



12.5 Annexure - Risk Identification

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The risks and opportunities associated with the Integrated Management System (IMS) were determined based on the environmental aspects, energy aspects, compliance obligations, and other applicable requirements related to the activities, products, and services of the institution. Inputs considered for determining risks and opportunities include the needs and expectations of interested parties, internal and external issues, and the context of the organization.

The needs and expectations of interested parties were evaluated by the respective process owners and operational heads to identify relevant concerns, obligations, and expectations that may influence the achievement of the intended outcomes of the IMS. Those needs and expectations that are relevant to the Environmental Management System (EMS) and Energy Management System (EnMS) were considered during the risk and opportunity identification process.

Risks and opportunities were identified by evaluating the environmental and energy impacts arising from activities, products, and services under normal, abnormal, and emergency operating conditions. Potential adverse impacts were considered as risks, while potential improvements in environmental performance, energy performance, resource efficiency, compliance, and sustainability were considered as opportunities.

The identified risks and opportunities provide inputs for operational controls, objectives and targets, monitoring activities, resource planning, and continual improvement initiatives to enhance environmental performance, energy performance, and compliance with applicable requirements.

S.No	Activity/Product/Services	Aspect	Condition	Impact	Category
1	Utilization of High Tension Electricity	Generation of LT Electricity	Normal	Generation of used oil from transformer	Risk
2			Normal	Generation of obsolete silica gel	Risk
3			Normal	Generation of used cables	Risk
4			Normal	Generation of obsolete coils	Risk
5			Normal	Generation of obsolete components	Risk
6		Fluctuations in voltage (High and Low Voltage)	Abnormal	Failure of electrical products	Risk



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S.No	Activity/Product/Services	Aspect	Condition	Impact	Category	
7		Failure of HT fuse	Abnormal	Knock out of power supply	Risk	
8		Failure of phase	Abnormal	Unbalanced load leading to equipment failure	Risk	
9		Failure of lightning arrester	Abnormal	Failure of electrical products	Risk	
10		Failure of surge arrester	Abnormal	Failure of electrical products	Risk	
11		Failure of relay and breaker	Abnormal	Knock out of power supply for the specific wing where the relay has failed	Risk	
12		Spillage of oil	Abnormal	Slippery conditions leading to fire accidents	Risk	
13		Failure of PT/CT	Abnormal	Power failure	Risk	
14		Failure of Jaw contact	Abnormal	Power failure	Risk	
15		Supply from Electricity Board	Moisture ingress in VCB	Abnormal	Power failure	Risk
16			Failure of HT insulation	Abnormal	Power failure	Risk
17			Failure of Transformer	Abnormal	Power outage	Risk
18.a			Occurrence of Floods	Emergency	Stagnation of water	Risk
18.b				Emergency	Intercepted power supply	Risk
18.c				Emergency	Repair of transformer components	Risk



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19		Damage of Underground cables	Emergency	Intercepted Power supply	Risk
20.a		Occurrence of Cyclonic	Emergency	Fall of trees on the overhead lines	Risk
20.b		Conditions	Emergency	Intercepted power supply	Risk
1	Operation of Gensets	Production of LT Electricity through Gensets	Normal	Generation of used oils	Risk
2			Normal	GHG emissions due to burning of fuels	Risk
3			Normal	SOx, NOx, PM, HC, CO emissions due to burning of fuels	Risk
4			Normal	Depletion of non-renewable resources	Risk
5			Normal	Generation of obsolete valves and pumps	Risk
6			Normal	Generation of obsolete batteries	Risk
7			Normal	Generation of noise and Obsolete components	Risk
8			Normal	Generation of obsolete filters	Risk
9			Normal	Reduction in noise pollution due to built up of acoustic chambers	Opportunity



