and equipment, to save on construction costs, will generally result in increased maintenance and repair requirements
- Poor design or improper construction or installation can cause inadequate performance from the outset and increase maintenance and repair requirements

- Abuse, misuse, neglect, and overuse of building components all increase needs for maintenance and repair.

Energy management
Planning for the energy management function can be done by the Facilities Planning department if properly equipped, by outside consultants, or a combination of the two. The Maintenance department usually acts as the installation, inspection, and maintenance staff for an organisation's energy management systems. Costs related to energy and environmental requirements can change rapidly; so a strict list of conservation measures should be avoided. Written policies should be developed, but they need to be periodically evaluated for cost effectiveness.

Basic criteria for energy management planning include the following:

- Select system and operation specifically for building occupancy.
- Determine energy use level when and where required, to provide minimum acceptable environmental conditions.
- Minimise heat loss and gain.
- Perform cost-benefit analysis of systems and retrofit proposals.
- Provide optimum operating efficiency for energy systems and equipment.
- Perform regular energy audits to monitor performance and consumption.

Building utilities include:

- Electric power, on-site generated or from a public utility
- Fuel power, includes gas, heating oil, and other fuels
- Heating and cooling
- Water supply
- Liquid sewage disposal
- Storm drainage systems
- Solid waste disposal

3.3.3 Operating and Maintaining the Facilities

All facilities require a maintenance and operations function. This function is critical to the protection of real property, buildings, and equipment, which generally make up a majority of an entity's assets. Two areas of operations and maintenance discussed in this module are:

- Facility maintenance
- Condition assessment.

Facility maintenance
In times of tight budgets and competing demands for public resources, it may be difficult to convince those responsible for policy making that neglect of maintenance of fixed assets and equipment can lead to significant losses of those assets. Recognition of the full cost of

ownership of these assets and the commitment to properly maintain them by policy makers presents a challenge to the management that has the responsibility of operating these facilities to carry out the entity's mission. The following are general criteria that pertain to operations and maintenance:

- Being able to predict the impact decisions regarding construction materials and building systems will have on future operation, maintenance, and repair costs
- Implementing a plan to improve the methods of determining professional staffing required for field-level facilities management
- Improving procedures for programming and budgeting for operation, maintenance, and repair work
- Making effective use of diagnostic techniques for determining the need for maintenance and repair
- Establishing a direct link between the maintenance and operations budget and plan and the entity's mission, goals and objectives, as they relate to maintenance
- Setting priorities for resource allocation
- Incorrect maintenance procedures can shorten the life of systems and components and cause premature failure.
- The functional areas of maintenance management include the following
- Budgeting
- Initiating - receiving and reviewing requests for work to be performed by trades people
- Planning - work assignments and material needs for the work orders
- Scheduling work requests
- Executing work request
- Reporting - measuring performance, including customer satisfaction surveys

ondition assessment

Condition assessment is a process an entity should use to identify all the maintenance needs in its facilities inventory. The entity should implement a periodic condition assessment procedure for all its facilities. The frequency with which this assessment should be performed will vary according to the age and inventory of facilities. This could range from annually to every three to five years. A condition assessment serves as the basis for establishing appropriate levels of funding required to reduce and eventually eliminate backlog.

3.4 Facility Maintenance Work Order Procedure

3.4.1 Purpose

The purpose of this procedure provides a general overview of work orders employed at stations, the uses of each category and the procedures involved for requesting different forms of work.

3.4.2 Terms

Work order supervisor:

- He/she is responsible for managing the work order.
- Work order planner:
- He/she is responsible for processing work order.
- Maintenance coordinator
- He/she approves non-facility requests.

Facilities (for this procedure) are buildings, structures, and all installed equipment. This includes the following: boilers, doors, windows, outdoor and indoor plumbing and fixtures, electrical panels, lights, wiring, etc. Non-facilities are items not installed in the building, or not associated with the normal function of the structure, e.g. recreational and gym equipment, and any specialized equipment purchased for its unique use that is not required for the normal operation of the building.

There are two types of work orders. They are;

1. Preventive maintenance work order
2. Service work orders

Preventive maintenance work order is generated weekly by the work order planner based on preventive maintenance programme.

Service work order is written on a daily or as needed basis by the work order planner as they are written and approved.

A general maintenance work order is for repairs or maintenance to existing facilities. The Work Order Planner automatically writes a Service Work Order upon receipt of a request. The request may be called into the Station Work Order desk.

Self-Assessment Exercise

1. Mention the phases of facility management process.
2. List the two types of work orders.

4.0 Conclusion

A hotel's facilities need to be maintained in order to meet the expected requirements of both guests and hotel management as well as to avoid unnecessary and untimely wear and tear.

5.0 Summary

Managers need more than budget for scheduled and preventative maintenance in their various hotels and departments. Hiring of the correct personnel and quality supervision is of prime importance in order to ensure efficiency is achieved while maintaining equipment and machinery in the hospitality industry.

6.0 Self-Assessment Exercise

1. How would you define hotel maintenance?
2. Differentiate between the various types of maintenance procedures.
3. What are the objectives of maintenance policy.

7.0 References/Further Reading

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Unit 2 Energy Conservation

1.0 Introduction

In unit one of this module, we discussed maintenance procedures in terms of general or scheduled maintenance and maintenance policy. In this unit, we will be discussing energy conservation.

You may know what energy conservation is, but have you ever stopped to consider why energy conservation is important? The reality is that there are many reasons why conserving energy is significant to our lives. To help you understand why energy conservation is important, you should know that there are two kinds of energy sources we depend on – **renewable and non-renewable.** Renewable energy sources are those that are continuously replenished, such as water, wind, and solar. Nonrenewable energy sources, on the other hand, like gas, coal, and oil, cannot be replaced. Hence, the consumption of these sources needs to be controlled to ensure that the limited supply we have will be available to generations in the future.

Since there are so many ways we can benefit from using less energy, it is imperative that everyone does their part to educate themselves as much as they can when it comes to learning why energy conservation is important, and applying the knowledge they acquire to everyday life. After all, conserving energy is not just about saving money every month on bills by reducing energy consumption; it is also about saving the environment.

December 14th is celebrated as World Energy Conservation day, so let us discuss some ways by which we can conserve energy and find out why energy conservation is so important.

2.0 Objectives

At the end of this unit, you should be able to:

- define energy conservation
- discuss the importance of energy conservation
- explain energy conservation measures.

3.0 Main Content

3.1What is Energy Conservation?

Energy conservation refers to reducing energy through using less of an energy service. It involves making effort to reduce the consumption of natural energy sources like electricity, water and so on. Energy conservation differs from efficient energy use, which refers to using less energy for a constant service. For example, driving less is an example of energy conservation. Driving the same amount with a higher mileage vehicle is an example of energy efficiency.

Energy conservation and efficiency are both energy reduction techniques. Reduction in the amount of energy consumed in a process or system, or by an organisation or society, through economy, elimination of waste and rational use. Though energy conservation reduces energy services, it can result in increased financial capital, environmental quality,

national security, and personal financial security. It is at the top of the sustainable energy hierarchy.

Why is energy conservation important?
We depend on energy for almost everything in our lives. We wish to make our lives comfortable, productive and enjoyable. Hence even if the outside temperature rises a little, we immediately switch on the air conditioner to keep our house cool. This is again using up of energy. Unfortunately, what we do not realise is that we have started taking things for granted and we have started wasting energy unnecessarily. Most of us forget that energy is available in abundance but it is limited and hence to maintain the quality of life, it is important that we use our energy resources wisely. If we do not conserve energy, the energy will exhaust and we will have nothing to use.

Energy conservation is also important when it comes to climate change. Currently, erratic climates and climatic changes are the greatest threats that we are facing today. Hence it is important to conserve energy. Reducing the amount of energy that we use is a good way to save money, and there are also other benefits to decreasing energy consumption. For example, a large portion of the energy we use is derived from oil. Some experts claim that we will run out of oil in just a few decades. As natural resources used to produce energy become scarce, the cost of energy will most likely increase. Also, toxins and pollution are released into the atmosphere during the production and consumption of energy. Not only are we running out of some valuable natural resources, but we are also destroying the environment in the process of using them.

Embrace energy conservation by making small changes that will lead to a significant difference in our overall energy consumption. Your efforts, combined with those of others who have chosen to make a few small changes too, will benefit your life and the lives of future generations, as well as our environment.

