FAIRLAND CONTRACTORS LTD

Risk Assessment – Radon and Excavation Tasks.

Location	**Grand Victorian Hotel Worthing**	**Date**	**18/05/23**
Department	**Site Works - Under Scott Harper**	**Assessment no.**	**Fairland / Radon**
Assessor's Name(s)	**Scott Harper (Contracts Manager)**	**Manager's Name(s)**	**David Scicluna (Site Manager)**
Task Description	**Formation of Strip Footings (up to 1.2m depth) and alterations to patio/new paving**		

NOTE - The following risk assessment must be read with the additional site-specific method statement for the tasks assessed. In addition, other task specific Risk Assessments for this project may also need to consider the risk of Radon in the work place and the tasks operatives are undertaking.

This assessment is initially based on the Desk Study Report (Ref: GE21670-DSR-MAR-23) whereby x14 Radon Monitors are currently in place and under monitoring/assessment by specialists – Radon Protection UK. The results will be formally issued after the agreed period of monitoring.

INTRODUCTION TO RADON -

In its physical form radon is a radioactive, colourless, odourless and tasteless gas which isn't detectable by humans.
Radon is a dense gas which is heavier than air, so it doesn't rise into the atmosphere and usually remains at ground level before it dissipates.
Radon is easily inhaled and is a health hazard. Health organisations are trying to raise more awareness about the potentially lethal gas.
The gas has strong links to lung cancer and is now believed to be the second biggest cause of the disease after smoking

Radon isn't commercially produced, it's a naturally occurring gas that is usually found in natural resources like igneous rock and soil. However, sometimes it can be found in water. Radon is a product of the breakdown of radium from uranium and radium to radon.

Radon poisoning is likely to occur when large amounts of radon enter the body and cause harmful physical changes.
Although it's a naturally occurring gas that we breathe in anyway, greater awareness and identification of Radon map areas are being continually undertaken and this site (via Planning Requirements) requires specific testing and monitoring to be applied.
It should be noted that large amounts of Radon Gas inhalation aren't good for your health due to the gas' radioactive properties.

There are no onset symptoms of radon poisoning, sufferers will only discover years later when they develop diseases such as lung cancer.

The main entry route for radon into the home/building/structure is gas seeping through various non protective entries, but it can also enter through water passages. Common points of entry include soil where radon is created from the breakdown of natural elements in the soil beneath the ground/structure, which is where the gas is most prevalent. When buildings are under construction/alteration, builders have to dig down into the soil, especially in older premises where basement works and footings are needed and therefore risks can be more common.

Radon is measured in units of becquerels per cubic metre, Bq/m3 (the concentration of radioactivity in air). The average indoor concentration in the UK is 20 Bq/m3.

FOR YOUR SAFETY – This project site has been equipped with Radon Detectors that measure units of becquerels per cubic meter and the appointed Site Manager is fully equipped and competent to undertake all necessary readings to ensure all above ground works can be undertaken safely and maintain assurance for all workers/visitors on site.

1. Hazard Information	2. Hazard rating (L1, M2 or H3 based on the RFWCI)	3. Likelihood information (with Risk Control Measures)	4. Likelihood rating (L1, M2 or H3 based on the data in column 3)	Hazard x Likelihood = Risk (L1/2, M3/4 or H6/9)
<u>Over Ground/Part Underground Works</u> During excavation of footings and associated patio alterations (in line with the Designer's Plans) potential Identification of High Radon Levels are alerted via the Radon Measuring/Monitoring system on site.	2	Prolonged working within the identified area can place operative/s at risk from future lung cancer and other health risks (Long term exposure) The site has been equipped with Radon Measurement devices which will be operational to record gas concentrations The appointed Site Manager / Supervisor will continually	2	4

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		monitor the readings and liaise with Radon Protection UK (as required) and has also been issued with a copy of the Radon Survey Report which identified the need for such monitoring systems to enable continued measuring and checks.		
Due to Radon being a dense heavy gas, this could form in the base of footings during construction where the ground is disturbed, penetrating into the excavation and footings as well as ground level water tables or be released following removal of sealed patios	3	Although operatives will follow the general principals of excavation safety (Via Separate RAMS) additional awareness will be applied to ensure operatives do not access or kneel into the excavation (max 1.2m depth) and only those associated to this task will be present in the area of working Monitoring devices will be present when the footings/excavation is under construction and design requirements will be followed when forming footings and barrier protection.	1	3
Soil Removal From site potentially containing Radon	3	Any soil generated from the strip footings must be WAC Tested (Waste Acceptance Criteria) and Certificates of testing / acceptance obtained from the approved receiving waste centre should soils be removed from site. Site Manager will be responsible for managing this and coordinating and communication this process with his Contracts Manager. Operatives will be instructed not to skip or remove any soils from site.	1	3

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<u>Potential Underground (internal Sub Structure Basement Works)</u> Footing connection - Underground workplaces such as basements can have significant levels of radon as can any above-ground workplaces, mainly in radon Affected Areas.	3	Alongside the risks as advised above, additional controls will be applied in line with specific monitoring devices being installed into basement/below ground levels. Monitoring will be continually applied and the appointed Site Manager will fully induct / instruct attending operatives to the condition on site alongside applying daily monitoring.	1	3
Site Access and Signage Controls will be required to prevent unauthorised entry and awareness to Radon Monitoring and associated works taking place.	3	The site boundary will be fully established and agreements applied with the client to segregate any/all specific areas under construction task aligned working. Access systems will be via either the erection of heras fencing, set in weighted boots and double clipped with clearly posted warning safety signage. Access details will also be displayed and contact details for entry into site. Access points will not be left open (unless under direct supervision)	1	3

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Excavation / Footing Safety – Unauthorised access by unwanted persons.	3	Alongside the site boundary controls, additional interlocking chapter 8 style barriers will be placed around any open excavation/strip foundation to further protect against persons falling in. Additional safety signage will also be posted and daily checks applied to all segregated areas and records held on file. All attending operatives will be duly advised of the areas of strip footings and not to interfere with the barriers or signs. Only authorised persons will be allowed entry and to work on the foundation strip/excavation who will also be fully briefed on the Radon monitoring situation. Please also refer to the Excavation Risk Assessment which must be read in conjunction to this assessment.	1	3

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Risk Matrix: 1-2 (trivial) 3-4 (tolerable) 6-9 (intolerable)

Following this assessment being read to All operatives, they are required re-read and then sign the site-specific method statement to confirm that they have read and understand the contents of the above risk assessments and methodology of works which will be specifically monitored by the appointed Site Manager / Supervisor.

Risk Assessment Authorised By:

Print Name:

Sign:

Date:

Residual Risk Matrix

Severity / Consequence (Hazard Rating)

Likelihood		Slightly Harmful (1)	Harmful (2)	Extremely Harmful (3)
	Highly Unlikely (1)	Trivial Risk (Score 1)	Trivial Risk (Score 2)	Tolerable Risk (Score 3)
	Unlikely (2)	Trivial Risk (Score 2)	Tolerable Risk (Score 4)	Intolerable Risk (Score 6)
	Likely (3)	Tolerable Risk (Score 3)	Intolerable Risk (Score 6)	Intolerable Risk (Score 9)

Risk level	Action
Trivial	No further action required.
Tolerable	Works must be monitored daily by Managers / Supervisors.
Intolerable	The Risk Assessment must be reviewed by Senior Management and works cannot proceed until further action is taken to reduce Risk.