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10			Normal	Safe emission height of air pollutants due to built up of stack arrangements	Opportunity	
11.a		Spillage of diesel	Abnormal	Slippery conditions leading to accidents	Risk	
11.b			Abnormal	Excessive depletion of non-renewable resources	Risk	
11.c			Abnormal	Possible fire accidents	Risk	
12.a		Leakage of Radiator coolant	Abnormal	Overheated engine	Risk	
12.b			Abnormal	Interruptions in the output power	Risk	
12.c			Abnormal	Possible explosions	Risk	
13.a		Overloading operation of gensets	Abnormal	Power failure	Risk	
13.b			Abnormal	Tripping	Risk	
14.a		Failure of AVR	Abnormal	Sudden power outage	Risk	
14.b			Abnormal	Damage to connected electrical equipment (Flickering)	Risk	
15			Failure of Self-starter motor	Abnormal	Gensets breakdown	Risk
16			Damage of Fan belt	Abnormal	Power failure	Risk
17			Failure of Battery	Emergency	Breakdown of gensets	Risk



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18		Occurrence of Fire Accidents	Emergency	Loss of resources and life	Risk	
1	Generation of Electricity through Solar	Production of Electricity through Solar	Normal	Alternative for non-renewable resources as no CO ₂ emission is involved	Opportunity	
2			Normal	Generation of PV waste that has heavy metals like Cu and Pb	Risk	
3			Normal	Generation of used electric cables	Risk	
4			Normal	Generation of obsolete inverters	Risk	
5			Normal	Generation of obsolete components	Risk	
6		Failure of Inverter	Abnormal	No power production	Risk	
7		Failure of Connector	Abnormal	No panel productivity	Risk	
8		Failure of DC Fuse	Abnormal	Interrupted power generation	Risk	
9.a		Failure of Surge arrester	Abnormal	Equipment failure	Risk	
9.b			Abnormal	Interrupted power generation	Risk	
10			Damage of solar panel	Abnormal	Reduced efficiency of solar panels (No power delivery) leading to production losses	Risk



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11.a		Occurrence of natural	Emergency	Solar equipment damage	Risk
11.b		calamities	Emergency	Intercepted power generation	Risk
22		Failure of Fuse	Emergency	Possible electrical fire	Risk
23		Opening of pressure relief valve	Emergency	Chiller shut down	Risk
1	Regulation of Indoor Temperature using Air Conditioner (Individual Unit)	Circulation of cool air inside the buildings using split AC	Normal	Depletion of non-renewable resources	Risk
2			Normal	Greenhouse gas emission	Risk
3			Normal	Generation of used electric cables	Risk
4			Normal	Generation of obsolete filters, valves and condenser coils	Risk
5			Normal	Generation of obsolete motors	Risk
6		Failure of motor	Abnormal	Split AC shutdown	Risk
7		Leakage of refrigerants	Abnormal	Greenhouse gas emission	Risk
8		Damage caused by rodents	Abnormal	Split AC shutdown	Risk
9		Damage of fan/blower	Abnormal	Hinders the cooling process	Risk
10		Failure of Board	Abnormal	System Shutdown	Risk
11.a		Damage of Valve	Abnormal	Unable to control refrigerant	Risk



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				flow	
11.b			Abnormal	Refrigerant leakage	Risk
12		Malfunctioning of PCB	Abnormal	Split AC shutdown	Risk
13		Failure of Capacitor	Abnormal	Split AC shutdown	Risk
14		Failure of Compressor	Emergency	Hinders the cooling process	Risk
1	Operation of Lift	Facilitation of vertical	Normal	Depletion of non-renewable resources	Risk
2	Transport	transport	Normal	Generation of obsolete motors	Risk
3			Normal	Generation of used Oils	Risk
4			Normal	Generation of used electric cables	Risk
5			Normal	Generation of obsolete components	Risk
6			Normal	Generation of metal scraps	Risk
7			Normal	Generation of obsolete batteries	Risk
8		Overloading of people	Abnormal	Halt of vertical transport	Risk
9.a		Failure of Sensor	Abnormal	Lift stuck up/OFF	Risk
9.b		Oil spillage	Abnormal	Slippery conditions leading to fall accidents	Risk
10		Failure of Relay	Abnormal	Lift Shutdown	Risk