Tips for conserving energy
There are many ways to conserve energy. It depends on the kind of choices we make to help us save our environment and also help our future generations. There are many things that will use less energy and by using such things you will conserve energy in a sensible way. Instead of normal tube lights, you can choose energy efficient bulbs. Energy efficient bulbs require less energy to perform the same function that normal tube lights do. Turn lights off in unoccupied areas, including porch lights when you go to bed. You can save lot of energy by switching off the lights and using natural lighting during day time.

Turning off all electronic devices when not in use is also a good way of conserving energy. Unplug also after turning off. Up to 75% of the electricity used to power home electronics is consumed while the products are turned off. Appliances like computers, televisions, cable boxes, cell phone chargers, coffee makers, etc. all continue to consume energy just by being plugged in into an outlet.

Replacing or repairing leaky/dripping faucets or running toilets help in saving lots of water.

Use air conditioner (AC) only when required. . Use fans whenever possible instead of AC, and ventilate at night this way when practical. Using fans to supplement AC allows you to raise the thermostat temperature, thus using less energy. Fans cost less to use than AC.

Make sure the dish-washer and clothes-washer have full loads before running them. Use the “air dry” setting on the dish washer. Wash clothes in cold water when possible and rinse

them in cold water. Clean the lint filter in your dryer after every load to improve air circulation, and periodically check the dryer vent to ensure it is not blocked.

Embracing an energy efficient lifestyle today will help you get a better life tomorrow. So let us slow down the demand for energy and give a better future for our coming generation.

Further reasons why we should think energy conservation is important are:

- It is sometimes a highly cost effective measure for an individual, business, local government or country saving them money.
- It can extend the lifetime of non-renewable energy resources such as coal, oil and gas, and minimise the need to use more energy intensive, expensive, dangerous and environmentally damaging sources, (such as deep sea oil, shale and tar deposits) than standard sources.
- It can reduce dependence on, and the associated military expenditure used to maintain a reliable supply of fossil fuels from politically unstable countries.
- It can reduce the rate of consumption of fossil fuels and subsequently the amount of greenhouse gases and other pollutants emitted along with their environmentally damaging effects

Sources of energy conservation
Sources of energy conservation are Solar Energy, wind energy, geothermal energy, wave energy, hydroelectric energy, and biomass energy.

3.2 Energy Conservation Measures for the Hotel Industry Do's and Don'ts

Food and beverage department
This department consumes approximately 25% of the total energy cost so the opportunities to reduce energy consumption in this area are excellent. Some helpful guidelines are given below.

Food Preparation – Kitchen

- Determine the preheating time for ovens, grills, boilers, fryers and other cooking equipment. Generally speaking 10 to 20 minutes should be sufficient.
- When preheating ovens, set thermostat at the desired temperature. Ensure thermostat controls are operating properly.
- Determine cooking capacity of ovens; use smaller or more energy efficient oven when possible.
- Use additional fry units, boilers, oven etc. only for peak business hours.
- Load and unload ovens quickly. If an oven's door is kept open for a second, it losses about 1% of its heat.
- Cover pots and pan switch lids while cooking.
- Turn off cooking and heating units that are not needed
- Oven should not be opened during operation. Food will cook faster and lose less moisture if oven is kept closed.

- Frozen food should be thawed in refrigerators. It will thaw easily and reduce power demand on the refrigerator.
- When using gas range for full heat condition, the tip of the flame should just touch the bottom of the pan or kettle. Yellow flame is the indication of inefficient, incomplete combustion and wastage of gas. Clean burners, pilot light regularly. If flames are still yellow, have gas-air mixture adjusted.
- A blue flame with a distinct inner cone is best. Flame should never flout but should just wipe the surface. Adjust flame until it is entirely blue.
- Thoroughly clean pot and pans to ensure there is no carbon build up at the bottom.
- Placing foil under range burners and griddles will improve the operational efficiency.
- Fryers need to be cleaned and oil filtered at least once a day.
- Cooking range burners should always be smaller than the kettle or pot placed on it.
- Have broken door hinges and cracks of oven doors attended to immediately.
- Turn off Rotary Toaster when not in use. Use pop-up toasters on lean timings.
- Shut off steam heater on dishwasher when dishwasher is not in use.
- Use hot water only when necessary.
- In pot washing area fill sink for washing utensils instead of running water.
- Cleaning should be done during day hours if possible. Do not use dishwasher till full load of soiled dishes is available.
- Turn off lights in the walk – in refrigerators and freezers when not required. Lights not only waste energy but add load to the box.
- Close tightly all walk-in doors after operating them.
- Allow hot foods to air cool before placing in refrigerators.
- Do not store items in front of the refrigerant coils or fans in a manner that restricts air circulation.
- Fully stored refrigerators and walk-ins use energy more efficiently than partially stored ones.
- Be sure foods requiring refrigeration are promptly placed in storage after delivery.
- Turn off supply and exhaust fans in kitchens stores etc. when areas are not in use.
- Report any leakage of gas immediately.
- Keep records of all breakdown of equipment to find out accident prone/uneconomical equipment.
- Turn on equipment only as needed. Make sure they are turned off at night.
- Carefully follow instructions in the user's guide for all equipment.
- Keep equipment and door seals clean and free of debris to prevent energy waste.
- Reduce peak loading. Your electrical bill is determined by two factors:-

a. demand charge (if applicable)

b. total consumption in kWh

You may achieve this by:

1. Intensive cooking such as baking and roasting during non-peak demand hours.
2. Use minimum number of electric appliances at a time. Stagger their operation.
3. Try to use electrical appliances between 6 AM to 10 AM or after mid night if possible.

- Equipment should be turned on at specific time to a specific temperature and turned off at times when not needed. A 10-15 minutes preheat period is required.
- Clean heating elements at least weekly. This may even be done daily if you do high volume frying.
- Cooking foods in least volume possible for most economic use of energy.
- If keeping electric burner on for shorter period is inevitable, when they are not in actual use keep the temperature low until you are ready to cook. This will even prolong the life of burner besides conserving energy.
- Avoid turning on gas burners until you are ready to cook.
- If possible, fill cooking vessels according to capacity. Large cooking vessel if used for cooking lesser quantity of food will consume more energy.
- Use flat bottom pots and pans for maximum heat transfer.
- Group kettles and pots on close top ranges.
- Turn down heat as soon as food begins to boil and maintain liquids at simmer.
- Clear boil-overs and spill-overs promptly to avoid buildup of carbon deposits which will affect the efficiency of equipment adversely.
- Always try to use roasting and baking oven to full capacity for maximum utilization of heat. If possible wait till oven is loaded up to its optimum capacity prior to switching on.
- Regular and prompt cleaning of rotary toaster saves energy.
- Avoid frequent opening of refrigerator doors. Door opening if planned, saves energy.
- Do not allow frosting on refrigerator coils to save energy.
- Close and preferably lock ice cube bins after removing ice for use.
- Using hot water for cooking consumes less energy as compared to cold water.
- Switching off heater when cooking is over, not only saves energy it is safer as well.
- Do not use dishwasher until you have sufficient load

Banquets

- While air conditioning is on, try to avoid using candles on the table. They add a tremendous heat load.
- When renting a space for function, try to fit the space to the size of function. Do not rent a 300 person ball room to 50 people even if the room can be divided. Remember you are spending almost same on air conditioner of the space.
- When setting up for a function, make certain that heating, cooling and lighting are off until ½ hour to 1 hour before function starts. Turn off systems as soon as the function is over. In fact, air conditioning can be turned off even ½ hours before function finishes. Air conditioning effect will stay for ½ hour.

- If you have a choice, try to avoid function that requires the addition of many spotlights or other heat producing equipment.
- Assign an individual responsible for turning lights on and off.
- Keep the light off whenever any function area is vacant or unoccupied.
- While Air-conditioning is on ensure that all doors and windows are properly closed.
- During winter season try to use outside air for cooling.
- Review lighting levels and prepare new standard lamping plans for meetings rooms to reduce unnecessary wastage of energy.

Restaurants

- Reschedule cleaning of area during day light hours.
- Avoid using electrical light while setting the table whenever possible.
- Turn off air-conditioning ½ hour prior to closing the restaurant.
- Keep wall and ceiling properly cleaned for better light reflection.
- Turn off lights when not needed.
- Review lighting level to provide minimum acceptable lighting level in all food service area.

