LG #13	LO #1. Gather information

Instruction sheet

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Obtaining Details of customer requirements.
- Accessing and site inspecting Plans/specifications.
- Developing Details of products and/or services.
- Determining Delivery point and methods of transportation.
- Recording Details workplace procedures.

This guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, you will be able to:

- Details of customer requirements are obtained through Discussion with customer or from information supplied
- Plans/specifications are a ccessed and site inspected
- Details of products and/or services to be provided are Developed
- Delivery point and methods of transportation are Determined where necessary
- Details are recorded in accordance with workplace Procedures

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below.
3. Read the information written in the “Information Sheets”. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them
4. Accomplish the “Self-checks” which are placed following all information sheets.
5. Ask from your trainer the key to correction (key answers) or you can request your trainer to correct your work. (You are to get the key answer only after you finished answering the Self-checks).
6. If you earned a satisfactory evaluation proceed to “Operation sheets
7. Perform “the Learning activity performance test” which is placed following “Operation sheets” ,
8. If your performance is satisfactory proceed to the next learning guide,
9. If your performance is unsatisfactory, see your trainer for further instructions or go back to “Operation sheets”.

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Information sheet-1	Obtaining Details of customer requirements

The define requirements activity can be further divided into three sub activities:

1. Identify sources and components;
2. elicit requirements (from different parts of the client organization and end users); and
3. define performance criteria

specification establishes the minimum requirements of materials, quality, batching mix proportioning, transporting, placing, protecting, curing, repairing, finishing & testing etc. of all types of cast-in-situ and precast concrete used in foundations, underground and above ground structures, floors, pavements etc. any special requirements as shown or noted on the drawings shall supersede over the provisions of this specifications.

The stage to identify customer requirements

- Identify the process, its start and end points.
- Identify the process outputs.
- Decide who the customers are for each of the outputs.
- Identify the process inputs required for the process to operate.
- Work out who the suppliers are for the process inputs.

Using the relative index ranking technique, clients' fundamental needs and responsibilities in the construction process were analyzed and ranked. Results indicate that the four most important needs are:

- ✓ functionality of the building,/project
- ✓ safety of the building, /project
- ✓ quality of the building, /project
- ✓ completion time of the building /project

we use a four step process to collect and analyze customer data. These four steps are:

- Identify
- Collect

- Analyze
- Translate

Identify is to identify who the customer are. Customer can be internal or external, and there may be one customer or several customers with different needs.

Collect is to collect customer needs. This may be as straightforward as obtaining a copy of a service level agreement, or specification, or as complex as conducting a full range of surveys of different customers and there varying requirements.

Analyse is to examine the collected requirements and start to think about how they can be made relevant to the project,

For example summarizing survey results, both qualitatively and quantitatively. At this stage we should also be confirming whether our customers and their needs should be segmented, or divided into different groups. If this is the case then of course it will impact on the subsequent phases of our project.

Translate means to take our analyzed requirements and turn them into meaningful data for our project, in the form of specifications and tolerances

Specifications and Service Level Agreements (SLA's) are very useful sources of data about customer requirements, and of course should not be overlooked.

Leading & Lagging indicators

Leading & Lagging indicators help enterprise leaders understand business conditions and trends.

Leading indicators are about trying to predict the future. They sometimes described as inputs and define what actions are necessary to achieve your goals with measurable outcomes. Its example includes the followings:

- Interviews
- Focus Groups
- Surveys
- Market Research

An interview is a formal methodology for collecting customer needs using phone or face to face methods. An interview would usually be used to learn about a particular customer segment, and is an opportunity to find out a lot of qualitative data about customer needs. It is a useful method to get in-depth information from customers where there is no real understanding

of their needs.

A focus group brings together a small group of customers to uncover general needs. It is used to capture a collective point of view from several customers at the same time, exploring the needs and concerns of specific customer segments.

