

Design Risk Assessment

Name of Project: St. Catherine's National School, Rush, Co. Dublin.		Date: 22.07.2026	Rev: T1			
Name of Designer Barry Nolan (Galileo Energy Services)		Design Area: Mechanical/Electrical		List of Potential Design Interfaces (with foreseeable Health and Safety implications)		
1	2	3	4	5	6	7
Feature, element, structure, "process", or activity	Hazards or hazardous activity identified from any or all of the following: 1. Accident or near miss records (internal or from similar projects, and 'industry' 2. Practical Guidance 3. Any foreseeable hazards identified by experienced team members	Efforts to eliminate by design: (all design, which includes: initial concepts, layout, rules and procedures, particular working methods, specifications including materials and substances, bills of quantities, temporary works	Where hazards cannot be eliminated , measures designers can take to reduce risk by reducing severity or population or reducing period of exposure (type of risk , or no. of persons or amount of time)	Residual issues, hazards or risks: the information to be supplied to others, and to whom or for what?	How is the information going to be provided?	Date closed out, with initials of responsible person
List Activities						
Welding on heating and water services pipework in the building.	Risk of Fire (2) Risk of toxic/explosive atmosphere (2)	Hot Work permit system to be used Use non sparking tools for installing pipe	Fire extinguisher to be in vicinity of welding area Welding to be carried out in well ventilated spaces only Trained personnel only to carry out welding Welding equipment is required to have flame arrest attachment fitted to equipment. Gas cylinders are not to be stored in the Building. Emergency exits are to be kept free of any obstructions.			
Working in a confined space	Risk of noxious fumes, flooding, oxygen deficiency.	Carry out a risk assessment, to ensure that during operations that adequate ventilation is provided to the areas. Emergency exits are to be kept free of any obstructions. Ensure that all personnel carrying out works in confined spaces are capable and trained in both the work and the use of any emergency equipment and know where the emergency exits from the basement are.	Fire extinguisher to be in vicinity of welding area Trained personnel only to carry out decommissioning works.			
Working at heights as new mechanical and electrical services to be installed at high level.	Fall from height, material falling from height (2)	Services to be located at low level where possible.	High level areas to be accessible using attic ladders. Provide scaffolding with protected guard rail in areas with ceiling void to allow safe access to services. Use safety harness system when working at a height. Harnesses to be worn when working at heights above 2000mm. Falls from ladders occur mainly when the person using the ladder is over reaching, or from placing the ladder on an unstable base, or using defective ladders. The use of ladders on this project shall comply fully with regulation 72, 73 & 74 of the SHAWAW Construction Regulations 2001.	Certified scaffolding to be used and PPE to be worn at all times Full working at heights training to be given to all personnel that will be working at heights.		
Working on electrical services in Building	Electrocution (2)	Works on electrical services to be carried out on isolated circuits only. Electrical works to be carried out by fully qualified competent and RECI certified electricians.	Use tag on/tag off system. Mains power disconnected to each individual room prior to commencement of works.			
Material deliveries on a live and busy building/Street	Accidents for staff/visitors	Material deliveries to be scheduled outside normal business hours where possible.	Construction traffic to be outside normal hours where possible. Use flagsman/banksman to control traffic. Minimise number of deliveries.			
Vehicle access to building is restricted	Injuries to body, backstrains, crushing etc. (2)	Heavy plant to be delivered at an early stage in the project.	Lifting gear/tools to be used by trained personnel. Plant to be transported to building by transporter. All plant to be lifted into the plantroom.	Plant to be delivered in section.		
External mains and sub mains cabling, water pipes, etc. shall be run in trenches	Risk of burial (2)	Regulations are to be strictly followed when excavation of external trench is required.	Excavations over 1.2m deep shall be protected from collapsing. Persons shall not enter excavated trenches at any time.			
Photovoltaic to be installed on the roof at approximately 12000mm above finished floor level.	Fall from height, material falling from height (3)	The PV panels require minimum maintenance. They PV panels will require cleaning every three years. If the PV panels do require maintenance, they can be	PV panels will be accessible by a telescopic boom. Use safety harness system when working at a height. Harnesses to be worn when working at heights above 2000mm.	Certified scaffolding to be used and PPE to be worn at all times Full working at heights training to be given to all		