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11		Malfunctioning of ARD	Emergency	Passengers stuck up in lift during power failure	Risk
12		Failure of door rope	Emergency	Lift Shutdown	Risk
13		Switching of floor level	Emergency	Disruption in the vertical transport	Risk
1	Groundwater Extraction	Consumption of Water	Normal	Depletion of renewable resource due to water consumption	Risk
2			Normal	Depletion of non-renewable resource and CO ₂ emission due to consumption of electricity	Risk
3			Normal	Generation of Obsolete Components such as Pipes, Plumbing fixtures, pumps and Motors.	Risk
4			Normal	Generation of Noise due to the operation of Pumps and Motors.	Risk
5			Abnormal	Declination in Groundwater Level	Risk
6			Emergency	Excessive increase in water demand	Risk
6			Unavailability of Groundwater	Emergency	Excessive increase in water demand
1	Water Treatment - RO	Production of Treated	Normal	Generation of Reject water	Risk



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2		Water	Normal	Depletion of renewable resource (water)	Risk
3			Normal	Depletion of non-renewable resource and CO ₂ emission due to consumption of electricity	Risk
4			Normal	Generation of noise due to operation in pumps and motors	Risk
5			Normal	Generation of obsolete components such as Pipes, Plumbing Fixtures, Storage tanks, Dual media, Flow indicators, Pressure gauges, Various pumps, Motors and Micron filter	Risk
6			Normal	Spillage of Antiscalant	Risk
7			Fluctuation in Voltage	Abnormal	No Production of treated water due to Panel damage
8		Scaling in Raw Water Pipeline	Abnormal	Inflow of the RO Unit will be decreased	Risk



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S.No	Activity/Product/Services	Aspect	Condition	Impact	Category	
9		Failure in Pumps	Abnormal	RO Unit Shutdown	Risk	
10		Failure in flow indicators & pressure gauge	Abnormal	Imbalance water flow in RO Unit	Risk	
11		Cut-off of Membrane O-Ring	Abnormal	1.Increase in generation of Reject Water 2.The Taste of water will be reduced	Risk	
12		Damage in Fibre Reinforced Plastic(FRP) Vessel	Abnormal	1.RO Unit will Stop its Function 2.Wastage of water	Risk	
13		Failure in High Pressure Pump	Abnormal	RO Unit Shutdown	Risk	
14		Excessive shortage in power supply	Emergency	RO Unit Shutdown	Risk	
12		Damage in Resin Beads	Abnormal	Increase the Hardness of Water	Risk	
13		Failure in Regeneration Tank	Abnormal	Output Water will not be delivered and it affect the Backwashing	Risk	
14		Failure in Dual Media	Abnormal	Decrease in Water Quality due to improper filtration	Risk	
15		Excessive shortage in power supply	Abnormal	Softener Unit Shutdown	Risk	
1		Wastewater Treatment - STP	Production of Treated	Normal	Generation of Sludge	Risk



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2		Waste Water	Normal	Depletion of non-renewable resource and CO ₂ emission due to consumption of electricity	Risk
3			Normal	Generation of Noise due to the operation of Pumps and motors.	Risk
4			Normal	Generation of Obsolete components such as Pipes and plumbing fixtures, flow meters, chemical stored tanks, pumps and motors, Membranes	Risk
5			Normal	Spillage of MBBR	Risk
6			Normal	Generation of Wastes such as Solid, Plastic waste	Risk
7			Blockage in Diffuser	Abnormal	Obstruction of air flow may lead to blower damage and odour generation
8		Failure of Pulley	Abnormal	1.Generation of noise	Risk
		2.Overheating of Belt may lead to Belt cut off			
9		Outburst in Pipes	Abnormal	Spillage of Wastewater	Risk



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10		Damage in Bearing	Abnormal	1.Generation of noise	Risk
				2.Wear and tear of bearing housing	
11		Choking in Filter	Abnormal	1.Improper air flow	Risk
				2.Settlement of dust	
12		Corrosion in Pipes	Abnormal	Formation of holes may lead to spillage	Risk
13		Blockage in Blower	Abnormal	Absence of air flow	Risk
14		Leakage in Valves	Abnormal	1.Air leakage in aeration tank	Risk
				2.Leakage of Wastewater in storage tank	
15		Leakage of Oil in Pumps	Abnormal	Spillage of oil	Risk
16		Failure in Pumps	Abnormal	Plant Shutdown	Risk
17		Cut Off of Belt	Abnormal	Operation of Treating will stop due to overheat in clarifier and decanter	Risk
18		Failure in Bush	Abnormal	Wear and Tear may lead to pulley damage	Risk
19		Damage in Centre Shaft Pipe	Abnormal	Obstruction in operation of pump	Risk
20		Damage in Impeller	Abnormal	Obstruction in water movement	Risk