Focus groups are reflection oriented, and designed to understand factors influencing needs, wants and delighters. They are often used as a follow up to interviews, or as an introductory step before a big survey effort.

Surveys are a research method to understand customer wants and perceptions using a large sample to gather valid, reliable and useful information that can help to provide quantitative data on customer wants, needs & opinions. They are most often carried out on a scale large enough to draw statistically valid information. They can also be used to benchmark a position, and the survey can be repeated at agreed intervals to track progress over time.

Market research is a general heading for any organized effort to gather information about target markets or customers. Market research provides important information to identify and analyze the market need, market size and competition.

Lagging indicators tell you about what has already happened, measures current production and performance. It is easy to measure but hard to change. Its example includes the followings.

- Existing customer surveys
- Warranty information
- Industry publications and articles
- Research reports
- Market forecasts



A SIPOC (supplies, input, process, output and customer) is constructed using the 5 steps listed below in the following order:

1. Identify the process, its start and end points.

2. Identify the process outputs
3. Decide who the customers are for each of the outputs
4. Identify the process inputs required for the process to operate
5. Work out who the suppliers are for the process

Information sheet-2	**Accessing and site inspecting Plans/specifications**

Specification is a document (the skill of recording specific requirements) about work you (or your client) want to be carried out. A construction specification is a well-structured, detailed description of the quality, standards, workmanship, materials, and completion of work to be done which evolves across a project. Specifications are often prepared by architects, engineers, and designers referred to as specifiers, and may be published as part of the contractual documentation for contractors to be read in parallel with models and drawings, and as part of the handover information.

Introduction

Plans or drawing are necessary for enabling the construction engineer to execute the project. It facilitates the preparation of detailed estimates and helps in inviting tenders. The bidders get an accurate idea of the work involved from the drawings. They prepare tenders on the basis of the drawings. While executing the project, the drawings help to line out the works in the field and to carry out the work in the manner conceived by the designer. Accurate and comprehensive drawings thus form an important part of highway project preparation.

Floor plan-The most important architectural drawing is the floor plan. It contains more information than all the other working drawings. The floor plan represents a tremendous amount of the project designers' time spent in analyzing and meeting the needs of the client.

Basically, the floor plan is a horizontal sectional view of the building taken about 150cm above the floor line. This is done of course to cut thought the majority of openings in the walls and to provide a view of the equipment installed inside.

Sections plan:- are an orthographic projection that has been cut apart to show interior features. (Vertical views slicing the building or wall)

Elevation plans-these are the different heights on the surface of the site in relation to a standard reference point known as the bench mark (BM).

Locations which have equal elevations are joined together using contour lines.

These lines help to define the topography of the land within a site.

Roof plan - The top view of a building and used to explains the overall configuration of the roof and the elements that penetrate or rest on the roofing membrane.

Details – are enlarged drawings that provide essential specific information.

- A detail is often an enlarged segment of another section.

A. Reduced the involvement of the designer in construction phases

B. Easy to supervision

C. Easy to understand assembly of parts by this whole construction clear and reduces the construction phase. Most of the time the contractors' question, the delay of construction time is because of poorly detailed drawing.

Detail Drawing- In almost every set of drawings, for a building of any size, detail drawings are necessary for a complete and finished project. Details may be presented in section plan, Floor plan, elevation plan or isometric form and usually drawn in a scale 1:1, 1:2, 1:5, 1:10 and 1:20.

- Before detailing a number of facts can be adjusted.

2.1. Site Inspection



What is the main purpose of a site inspection?

i. Construction site inspections

Construction site inspections are critical to ensuring that quality and safety procedures are followed correctly from the start. Construction projects involve co-ordinating multiple project team members, materials and equipment, which may expose contractors to many potential risks and hazards.

