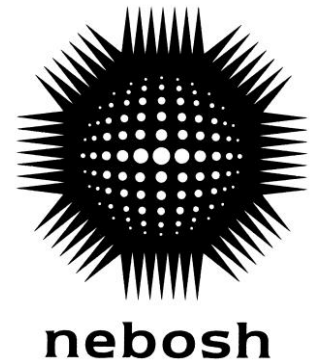


NEBOSH

MANAGING CONSTRUCTION SAFELY

UNIT NC1:

For: NEBOSH Health and Safety Management for Construction (UK)



Open Book Examination

Available for 48 hours

Guidance to learners

This is an open book examination. It is not invigilated, and you are free to use any learning resources to which you have access, eg your course notes, or the HSE website, etc.

By submitting this completed assessment for marking, you are declaring it is entirely your own work. Knowingly claiming work to be your own when it is someone else's work is malpractice, which carries severe penalties. This means that you must **not** collaborate with or copy work from others. Neither should you 'cut and paste' blocks of text from the Internet or other sources.

The examination begins with a realistic scenario to set the scene. You will then need to complete a series of tasks based on this scenario, including a risk assessment exercise. Each task will consist of one or more questions.

Your responses to **most** of these tasks should wholly, or partly, draw on relevant information from the scenario. The task will clearly state the extent to which this is required.

The marks available are shown in brackets to the right of each question, or part of each question. This will help guide you to the amount of information required in your response. In general, one mark is given for each correct technical point that is clearly demonstrated. Avoid writing too little as this will make it difficult for the Examiner to award marks. Single word answers or lists are unlikely to gain marks as this would not normally be enough to show understanding or a connection with the scenario.

You are expected to write approximately 4500 words in total for the questions, **excluding** the risk assessment task which has no word count restriction.

It is recommended that you use the available answer template.

Please attempt **ALL** tasks.

SCENARIO

You have just started a new job as the Assistant Site Manager on a construction site, with responsibilities for overseeing health and safety during a construction project.

The project involves the piecemeal demolition of a large 70-year-old derelict warehouse building to allow for future building works. The project is scheduled to last for a total of 60 days (excluding weekends and public holidays).

The warehouse building is 1150 metres (m) long, 600m wide and 15m high. The warehouse building is steel framed construction with brick in-fill. It has 1m deep pile-driven concrete foundations that are currently being excavated.

The topography of the site is mostly flat grassland. The site is in a relatively secluded location, close to a large fast-flowing river and public footpath that will remain accessible to the public throughout the project. During heavy rainfall, the river can flood onto the site area.

Prior to these works, a demolition method statement and soft strip of the building were completed, leaving the outer shell of the warehouse ready for demolishing.

Pre-demolition surveys have identified the following:

- The warehouse has pipes that contain asbestos lagging. The asbestos has been identified as being in poor condition (fibrous and flaking).
- The apex roof is made of asbestos cement sheeting.
- The building is in a dilapidated state and may collapse unexpectedly.
- Buried services lie underneath the warehouse building. They have already been isolated before the demolition work.

The site is accessed by a 1-mile (1.6 kilometre (km)) long uneven dirt track that connects to a busy main road. The main road provides good access to a town centre and hospital 8-miles (approximately 13km) away. The site rules state that there are speed restrictions in place, as well as a one-way system, and that all vehicles entering the site must reverse only in designated reversing areas.

The following workers will be on site for the duration of the building works:

Quantity	Job
1	Site manager
1	Assistant site manager
1	Engineer
1	Surveyor
2	General forepeople
2	Supervisors
6	General workers

All workers will be on site from 07:00 – 16:00, Monday to Friday. Many of them will be living in temporary accommodation units on site for the duration of each working week.

Once the project starts, one of your tasks is to act as a 'non-working supervisor'. This involves walking around the site observing the construction work to help ensure that health and safety measures are being followed, particularly important because of recent high winds and icy conditions. On one occasion, you see a young worker descending a ladder with a heavy piece of guttering from the warehouse roof. The ladder is not secured and one rung is missing near the base. Once the

worker reaches the ground, you inspect the ladder and speak to them privately about their unsafe behaviour.

The worker is initially quiet and reluctant to give you a reason why they used the ladder. Eventually, when prompted, they say that they had been pressured by their supervisor to use a ladder. The worker tells you that they had suggested to their supervisor that a mobile elevating work platform (MEWP) should be used, but it would have taken 24 hours to bring a MEWP on site and the supervisor wanted the job done quickly before the end of their shift. When the worker asked their supervisor for a MEWP, the supervisor responded "It will take too long, and you will only be up there for a minute. If you will not do it, I can always find someone to replace you who will do it." The worker even admits that they hoped that you would not catch them breaking the rules, so they had someone (who seemed to disappear as you approached) stand near the ladder on the ground keeping a look out.

