



ON THE HUNT FOR SAFE ACCESS TO GI SITES

CC Ground Investigations and Ground-Guards look at the tricky issue of difficult access to sites on muddy or uneven ground.

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We're going on a bear hunt...

Safe access onto GI sites

Well, maybe not a bear hunt, but if you have small children you will be able to relate to mud... "you can't go under it, you can't go over it, so let's go through it....squelch, squelch, squelch."

Following the record-breaking winter of 2019-2020, where wet weather continually interrupted and caused havoc on sites throughout the UK, The AGS Safety Working Group has been looking at appropriate solutions for gaining safe access onto ground investigation sites.

The nature of our work often involves accessing sites with heavy plant, vehicles and

machinery. In addition to the many health and safety issues whilst using this equipment, other considerations include damage to agricultural land, potential habitat loss and more often unhappy landowners who were unprepared for the potential damage and disruption we may have caused and want it returned to its original conditions.

Consideration of ground disturbance during the contract is often neglected within the framework of the Construction, Design and Management Regulations (CDM 2015) and is often a major factor in contractual disputes. Additionally, there is often a significant time lapse and delay between the tender stage and



site mobilisation, with deteriorating weather conditions having a significant impact on the underlying ground conditions.

In this article we explore how the parties involved can work together to avoid these situations. A walkover of the site by both the Designer at the design stage and the Contractor at tender stage is a good first start. This will determine an early appreciation of the likely site access conditions and limitations and enable consideration of the potential options to consider for gaining safe

access to and on the site.

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The Role of CDM

Under CDM, the Client must make sure there is sufficient time and resources allocated, the Designer must manage, monitor and coordinate health and safety in the construction phase of a project and the Contractor must

prepare the construction phase plan (CPP), including the risk assessment and method statements. Contractors must ensure that





Method	Hazard
No ground protection	<ul style="list-style-type: none"> · Unsafe ground conditions due to mud/soft ground causing vehicle accidents. · Slips, trips and falls due to soft ground and vehicle rutting. · Mud on local roads. · Landscape and habitat damage/destruction
Roadway Construction	<ul style="list-style-type: none"> · Increased vehicle traffic to/from site delivering/removing materials. · Potentially contaminated materials including asbestos and sharps. · Underlying soft spots causing uneven tracks with potential for vehicle accidents
Track Matting	<ul style="list-style-type: none"> · Manual handling, particularly if covered in excess mud/debris. · Slips trips falls if become wet and muddy. · Mats slipping if not properly connected, plus ground anchoring if on sloping ground. · Specifying the correct mats for the job is important to minimise damage to them or the ground. · Lifting of mats using equipment. · Ecology - it is known that small vertebrates and amphibians can crawl under the mats overnight and may be crushed if the mat is travelled over by a vehicle

the plant and support vehicles engaged on the site are suitable for the task, e.g. with all-terrain tyres or tracks. All drivers of all-terrain vehicles must be suitably qualified and experienced. The potential recovery of bogged down vehicles must also be considered and documented, with a safe method of recovery using appropriate equipment, training and resources.

Access Options

There are broadly three types of methods to gain access to site:

- No ground protection: Direct access by vehicles and machinery with the intention to reinstate on contract completion. This method has several disadvantages including delays caused by bogged down





Further considerations/reference material	
	Wildlife and Countryside Act 1981
	Requires temporary works design
	Consider Manual Handling Regulations, must carry out MH task assessment, must follow supplier guidance. Consider PUWER Regulations. Consider LOLER Regulations. Wildlife and Countryside Act 1981

vehicles; unsafe ground conditions including rutting and consequently slip, trips and fall hazards; harm to protected species particularly on fragile grasslands; damage or destruction of habitats; damage to the ground; and mud and debris spread onto the highway. An issue with this method is the unknown amount of reinstatement that will be required on completion, whether it will be the satisfaction of the Investigation Supervisor

and landowner and who covers the costs which could be significant.

Roadway Construction: Construction of a temporary roadway using imported granular materials is classified as temporary works with associated implications. Importation of road construction materials requires good source and site control to prevent potentially contaminated materials entering site, particularly when recycled aggregate is used which may contain metal, asbestos fragments, tarmacadam and organic materials. A geotextile type membrane is often placed between the imported materials and the original ground surface. Further issues may include construction time of the road before ground investigation can commence; poor drainage and soft ground beneath the roadway; costs associated with the temporary works; and removal and controlled disposal after the





works are complete.

Ground Protection: Roadways and paths can be protected from extensive damage from vehicles and footfall using ground protection in the form of temporary trackway mats. Trackway has the advantage of being generally portable, reduce reinstatement work and costs, can be site specific, and reduces the likelihood of vehicles becoming stuck.

