

Transforming the Civil Engineering Surveyor

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Key words: Cost management; Education; Engineering survey; Professional practice; Quantity surveying; BIM; data management; information management; digital transformation

SUMMARY

Our reality: The adoption of digital engineering is not at the level it should be to realise the efficiencies of data sharing and survey expertise. There is a disconnect between commercial management and geospatial surveyors in civil engineering.

The consequences: Construction will not be allowed to continue in the way it has done for centuries. It is unsustainable in every way, for time, costs, people and planet.

Our proposal: Better management of data is the key to sustainable growth in the construction industry and civil engineering surveyors must be leaders in this transition. We will use digital engineering to bridge the two civil engineering survey disciplines of geospatial and commercial management to benefit the industry and societies we operate in.

How we will get there: Having identified digital transformation as a ‘golden thread’ that will be key to delivering a profession that is fit for 2050 and beyond, the Chartered Institution of Civil Engineering Surveyors (CICES) has considered the barriers to the uptake of digital engineering, encompassing information management, data sharing and building information modelling (BIM), within infrastructure projects. The barriers we face today will be different to those we face tomorrow, and this paper will set out how surveyors can assess their digital maturity now, and plot the steps they need to take to be confident they are in the best position to face the challenges of tomorrow and the decades to come.

In line with the steps the surveyor needs to take, this paper will look at the supporting roles of contracts, protocols, technology, education, training, standards and professional bodies in enabling

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change.

Key to this transformation is a better understanding of the expertise of geospatial surveyors and commercial managers, and how this can inform decision making on infrastructure projects. This paper recommends a shift in the traditional timing of when civil engineering surveyors are engaged in projects, identifying that more impactful input will be achieved in the planning phase. Knowing what data will be needed when and to what accuracy and how this data will be used in scenario planning, costing, scheduling and monitoring will realise efficiencies and make full use of the surveyor's expertise. The paper also sets out the roles of the surveyor throughout the project, highlighting when and why they should be engaged.

Over 30 surveyors were engaged in the drafting of this paper, including the involvement of other industry bodies such as Survey4BIM, the UK BIM Alliance, Women in BIM, BIM4Heritage and the BIM Academic Forum.

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