Front office and lobby

- Front office can play an important role in energy conservation. When occupancy is unfortunately not high, front office should rent room by virtue of their location. In summer, rooms on the east or north sides of the building will be cooler. Also, corner rooms with two outside exposures will be warmer. Rooms close to heat source should also be avoided if possible. This would certainly help reduce air conditioning load and result in saving of energy.
- Front office should make sure that the rooms which are not to be rented out during lean periods are not air conditioned or ventilated unnecessarily. If any one of these is to be rented out. Air conditioning or ventilation can be started ½ hour before the guest moves in.
- Lower all lighting levels during late night and day light hours. Turn off all lights in offices when these are closed.
- If possible, instruct shopkeepers to reduce the amount of shop and display lighting. Although, in most cases, shopkeepers do pay for their electric consumption, the lighting load still affects hotels cooling systems.
- Lobby managers should ensure that lobby main entrance and doors are not unduly kept opened. A door opening will result in ingress of heat from outside and adversely affect air conditioning.
- Lobby Managers, in course of their duty, do take rounds of the property. They on their rounds should ensure that no unnecessary lights or water taps are left on by careless staff.
- During day light hours reduce electric lighting load in the lobby etc. to minimum to make full use of natural light.

- During low occupancy period try to block complete floor. If this is not practicable, attempt should be made to block as far as possible total wings of individual floor.
- As soon as a guest checks out, Front office should inform Housekeeping so that all lights of the vacant room are switched off at the earliest.
- Report broken windowpanes to stop ingress of air.
- Inspect public toilets periodically and report leaking W.C. and faucets toavoid water wastage.

House-keeping department

The major space in a hotel is devoted to guest rooms and corridors. Number and variety of ways to conserve energy in these areas are startling. Although the energy conserved in one room or corridor does not seem significant, but when multiplied by 100 or so rooms, it does become significant. Some of the ways the housekeeping department can significantly contribute to energy saving is listed below:

- Turn off guest room lights when rooms are not physically occupied.
- Use minimum lighting when making up and cleaning rooms. Use natural light whenever possible.
- Turn off corridor lights, or reduce it to 50% when natural light is available.
- Turn off lights in linen rooms, storage room and maids closets when not in use.
- Check your areas for light level. Reduce number of lights if possible. Use lower wattage bulbs wherever possible.
- Have lamp shades cleaned at once. Bulb gives more light with clean lampshades.
- Keep walls and ceiling walls cleaned for better light reflection.
- Switch off music and TV Sets when rooms are not physically occupied.
- Turn off HVAC system when rooms are not physically occupied.
- Report water leaks immediately
- Keep windows closed and curtains on. The ingress of hot air in summer and cold air during winter contribute to very large waste or energy. For example 6' wide window opened just one inch would allow hot air necessitating 1.76 kWh to cool.
- Keep room hot water temperature at lowest acceptable limit.
- Minimise use of lights during night cleaning by switching on only those lights which are actually required to clean a particular area.
- Bellhops may be advised to leave only such lights on which are actually needed by the guest while leaving the room.

Laundry department

One of the large consumers of water and heat, the hotel laundry is an outlet that can significantly reduce energy consumption with no effect on guest comfort or satisfaction. Some of the important points to achieve desired results are listed below:

- Have lights turned off when not in use.
- Periodically clean lamps and lights fixtures.

- Clean and wash walls, floors and ceiling
- Operate washing machines at full load; partial loads may require same amount of water as full loads.
- Check and record your water consumption. Compare water consumption daily to find wastages, if any.
- Do not leave water taps running.
- Consider using cold water detergents. It will greatly reduce energy consumption.
- Reduce hot water temperature to 120 o F.
- Repair or replace all hot water piping insulation.
- All steam line values should be checked for leaks. That is, you should be able to shut off steam to any machine not in use keeping steam supply main open.
- If possible use final rinse water for 1st wash.
- Reduce time between loads to prevent tumblers from cooling down.
- Air line should be checked for leaks.
- Periodically clean exhaust duct and blower of lint and dust.
- Keep steam pressure at lowest possible level.
- Shut off steam valve whenever machine is not being utilized.
- Keep radiator coils and fins free from dirt all the times.
- Ensure all steam traps are in perfect working order.
- Keep an eye on the preventive maintenance schedule of all laundry equipment by Engineering Department to ensure timely compliance.
- Ensure that Drying tumblers and washing machines are kept clean and free from scale at all times.
- Switch off laundry exhaust fans when laundry is closed.
- Ensure that extractors are working properly. Incomplete extraction increases load on dryer and consumes more energy for drying.
- Reschedule machine operation to reduce peak demand charges.
- Inform boiler room when steam is not required so that boilers can be shut down to save fuel.

Engineering department

An analysis of hotels show that approximately 60% of the energy consumed in a property is in the equipment and machinery rooms, boiler rooms, air conditioning rooms, water treatment and pump areas and sewage plants. Engineering Department is responsible for running and maintaining these equipment. They are also concerned with maintaining the entire building/complex.

Keeping the above in view, it is imperative that the Engineering Department operates this equipment at peak efficiency. Engineering Department can help conserve energy in the following Ways:

- By acting as an advisor to various departments to help them achieve their respective Energy Management goals
- By ensuring efficient and economic operation of all equipment
- They must maintain a history card of each machine so that in-efficient and uneconomical machines can be identified and eliminated to save the wasteful uses of energy. This will also help in deciding the preventive maintenance schedule of each machine.

Some guidelines to achieve energy management goals at little or no cost are listed below:

Heat, Ventilation and Air-Conditioning (HVAC) Systems – Plant Room

- Turn off HVAC machinery in all unoccupied spaces
- Eliminate or reduce duct air leakage

While operating chillers ensure the following:

- As far as possible keep leaving chilled water temperature on the higher side
- Reduce entering condenser water temperature
- Maintain proper refrigerant charge
- Eliminate refrigerant and charge
- Maintain proper flow rate of condenser water
- Operate chillers in proper sequence
- Operate condenser and cooler pumps in a proper sequence
- Lower hot water temperature for heating when outside temperature rises
- When chiller is not operating, make certain that chilled and condenser water pumps are shut down
- Use proper water treatment to prevent fouling or sealing of condensers, cooling towers and piping
- Repair all hot, chilled and condenser water lines, valves and pumps. A considerable quantity of water is lost through leaky pump glands which can be saved easily
- Repair or replace damaged hot or chilled water line insulation
- Check cooling water tower bleed off periodically
- Check efficiency of chiller against manufacturer's specifications by checking water temperature and pressure drop in and out of chillers and condensers and motor amperage on compressor
- Condenser tubes should be kept clean
- Stop all refrigerant leaks
- Check daily purge operation on chiller for signs of air leaks
- Remove algae growth from cooling towers
- Check all belt drives. Replace worn out or frayed belts
- Clean coils and fans periodically, check chilled water sample to know the internal condition of coil. Do periodic cleaning of coil

- Filter must be cleaned periodically
- Check all thermostats for correct functioning.

Boilers

- Check Boilers Room for negative air pressure which can reduce combustion efficiency
- Avoid multiple boiler operation. One boiler operating at 80% is more efficient than two at 40%
- Operate boilers at as low steam pressure as possible
- Avoid excessive boiler blow down
- Clean burner nozzle periodically
- Pre-heat the fuel to correct temperature before injection
- Maintain a good water treatment programme
- Repair and replace if necessary boiler insulation that is damaged
- Repair and replace all worn or damaged steam and condensate piping insulation
- Insulate all condensate and steam pipe line flanges
- Check and repair all steam traps
- Eliminate all steam leaks
- Check fuel lines for leaks
- Check combustion control in order to maintain maximum efficiency
- Check all safety valves for any leaks.

Heating

- Check and back wash water filtration plant for higher efficiency and reduction in water system scaling.
- Check water analysis periodically.
- Repair at once all leaks, dripping faucets and shower heads.
- Check boiler flush valves for any water leaks.
- Lower hot water temperature to 120°F.
- Check and adjust swimming pool make up water (not to exceed 10%).
- Shut down pool filtration plant when pool is not in use.
- Reduce lawn and shrubbery watering to absolute minimum.
- Check water regulating valves on water coolers, refrigerant units and ice machines.
- Consider sprint loaded self-closing water valves in kitchens.

Building and grounds

- Seal all exterior windows, doors cracks and openings to reduce outdoor air leaks.
- Reduce gap under the doors of air conditioned spaces to minimum.
- Check grounds for leaking pipes underground.
- Check and repair all door closers.