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S.No	Activity/Product/Services	Aspect	Condition	Impact	Category
21		Choking in Dual Media	Abnormal	Increase in water inlet pressure may lead to pump damage	Risk
22		Breakage in Rotameter	Abnormal	Not able to " read " the flow rate	Risk
23		Excessive Wastewater Inflow	Abnormal	Spillage of Wastewater	Risk
24		Choking in Membrane(UF)	Abnormal	1.Increase in the inlet pressure may lead to outburst and leakage	Risk
				2.Reduction in flow rate	
25		Failure in Pneumatic Wall	Abnormal	Plant Shutdown	Risk
27		Decanter Sensor Break	Abnormal	No display of speed variations may lead to stop the decanter	Risk
28		Failure in Decanter Indicator Failure	Abnormal		Risk
29		Failure in Decanter Dosing Pump	Abnormal	Obstruction in polymer insertion may lead to stop the sludge thickening	Risk
30		Failure in Decanter Panel Board	Abnormal	obstruction in power supply may lead to plant shutdown	Risk



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31		Failure in Decanter VFD Drive	Abnormal	1.Decrease in motor speed and no input signal may lead to decanter shutdown 2.Unregulate the motor speed regulations	Risk
32		Death of Bacteria	Abnormal	1.Generation of odour 2.Decrease in wastewater quality parameters	Risk
33		Occurrence of Natural Calamity	Emergency	Plant Shutdown	Risk
		Calamity			
1	Rainwater Harvesting	Conservation of Rainwater	Normal	Increase the Quality and Quantity of Groundwater	Opportunity
2			Normal	Generation of Obsolete Components such as Pipes and Plumbing fixtures.	Risk
3		Blockage of Rainwater	Abnormal	Wastage of Rainwater	Risk
		Collection Pipe			
4	Obstruction in Pits	Emergency	Decrease in Infiltration Rate and Percolation of water	Risk	



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S.No	Activity/Product/Services	Aspect	Condition	Impact	Category
1	Storm Water Drainage	Flow of Water in Drains	Normal	Prevention of Soil Erosion and Flood	Opportunity
2			Normal	Safe Discharge of Rainwater	Opportunity
3		Stagnation of water	Abnormal	Fall Accidents due to Wet Surface	Risk
4		Blockage of Drainage	Abnormal	Overflow of water	Risk
5		Excessive Rainfall	Emergency	Occurrence of Flash Flood	Risk
1	Solid Waste Management	Recoverable Degradable waste Inert waste	Normal	Promotion of circular economy.	Opportunity
2			Normal	Prevention of Air and Water borne diseases	Opportunity
3			Normal	Depletion of non-renewable resource and CO ₂ emission due to consumption of electricity	Risk
4			Normal	Depletion of renewable resources (diesel) for transportation s	Risk
5			Normal	Obsolete machineries components	Risk
6			Abnormal	Creates a Bad odour and the cause Air and waterborne diseases	Risk



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S.No	Activity/Product/Services	Aspect	Condition	Impact	Category
7		Spillage of Wastes while collecting	Abnormal	Bike Accidents may occur by skid	Risk
8		Mix up of Biomedical waste	Abnormal	May cause contamination and pollute the soil	Risk
9		Mix up of Carcass waste	Abnormal	Bad odour and prey for birds	Risk
10		Non availability of collection trucks	Abnormal	Stocking of wastes and it cause bad odour	Risk
11		Occurrence of Fire Accidents	Emergency	Pollution to the environment, loss of stocks fire, Fire Injuries	Risk
1		Hazardous Waste Management	Hazardous waste management	Normal	Reduction of the harmful chemicals and pollutants that enters to the soil, water.
2		Normal		Generation of used barrels and glassware	Risk
3		Normal		Emissions of greenhouse gases	Risk
4		Spillage of oils while storing	Abnormal	Slippery condition may lead to accidents by fall	Risk
5		Leakage in the storage container	Abnormal	Results in surface water pollution	Risk
6		Manual handling of oils	Abnormal	Human Injuries	Risk