The worker is worried about getting into trouble for speaking to you and begs you not to speak to their supervisor. They explain that it is their first job and they have only been working here for a few weeks. You decide to issue a verbal warning to the worker for unsafe behaviour, which is in line with the site's disciplinary policy.

The following day you write a near miss report to formally document this incident. You return to the area where the ladder was placed to gather more information. You realise the ladder was placed in a designated vehicle reversing area that was not clearly signposted or segregated with barriers. You decide to privately speak to the supervisor about the near miss. During the discussion, the supervisor admits that they are feeling very stressed due to project delays and the pressures of an upcoming deadline. This has led them to feel they need to cut corners to meet the project timelines, as any delay will result in them staying onsite longer and not returning home to their family.

You then turn your attention to a nearby excavation trench, which has been dug next to where the plant vehicles are parked in order to start digging out the concrete foundations. Excavation work has been in progress for several days, and started at the same time as the roof renovation work to save time on the project.

You speak to a nearby supervisor to check that safe working procedures are being followed during the excavation works. The supervisor replies that they personally inspected the site before digging first commenced to help ensure it was safe, and that they have been observing the work every day since. Warning signs have been placed by the public footpath to keep pedestrians away. The supervisor advises that the edges surrounding the excavation trench are free from any items or equipment, so they are confident that no harm should occur to the excavation workers.

Task 1: Foundations of construction health and safety

- 1 Based on the scenario, explain whether the project is notifiable to the Health and Safety Executive (HSE) under the Construction (Design and Management) Regulations 2015 (CDM). (3)

Task 2: Developing safe systems of work (SSOW)

- 2 As part of preparing the demolition method statement, first-aid arrangements are to be arranged.
- Based on the scenario, what do you need to consider so that the first-aid needs are realistic and proportionate for the site? (8)
- Note: You should support your answer, where applicable, using relevant information from the scenario.*

Task 3: Human factors

- 3 What individual human factors could have influenced the unsafe behaviour of the younger worker? (6)

Task 4: Safety culture

- 4 Based on the scenario only, comment on the health and safety culture on site. (10)

Task 5: Working at height

- 5 When questioned, the young worker said that they knew the ladder was unsafe for the roof guttering removal task because they had recently completed their working at height training.
- What safety considerations should the worker have made regarding the suitability of the ladder for the task? (12)
- Note: You should support your answer, where applicable, using relevant information from the scenario.*

Task 6: Psychological health

- 6 Based on the scenario only, what could have contributed to the supervisor allowing the unsafe use of the ladder? (3)

Task 7: Risk assessment

7 The site manager has identified three areas of concern relating to the excavation of the concrete foundations:

- Depth and location of excavation trench
- Location of river
- Buried services

You have been asked to look into these areas of concern to determine what the specific hazards are, and whether there are significant controls in place to reduce the level of risk from these hazards.

For **EACH** area of concern, identify the following

- (a) specific hazards associated with each area of concern. (15)
- (b) *existing* control measures in place that help reduce the level of risk. (10)
- (c) *additional* control measures that can be put in place to further reduce the level of risk. (15)

Note: Your answers **must** relate directly to the scenario. You **must** use the table in the answer template to structure your answer.

A **sample** table is provided below, with example answers included to indicate the level of detail required when answering this question. **Please note** you will be required to write more answers in the live examination paper; this is for sample purposes **only**.

Area of concern	(a) Specific hazards	(b) Existing control measures	(c) Additional control measures
Depth and location of excavation trench	<p><i>Eg Unexpected collapse of warehouse structure</i></p> <p><i>Falling items from nearby roof renovation works</i></p>	<p><i>Eg Building services have been isolated</i></p> <p><i>Inspection was carried out before excavation work started</i></p>	<p><i>Use shoring to stop excavation collapsing</i></p> <p><i>Additional inspections following adverse weather</i></p> <p><i>Provide support structures for nearby buildings</i></p>
Location of river			
Buried services			

- 8 Prioritise **FIVE** of your additional control measures from question 7 (c). For **EACH** prioritised control, briefly justify your prioritisation in terms of risk reduction.

(10)

Note: You **must** use the table in the answer template to structure your answer.

A **sample** table is provided below, with example answers included to indicate the level of detail required when answering this question. **Please note** you will be required to write more answers in the live examination paper; this is for sample purposes **only**.

Prioritised additional control measure	Justification for prioritised additional control measure in terms of risk reduction
<i>Provide support structures for nearby buildings</i>	<i>Eliminates the risk of a fatality, which is extremely high when buildings unexpectedly collapse around excavations.</i>
<i>Use shoring to stop excavation collapsing</i>	<i>Reduces the risk of a fatality, which is high if an excavation collapses while workers occupy it.</i>

End of examination

Now follow the instructions on submitting your answers.

Note: This Learning Partner sample is shorter than the actual examination paper but gives a flavour of what it will be like. It incorporates typical examples of tasks and questions that may form the examination.