

Health and safety report of laboratory



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Health is a state of complete physical and social and mental well-being which include the absence of disease or infirmity whereas safety is relates to the absence of physical or psychological injury or harm and often extends to the absence of damage to property. The difference between health and safety is that health is long-term issues and safety is relates to issues with immediate effect. For example, safety can be relates to security provided by police presence and health can be refer to social well-being.

The first positive aspect that is we found is first aid kit in Environmental Engineering Laboratory and also Engineering Workshop . A first aid kit is a collection of supplies and equipment for use in giving first aid, and can be put together for the purpose by an individual and organization. First aid is the provision of emergency care for an illness or injury until actual medical treatment can be accessed if required. The first aid in EV lab and engineering workshop can be found easily because it kept at the obvious and suitable location. The essential items for the first aid kit are completed which included the adhesive bandages, adhesive tape , antiseptic wipes, plasters, triangular bandages, gauze, burn treatment, scissors, and cold compresses. Moreover, the essential items in first aid kit is in dry, clean and properly packaged condition. Furthermore, there is no signs of tampering or vandalism of the first aid kit. The essential items in first aid kit are checked often and safe from the expired date. Any out-of-date or damaged items have been replaced with the all-new one. Besides that, a first aid manual which use to provide instruction to the user available in the first aid kit too. When unexpected accident occur in workshop or the laboratory , the first aid kit is used to prevent excessive blood loss , infection, and scarring. It also

prevent acute injury such as small cuts and scratches from becoming a chronic problem and even cause death. In addition, first aid supplies also apply to situation which if a doctor is absence. Hence, presence of first aid is one of the vital aspect in a Environmental engineering workshop and Environmental Engineering Laboratory.

Another positive aspect that I found in Engineering Workshop and Environmental Engineering Laboratory is fire extinguisher. It is an active fire protection device used to extinguish or blow out small fires in emergency situations. The fire extinguisher is not blocked by other equipment that could interfere with access when emergency occur. Furthermore, the nozzle or other parts of fire extinguisher are not blocked. It also free of rust, dents and leaks. A fire extinguisher is important for safety of students, lecturers and lab assistant in Environmental engineering workshop and Environmental engineering laboratory. It can save the apparatus, machines and materials of Engineering Workshop and Environmental Engineering Laboratory from burning as it can control of small fire from spreading and extinguish the flame. Besides that, the students, lecturer and staff will feel secure and safe when conducting experiments in the workshop and laboratory which owned a fire extinguisher because it can reduce the risk to them. Moreover, a simple tutorial of using fire extinguisher is also available with the fire extinguisher so the students, lecturers and staff will know how to use a fire extinguisher during the fire outbreak. Hence, fire extinguisher is found in Engineering Workshop and Environmental Engineering Laboratory as a prevention of fire outbreak.

In Engineering Workshop and Environmental Engineering Laboratory, I can find another positive aspect that is emergency shower and eyewash station. There are combination units available that contain both features: a shower and an eyewash. Emergency showers and eyewash stations provide on-the-spot decontamination. The location of the emergency shower and eyewash station are obvious with a highly visible sign. The sign is in the form of a clear and understandable symbol. So, people can easily reached the emergency shower and eyewash station as fast as possible when unwanted incident occurs to prevent delaying treatment because the first 10 to 15 seconds after exposure to a hazardous substances are critical and may cause serious injury or even death. They can flush away hazardous and corrosive substances which can cause injury. Emergency showers are designed to flush the user's head and body but not suitable used to flush the user's eyes due to the pressure and high rate of water flow may damage the eyes. Emergency showers can also use to extinguish fire on clothing. While Eyewash station is designed to flush the eye and face area only. When someone is on fire, position him or her under the emergency shower and pull the handle, the fire will be extinguished immediately by the great rate of water flow . In addition, students can use the emergency showers and eyewash station to flush away the dangerous and toxin chemical substances which spilled on them. The emergency shower and eyewash station are important in Engineering Workshop and Environmental Engineering Laboratory to protect the safety of the students, lecturers and staff .

Furthermore, another positive aspect that can be found in Environmental Engineering Laboratory is the presence of emergency evacuation floor plan

and flow chart of emergency response on lab incident or accident. This flow chart is important as it guide students, lecturers and staff when there is an emergency incident happens. Moreover, it can prevent them becomes more panic and then lead to a more serious situation. Next, the emergency evacuation floor plan clearly shows the direction from escaping from the laboratory which in dangerous situation to a safe area. These both stuff can increase the safety of users in the Environmental Engineering Laboratory.

