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Question#01: What is the difference between Hazards and threats? Provide Examples.

Answer:

<u>Hazard</u> is a source of potential harm or a condition, which may result from an external cause (e.g., earthquake, flood, or human agency) or an internal vulnerability, with the potential to initiate a failure mode. It is a situation with a potential to cause loss, that is, a risk source. Depending on the nature of a project and its geographical location, some of the following natural hazards should be included within the scope of risk studies: flooding due to rivers, extreme rainfall and monsoons, coastal waves, dam/embankment failure, sea-level rise, tidal, cyclones, drought including bushfires or forest fires, extreme wind, tornado, landslide, mudslide, subsidence and sinkholes, volcano, earthquakes and potential tsunamis, and coastal/shoreline erosion. Potential hazards must be identified and considered perhaps using life cycle analyses or some other approach necessary for an orderly and structured inventory.

The interaction between a person (or a system) and a hazard can be voluntary or involuntary. For example, exposing a marine vessel to a sea environment might lead to its interaction with extreme waves in an uncontrollable manner (i.e., an involuntary manner). The decision of a navigator of the vessel to go through a developing storm system can be viewed as a voluntary act and might be necessary to meet schedule constraints or other constraints, and the potential rewards of delivery of ship mentor avoidance of delay charges offer an incentive that warrants such an interaction. Other examples would include individuals who interact with hazards for potential financial rewards, fame, self-fulfillment, and satisfaction, ranging from investments to climbing cliffs.

<u>Threat</u> is the potential intent to cause harm or damage on, with, or through a system by exploiting its vulnerabilities. Threats can be associated with intentional human actions examples under several threat types including chemical, biological, radiological, nuclear, explosive, sabotage, and cyber. (1) General threats (2) Specific threats

<u>Threat Types and Examples</u>

Selected Threat Type	Example Delivery Mode	Example Weapon/Agent	Quantity/Quality
Chemical	Outdoor dispersal	Ricin Mustard gas	Potent
	Crop duster	VX nerve agent	Potent
		Chlorine gas	Potent
	Missile	Any of the above	Potent
	Postal mail	Ricin	Potent
Biological	Outdoor dispersal	Anthrax	Potent
		Severe acute respiratory Syndrome (SARS)	Potent
	Postal mail	Anthrax	Potent
	Food buffets	Hepatitis	Potent
		Salmonella	Potent
	Missile	Any of the above	Potent

Radiological	Standard deployment	Dirty bomb	Strong
		Radiological release	Strong
Nuclear	Standard deployment	Improvised nuclear device	in kilotons
		Strategic nuclear weapon	in kilotons
Cyber	Physical	Cut control cable	not applicable
		Magnetic weapons	Power units
	Cyber	Worm virus	Disruption of services

Question# 02: Define risk and provide a classification of risk based on its sources. Provide an example for each risk source.

Answer:

The concept of risk can be linked to uncertainties associated with events. Within the context of projects, 'risk is commonly associated with an uncertain event or condition that, if it occurs, has a positive or a negative effect on the objectives of a project'.

Risk originates from the Latin term "risicum", which means the challenge presented by a barrier reef to a sailor.

Oxford Dictionary defines risk as the chance of hazard, bad consequence, loss, and so on, or risk can be defined as the chance of a negative outcome.

Classification of risk management: These can be financial, contractual, operational and environmental and can be caused by both internal and external sources.

Common risks include;

- Safety hazards that lead to workers accidents and injuries.
- Managing change orders
- Incomplete drawings
- Poorly defined scope
- Unexpected increase in material costs
- Labor shortage
- Damage or theft to equipment and tools
- Natural disasters
- Issues with subcontractors and suppliers
- Availability of building materials
- Poor project management

When risk come to fruition, they can have a serious impact on cost, schedule, and performance of your project which will lead to delays and disputes down the road. The good news is most of these risks can be managed and mitigated with proper planning and good project management.

Construction projects typically entail risk events and factors that can be grouped as follows:

• Technical, technological, quality, or performance risks, such as unproven or complex technology, unrealistic performance goals, and changes to the technology used or the industry standards during the project

• Project-management risks, such as poor allocation of time and resources, inadequate quality of the project plan, and poor use of PM disciplines

• Organizational risks, such as cost, time, and scope objectives that are internally inconsistent; lack of prioritization of projects; inadequacy or interruption of funding; resource conflicts with other projects in the organization; errors by individuals or by an organization; and inadequate expertise and experience by project personnel

• External risks, such as shifting legal or regulatory environment, labor issues, changing owner priorities, country risk, and weather

• Natural hazards, such as earthquakes, floods, strong wind, and waves that generally require disaster recovery actions in addition to risk management.