- Make certain all electric connections are tight.
- Keep all 'contacts' clean.
- Check Lighting levels in all Engineering spaces to see if they can be reduced.
- Replace all incandescent fixtures with fluorescent and energy efficient lamps.
- Keep all light shades clean. Use shades that allow more light to pass or reflect.
- Do not switch on lights unless necessary.
- Arrange schedules for turning or reducing lights in guest corridors, lobby area, function spaces, restaurants, bars, shops, kitchens etc.
- Make a house inspection of all departments to see that energy conservation is being observed.

Self-Assessment Exercise

1. Define energy conservation.
2. When is World Energy Conservation day celebrated?

4.0 Conclusion

The climate change or the climate crisis rapidly getting worse and we need to reduce energy consumption even on an individual level. In fact, if everyone started saving energy at home, we are already on a good way to getting emission levels down to normal. Every man has a social responsibility to conserve energy for our children and future generations to live in an environment that is equal to our present environment if not better.

If we continue to waste energy without employing proper conservation methods, one day we will run out of nonrenewable energy to use. The reality is that there are many reasons why conserving energy is significant to our lives. First of all, saving energy is important because energy use affects the environment and everyone in it. Secondly, when you conserve energy you also save on the cost of living.

Since there are so many ways we can benefit from using less energy, it is imperative that everyone does their part to educate themselves as much as they can when it comes to learning why energy conservation is important, and applying the knowledge they acquire to everyday life.

5.0 Summary

- Energy conservation is reducing energy through using less of an energy service.
- Sources of energy conservation are Solar Energy, wind energy, geothermal energy, wave energy, hydroelectric energy, and biomass energy.
- There are two kinds of energy sources we depend on – renewable and nonrenewable.
- The energy in a hotel facility is consumed by dozens of pieces of equipment or systems. Load reduction will be derived from an appliance-by-appliance approach. A multitude of individual strategies or equipment replacements must be considered, placing an ongoing demand on somebody's time, not to mention your operating budget. The life-cycle cost of equipment must become embedded within the purchasing process.

6.0 Self-Assessment Exercise

1. Discuss the importance of energy conservation.
2. Itemise the reasons why we should think Energy Conservation.

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Unit 3 Pollution

1.0 Introduction

In the previous unit, we discussed energy conservation. In this unit, we shall be looking at pollution. Pollution is the introduction of contaminants into a natural environment that causes instability, disorder, harm or discomfort to the ecosystem i.e. physical systems or living organisms. Pollution can take the form of chemical substances or energy, such as noise, heat or light. Pollutants, the components of pollution, can be either foreign substances/energies or naturally occurring contaminants.

2.0 Objectives

At the end of this unit, you should be able to:

- state the meaning and forms of pollution
- outline the major sources of pollution
- enumerate the dangers of pollution
- outline preventive/reduction measures.

3.0 Main Content

3.1 Forms of Pollution

Pollutants
A pollutant is a waste material that pollutes air, water or soil. Three factors determine the severity of a pollutant: its chemical nature, the concentration and the persistence.

Forms of pollution
The major forms of pollution are:

Air pollution
This is the release of chemicals and particulates into the atmosphere. Common gaseous pollutants include carbon monoxide, sulfur dioxide, chlorofluorocarbons (CFCs) and nitrogen oxides produced by industries and motor vehicles. Photochemical ozone and smog are created as nitrogen oxides and hydrocarbons react to sunlight.

Light pollution
Light pollution includes light trespass, over-illumination and astronomical interference.

Littering
This is the criminal throwing of inappropriate man-made objects onto public and private properties.

Noise pollution
This encompasses roadway noise, aircraft noise, industrial noise as well as high-intensity sonar.

Soil contamination
Soil contamination occurs when chemicals are released by spill or underground leakage. Among the most significant soil contaminants are hydrocarbons, heavy metals, herbicides, pesticides and chlorinated hydrocarbons.

Radioactive contamination
Radioactive contamination, resulting from 20th century activities in atomic physics, such as nuclear power generation and nuclear weapons research, manufacture and deployment.

Thermal pollution
Thermal pollution is a temperature change in natural water bodies caused by human influence, such as use of water as coolant in a power plant.

Visual pollution
This refers to the presence of overhead power lines, motorway billboards, scarred landforms (as from strip mining), open storage of trash, municipal solid waste or space debris.

Water pollution
Water pollution entails the discharge of wastewater from commercial and industrial waste (intentionally or through spills) into surface waters; discharges of untreated domestic sewage, and chemical contaminants, such as chlorine, from treated sewage; release of waste and contaminants into surface runoff flowing to surface waters (including urban runoff and agricultural runoff, which may contain chemical fertilizers and pesticides); waste disposal and leaching into groundwater; eutrophication and littering.

Self-Assessment Exercise 1

1. Define pollution
2. State the forms of pollution

3.2 Sources and Causes of Pollution

Air pollution comes from both natural and human-made (anthropogenic) sources. However, globally human-made pollutants from combustion, construction, mining, agriculture and warfare are increasingly significant in the air pollution equation. Motor vehicle emissions are one of the leading causes of air pollution. China, United States, Russia, India Mexico, and Japan are the world leaders in air pollution emissions.

Principal stationary pollution sources include:

- chemical plants
- coal-fired power plants
- oil refineries
- petrochemical plants
- nuclear waste disposal activity
- incinerators
- large livestock farms (dairy cows, pigs, poultry, etc.)
- PVC factories

- metals production factories
- Plastics factories, and other heavy industries.

Agricultural air pollution comes from contemporary practices which include clear felling and burning of natural vegetation as well as spraying of pesticides and herbicides. Some of the more common soil contaminants are chlorinated hydrocarbons (CFH), heavy metals (such as chromium, cadmium–found in rechargeable batteries, and lead–found in lead paint, aviation fuel and still in some countries, gasoline), zinc, arsenic and benzene. In 2001 a series of press reports culminating in a book called Fateful Harvest unveiled a widespread practice of recycling industrial byproducts into fertilizer, resulting in the contamination of the soil with various metals. Ordinary municipal landfills are the source of many chemical substances entering the soil environment (and often groundwater), emanating from the wide variety of refuse accepted, especially substances illegally discarded there.

Pollution can also be the consequence of a natural disaster. For example, hurricanes often involve water contamination from sewage, and petrochemical spills from ruptured boats or automobiles. Larger scale and environmental damage is not uncommon when coastal oil rigs or refineries are involved. Some sources of pollution, such as nuclear power plants or oil tankers, can produce widespread and potentially hazardous releases when accidents occur.

In the case of noise pollution the dominant source class is the motor vehicle, producing about ninety percent of all unwanted noise worldwide.

3.3 Sources of Pollution in the Hotel Industry

Resource depletion is the biggest flaw of the hospitality industry in regards to environmental abuse. Water and petroleum are not the only natural resources hotels use extensively, though they are the greater. Consider construction and decorating materials and furnishings too. The hospitality industry may not directly cause pollution, but it contributes to it in other areas, the areas where their goods are made, and along the way to delivery. More care needs to be taken with the purchasing of goods to minimise resource depletion.

Key environmental metrics include:

- energy: total used and renewable energy bought or used
- water: total used and water pollution
- air: greenhouse gas emissions, release of heavy metals and toxic chemicals, and emission of particulates
- waste: solid, recycled, and hazardous
- compliance: notices of violations and fines or paid penalties

Also;

- Lodging properties can produce toxic air pollutants and ozone-depleting substances.
- Cleaning supplies, synthetic materials, paints, and pesticides can release toxic air pollutants and Volatile Organic Compounds (VOC). Although emitted indoors, these air pollutants will also eventually leak into the outdoor air through doors, ventilation systems, and other openings. Once outside, the chemicals in these substances can react

in the air to form ground-level ozone (smog), which has been linked to a number of respiratory effects.

- Ozone-depleting substances such as chlorofluorocarbons may be released by improperly maintained heating, ventilation, and air conditioning (HVAC) units, refrigeration units, and fire extinguishers.

3.4 Dangers of Pollution

Air pollution

People who are exposed to toxic air pollutants at sufficient concentrations, for sufficient durations, may increase their chances of getting cancer or experiencing other serious health effects, such as reproductive problems, birth defects, and aggravated asthma. Adverse air quality can kill many organisms including humans. Ozone pollution can cause respiratory disease, cardiovascular disease, throat inflammation, chest pain, and congestion. Older people are majorly exposed to diseases induced by air pollution. Those with heart or lung disorders are under additional risk. Children and infants are also at serious risk.

