



## **Competition Brief**

Occupational Safety and Health in Construction  
Competition

For Third and Fourth Year Students (or penultimate  
and final year) on Construction-related Undergraduate  
Programmes

2014/2015

Issued on: Tuesday 30th September 2014

Deadline for Submissions: 17:00, 15<sup>th</sup> January 2015

Submissions should be sent to [studentcompetition@hsa.ie](mailto:studentcompetition@hsa.ie) in electronic format  
only, (max 10MB)

## **PROJECT BRIEF: HSA Safety in Construction Third Level Competition 201/2015**

### **1.0 INTRODUCTION:**

Health and safety plays an important role in every construction project, from design stage right through to completion. The aim of this challenge is to encourage you to consider safety in regards to certain aspects of a construction project (refurbishment works on an historic building).

### **SCENARIO:**

#### **2.0 PROJECT DESCRIPTION:**

This project involves the re-rendering and refurbishment of Ballycarraig Rua Castle, Co. Waterford, to reinstate the original external finish that acts both as a protective weathering layer and recreates the original appearance.

#### **Description of Ballycarraig Rua Castle:**

Ballycarraig Rua Castle in Co. Waterford, was built in the 1470's, and is being extensively repaired and refurbished to return the structure to residential use and limited public visitor use.

In the intervening two and a half centuries since the building was last in residential use, Ballycarraig Rua Castle had, like so many similar medieval buildings, fallen into disrepair and ruin. Part of this decay and dereliction process has included the loss of the external lime render coat that was once a normal feature of so many masonry buildings.

#### **2.1 General Description of Works:**

This project consists of refurbishment works to some damaged battlement stones at parapet wall level, and the reinstatement of the external lime render finish of the entire external façade of the castle, recreating its original and historic appearance. This external lime render has a two-fold purpose: to physically protect the solid masonry construction from effects of wind and rain, and to present the building as it was originally seen in the late 15th century.

Most of the external masonry itself had been carefully repaired, consolidated, and where missing, reinstated as part of the main restoration and repair project.

The stone refurbishment and re-rendering works will be preceded by the erection of a fully enclosed scaffold.

As the Ballycarraig Rua Castle site is highly wind-exposed, care must be taken to ensure that the upper layers of the newly applied lime render are not allowed to over-dry (burn) before a proper balanced carbonation occurs. For that reason, two layers of protective mesh will be fitted to the exterior of the scaffold and the face of each tower will be further protected by hessian 'curtains' hung approximately 150mm from the rendered facades.

Each of the lime coats is dampened every day throughout the re-rendering process. This after-care is of critical importance to ensure a durable render finish is achieved.

The three-coat render consists of locally sourced creamy coloured sand, combined with pea gravel to achieve a roughcast final top coat finish to the third layer.

The protective hessian curtain will remain in place after the final render has been applied, enabling a balanced and comprehensive carbonation to take place.

Prior to the re-rendering work commencing, work will begin on the refurbishment of the limestone battlements at parapet wall level. The battlements will be repaired in place where possible, but, based on the initial survey some will have to be temporarily taken out and redressed. The majority of the repairs can be carried out from the scaffold platform. The battlement weights range from 45kg to 75kg. It should be noted that for construction purposes, vehicular access to the immediate vicinity of the castle and bawn will be limited to a teleporter. In particular the ground conditions mean that it will not be possible to gain access for a mobile crane.

### **3.0 DRAWINGS:**

You have been supplied with (i) a Site Location Drawing and (ii) Section/Elevation Drawing to assist you in addressing the tasks.

### **4.0 THE TASK:**

You are acting as a team of safety consultants for the project, and have been asked to advise on certain work elements that arise in the project.

The tasks you have been set are:

1. Using the principles of behavioural- based safety, design a poster to be used on this and other State-sponsored conservation projects to:
  - a. motivate site personnel to work safely, and
  - b. positively influence safety on-site.

The poster is to be accompanied by an explanatory note, setting out which behavioural-based safety management techniques you have utilised. (maximum 250 words)

2. Occupational health is an important consideration when planning construction projects.
  - a. Describe the control measures you will use to ensure the safe use of lime plaster on this project. (maximum 250 words)
  - b. Having taken account of the key risk factors and carried out a risk assessment of the work activity of manual handling the stone battlements, (i) identify and specify the control measures appropriate to reduce the risk of injury and (ii) detail the proposed system of work which will eliminate or reduce the need for manual handling of the stone battlements. (maximum 1000 words)

3. Prepare a scaffold brief which sets out the site- specific issues and requirements that the scaffold designer will need to address. Your brief should include a schedule of the information and documentation to be supplied as part of the scaffolding package.

Please support your answer with two drawings/sketches. (maximum 500 words)

### **Second Stage of Competition:**

#### **Interviews:**

Following adjudication of the submissions, a number of teams **will be short-listed** for the competition final which consists of team interviews, to be held in the **RDS in Dublin on 4<sup>th</sup> March 2015**.

The judging panel, at interview, will pose team questions largely based on the answers submitted. The panel may also ask questions about how teams approached the brief. Teams will also be expected to discuss current safety and health issues for the construction industry.

Teams are expected to convince the judging panel (acting as your Client) why they should choose your poster from Question 1 for the project (Use of MS PowerPoint will not be permitted at Interview).

ENDS