Completion risk is the that the project may not be completed in time, due to random reasons, such as the risk of cost overruns, technical failures, force majeure etc.

Price risk is the starting price of the item may fluctuate due to supply and demand factors. If there are new features, there are likely to rise or fall, if demand for the project output, the price of risk is high.

Risk of resources, the risk of project operations, including raw materials unavailable. It also includes the risk of price of raw materials could adversely move

Technical risk is the use of technology that is not mature enough in the project's risks.

Operational risk is the risk of the operation and maintenance that may be the cost of the project will be doubled. It also includes the risk of failure of the project will take place.

Political risk, this risk is due to the problems, such as increased taxes and royalties, revocation or modification, income exchange control concessions, forcing the government to intervene in the actions and refusal to license the import of essential equipment.

Risk of Accidents is physical harm, the risk to the project team. Also included in the project site to a third party responsible for the accident.

Environmental risks related to the increase in the cost of risk projects to meet new environmental standards. There could also be environmental protest against the natives of the project.

Exchange rate risk the devaluation of the currency exchange rate risk is the risk of the project's products will be sold with reference to the project loans. Although the debt can be divided into

rupee denominated debt will reduce the presence of foreign debt service ratio of bonds in case there is an adverse exchange rate movements.

Interest rate risk is the risk of a variable rate loan programs increased by more than ready to assume the level of expected cash flows.

Risk of bankruptcy is the contractor, the risk of production project sponsors, suppliers, purchasing items, insurance or joint bank bankruptcy.

Risk of project development, the risk that the project cannot be orderly conduct.

Site risk is the risk that the project site may have legitimate claims risk. The site also includes the risk of technical problems.

Financial risk is the risk that the project failed to achieve financial closure of the project.

Question# 03: How would you assess the performance of a transportation system of a city?

Answer: Public transport is supplied to provide mobility to people who do not have access to private cars, or provide an alternative options to private car mobility. Nowdays, public transport is increasingly adopted for many purposes, such as providing mass mobility, managing traffic congestion, mitigating air pollution, reducing energy consumption and creating development opportunities. Notwithstanding all the stead incentives to promote the use of public transport, a critical issue remains whether public transport services are able to cope adequately with the demand for it.

Now to assess the performance of a transportation system of a Peshawar city, as day by day the transport system of Peshawar city is getting worst due to heavy buses the increasing numbers of rikshaws and unregistered taxis. As recently the government has to take different measures to solve the problems related to transport, as government introduce one of the mega project in Peshawar KPK Pakistan which is named as Bus Rapid Transit (BRT) Peshawar as its rout started from Chamkani and end at Karkhano market Peshawasr. The main objective of this project is to provide cheap transport to the citizens of Peshawar at a very low cost as it's also a capital city of KPK, as this project take a very much time for completion in starting days the overall transport system of Peshawar is very bad as all the roads are destroyed/dugout for elevated areas and also for rigid pavement laying for special BRT rout and also for huge number of stations so the work is started without any approved plan so the number of problems are getting high, however, with time the structural work are completed and nowdays the finishing work is towards its completion. In future the project will have fruitful outcomes for the public as they will travel the whole city with such a low rates without wasting time in any traffic congestions. All the roads of the city are also newly carpeted for private transport as the traffic

flow can never disturbed. The drainage system is also make better than the previous ones. The aesthetics of city is also good through this project. Now by making oath with our self we have to protect this project and take care of it. Any how this type of project is one of good initiative to assess the performance of transportation of a city.

Question# 04: Define security vulnerabilities of a university campus?

Answer: Personal safety is a big issue on many university campus sites these days. Some have, unfortunately, been the sites of some very serious crime which has been committed by unauthorized people coming onto the campus in order to cause havoc. In other situations, it has been members of the student body themselves who have has been responsible for criminality. Of course, most university campus vice chancellors will want to create a campus which is a development place that is open. A seat of learning should be welcoming, after all. That said, those responsible for student and employee safety must always strike a balance between personal freedoms and the rights of individuals to remain as safe as possible when on campus. Nowadays, if you want to improve college campus safety you don't always have to trade off personal freedom against augmented security. By using some of the most modern technologies and procedures, safety and freedom don't need to compete with one another.