Inspection is carried out purely to give an independent view of the works either for the client

or a third party, the term supervision might imply taking some responsibility for the works, when in fact contractual responsibility lies with the contractor. The usual construction inspections include the following activities:

- Inspection of the construction process to make sure that all materials and procedures comply with the plan and specifications
- Inspection and documentation of all contractor activities
- Reporting of daily on-site inspections
- Detailed inspections of the quality of installations if they comply to standards and specifications
- Scrutinising drawings and specifications and discussing deviations and non-conformities
- Keeping and maintaining inspection checklists and records in a complete, accurate, and orderly manner
- Participation in project meetings
- Monitoring the contractor's schedule
- Inspections of paints and coatings
- Field testing and materials sampling of soils, concrete and asphalt, etc.
- Review and completion of change order/s
- Monitoring and documenting materials delivered and used in the construction works
- Performing semi-final and final inspections upon building completion
- Preparation of punch list/s and monitoring of completion works
- Handover inspection for smooth project close-out

Regular inspection *is a crucial part of ensuring that the works progress as intended, both in terms of quality and compliance*.

ii. Quality and progress

Quality control (QC) inspections involve those that ensure that the construction works comply with requirements. For construction quality, there are technical specifications that describe what controls must be carried out to guarantee that construction works are carried out satisfactorily.

These controls are not only for the products and materials, but also include the execution and completion of the construction works. Inspections are a way to control the quality of a finished construction work. The desired outcome is to refine the product or work before being presented to the client such that those that do not comply with requirements are fixed.

Your goal is to reduce the costs of poor quality and that the deliverable project complies with all of the client's requirements whether you're implementing internal or external controls, or even both

Construction inspections related to quality may include checks for materials, work units, processes and services designed and planned by the construction company in order to comply

with the contract's quality requirements. For preventative strategies, an inspection scheme is also aligned with the quality plan for the construction works requiring guarantee in construction quality. Inspections may also be carried out around documentation, work instructions, action plans, etc. for the execution and control of construction processes. These quality control inspections may also be replaced with certifications by third parties.

iii. Health and safety for building design and construction

Buildings can present a great number of possible risks both in construction and operation. There are many duties placed on those commissioning, designing, constructing and operating buildings to control those risks.

Construction inspections are also important to make sure that health and safety, the Construction (Design and Management) (in the UK), and the European Agency for Safety and Health at Work regulations and standards are being complied with and followed.

These inspections can be internally conducted by the contractor, or externally by the regulating body, or by third party audits. The health and safety inspections needed to be conducted in the construction site is a specific list and should be conducted exhaustively as per required:

- Prevention of falls and personal fall protection systems
- Work at height
- Work platforms such as scaffold and mobile platforms
- Ladders and stepladders
- Personal protection equipment (PPE), including head protection
- Plant, vehicles and other equipment
- Storage
- Electrical systems
- Asbestos risk
- Provision of welfare facilities such as toilets and hand washing facilities
- Site conditions and order
- Avoidance of obstructions
- Management of respiratory risks
- Structural stability
- Prevention of unauthorised access to the site

The timing of inspections should be scheduled as to frequency and accompanied with correct reports and actionable items.

The Construction Design and Management CDM regulations impose duties on:

- The client.
- Designers.
- Contractors &Workers

Many additional requirements are placed on the design of buildings by the Building Regulations (such as Part A: structural safety, Part B: fire safety, Part K: protection from falling, Part N: glazing safety, Part P: electrical safety, etc.).

Benefits of a Construction Site Inspection

A construction site inspection carries a lot of weight and responsibility, not only for the agents but also for the workers and project managers. *These inspections are crucial to ensure that the project is preceding safely and efficiently*. Residential and commercial projects alike are required to have routine inspections so that any violations or mismanagements can be corrected before the completion date. The inspector will also inspect the tools being used on the job, prides itself on being a trusted manufacturer and distributor of safe and easy-to-use commercial tools. Still, there are more benefits than drawbacks to having an inspection done throughout every stage of your project.