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		reached by a telescopic boom machine if required. The PV panels are located on the edge of the roof so who ever needs to maintain the PV panels do not have to walk across the main roof for access.		personnel that will be working at heights. Trained personnel to use the telescopic boom. Electrical works to be carried out by fully qualified competent and RECI certified electricians. Assess the condition of the roof, the types of roofing material and the roof cavity to ensure that it can be accessed safely. In case the surface is wet (in case of rain, snow, ice), try to re-schedule the work so that it can be done once the surface is dry. Eliminate any tripping and slipping hazards, paying particular attention to moss, debris and tools lying around. If a trip hazard cannot be eliminated signs and cones should be used to warn workers of the hazard.		
Main and sub-contract works shall be carried out on site at the same time.	Non co-ordination.	All works shall be co-ordinated and health & safety file to be prepared incorporating all elements.	Main contractor and Project Supervisor Construction Stage to liaise with all sub-contractors. Weekly meetings to review Health & Safety issues to be taken and minutes recorded.	PPE to be worn by Contractors personnel at all times. Ensure all Contractors personnel have a current Safe Pass card.		
There are existing Eir lines on the building	Risk of knocking out eir lines to adjacent buildings. (2)	Carry out site survey to identify exact routes of all services prior to commencement of works.	Liaise with Eir to re-route existing lines prior to demolition of building.			
There are existing site services in the ground and the exact routes of these are not presently known.	Risk of electrocution (2) Risk of knocking out power to building (2) Risk of gas leak (2) Risk of water leak (2) Surface encumbrances, Excavation Collapse, Falling Loads – Materials falling onto workers, Mobile equipment – workers and vehicles falling into the excavation, Vehicular traffic – workers/general people being struck by plant, Undermining of nearby structures, Access/egress to/from excavation, Hazardous atmospheres, Ground water, Accidents to members of the public	Carry out site survey to identify exact routes of all existing site services prior to commencement of works. Dig trial holes to identify exact routes of all existing site services prior to digging trenches for new services..	Excavations over 1.2m deep shall be protected from collapsing. Contact the appropriate service providers (Campus staff, ESB, Bord Gáis, etc.) and ask their advice. Look around for obvious signs of underground services, e.g. valve covers or patching of the road surface. Use locators to trace any services and mark the ground accordingly. Make sure persons using these scanners are trained and understand their use. Make sure that the person supervising excavation work has service plans and knows how to use them. Everyone carrying out the work should know about safe digging practices and emergency procedures. Survey the area for overhead obstructions such as electricity lines. Erect goal posts and bunting if/as required. Where work needs to be carried out in close proximity to overhead lines, contact the ESB for advice. For further information on working near underground services, see the HSA Code of Practice 'Avoiding Danger from Underground Services', available from the HSA Publications section of this website or contact 1890 289 389. Measures that should be taken to avoid excavation collapse include: Batter the sides and the ends to a safe angle. Where it is not possible to batter, support the walls with timber, sheeting or proprietary support systems. Do not go into unsupported excavations that have not been battered to a suitable slope. Do not allow any vehicle or item of plant near an edge of an excavation that may be likely to cause collapse. Keep equipment and materials piled, grouped or stacked at a suitable safe distance from the edge of the excavations. Never work ahead of the support. Remember that even work in shallow trenches can be dangerous. You may need to provide support if the work involves bending or kneeling in the trench. Ensure adequate protective measures are taken even in rock cut excavations. Do not store spoil or other materials close to the sides of excavations. The spoil may fall into the excavation and the extra loading will make the sides more prone to collapse Make sure the edges of the excavation are protected against falling materials. Provide toe boards where necessary. Always wear a hard hat when working in excavations In rock cut excavations where the rock is friable, netting should be used Fence off all excavations in public places to prevent pedestrians and vehicles falling into them. Where children might get onto a site out of hours precautions should be taken such as backfilling or securely covering excavations. If possible excavations in public roads or streets should be backfilled or covered over at night to minimise the risk of accidents to the public. Do not leave materials lying beside the area of work if not required for imminent use beside the excavation. Ensure excavations do not affect the footings of scaffolds or the foundations of nearby structures. Walls may have very shallow foundations that can be undermined by even small trenches. Decide if it is necessary to remove a structure from the excavation so as to be unaffected by the excavation activity			