How CDM and the options work together

Preparation of the CPP for either of the chosen access methods listed above will require a

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consideration of hazards and regulations. Particular hazards to consider are given in the table above.

The pre-construction Health and Safety assessment must identify these hazards specific to the site. With knowledge of these hazards the Client must allow sufficient time and resources to the project to allow safe access. This means enough time for safe access to be resourced for.

It is the Designers duty to

eliminate, reduce, isolate or control foreseeable risks that may arise perhaps by considering if the work at that location is actually required, considering and arranging different access points, changing the type of work therefore reducing equipment and vehicle movements



or how to control the hazards by the type of ground protection required. It is the Contractors duty to ensure that the activities are carried out to the design, safely. This includes the installation and removal of ground protection as per the manufacturer's instructions.

The Designer and Contractor also have responsibility to recognise the possible damage to the ground surface when carrying out construction-based activities. Whatever the activity, ground disturbance almost always happens to some degree and can be very weather dependant. Leaving the ground in a safe condition at the end of works is a primary requirement but leaving it so that it looks as "if you wouldn't know we'd been" is practically impossible.

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The Specification

The UK Specification for Ground Investigation addresses ground disturbance in Clauses 3.15, 3.16 and 3.17. Particular reference should be made to Clause 3.15.1: "all work shall be carried out with the least possible damage to the site and its environs" and

Clause 3.16.1: "the whole of the site and any ancillary works shall be left in a clean and tidy condition".

The site-specific specification then often lists a lot of subjective statements that are difficult to accurately cover at tender stage such as:

- It is required that wherever the ground surface (hard or soft finish) is disturbed by the investigation activities, the contractor



	Pros	Further considerations/reference material	
All methods: laying track matting to the construction site	Provides good clean access	Costs, impact on programme	
Placing matting by hand	Adaptable to restricted locations	Consider manual handling	Mitigation
			Reduce mat size and weight Include handles to improve ergonomics Smaller mats will fit into single cab of a 4x4
Use Telehandler or chains to place mats	Reduces manual handling to ASARP	<ul style="list-style-type: none"> ▶ Logistics ▶ Cost ▶ PUWER ▶ LOLER 	Planning to consider all relevant legislation

Ground Protection Options for Site Investigations

Product type	Typical dimensions	Typical weight	Installation method	Important points	Popular brands
Light-duty plastic mats	2.4 x 1.2m (13mm thick)	35-39kg	Hand	Very portable for self-installation. Loose lay for mobile use or clip together for temporary trackway.	Ground-Guards / TuffTrak
Medium-duty plastic mats	1.8 x 0.9m (23mm thick)	40kg	Hand	Very portable for self-installation. Overlapping flanges bolt together for a fully supportive trackway.	Ground-Guards
Heavy-duty plastic mats	3.0 x 2.5m (40mm thick)	295kg	Mechanical	Bolt together with metal connector straps.	TuffTrak
Buoyant plastic mats	Approx. 4 x 2m (100mm thick)	360-460kg	Mechanical	Honeycomb or foam filled for use on very soft wet ground. Overlapping flanges with quick connectors.	Ground-Guards / Newpark TuffTrak
Aluminium trackway	3.0 x 2.5m (50mm thick)	285kg	Mechanical	Overlapping flanges with bolted connectors. Consider site security due to high scrap metal value.	Live / TPA
Timber bog mats	5.0 x 1.0m (100-200mm thick)	530-1100kg	Mechanical	Preferred option for steel tracked plant. Bulky to transport and install. No connection between mats. Not suitable for areas liable to flooding.	Birketts / Timbermats / Welex

will reinstate the surface fully using the same materials to match as closely as possible to the original finish to the satisfaction of the property owner.

The Contractor shall make good damage, whether in the vicinity of the hole or on the access route there to the satisfaction of the Investigation Supervisor.

To avoid prolonged contractual arguments regarding the reinstatement, the Designer should ensure that all CDM responsibilities are upheld, the Client is fully briefed into what to expect during and after the works, and that there is sufficient site specific detail to allow

the Contractor to adequately and fairly cover reinstatement costs in the contract.

Ground Protection Methods – Track Mats

There are many suppliers of ground protection mats within the UK construction industry. When selecting the type of track mat to be used the table on the left can be considered.

Typical ground protection products are summarised in the table below.

Suitable for			
4x4's Commercial vehicles	Wheeled Plant	Rubber tracked Plant	Steel tracked plant
★	★	★	
★	★	★	
★	★	★	
★	★	★	
★	★	★	
	★	★	★

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