Water pollution

Virtually all water pollutants are hazardous to humans as well as lesser species; sodium is implicated in cardiovascular disease, nitrates in blood disorders. Mercury and lead can cause nervous disorders. Some contaminants are carcinogens.

Dichlorodiphenyltrichloroethane (DDT) is toxic to humans and can alter chromosomes. Polychlorinated Biphenyls (PCBs) cause liver and nerve damage, skin eruptions, vomiting, fever, diarrhea, and fetal abnormalities. Along many shores, shellfish can no longer be taken because of contamination by DDT, sewage, or industrial wastes.

Dysentery, salmonellosis, cryptosporidium, and hepatitis are among the maladies transmitted by sewage in drinking and bathing water.

Water pollution is an even greater problem in the Third World, where millions of people obtain water for drinking and sanitation from unprotected streams and ponds that are contaminated with human waste. This type of contamination has been estimated to cause more than 3 million deaths annually from diarrhea in Third World countries, most of them children.

Other effects of pollution on human health

Oil spills can cause skin irritations and rashes. Noise pollution induces hearing loss, high blood pressure, stress, and sleep disturbance. Mercury has been linked to developmental deficits in children and neurologic symptoms. Lead and other heavy metals have been shown to cause neurological problems. Chemical and radioactive substances can cause cancer and as well as birth defects.

Pollution control

Pollution control is a term used in environmental management. It means the control of emissions and effluents into air, water or soil. Without pollution control, the waste products from consumption, heating, agriculture, mining, manufacturing, transportation and other human activities, whether they accumulate or disperse, will degrade the environment. In the hierarchy of controls, pollution prevention and waste minimization are more desirable than pollution control.

3.5 Prevention/Reduction of Air Pollution

Pollution prevention can reduce the impact of air pollution by using materials, processes, or practices that reduce or eliminate air pollution at the source. The best lodging properties implement pollution prevention strategies not only to comply with federal, state, and local laws but also to further minimize impacts on human health and the environment.

Pollution prevention safeguards the health of your employees, customers, and families by using materials, processes, or practices that can reduce or eliminate air pollution at the source.

Pollution prevention practices also save money on waste disposal, materials usage, and the cost of air pollution controls. You may already be regulated by federal, state, and local, agencies and may already voluntarily implement pollution prevention practices. However, increasing pollution prevention efforts can further minimize impacts on human health and the environment.

Other possible measure for pollution control may include:

Changing cleaning agents

- When possible, use non-toxic products. For example, instead of products with toxic ingredients to clean and polish furniture, use lemon oil.
- Purchase cleaning agents with low toxic air pollutant and (volatile organic compounds) VOC content.
- Choose pump-style sprays, which emit fewer toxic air pollutants and VOC.

Maintaining buildings

- Use water-based or other less toxic, paints and coatings.
- Regularly inspect floors to determine where the most wear occurs. Refinish only those portions.
- If available, use indoor furniture made of wood instead of pressed wood products, which can emit toxic air pollutants.

Controlling Ozone-depleting substance emissions

- Use "good housekeeping" measures, such as checking for leaks in HVAC units and refrigeration systems, during equipment maintenance and operation.
- Recover and reuse ozone-depleting substances.
- At the end of equipment service life, replace with new and more efficient equipment that does not use ozone-depleting substances.
- Inspect halon-containing fire extinguishers frequently for leaks. Repair or replace faulty equipment.
- Get to know local lodging property managers because they know best about the materials and operations used in their businesses and the regulations with which they must comply.
- Keep local media aware of progress by sending them updates. Publicity can reward success and attract more public involvement.

Make a plan

- One idea is to form a work group that includes local lodging owners and operators to develop and implement a workable pollution reduction plan.

Locate resources

- Go for further information and find governmental and nonprofit contacts who can provide help with analysis, technical information, equipment, and funding.

Encourage other lodging properties to "Go Green"

A "green" lodging property is a property that is managed to be environmentally-friendly through a conscious effort to reduce pollution.

- Use media connections to provide coverage for successful efforts in reducing pollution. Positive publicity for successful "greening" efforts can mean increased business.
- Visibly displayed awards or certificates stating that the lodging property is a "green" property may also increase business.
- Motivate lodging property managers to become involved in "green" organisations for the hospitality industry such as Green Seal or the

Self-Assessment Exercise 2

1. Mention some sources of pollution
2. State some dangers of pollution
3. List some practices that will reduce air pollution.

4.0 Conclusion

This unit has shown discussed the forms of pollution and the sources of pollution as well as the dangers of pollution. Making changes in our habits, mode of operation can go a long way in controlling and reducing pollution. Making changes in how lodging properties maintain their facilities can stop pollutants at the source and improve indoor air quality. By evaluating and improving work practices, lodging properties, plants and other factories can decrease emissions, reduce operating costs, and protect employee and public health.

5.0 Summary

Pollution is the introduction of contaminants into a natural environment that causes instability, disorder, harm or discomfort to the ecosystem. The forms of pollution are air, soil, water, light, noise, littering, thermal, visual, and radioactive pollutions. Pollution prevention can reduce the impact of air pollution by using materials, processes, or practices that reduce or eliminate air pollution at the source. Sources of pollution include chemical plants, coal-fired power plants, oil refineries, petrochemical plants, nuclear waste disposal activity, incinerators, large livestock farms, factories, waste and air. Maintenance and activities within the lodging sector and factories may release pollutants into the air and may contribute to health concerns at lodging properties and in the community. Pollution can result in such health hazards as cancer, reproductive problems, chest pain, liver damage, nervous disorder, aggravated asthma, hepatitis, salmonellosis, cardiovascular diseases and death.

6.0 Self-Assessment Exercise

1. Evaluate the menace of hotel industry pollution to the society.
2. Examine the causes of pollution from a given hotel industry in your state.
3. Discuss the forms of pollution and identify the ones that occur in your area.

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Unit 4 Common Building Defects

1.0 Introduction

In unit three, we looked at pollution; its forms, causes and dangers, as well as its control and reduction. In this unit, we shall be discussing common building defects.

The practice of securing information on heritage buildings has been considered fundamental towards understanding the existing building conditions and defects. Such detailed and systematic collection and documentation of vital building information is commonly known as the dilapidation survey.

Dilapidation surveys are usually prepared in anticipation of the work required to rectify any identified building defect; hence, they are best conducted as part and parcel of the documentation for these works. A poor understanding regarding the extent and nature of the building defects would render an inappropriate approach and scope of repair work being carried out during the conservation project - leading to disagreements and substantial costs implications amongst building owners, clients and contractors.

A dilapidation survey is the practice of identifying and recording building defects through the means of photographic and digital documentation prior to any conservation work. The survey - usually carried out by building conservators - requires in-depth analyses of the building defects, probable causes and the proposed methods and techniques of building conservation. Normally, data and information obtained from the dilapidation survey are analyzed, documented and presented in a technical report: which is used for preparing project briefs, building specifications and the Bill of Quantity (BQ).

2.0 Objectives

At the end of this unit, you should be able to:

- state the meaning of dilapidation survey
- enumerate commonly found building defects and their causes.

3.0 Main Content

3.1 Dilapidation Surveys

Dilapidation Survey is also known as a pre-construction condition survey. A dilapidation survey is the practice of inspecting, identifying and recording building defects through the means of photographic and digital documentation prior to the commencement of a demolition, construction or development. All prominent defects in the form of cracks, settlement, movement, water seepage, spalling concrete, distortion, subsidence and other building defects will be recorded in photographs together with notes.

As building conservation often involves various remedial works and building repairs, a thorough identification and recording of building defects are integral in determining the appropriate conservation methods and techniques to be employed. Occasionally, the expertise of microbiologists, chemists, archaeologists, historians, architects, conservators, structural engineers, mechanical and electrical, and quantity surveyors geologists are also

sought. In the practice of building conservation, dilapidation surveys are generally instrumental in regard to the following aspects:

- Understanding the state of the building defects
- Determining the causes of the building defects
- Identifying appropriate methods and techniques of building conservation
- Providing reference materials to clients, consultants and project contractors
- Providing a vital resource for conducting the Historical Architectural Building Survey (HABS).

As recording and documenting are the basic components of the dilapidation surveys, a thorough investigation of the building conditions, defects and their causes are necessary. The conditions and nature of the existing building materials should be well captured in both photographic and digital forms for purposes of documentation. Existing building materials - whether timber, brick, stone, plaster or concrete - should be fully examined and documented. The same goes for the condition of roof structures, floors, doors, windows, staircases and foundation. Balustrades, pinnacles, cornices or festoons that have been broken or missing in the past should also be noted. The exact locations of all building defects should be marked clearly and plotted onto floor plans, sections and elevations. For cross-referencing purposes, windows, doors, staircases and rooms should be coded.