Following steps are taken to minimize the security vulnerabilities of a university campus;

Use electronic communications

One of the best ways to start reducing the fear of crime on a campus is to communicate more effectively with the people who go there every day. Let's say, for example, that you have a couple of reported incidents from students at a certain time of the day where they were victims of petty crime or when they simply reported that they felt uncomfortable. The best way to make sure that other students – and your teaching staff – become more vigilant as a result of such incidents is to inform them about them. Far from creating a climate of fear, most students will be pleased to know that situations are being monitored and dealt with. Indeed, many students will respond favorably and perhaps adjust their behavior to avoid certain places at certain times of the day or ensuring they do so as part of a group rather than on their own. These days, electronic communications are not just the cheapest way of relaying this sort of information to students but it is also the most effective. E-mails to the student body about what to watch out for are useful but also consider texting your students en masse, when needed, perhaps because of a major incident that is under investigation. You could even develop a campus app which gives all sorts of information about what is going on at your university on a given day including safety updates and advice on personal security.

The role of ID badges

Personal ID badges are now commonplace in industrial settings and business parks, so what about university campuses? Bear in mind that an ID badge is no longer seen by many as a restraint on personal freedoms and something that is used by authorities to monitor the movements of perfectly innocent people. With students carrying their campus ID on them, they will understandably feel safer that only authorized people are able to be on site legitimately. What's more, anyone who might target your campus for crime without the appropriate ID may well think again as soon as he or she realizes they may be challenged and need to prove that they have the right to be there.

Update lighting around the campus site

The link between good lighting and criminality has been studied for decades. According to a recent Police report, criminals don't really weigh up good lighting when they are considering committing a crime as a single factor they tend to consider it as just one of many different elements. However, good lighting is well known to reduce the fear of crime that many people feel and upgrading the lighting around your campus can be one of the most effective ways of making people feel comforted.

Many university campuses have buildings with long corridors in them as a result of their old fashioned architecture. Of course, there is little you can do about this but ensuring that they are lit well is something you can put right. This means not waiting for bulbs and strip lighting to fail but doing what most forward thinking business facilities managers would do an opting for a planned maintenance regime. What's more, you are not faced with the issue of potential dark patches where people are most fearful. When it comes to the exterior lighting you have on campus, bear in mind that it is the regularity of light which, psychologically speaking, people find most comforting. That means a pair of lights at either end of a pathway is no good unless you provide lighting provision for the rest of the route. Low-level lighting which is energy efficient is all that is needed. LED fittings mounted in the ground or within pillars do an excellent job so you don't need to think of expensive lighting columns when you are considering upgrading your lights around the campus.

Introduce an electronic visitor management system

If you are serious about ways to improve university campus safety, then the best approach to take is to introduce a proper visitor management system. With an electronic registration procedure, anyone without a permanent right of access to your campus will need to sign in. Crucially, such systems can be automated, massively reducing the amount of time reception staff have to spend dealing with administrative tasks.

Once a visitor has signed in electronically, they can then enter your buildings, perhaps to undertake some maintenance work or to operate as a guest lecturer. The big advantage here is that they will only be able to go to the places that are appropriate for their work without the ability to travel freely. Therefore, this approach augments your university campus safety standards at a stroke. Security personnel are able to monitor the movements of guests until they leave when they sign out. More significantly, perhaps, is the fact that they can do so remotely without the need to be even on the same site as the visitor or visitors in question.

Construction of proper boundary wall around the campus

One of the great step to ensure less security vulnerabilities of university campus is to construct proper boundary wall throughout the university campus so that no one is able to enter easily to the campus.

Installation of security cameras throughout the campus and a command room

Installation of security cameras throughout the university campus and construct a command room is also one of the great step to minimize the security vulnerabilities of university campus. Whenever any crime is committed in university campus if crime is missed from human eyes it will be recorded in cameras and easily traced.

Provision of proper emergency exit in campus

Whenever crime is attempt by terrorists in the university campus, so the emergency exit are very helpful. Thus the provision of proper emergency exits are one of the great step to reduce the security vulnerabilities of a university campus.