1. **Hazard Identification**

As a project manager, safety for your workers is your No. 1 concern. Not only do construction inspections identify the safest roads for equipment and keep your workers safe, they also help identify the potential hazards that could occur along the way. You're able to take precautions and prepare correctly so that your workers are safe, the site isn't compromised by nature or human error, and you can continue without delay. Being on alert and aware of the potential dangers will also keep your team focused while working on the job site.

2. **Improved Construction Quality**

You take pride in the quality of work that you and your team produce, but in order to maintain your high standards, you need to understand where you're lacking. Having an inspection performed throughout the construction process will guarantee that you are sticking to existing regulations and codes. If there is a change in code throughout your project, an inspector can guide you through the necessary changes,

keeping your quality of work at its highest. In the end, your client will be left with a well-built, sound structure.

3. **Encourages Environmentally Friendly Sites**

Part of an agent's role is to monitor the environmental impact that your project is having on the surrounding land, lakes, streams, and wildlife. There are detailed policies for construction sites, and an inspector can keep you on track with those regulations. They will monitor your use of fuel, how trash is discarded or recycled, and where you're dumping waste. This will ensure that your team is vigilant in their cleanup, and that the environmental impact is minimal.

Other Inspections,

There are other construction inspections not included in the categories above, which include:

- Planning inspections to substantiate compliance with planning, permissions,conditions and obligations
- Inspections for release of funding by applicable agencies
- Insurance inspections
- Routine inspections of street works by highway authorities for road and sewer construction types
- Environmental inspections related to pollution (noise, water, smoke, etc.) and installations like kitchens and drains
- Fire safety inspection for fire escapes, protection systems, hazards and storage of certain materials
- Factory inspections
- Aracheological inspection of excavations.

Information sheet-3	Developing Details of products and/or services

A product generated out of services to be provided to the users. It is a kind of consolidation and presentation process giving tangibility to information.

✓ What are Products and Services?

A product is a tangible item that is put on the market for acquisition, attention, or consumption, while a service is an intangible item, which arises from the output of one or more individuals. Although it seems like the main distinction between the two concepts is founded on their tangibility, that is not always the case. In most cases services are intangible, but products are not always tangible.

One thing to keep in mind is that products and services are closely aligned. In fact, a majority of products carry with them an element of service. For example, when a consumer buys a car, the product comes with a lot of other service responsibilities, such as tune-up and maintenance.

Tangible vs. Intangible

Assessing the quality of a tangible product is very easy. Since most products are countable, touchable, and visible, a consumer can assess its durability by examining it. A good case in point is when an individual is buying a home. The buyer will check every nook and cranny of the house, including the attic, basement, foundation, each individual room, and more.

In contrast, a service is not something that one can feel or try out before paying for it. Say an individual needs a professional inspector to identify any hidden issues before deciding to purchase a home. Just how experienced is the inspector with regard to plumbing, roofing, and other structural matters?

In a nutshell, the client lacks sufficient knowledge about the inspector's expertise until the task is already in progress. The customer can read online reviews, ask for the inspector's credentials, as well as before and after pictures of his previous

work, but there's no definite way of evaluating the quality of a service until it's rendered.

How can you develop your products or services?

Here are 8 steps to help you take your new product or service to market:

- ✓ Describe your product or service. ...
- ✓ Protect your intellectual property. ...
- ✓ Research your market...
- ✓ Assess your business potential. ...
- ✓ Identify your commercialisation pathway. ...
- ✓ Design and complete a working prototype. ...

What are the types of product?

Types of Product:-Goods, Services, Experiences, Convenience, Shopping, Specialty Goods, Industrial Goods and Consumer Goods.

Products can be classified in the following three ways:

Type # 1. Goods, Services and Experiences:

Type # 2. Convenience, Shopping, and Specialty Goods:

Type # 3. Industrial Goods and Consumer Goods:

1. Goods: These are tangible in nature and one can touch them, taste them, and they have definite form. The quality of goods can be objective in nature and to the consumer's specifications. E.g., TV, motorcar, houses, clothes, food, medicines etc.