After diagnosing all building conditions, defects and causes, they should be presented with relevant graphics in the dilapidation survey report. The use of information technology may well assist in the preparation of a good-quality report. As a rule of thumb, a dilapidation survey report should contain the following information:

- Cultural attributes and historical background of heritage buildings
- Architectural details and significance of heritage buildings
- Detailed explanation of building conditions, defects and their causes
- Proposed methods and techniques of building conservation
- Proposed scientific studies and tests to be carried out in the project
- Pictorial documentation on building conditions and defects
- Floor plans, sections and elevations indicating the locations of building defects

An experienced building consultant, building surveyor or building expert will need to inspect and report on the causes of the building problem or defect. Every defect must be assessed on an individual basis so that the correct building remedial works are carried out.

Self-Assessment Exercise 1

What is a dilapidation survey?

3.2 Types and Causes of Building Defects

Fungal stain and harmful growth

Fungal stains or mould occur when there is moisture content in the walls. It flourishes in an environment of high humidity with lack of ventilation. Harmful growth includes creeping and ivy plants that can grow either on walls, roofs or gutters. This usually happens when dirt

penetrate small openings in the walls and mortar joints, creating suitable grounds for seeds to grow. Roots can go deep into the existing holes causing further cracks and water penetration.

Erosion of mortar joints

The main function of a mortar joint is to even out the irregularities of individual blocks either stones or bricks. Causes of mortar joint erosion include salt crystallization, scouring action of winds, the disintegrating effects of wall-growing plant, and water penetration resulting in dampness. Decayed mortar can be forcibly removed with a mechanical disc or manually raked out using a knife or spike.

Peeling paint

Peeling paint usually occurs on building facades, mainly on plastered walls, columns and other areas that are exposed to excessive rain and dampness. Some buildings located near the sea may face a greater risk. The amount of constant wind, rain and sun received can easily turn the surfaces of the paint to become chalky and wrinkled or blistered. As is the case in many heritage buildings, several layers of paints have been applied onto the plastered walls over the decades. Apart from lime wash, other types of paints used include emulsion, oil-based, tar, bituminous and oil-bound water paint. Different types of paints require different methods of removal depending on their nature.

Defective plastered renderings

Defective plastered rendering occurs mostly on the external walls, columns and ceiling. In a humid tropical climate like Malaysia, defective renderings are normally caused by biological attacks arising from penetrating rain, evaporation, condensation, air pollution, dehydration and thermal stress. Other causes may be the mould or harmful growth, insects, animals and traffic vibration. Prior to being decomposed and broken apart, renderings may crack due to either shrinkage or movement in the substrate.

Cracking of walls and leaning walls

External walls may be harmful to a building if they are structurally unsound. Vertical or diagonal cracks in the wall are common symptoms of structural instability. Such defects should be investigated promptly and the causes diagnosed: be it the foundations, weak materials and joints; or any shrinkage or thermal movements such as those of timber window frames. Diagonal cracks, usually widest at the foundations and may terminate at the corner of a building, often occur when shallow foundations are laid on shrinkable sub-soil which is drier than normal or when there is a physical uplifting action of a large tree's main roots close to the walls. Common causes of leaning walls include a spreading roof which forces the weight of a roof down towards the walls, sagging due to soil movement, weak foundations due to the presence of dampness, shrinkable clay soil or decayed building materials; and disturbance of nearby mature trees with roots expanding to the local settlement.

Defective rainwater goods

Problems associated with the defective rainwater goods include sagging or missing eaves, gutters, corroded or broken downpipes, and leaking rainwater heads. Other problems include undersized gutters or downpipes which cause an overflow of water during heavy rain, and improper disposal of water at ground level. Due to inadequate painting, iron rainwater goods can rust and fracture. Lack of proper wall fixings, particularly by projecting lead ears or lugs can cause instability to the downpipes. If routine building inspections and maintenance have been neglected, rainwater goods can be easily exposed to all sorts of defects.

Decayed floorboards
Widely used in many heritage buildings including churches, schools, residences and railway stations, some timber floorboards have been subjected to surface abuses and subsequently deteriorated: leading to structural and public safety problems. The main causes are pest attacks, careless lifting of weakened boards by occupants, electricians or plumbers; lack of natural preservatives; and corroded nails.

Insect or Termite attacks
Timber can deteriorate easily if left exposed to water penetration, high moisture content and loading beyond its capacity. Insect or termite attacks pose a threat to damp and digestible timber found in wall plates, the feet of rafters, bearing ends of beams and trusses, as well as in timbers which are placed against or built into damp walling. It is unwise to ignore timber that is lined with insect or termite holes because they may in time soften the timber and form further cracks. Affected timber can be treated by pressure-spraying with insecticide or fumigant insecticidal processes.

Roof defects
As roof often acts as a weather shield, it is important to treat aging roof tiles. In Malaysia, clay roof tiles have been widely used in the heritage buildings. Common defects of roof tiles include corrosion of nails that fix the tiles to battens and rafters, the decay of battens, and the cracking of tiles caused by harmful growth. Harmful growth poses a danger to the tiles because it may lift tiles and create leaks. Another aspect to be considered is the mortar applied for ridge tiles which tends to decay or flake off over the years.

Dampness penetration through walls
Dampness penetration through walls can be a serious matter, particularly to buildings located near water sources. Not only does it deteriorate building structures but also damages to furnishings. The main cause of dampness is water entering a building through different routes. Water penetration occurs commonly through walls exposed to prevailing wet wind or rain. With the existence of gravity, water may penetrate through capillaries or cracks between mortar joints, and bricks or blocks before building up trap moisture behind hard renders. Water may also drive further up the wall to emerge at a higher level. Dampness also occurs in walls due to other factors such as leaking gutters or downpipes, defective drains, burst plumbing and condensation due to inadequate ventilation. Dampness may also enter a building from the ground through cracks or mortar joints in the foundation walls.

Unstable foundations
Foundations are a critical in distributing loads from roofs, walls and floors onto the earth below. They are structurally important to the permanence of a building and should this be lacking, it is pointless investing on superficial restoration work. Most of the common problems associated with the foundations depend on the geology of the ground upon which a building stands, structural failures as well as presence of height of a water table. Additionally, inherent failures may also happen in a building in which has to cope and carry any unsettled problem of the foundations. Problems of the foundations may lead to an unstable building structure, which is unsafe to users and occupants. Unstable foundations may occur because of several reasons including shrinking clay soil, penetration of dampness and water that may decay walls and foundations; presence of large trees near the building; and the undertaking of excavations nearby. They may also occur due to traffic vibrations, deteriorating of building materials and the increased loads, particularly with a change in building function.

Poor installation of air-conditioning units
Most heritage buildings were built without air-conditioning systems. Where people have to contend with warm temperatures, the need to install air-conditioning systems to meet modern building requirements seems necessary. Subject to the building function, structures and the effects on building fabric, one should consider several factors before installing air-conditioning units in heritage buildings. The cooler and drier air produced by the air-conditioning systems may cause shrinkage of building materials. There may also be a possibility of condensation either on the surfaces or within the structure of the fabric, eventually allowing the build-up of mould. Moreover, it may be difficult installing the air conditioners as evidenced by how units were haphazardly placed on windows or the front façade of some heritage buildings. Such poor practices have gravely affected the appearance of these heritage buildings.

Self-Assessment Exercise 2
Mention some of the common building defects.

4.0 Conclusion

It is essential to recommend in the dilapidation survey report the proposed scientific studies and tests to be carried out during any conservation work. Such scientific studies and laboratory tests are important as they provide additional information that can lead to solving related building problems or defects. Common scientific studies required during the conservation works include microbiological studies to identify plant species, dispersion agents, control ranking and chemical fungicides; archaeological studies to trace hidden remnants; and the study of relative humidity to gauge the local temperatures and air moisture levels.

5.0 Summary

A dilapidation survey is the practice of inspecting, identifying and recording building defects through the means of photographic and digital documentation prior to the commencement of a demolition, construction or development. It is usually prepared in anticipation of the work required to rectify any identified building defect.

