

# **Designing Simulated Work for Scanning, a Case Study on the Falkirk Wheel, and Implementation of Findings. Scotland. Derek**

**Derek Spalton, Richard Self and Omar Hamza (United Kingdom)**

**Key words:** Bridge surveying; Deformation measurement; Education; Engineering survey; Laser scanning; Remote sensing; Young surveyor; Simulated Learning; Learning Resources

## **SUMMARY**

An opportunity arose to scan the Falkirk Wheel (FW), as guest of Scottish Canals (SC). It was proposed to take a group of Postgraduate students. The Author planned the project to reflect the requirements of a live brief.

Designing the study included, getting the students to undertake pre-survey works, including RAMS, which were approved by SC. The students were required to consider all the resources required. The team size reflected the time limitations and the expected resources adopted in professional practice, all team members had scanned before. They stayed in a boat moored at the FW, this saved travel time and allowed unrestricted access outside of the attractions opening hours.

The Author took an overview and only stepped in, if a serious issue occurred. The 3 key areas from Pedagogy were; peer support, problem solving and Health and Safety (H&S).

The design of the study required the team to coalesce working with multiple scanners and ensure that they covered all aspects. The FW is a busy attraction, the team had to deal with lots of survey “noise”, with regular trips through the Wheel restricting scanning. The most challenging issue was ensuring that the final model could be tie together.

H&S in any survey is paramount, they prepared and produced detailed RAMS and responded to questions from SC, they had to work under real time constraints and deal with the weather in Scotland, which was particularly hot.

The students applied themselves well to the pre-survey procedures and were sharply focused as the “assessor” was professional, this aligns to past research and shows the mind-set in live situations.

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The loudest person took the lead at first, but over time a natural leader emerged, with communications becoming more thoughtful. As they lodged together, a strong bond was established, with roles being formed based on the individual strengths.

Problem solving skills, tended to be reactive, with problems arising from distraction by the visitors, e.g. forgetting to save data whilst chatting. Research supports these findings, as students struggle to align academic thinking to the pace or interaction in real scenarios. The H&S of the work allowed the students to integrate the requirements of a client within their own plans, ensuring that they had full compliance. They were in a public area and had to follow their own RAMS throughout.

During COVID a guide and interactive learning resources have been developed to be adopted on future projects.

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