Next will be the glass disposal boxes that can be found in Environmental Engineering Laboratory , Biochemical Laboratory and Engineering Workshop. Its function similar to the dustbin but only involves broken glass wares. It is important because the glass is a very dangerous material when it breaks, it can form numerous sharp broken pieces, and it might be used to store or get contaminated with chemicals before. If people happen to get in contact with it, it may cut open the rubber gloves wearing and the chemical get stained on the skin of that person directly . By providing it, the risks can be greatly reduced for things like that to happen to students, lecturer and staff after it is disposed into the box.

Furthermore, there is another positive aspect is fume chamber which I can found in the Biochemical Laboratory and Environmental Engineering Laboratory . It is a fume-collection device over an enclosed shelf, so that experiments involving poisonous or unpleasant fumes or gases may be conducted away from the experimental area. Hence, it can provide safe environment for students , lecturers and staff as it separates the chemical used by the users who conducting chemical experiment which involves very dangerous chemical like concentrated acid where it will evaporate

immediately when being exposed to environment. The fume chamber also provides special gloves which can resist corrosive chemicals, giving them the confidence to handle dangerous chemicals properly in the fume chamber for the experiment. As a result, fume chamber is one of the vital aspect in Biochemical Laboratory and Environmental Engineering Laboratory.

However, several negative aspect also found in Environmental engineering workshop. The one of them is masks and gloves not provided for students to conduct their experiments. It is crucial for users to wear those when conducting experiments as the gloves will prevents the chemical which is used during experiment to be contaminated, affecting results and also avoid chemical staining onto bare hands as it may be transmitted to food and damaging body when consumed. While the mask can prevent the absorbent of the harmful gas produced in the experiment and protect the health of students, lecturers and staff. For Biochemical laboratory and Engineering Workshop, there are gloves and masks provided but not for Environmental Laboratory. For the health and safety of the students, lecturers and staff, some improvement must be done by using engineering control that is mask and gloves must be provided by the person who in charge of the laboratory in Environmental Laboratory too.

For the following negative findings, one of them would be lab coat and covered shoes issue. Before entering the Environmental Laboratory, there is a sign stated that lab coat and covered shoes should be worn before entering the laboratory but still some of them would not care and just step into the laboratory directly. Without wearing a lab coat, this will not only bring contaminant like dust or dirt which stick on their clothes from outside

which will dirty the laboratory and might cause contamination to the chemicals too. At the same time, they will also bring the contaminant out from the lab to outside which may cause infection or any pollution.

Furthermore, the dangerous chemical substances or the materials of the experiment will straight attached on our clothing and may in contact to our skin and cause injuries if we didn't wear a lab coat. The chemical substances which are toxin will directly spilled on our naked foot if we wearing an uncovered shoes and cause us serious injuries. Therefore, wearing lab coat and covered shoes is very important to protect us in terms of health and safety by wearing one more protection layer and keep us free of contaminant when go in to the laboratory or leaving from laboratory.

However, some improvement for this problem can be done by using administrative control. The person who is in-charge of the laboratory of the day should watch out for those who didn't wear lab coats and ask them to wear one. If he or she didn't bring one, offer them to rent lab coat or leave the laboratory. For the students who wear uncovered shoes such as slippers will asked to go home and change with their covered shoes strictly.

In addition, one of the negative aspect I found is in Biochemical Laboratory. Some fragile glassware which might contain dangerous chemicals is placed on the floor but not pour into the chemical waste tank although it is just located beside. This will cause several unexpected accidents. The glassware which contain the dangerous chemicals can cause injury to students, lecturers and staff who accidentally break it and spilled the chemicals on themselves. Moreover, the explosion of reaction of chemical may occur too as they are very dangerous and toxin. So, the users should take precaution

in terms of administrative control that is pouring all the dangerous chemicals into the chemical waste tanks immediately but not put aside and abandoned them which can lead to serious unwanted incidents. Hence, random disposal of unused chemical material in laboratory will lead to happening of accident or incident.

Last but not least, there are also negative aspect found in Environmental engineering laboratory. This picture shows that an extension cord with multiples plugs. This scenario is very dangerous. It can be easily overheated and cause short circuit to occur that lead to a fire outbreak of the laboratory and cause injuries and even death. In terms of administrative control, some improvement can be done. The staff should use an extension cord with only one or two plug at the same time to reduce overheated of extension cord. Hence, this negative aspect can be prevent taking the right precaution steps.