Types of building defects are fungal stain and harmful growth, erosion of mortar joints, peeling paint, defective plastered renderings, cracking of walls and leaning walls, decayed floorboards, insect/termite attack, roof defects, dampness penetration through walls, unstable foundation and poor installation of air-conditioning units.

6.0 Self-Assessment Exercise

Identify common defects found in buildings and evaluate their causes

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Unit 5 Safety and Security

1.0 Introduction

In unit four, we discussed building defects. In this unit, we shall be looking at safety and security. The safety of customers and employees is critically important, as is protecting a restaurant's assets. You will learn the basics important in the design of safety programmes to help protect people and security programmes to help protect property. Procedures to protect a restaurant from consumer theft, fraudulent payments, and internal theft are presented. Finally, managers will learn how to devise, implement, and assess emergency plans to safeguard individuals and assets and to respond to crises threatening people, property, or the business itself. Managers have no task more important than taking reasonable care to protect the safety of employees and customers. They must also protect business assets. These responsibilities require an examination of routine safety and security processes and emergency procedures.

2.0 Objectives

At the end of this unit, you should be able to:

- explain crisis management
- state the types of crises
- enumerate essential features of crisis management
- identify safety and security management process
- Discuss the role of security guards.

3.0 Main Content

3.1 Creating a Protected Environment

Managers have no task more important than taking reasonable care to protect the safety of employees and customers. They must also protect business assets.

These responsibilities require an examination of routine safety and security processes and emergency procedures.

3.2 Crisis Management

3.2.1 What is Crisis?

Crisis is a sudden and unexpected event leading to major unrest amongst the individuals at the workplace. This is organisation crisis. In other words, crisis is defined as any emergency situation which disturbs the employees as well as leads to instability in the organisation. Crisis affects an individual, group, organisation or society on the whole.

Characteristics of crisis

- Crisis is a sequence of sudden disturbing events harming the organisation
- Crisis generally arises on a short notice
- Crisis triggers a feeling of fear and threat amongst the individuals.

Examples of crisis situations having potential for devastating damage to restaurants include:

- Power outages
- Vandalism
- Arson/ fire
- Bomb threats
- Robbery
- Looting
- Severe storms, including Hurricanes Tornadoes Earthquakes
- Floods
- Snow and ice
- Civil disturbances
- Accidents/injuries
- Drug overdoses
- Medical emergencies, including cardiopulmonary resuscitation (CPR)
- Death/suicide of customer or employee
- Intense media scrutiny
- Adversarial governmental agency investigation

Why crisis?
Crisis can arise in an organisation due to any of the following reasons:

- Technological failure and breakdown of machines lead to crisis. Problems in internet, corruption in the software, errors in passwords all result in crisis.
- Crises arise when employees do not agree with each other and fight amongst themselves.
- Crises arise as a result of boycott, strikes for indefinite periods, disputes and so on.
- Violence, thefts and terrorism at the workplace result in organisation crisis.
- Neglecting minor issues in the beginning can lead to major crisis and a situation of uncertainty at the work place. The management must have complete control on its employees and should not adopt a casual attitude at work.
- Illegal behaviors such as accepting bribes, frauds, data or information tampering; all lead to organisation crisis.
- Crises arise when the organisation fails to pay its creditors and declares itself a bankrupt organisation.

3.2.2 Types of Crisis

During the crisis management process, it is important to identify types of crises in that different crises necessitate the use of different crisis management strategies.

Crises are categorised into:

1. Natural disaster
2. Technological crises
3. Confrontation
4. Malevolence
5. Organisational misdeeds
6. Workplace violence
7. Rumours
8. Terrorist attacks/man-made disasters

Natural crises
Natural crises, typically natural disasters considered as 'acts of God,' are such environmental phenomena as earthquakes, volcanic eruptions, tornadoes and hurricanes, floods, landslides, tsunamis, storms, and droughts that threaten life, property, and the environment itself.

Example: 2004 Indian Ocean earthquake (Tsunami).

Technological crises
Technological crises are caused by human application of science and technology. Technological accidents inevitably occur when technology becomes complex and coupled and something goes wrong in the system as a whole (Technological breakdowns). Some technological crises occur when human error causes disruptions (Human breakdowns). People tend to assign blame for a technological disaster because technology is subject to human manipulation whereas they do not hold anyone responsible for natural disaster. When an accident creates significant environmental damage, the crisis is categorized as mega damage. Samples include software failures, industrial accidents, and oil spills.

Examples: Chernobyl disaster, Exxon Valdez oil spill.

Confrontation crisis
Confrontation crisis occur when discontented individuals and/or groups fight businesses, government, and various interest groups to win acceptance of their demands and expectations. The common type of confrontation crisis is boycotts, and other types are picketing, sit-ins, ultimatums to those in authority, blockade or occupation of buildings, and resisting or disobeying police.

Example: Rainbow/PUSH's (People United to Serve Humanity) boycott of Nike

Crisis of malevolence
An organisation faces a crisis of malevolence when opponents or miscreant individuals use criminal means or other extreme tactics for the purpose of expressing hostility or anger toward, or seeking gain from, a company, country, or economic system, perhaps with the

aim of destabilising or destroying it. Sample crisis include product tampering, kidnapping, malicious rumors, terrorism, and espionage.

Example: 1982 Chicago Tylenol murders

Crises of organisational misdeeds
Crises occur when management takes actions it knows will harm or place stakeholders at risk for harm without adequate precautions. Three different types of crises of organisational misdeeds have been specified as:

- crises of skewed management values
- crises of deception, and
- crises of management misconduct.

Crises of skewed management values are caused when managers favor short-term economic gain and neglect broader social values and stakeholders other than investors. This state of lopsided values is rooted in the classical business creed that focuses on the interests of stockholders and tends to disregard the interests of its other stakeholders such as customers, employees, and the community.

Crisis of deception occur when management conceals or misrepresents information about itself and its products in its dealing with consumers and others.

Example: Dow Corning's silicone-gel breast implant.

Crises of management misconduct caused by deliberate amorality and illegality.

Workplace violence
Crises occur when an employee or former employee commits violence against other employees on organisational grounds.

Rumours
False information about an organisation or its products creates crises hurting the organisation's reputation. Sample is linking the organisation to radical groups or stories that their products are contaminated. Example: Procter & Gamble's Logo controversy

3.2.3 Crisis Management

Crisis management can be defined as a, "Holistic management process that identifies potential impacts that threaten an organisation and provides a framework for building resilience, with the capability for an effective response that safeguards the interests of its key stakeholders, reputation, brand, and value-creating activities, as well as effectively restoring operational capabilities. Crisis management deals with sudden and unexpected events which disturbs the employees, organisation as well as external clients.

Consider Samir, who manages a restaurant near a community that has been destroyed by a tornado. He knows that storms often occur with little warning and wonders what he and his staff would do if a storm threatened his restaurant. He also wonders what he can do now to prepare in case a tornado strikes his property.

Although managers do not have control over some crises, such as storms, it is reasonable to assume that a manager could pre-plan for them. Crisis management involves pre-planning,

responding properly during a crisis, and assessing performance afterwards to determine whether improvement is possible. The legal implications of safety, security, and crisis management are important, as are the financial, marketing, public relations, and morale issues associated with creating a protected environment. Managers must keep current on changing trends and products related to customer, employee, and asset safety to ensure the physical safety of those entering their property and to reduce legal liability.

Need for crisis management

- Crisis Management prepares the individuals to face unexpected developments and adverse conditions in the organisation with courage and determination.
- Employees adjust well to the sudden changes in the organisation.
- Employees can understand and analyse the causes of crisis and cope with it in the best possible way.
- Crisis Management helps the managers to devise strategies to come out of uncertain conditions and also decide on the future course of action.
- Crisis Management helps the managers to feel the early signs of crisis, warn the employees against the aftermaths and take necessary precautions for the same.

Essential features of crisis management

- Crisis Management includes activities and processes which help the managers as well as employees to analyse and understand events which might lead to crisis and uncertainty in the organisation.
- Crisis Management enables the managers and employees to respond effectively to changes in the organisation culture.
- It consists of effective coordination amongst the departments to overcome emergency situations.
- Employees at the time of crisis must communicate effectively with each other and try their level best to overcome tough times. Points to keep in mind during crisis
- Do not panic or spread rumours around. Be patient.
- At the time of crisis the management should be in regular touch with the employees, external clients, stake holders as well as media.
- Avoid being too rigid. One should adapt well to changes and new situations.

