

## 4D Campus Model of Texas A&M University

Narendra Nigudkar<sup>1</sup>, Julian H. Kang<sup>2</sup>

In the current AEC world, 4D CAD is gaining a lot of importance as planning tool. In 4D environment the spatial and temporal elements of a construction process are integrated. Typically, 4D modeling involves three main tasks: generating a 3D CAD model, generating a schedule, and linking of corresponding components of the 3D model to the schedule.

3D CAD model used for 4D environment is slightly different in structure and content from an ordinary 3D CAD model. The geometric information is stored in different layers such that it can be regrouped onto new set of layers to correspond with specific activities in the schedule. A 4D model is generated when 3D components are organized hierarchically and linked to corresponding scheduling activities.

Although, 4D modeling is suitable only for pre-project planning since it is still in its developmental stages, it can be useful as an educational tool. Experienced constructors can visualize structures merely by reading 2D drawings. When schedule is linked to 3D drawings, not only the structures, but also the sequence in which they are built can be visualized in a better way, which in turn result in a more logical schedule. Further, 4D modeling will help students understand the relation between the spatial and temporal aspects of structures faster.

This research attempts to promote the use of 4D modeling as an educational tool by developing a 4D campus model of the Texas A&M University. The model will depict how the university campus was developed since established in 1876, to the level of detail of which building was built in what year etc. We use 3D AutoCAD files and MS Project schedule to represent the spatial and temporal aspects respectively, and integrate them together in a commercial 4D application, namely Common Point 4D.

- 
1. Graduate research assistant, Department of Construction Science, College of Architecture
  2. Assistant professor, Department of Construction Science, College of Architecture