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7		Occurrence of Fire Accident	Emergency	Occurrence of Explosion	Risk
1	E-Waste Management	Generation of E-waste	Normal	Generation of obsolete electronic equipment and lab instruments	Risk
2			Normal	Depletion of non-renewable resource	Risk
3		Fall accidents during storage and transport	Abnormal	Minor Injury	Risk
4		Occurrence of fire accidents in the storage room	Emergency	Production of polycyclic aromatic hydrocarbons and dioxins.	Risk
1	Horticulture Activity	Development of Green Belt	Normal	Generation of soil pollution	Risk
2			Normal	Carbon dioxide emission due to consumption of electricity	Risk
3			Normal	Generation of Noise due to the operation of lawn movers and motors.	Risk
4			Normal	Generation of Obsolete components such as pipes, valves, drip irrigation setups. etc.	Risk



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5			Normal	An Eco-friendly environment lifestyle to the students.	Opportunity
6		Damage to the plants	Abnormal	Generation of Odour due to decrease in Water Quality	Risk
7		Components Malfunction s	Abnormal	Lack of water flow or unpruned of plants	Risk
8		Lopping injuries	Abnormal	Minor Injury	Risk
9		Over stagnant of water	Abnormal	Loss of Percolation	Risk
10		Failure of Pumps	Abnormal	Lack of water to plants	Risk
11		Occurrence of Natural Calamity	Emergency	Fall of trees and branches	Risk
1	Horticulture Waste Management	Organic composting	Normal	Generation of Odour	Risk
2		production	Normal	Generation of Mosquitos	Risk
3			Normal	Generation of Leachate	Risk
4		Loss of worms while	Abnormal	Increase in Composting time.	Risk
		composting			
5		Excessive waste generation	Abnormal	Lack of area for the composting	Risk
6		Occurrence of Fire Accidents	Emergency	Occurrence of Explosion	Risk



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1	Food Production	Production of Food	Normal	Ozone layer depletion (Refrigerants)	Risk
2			Normal	Obsolete machineries components and utensils	Risk
3			Normal	Generation of waste water	Risk
4			Normal	Depletion of non-renewable resource and CO ₂ emission due to consumption of electricity	Risk
5			Normal	Generation of noise due to operation in grinder and peeler.	Risk
6			Normal	Spillage of oils and raw materials while cooking	Risk
8		Voltage fluctuation	Abnormal	Fire injuries and no operation of components	Risk
9		Apron Fire	Abnormal	Fire injuries	Risk
10		Falling of Cylinder	Abnormal	Injuries to human	Risk
11		Spillage of food during transportation	Abnormal	Slippery condition may lead to accidents and food loss	Risk
12		Spillage of oil	Abnormal	Fall Accidents	Risk



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13		Shredding accidents	Abnormal	Injuries to human	Risk
14		Failure of cold storage	Abnormal	Rotten of fresh vegetables and dairy products	Risk
15.a		Flooding due to rain	Emergency	water logging in Kitchen area	Risk
15.b		Occurrence of Fire Accident	Emergency	Fire injuries to human and loss of components	Risk
1	Firefighting System	Executing the firefighting operations	Normal	GHG emissions due to burning of fuels (diesel)	Risk
2			Normal	SOx, NOx, PM, HC, CO emissions due to burning of fuels (diesel)	Risk
3			Normal	Generation of used oils	Risk
4			Normal	Generation of hazardous waste due to the operation of fire extinguishers	Risk
5		Spillage of grease	Abnormal	Slippery conditions leading to fall accidents	Risk
6		Obstruction in exit ways	Abnormal	Fall accidents	Risk
7		Blockage in water mains	Emergency	Intercepted water flow causing hindrance to the operation	Risk



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8		Malfunctioning of fire alarms	Emergency	Unable to hear the warning alarm	Risk		
1	Operation of Transportation Services	Facilitation of fleet service	Normal	GHG emissions due to burning of fuels (diesel)	Risk		
2			Normal	SOx, NOx, PM, HC, CO emissions due to burning of fuels (diesel)	Risk		
3			Normal	Depletion of non-renewable resources	Risk		
4			Normal	No GHG emissions due to battery operated vehicles	Opportunity		
5			Normal	No release of air pollutants due to battery operated vehicles	Opportunity		
6			Normal	Generation of obsolete batteries and other obsolete components	Risk		
7			Maintenance of vehicle	Normal	Improved mileage and passenger safety	Opportunity	
8					Normal	Generation of used paint containers and other accessories	Risk
9					Normal	Generation of obsolete tyres due to wear and tear	Risk



