BAR BENDING AND CONCRETING

Level-II

Learning Guide -40

Unit of Competence: - Erect Pre-cast Concrete Structural & Cladding Units

Module Title:- Erecting Pre-cast Concrete Structural & Cladding Units

LG Code: EIS BBC2 M11 LO4-LG-40

TTLM Code: EIS BBC2 TTLM 10 19v1

LO 4: Clean up

Instruction Sheet	Learning Guide #40

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

- Disposing, reusing and recycling waste materials
- Maintaining plants, tools and equipment's
- Performing good housekeeping

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, upon completion of this Learning Guide, **you will be able to –**

- Work area is cleared and materials disposed of, reused or recycled in accordance with legislation/regulations/codes of practice and job specification
- Plant, tools and equipment are cleaned, checked, maintained and stored in accordance with manufacturers' recommendations and standard work practices

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below 3 to 6.
3. Read the information written in the information "Sheet 1, Sheet 2 and Sheet 3" **in page 3, 6, and 10** respectively.
4. Accomplish the "Self-check 1, Self-check t 2 and Self-check 3" **in page 5, 9 and 11** respectively

Information Sheet-1	Disposing, reusing and recycling waste materials

1.1 Definition

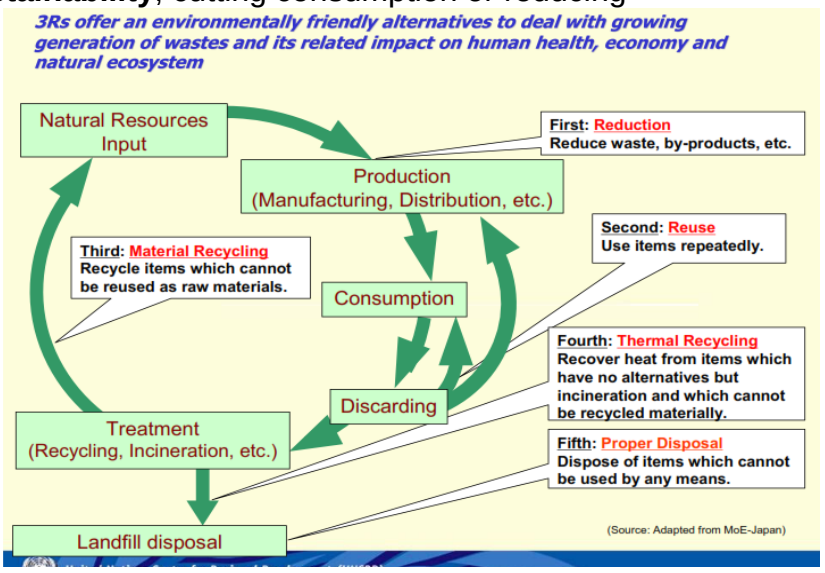
Disposing Removing and destroying or storing damaged, used or other unwanted domestic, agricultural or industrial products and substances

Recycling means turning an item into raw materials which can be used again, usually for a completely new product. This is an energy consuming procedure.

Reusing refers to using an object as it is without treatment. This reduces pollution and waste, thus making it a more sustainable process.

1.2 Purpose

When looking into **environmental sustainability**, cutting consumption or reducing rubbish during a house clearance, it's more than likely that you'll come across the following 3Rs: reduce, reuse and recycle.Learn how Disposing,



reusing(R), and recycling(R) can help you, your community, and the environment by saving money, energy, and natural resources.

Recycling is the process of collecting and processing materials that would otherwise be thrown away as trash and turning them into new products. Recycling can benefit your community and the environment.

Recycling reduces waste disposal by transforming useful materials such as plastic, glass and paper into new products

The reusing process is not just about re-purposing materials, but the object as it is. This includes buying and selling used goods and repairing items rather than discarding them. Reusing is better than recycling because it saves the energy that comes with having to dismantle and re-manufacture products. It also significantly reduces waste and pollution because it reduces the need for raw materials, saving both forests and water supplies.

Waste that cannot be reused or recycled in some form eventually finds its way to disposal. This disposal includes landfills, but an increasing number of municipalities have elected to divert waste into resource recovery. These recovery methods use the waste to generate electricity or produce raw materials for industry.

Self-Check -1	Written Test

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

1. What are advantages of applying 3R's for environmental sustainability? (5 points)

Note: **Satisfactory rating - 3 points** **Unsatisfactory - below 3 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet-2	Maintaining plants, tools and equipment's

2.1 Maintenance

Maintenance on plant and equipment is carried out to prevent problems arising, to put faults right, and to ensure equipment is working effectively.

Maintenance may be part of a planned programme or may have to be carried out at short notice after a breakdown.

2.2 Important of maintenance plant and equipment

An effective maintenance programme will make plant and equipment more reliable. Fewer breakdowns will mean less dangerous contact with machinery is required, as well as having the cost benefits of better productivity and efficiency.

Additional hazards can occur when machinery becomes unreliable and develops faults. Maintenance allows these faults to be diagnosed early to manage any risks. However, maintenance needs to be correctly planned and carried out. Unsafe maintenance has caused many fatalities and serious injuries either during the maintenance or to those using the badly maintained or wrongly maintained/repaired equipment.

2.3 Necessary consideration

If you are an employer and you provide equipment for use, from hand tools and ladders to electrical power tools and larger plant, you need to demonstrate that you have arrangements in place to make sure they are maintained in a safe condition.