			Decide if the structure needs temporary support before digging starts. Surveys of the foundations and the advice of a structural engineer may be needed If shoring support is required, it should be installed in such a way that the stability of the structure is not compromised at any stage of the installation/excavation process. The services of a registered professional engineer may be required to determine that excavation work will not pose a hazard to employees Regulation 55 of the Construction Regulations 2006 requires every accessible part of an excavation near to which persons are working and where persons could fall are either fenced or securely covered unless fencing is not present to allow access of persons/equipment. Quick unobstructed and ready access and egress should be allowed in case of emergencies. The size of the openings should be adequate and free from obstruction to allow ready passage for persons wearing the necessary PPE and allow access to rescue personnel. An alternative opening should be used for insertion of hoses, ventilation ducts, power lines and other cables required for work. An appropriate means such as a barrier or a safety warning sign should be used to prevent unauthorised entry into a confined space. Structural modifications (temporary openings) is necessary in the case of a confined space with a design deficiency whose openings are too tight, of convoluted construction or have excessive distances to the point of escape. Manufacturers and suppliers of equipment as well as designers engineers and architects should ensure that entry and exit can be achieved from this equipment easily. For example the provision of manholes close to the bottom of the tank/vessel and fixed ladders from top manholes should be provided to facilitate emergency egress where the need for persons to enter a confined space is unavoidable. Manufacturers and designers should also be aware of any standards relevant to what they are constructing as there may be minimum sizes set out for hatches or manholes. Excavations can have very poor natural ventilation so that the potential for a dangerous atmosphere can give rise to typical 'confined space' conditions of immediate danger to life and health. Dangerous atmospheres can occur in excavations due to lack of oxygen or the presence of toxic or flammable gases of simple asphyxiants. The leakage or seepage of a toxic gas into an excavation must be avoided by ventilation. Investigate if a dangerous atmosphere is present or liable to be present? See is the space adequately ventilated to maintain adequate oxygen content and prevent the accumulation of harmful substances? Find out what the use and history of the location of work is when carrying out risk assessment. Buried underground pipe work or a leakage in sewage system may present a hidden hazard. Investigate if a dangerous atmosphere is potentially present; the excavation must be treated as a confined space. A safe system of work must be developed and put in place, including the making of appropriate emergency arrangements. The safe system of work may involve the provision of adequate ventilation, testing of atmosphere, or other precautions, as devised by a competent person. The Following publications are available on the HSA website; Code of Practice for Working in Confined Spaces A Guide to Safety in Excavations SSWP Ground Works Form revised 2007 Code of Practice for Avoiding Danger from Underground Services		
Excavations Notes:	Excavations over 1.2m deep shall be protected from collapsing. Measures that should be taken to avoid excavation collapse include: - Batter the sides and the ends to a safe angle. Where it is not possible to batter, support the walls with timber, sheeting or proprietary support systems. - Do not go into unsupported excavations that have not been battered to a suitable slope. Do not allow any vehicle or item of plant near an edge of an excavation that may be likely to cause collapse. - Keep equipment and materials piled, grouped or stacked at a suitable safe distance from the edge of the excavations. Never work ahead of the support. Remember that even work in shallow trenches can be dangerous. You may need to provide support if the work involves bending or kneeling in the trench. Ensure adequate protective measures are taken even in rock cut excavations. - Do not store spoil or other materials close to the sides of excavations. The spoil may fall into the excavation and the extra loading will make the sides more prone to collapse Make sure the edges of the excavation are protected against falling materials. Provide toe boards where necessary. Always wear a hard hat when working in excavations in rock cut excavations where the rock is friable, netting should be used Fence off all excavations in public places to prevent pedestrians and vehicles falling into them. Where children might get onto a site out of hours precautions should be taken such as backfilling or securely covering excavations. If possible excavations in public roads or streets should be backfilled or covered over at night to minimise the risk of accidents to the public. Do not leave materials lying beside the area of work if not required for imminent use beside the excavation. Ensure excavations do not affect the footings of scaffolds or the foundations of nearby structures. Walls may have very shallow foundations that can be undermined by even small trenches. Decide if it is necessary to remove a structure from the excavation so as to be unaffected by the excavation activity. Decide if the structure needs temporary support before digging starts. Surveys of the foundations and the advice of a structural engineer may be needed If shoring support is required, it should be installed in such a way that the stability of the structure is not compromised at any stage of the installation/excavation process. The services of a registered professional engineer may be required to determine that excavation work will not pose a hazard to employees Regulation 55 of the Construction Regulations 2006 requires every accessible part of an excavation near to which persons are working and where persons could fall are either fenced or securely covered unless fencing is not present to allow access of persons/equipment. Quick unobstructed and ready access and egress should be allowed in case of emergencies. The size of the openings should be adequate and free from obstruction to allow ready passage for persons wearing the necessary PPE and allow access to rescue personnel. An alternative opening should be used for insertion of hoses, ventilation ducts, power lines and other cables required for work. An appropriate means such as a barrier or a safety warning sign should be used to prevent unauthorised entry into a confined space. Structural modifications (temporary openings) is necessary in the case of a confined space with a design deficiency whose openings are too tight, of convoluted construction or have excessive distances to the point of escape.				

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