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(Deemed to be University under section 3 of UGC Act, 1956)

12.5 Annexure - Risk Identification

Issue No : 01

Revision No: 00

Doc. No: IMS-MITS/ANX/05

Issue Date: 01-04-2025

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S.No	Activity/Product/Services	Aspect	Condition	Impact	Category	
10			Normal	Generation of effluent due to water wash	Risk	
11			Normal	Improved indoor air quality due to water wash	Opportunity	
12			Normal	Inhalation of volatile organic compounds and aerosols due to painting and sticking works	Risk	
13			Normal	Generation of used engine oils	Risk	
14			Normal	Generation of electrical and solid waste	Risk	
15			Fall accidents during wheel maintenance	Abnormal	Minor injury	Risk
16			Spillage of oils	Abnormal	Slippery conditions leading to accidents	Risk
17				Abnormal	Depletion of non-renewable resources	Risk
18			Leakage of refrigerants	Abnormal	Emission of greenhouse gases	Risk
19			Breakdown of vehicles	Abnormal	Delay in reaching the destination	Risk
20			Occurrence of minor road accidents	Abnormal	Injuries to people	Risk



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S.No	Activity/Product/Services	Aspect	Condition	Impact	Category
21		Occurrence of minor road accidents	Abnormal	Delay in reaching the destination	Risk
22		Occurrence of fire accidents	Emergency	Minor/major injuries and damage to the property	Risk
23		Occurrence of major road accidents	Emergency	Loss of life and property	Risk
1	Housekeeping Activities	Performing Cleanliness and Sanitation works	Normal	Depletion of non-renewable resource and CO ₂ emission due to consumption of electricity	Risk
2			Normal	Depletion of renewable resource due to water consumption	Risk
3			Normal	Generation of Obsolete Components such as vacuum machine, shampoo washing machine, carpet cleaning machine, floor cleaning machine, smart tools, PPE and other accessories	Risk



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S.No	Activity/Product/Services	Aspect	Condition	Impact	Category
4			Normal	Generation of Noise due to the operation of vacuum machine and shampoo washing machine	Risk
5			Normal	Wet Flooring	Risk
6		Spillage of Detergents and Shampoo	Abnormal	Slippery Condition may lead to fall accidents	Risk
7		Electrical Hazards	Abnormal	Major injuries due to electric shock and etc.	Risk
8		Fall of dust on eyes	Abnormal	Eye irritation	Risk
9		Improper Operation Protocols of machines	Abnormal	1.Major injuries due to reverse operation 2.Damage in machines	Risk
10		Fire Accidents	Emergency	Loss of life and properties	Risk
1	Civil Maintenance Activities	Consumption of Building Materials	Normal	Depletion of Resources	Risk
2		Utilisation of Equipment	Normal	Generation of Noise and Obsolete Components	Risk
3		Provision of Carpentry	Normal	Generation of Noise and Wood waste	Risk
4		Provision of Partition Facilities	Normal	Generation of Aluminium Waste	Risk
5		Provision of Fall Ceiling	Normal	Generation of Waste False Ceiling	Risk



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S.No	Activity/Product/Services	Aspect	Condition	Impact	Category
				Boards	
6		Provision of Painting	Normal	Generation of Paint Containers	Risk
7		Spillage of Paint	Abnormal	Slippery floor condition	Risk
8		Fall of Objects	Abnormal	Minor Injuries	Risk
1	Stores	Storage of materials	Normal	Provision of ambient temperature (proper storage of materials)	Risk
2				Generation of packaging waste	Risk
4		Storage of oil	Abnormal	Spillage of oils	Risk
5		Storage of chemicals	Abnormal	Spillage of chemicals	Risk
6		Occurrence of Fire Accidents	Emergency	Generation of emissions and Loss of resources	Risk