2. Services: Are intangible in nature and can be only felt/experienced but cannot be touched. The quality is subjective in nature. E.g. Tailoring, transport, hospitality, cooking, nursing etc.

3. **Industrial Goods:** Industrial goods are the goods that are required in the manufacture of industrial products.

4. ***Consumer Goods: Consumer goods are the products used by the end consumer.***
5. **Shopping Goods:** These are the products that are purchased on impulse. Many times, these products are purchased without any particular need to buy them. E.g. Men's accessories, textiles, lady's purses/hand bags etc.

6. **Convenience Products:**The consumer products bought frequently with an aim of immediate consumption without spending too much time and effort to purchase the same are called as convenience products.

A product can be physical or virtual. Physical products include durable goods (such as cars, furniture, and computers) and nondurable goods (such as food and beverages). Virtual products are offerings of services or experiences (such as education and software).

Information sheet-4	**Determining Delivery point and methods of transportation**

Means of transport is a term used to distinguish between different ways of transportation or transporting people or goods. The different modes of transport are air, water, and land transport, which include Rails or railways, road and off-road transport.

Transport or transportation is the movement of humans, animals and goods or materials from one location to another.

Transport modes are the means of supporting the mobility of passengers and freight. They are mobile transport assets and fall into three basic types; land (road, rail, pipelines), water (shipping), and air.

Analysis of Transportation Methods in Construction.

Analytical evaluation of transportation time on a building site may be very helpful in site planning. Five Major Modes of Transportation

- Road transport.
- Railway transport.
- Pipeline transport.
- Water transport.
- Air transport.

Information sheet-5	**Recording Details workplace procedures**

Reporting and recording are legal requirements. The report tells the enforcing authorities for occupational health and safety (HSE and local authorities) about serious incidents and cases of disease. This means they can identify where and how

risks arise and whether they need to be investigated.

work area records to become familiar with the hazards of the equipment. Do not allow the inspection team to become so intent on noting the details listed.

Records also help to prevent injuries and ill health, and control costs from accidental loss.

- **Importance of daily records and construction site field reports**

Site diary helps in refreshing our memory about activities at construction site.

Record keeping in construction projects helps you get clearer insight to what happened on site

What is a construction site diary?

Site Diary in construction is a document where any site occurrences are recorded by a qualified person like site manager, supervisor, super intendant or site engineer.

What is a daily site report?

Daily report in construction is a record of daily activities for specific contractor or subcontractors. It explains reasons behind issues or delays. It can also give you information about how many workers were on site each day, which plant and equipment was in use, where they worked or if there were any material deliveries.

Why is it important to maintain daily records on construction site?

- Construction site reports may be used for your own protection in disputes with your customer or subcontractors
- Daily reports may be used as evidence of site activities in the court of law
- Site diary helps in refreshing our memory about activities at construction site
- Record keeping in construction projects helps you get clearer insight to what happened on site

Self-check -1 written test

Directions: Answer all the questions listed below.

1. What are the we use a four step process to collect and analyze customer data? (4point)
2. what are the Leading indicators customer requirements?(2point)

Self-check -2 written test

Directions: answer all the questions listed below. Use the answer sheet provided in the next page:

1. _____ are crucial to ensure that the project is preceding safely and efficiently.(2 point)
2. _____ contains more information than all the other working drawings. (2point)
3. _____The top view of a building.(2 point)

Self-check -3 written test

Directions: answer all the questions listed below. Use the answer sheet provided in the next page:

1. What are the 7 types of product?
2. What are the 8 steps to help you take your new product or service to market? (5 point)

Self-check -4 written test

Directions: answer all the questions listed below. Use the answer sheet provided in the next page:

1. write modes of transport? (6 points)
2. What is transport? (6 points)

Self-check -5 written test

Directions: answer all the questions listed below. Use the answer sheet provided in the next page:

1. Writes some of the form part of the legal safety requirements for lab work? (6point)
2. What are the types of recording details of project work? (4point)