Self-Assessment Exercise 1

1. What is crisis management?
2. What are the characteristics of crisis?

3.3 Safety and Security Management

Safety and Security Management are procedures and activities designed to protect the property and assets of customers, employees, and the business. Managers are responsible for numerous activities designed to protect people and property, which are part of a safety programme and a security programme.

Policies, procedures, and training programmes constituting safety and security programmes must be planned, implemented, and continually assessed. Large restaurants, hotels and

companies employ Directors of Safety and Security, who design and encourage on-site safety and security efforts. In smaller restaurants, the manager is responsible for meeting the expectations of the general public, customers, employees, and others who will be protected from harm. Failure to do so can result in tremendous liability if lawsuits occur.

Courts will not expect managers to guarantee, against all possible calamities, the safety of everyone coming in contact with an establishment. They will expect managers to use good judgment when managing procedures that show concern for the well-being of people and the security of their property.

3.4 Safety and Security Programmes

It is difficult to provide a step-by-step list of activities which, if implemented, will minimise the chances of accident, injury, or loss. Managers must assess their safety and security programme needs, develop and implement programmes to address them, and effectively monitor results with the goal of constant improvement.

Advantages of Pre-planning
The advantages of a safe and secure environment go beyond protecting customers, employees, and business assets. Such advantages include:

- Increased employee morale. When employees see safety and security programmes being implemented, they know this benefits them.
- Improved management image. Often, managers are accused of placing the needs of the business ahead of the needs of people. Implementation of safety and security programmes demonstrates management's concern for staff and customers and confirms that management cares for people as well as profits.
- Improved effectiveness in recruiting employees. Effective safety and security programmes can affect recruiting. Consider the parents of a teenage worker counseling their child about a job offer. Uniformed security guards, closed-circuit cameras, and a management dedicated to safety will be important in the decision-making process.
- Reduced insurance rates. Insurance companies often reward businesses for safety and security efforts by reducing insurance premiums.
- Reduced employee costs. Employees who avoid injury are more productive and reliable than those who do not. Worker's compensation claims are lower in a safe work environment, and lost productivity from injury-related absence is reduced.
- Improved operating ratios. A safe and secure facility has lower costs. When theft by customers and employees is reduced, profitability increases. Well-conceived programmes to reduce theft and raise awareness about security measures yield lower operating costs and higher gross operating profits.
- Support if accidents occur. When accidents do happen, attorneys and managers will want documented evidence that programmes were in place to reduce the chance of a mishap. Juries will be interested in whether managers exercised reasonable care in the operation of their property. Attorneys can best do their job when managers have done their job professionally.
- Increased customer satisfaction. The restaurant that does not protect its inventory affects the customer. Inventory stock outs and/or the need to increase prices to cover higher costs promote customer dissatisfaction.

- Marketing advantages. When a restaurant takes a genuine and documentable proactive stance in safety and security, it becomes easier to market the property to the general public.
- Reduced likelihood of negative press. Today's media typically sensationalize misfortunes. Managers can often avoid accidents and thereby escape the negative press that would otherwise result. It is always easier to avoid accidents than to defend oneself in the press.

3.5 Safety and Security Management Process

Legally, a manager's basic obligation is to act responsibly in the face of threats to people and property. One way to manage those responsibilities is to use a four-step safety and security management process, as described below.

Recognise the threat
Safety and security programmes start by recognizing that a threat to people or property exists. Consider Tunc, who manages a pizza parlor. Over the past six months, four customers and two employees have complained about vandalism to their cars. Prior to these incidents, he never had a problem, after this, he now realises the need to act responsibly to serve the interests of his customers, employees, and their property.

It is common to assess the need for safety and security programmes as they relate to:

- Customers and employees and their property
- Other affected persons and their property
- Business assets

A number of safety and security concerns follow. The list is not exhaustive but does indicate areas within a restaurant to be considered in developing a safety and security programme.

Identify areas of safety and security concern Customers:
- Parking lots
- Public areas
- Dining rooms
- Bars and lounges
- Rest rooms
- Meeting (function)
- Rooms

Employees:
- Work site safety
- Workplace violence
- Worker accidents
- Employee locker rooms

Customers' property In:

- Coatrooms
- Parking lots

Business assets:

- Cash
- Operating supplies
- Food and beverage inventories
- Equipment and service ware
- Telephone access

All People and property:

- Medical emergency
- Criminal activity
- Natural disaster
- Utility outages

Respond to threat

After a threat to safety or security is identified, a response can be developed. Responses can include:

Training for threat prevention.

If, for example, employee safety is threatened by back injuries caused by improper lifting, training employees in proper lifting techniques may reduce or eliminate that threat.

Increased surveillance or patrol.

Sometimes the best response to a threat is to increase necessary scrutiny. In the parking lot problem described earlier, Tunc could increase parking lot monitoring. Routine patrols by management, employees, and an outside security firm or the police may help to deter vandals.

Some safety and security threats can be addressed by using video cameras in stairwells, halls, and storerooms. Often the presence of the camera itself deters crime. (Camera systems can either record activity in an area or show such activity without recording it).

An owner's right to unlimited monitoring and surveillance, even in that owner's property is not absolute. Illegally monitoring the behavior of customers and employees can dramatically increase an owner's own legal liability.

Systematic inspections.

Systematic inspections of facilities can often identify possible safety and security threats. Managers should carefully monitor their property's compliance against accepted standards of a safe and secure operation, and such efforts should be documented.

Modification of facilities

When the facility itself contributes to a problem, it will require modification. Examples include replacing worn carpets that may cause falls, painting curbs to make them more visible, and adding security lighting. Kitchen equipment must be properly maintained, with

repairs made as soon as reasonably possible. Facility defects that are recognised but not acted upon can be damaging in the event of a lawsuit.

Establishment of standard procedures.
Routine policies and procedures can be an effective response to safety and security threats. For example, when a restaurant collects cash, the money must be counted and deposited according to specific procedures. Periodic product inventories, plate counts for buffet meals, and signing in and out for management keys are examples of standard operating procedures that affect safety and security.

Implement programme(s)
After a safety or security threat is identified and a response is developed, proper implementation becomes important. Large restaurants may have individuals specifically designated for these tasks; in smaller properties every employee may have responsibility for implementation. Large and small properties may be helped with temporary or longer-term assistance by a security guard company. Local law enforcement officials should always be a component of any safety and security efforts.

3.6 Safety and Security Departments

Large properties may have a Safety and Security Department, whose manager reports to the General Manager. Staff would be responsible for routine duties such as patrolling the facility, performing inspections, assisting with crime reports, and serving as liaison with insurance carriers. The department would also advise the General Manager on safety and security topics.

Security guards
Managers of smaller properties may contract with a security guard company to help with programme implementation. Generally, a guard's role is to observe the property and:

- Report observations to management (or police, if needed)
- Intervene only if it can be done safely or to protect the life of a customer or employee.
- Record activities and findings

Engaging security guards is an excellent option when additional help is needed (for example, in the event of large parties or when managers believe additional safety or security protection is warranted). They are not a substitute for a complete and ongoing safety and security programme. If guards are to be used, insist that the security guard company do the following:

- Provide an acceptable indemnification/hold harmless agreement.
- Supply proof of liability insurance that names the restaurant as an additional insured.
- Demonstrate proof that it carries worker's compensation insurance.
- Supply a copy of its hiring standards and procedures.
- Provide a written agreement as to the specific services it will provide.

Self-Assessment Exercise 2

1. What is the Safety and Security Management Process?
2. What is the role of a security guard?

4.0 Conclusion

This unit has shown the need and importance of safety and security in hotel operations. It has discussed the process of achieving and maintaining the security of the premise as well as the importance of crisis management.

5.0 Summary

- Crisis is any emergency situation which disturbs the employees as well as leads to instability in the organisation.
- Crisis management is a holistic management process that identifies potential impacts that threaten an organisation and provides a framework for building resilience, with the capability for an effective response that safeguards the interests of its key stakeholders, reputation, brand, and value-creating activities, as well as effectively restoring operational capabilities.
- Managers are responsible for numerous activities designed to protect people and property, which are part of a safety and security programme.
- Areas of safety and security concern are customers, employees, business asset, all people and property.
- Safety and security programmes start by recognising that a threat to people or property exists.
- Security Guards observe the property and report observations to management, intervene only if it can be done safely or to protect the life of a customer or employee and record activities and findings.

6.0 Self-Assessment Exercise

1. Enumerate the essential features of crisis management.
2. Discuss Safety and Security Management Process.
3. Itemise the advantages of pre-planning.

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