Think about what hazards can occur:

- if tools break during use
- machinery starts up unexpectedly
- there is contact with materials that are normally enclosed within the machine, ie caused by leaks/breakage/ejection etc

Failing to correctly plan and communicate clear instructions and information before starting maintenance can lead to confusion and can cause accidents.

Establishing a planned maintenance programme may be a useful step towards reducing risk, as well as having a reporting procedure for workers who may notice problems while working on machinery.

Some items of plant and equipment may have safety-critical features where deterioration would cause a risk. You must have arrangements in place to make sure the necessary inspections take place.

2.4.Clean and Check

- Release any stored energy, such as compressed air or hydraulic pressure that could cause the machine to move or cycle
- Support parts of plant that could fall, eg support the blades of down-stroking bale cutters and guillotines with blocks
- Allow components that operate at high temperatures time to cool
- Place mobile plant in neutral gear, apply the brake and chock the wheels
- Safely clean out vessels containing flammable solids, liquids, gases or dusts, and check them before hot work is carried out to prevent explosions. You may need specialist help and advice to do this safely
- Avoid entering tanks and vessels where possible. This can be very high-risk work. If required, get specialist help to ensure adequate precautions are taken
- Clean and check vessels containing toxic materials before work starts

2.5 Dos and don’ts of plant and equipment maintenance

Do…

- Ensure maintenance is carried out by a competent person (someone who has the necessary skills, knowledge and experience to carry out the work safely)
- Maintain plant and equipment regularly – use the manufacturer’s maintenance instructions as a guide, particularly if there are safety-critical features
- Have a procedure that allows workers to report damaged or faulty equipment
- Provide the proper tools for the maintenance person

- Schedule maintenance to minimise the risk to other workers and the maintenance person wherever possible
- make sure maintenance is done safely, that machines and moving parts are isolated or locked and that flammable/explosive/toxic materials are dealt with properly

Don't…

- Ignore maintenance
- Ignore reports of damaged or unsafe equipment
- Use faulty or damaged equipment

2.6 Dos and don'ts of machinery safety for workers

Do…

- Check the machine is well maintained and fit to be used, ie appropriate for the job and working properly and that all the safety measures are in place – guards, isolators, locking mechanisms, emergency off switches etc
- Use the machine properly and in accordance with the manufacturer's instructions
- Make sure you are wearing the appropriate protective clothing and equipment required for that machine, such as safety glasses, hearing protection and safety shoes

Don't…

- Use a machine or appliance that has a danger sign or tag attached to it. Danger signs should only be removed by an authorised person who is satisfied that the machine or process is now safe
- Wear dangling chains, loose clothing, rings or have loose, long hair that could get caught up in moving parts
- Distract people who are using machines
- Remove any safeguards, even if their presence seems to make the job more difficult

Self-Check -2	Written Test

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

1. Discuss dos and don’ts of tools, equipment’s and machineries? (10points)

Note: **Satisfactory rating - 3 points** **Unsatisfactory - below 3 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet-3	Performing good housekeeping

3.1 Basic Guide

Effective housekeeping can eliminate some workplace hazards and help get a job done safely and properly. Poor housekeeping can frequently contribute to accidents by hiding hazards that cause injuries. If the sight of paper, debris, clutter and spills is accepted as normal, then other more serious health and safety hazards may be taken for granted.

Housekeeping is not just cleanliness. It includes keeping work areas neat and orderly; maintaining halls and floors free of slip and trip hazards; and removing of waste materials (e.g., paper, cardboard) and other fire hazards from work areas. It also requires paying attention to important details such as the layout of the whole workplace, aisle marking, the adequacy of storage facilities, and maintenance. Good housekeeping is also a basic part of accident and fire prevention.

Effective housekeeping is an ongoing operation: it is not a hit-and-miss cleanup done occasionally. Periodic "panic" cleanups are costly and ineffective in reducing accidents.

3.2 PURPOSE

Poor housekeeping can be a cause of accidents, such as:

- tripping over loose objects on floors, stairs and platforms
- being hit by falling objects
- slipping on greasy, wet or dirty surfaces
- striking against projecting, poorly stacked items or misplaced material
- cutting, puncturing, or tearing the skin of hands or other parts of the body on projecting nails, wire or steel strapping

To avoid these hazards, a workplace must "maintain" order throughout a workday. Although this effort requires a great deal of management and planning, the benefits are many.

3.3 BENEFIT

Effective housekeeping results in:

- Reduced handling to ease the flow of materials
- Fewer tripping and slipping accidents in clutter-free and spill-free work areas
- Decreased fire hazards
- Lower worker exposures to hazardous substances (e.g. Dusts, vapours)
- Better control of tools and materials, including inventory and supplies
- More efficient equipment cleanup and maintenance
- Better hygienic conditions leading to improved health
- More effective use of space
- Reduced property damage by improving preventive maintenance
- Less janitorial work
- Improved morale
- Improved productivity (tools and materials will be easy to find)

Self-Check -3	Written Test

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

1. What is good housekeeping? (5 points)

Note: **Satisfactory rating - 5 points** **Unsatisfactory - below 5 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

REFERENCE

C. R. C. Mohanty, UNCRD ;9 May 2011,
REDUCE,REUSE AND RECYCLE(3R) AND RESOURCE EFFICIENCY AS THE BASIS FOR Sustainable Waste Management. New York.

Environment Protection Guidelines for Construction and Land Development in the ACT retrieved from https://ginninderry.com/wp-content/uploads/2017/03/EPA-Guidelines-for-Construction-and-Land-Development-ACCESS.pdf. accessed on Oct 30/2017.

Workplace Housekeeping - Basic Guide; Document confirmed current on June 6, 2014.

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