

Geomatics and developments in BIM education in Ireland

Eugene McGovern and Avril Behan (Ireland)

Key words: Curricula; Education; BIM

SUMMARY

BIM (Building Information Modelling) is the process of designing and managing buildings, and other structures, using one coherent system of 3D virtual models. It offers significant savings in cost and time, greater accuracy in estimation, and the avoidance of error, alterations and rework due to information loss. To achieve these benefits surveyors, architects, engineers, constructors and others engaged in the process must work collaboratively. In response, third level educational programmes need to adapt traditional, isolated and un-collaborative modules to a more interdisciplinary approach. Located in Ireland, with over 20,000 registered students, the Dublin Institute of Technology (DIT) provides full-time and part-time programmes from doctoral to apprenticeship levels. Within DIT, the College of Engineering & Built Environment represents all the major disciplines involved with BIM in one location. Previously, the various disciplines tended to function in isolation. Recently, however, a new School of Multidisciplinary Technologies has been created to provide and manage interdisciplinary (and multidisciplinary) programmes and modules within the College. This paper describes the design and implementation of two new programmes, located within the School of Multidisciplinary Technologies, that leverage the knowledge available within the College to produce programmes in the BIM domain that are discipline-specific but are placed within a genuinely collaborative framework. The academic model is considered unique in the sense that collaboration is central to the design and the collaborative modules within the programmes are core. Spatial information plays a central role in the BIM process, particularly in the context of creating a building model (especially of existing buildings), dimensional control during construction and maintaining model currency over the life of a building. This central role was recognised during the design process for these BIM programmes and Geomatics skills were embedded in both the discipline-specific and the collaborative modules. This level of integration of Geomatics skills within streams representing the other disciplines within the BIM domain is hugely significant in terms of raising awareness of Geomatics skills amongst peers. Indeed, as a reflection of the significance of Geomatics within the BIM process, the course team has approved the addition of a further stream within the BIM courses to be known as Geomatics Engineering. This will be a discipline-specific stream but will be fully integrated within the collaborative modules. This is a significant development for the profession of Geomatics in Ireland going forward and, accordingly, this paper also describes design of the new Geomatics Engineering stream.