This was our first attempt to introduce Autodesk Revit to students. It enables them to take full control of the design process and design product.

— Aswin Indraprastha
Assistant Professor,
Study Program of Architecture
Institut Teknologi Bandung

Preventing Tomorrow’s Architects for Global Competition

As one of the oldest architectural schools in Indonesia, Institut Teknologi Bandung has a responsibility to pursue the latest advancements in design technology to keep our graduates relevant in the ever-changing world.

The Study Program of Architecture at ITB has adopted Building Information Modeling (BIM) into the curriculum and implemented Autodesk® Revit® software. Two courses incorporate the BIM workflow: the first is a Design and Computation Studio course; and the second is an elective course.

The elective course focuses on the practical implementation of the BIM process using Revit software and Autodesk® Navisworks® software.

Introducing BIM

The elective course has 45 students ranging from fifth to eighth semester.

We also have an industry-academic partnership with PT Intiland Development Tbk, one of the largest property developer in Indonesia. In this partnership, PT. Intiland provides BIM specialists to share their experience and knowledge as facilitators for the second session of the course.

“We need fresh graduates who are capable of handling projects using BIM technology. Currently, only a few graduates from reputable universities have that capability. We are glad to be part of this partnership,” says Anto Sudaryanto, BIM manager, Intiland Development.

This lecture-workshop series introduces practical methods of incorporating BIM into the architectural design process using Revit software. The 14 weeks of the course are divided into two sessions: Architectural BIM and Collaborative BIM. Architectural BIM focuses on the implementation of Revit software’s key features for architectural design while the second session focuses on the implementation of collaborative aspects of Revit software, including architecture, structural design, and plumbing.
By using BIM in the conceptual and collaboration phases of their design projects, students gain multidisciplinary experience.

Collaborative BIM

In the Collaborative BIM session, students are introduced to the collaborative features in Revit in order to simulate the design process of a real project. In this project, students work in groups to create a design and then collaborate to further the design process.

Using Navisworks software to identify and mark up clashes, students are introduced to project management tools. This is an important aspect of completing a real-world project.

The Solution

The primary challenge in this course is to introduce BIM concepts, principles, and collaboration skills into the design process. Institut Teknologi Bandung has a tradition of focusing on the engineering aspects of design. Incorporating BIM technology helps students to understand the correlation between building elements, various disciplines, visualization, and design production.

The first half of the 14-week course — Architectural BIM — is dedicated to teaching the technology and workflows of 3D modeling, and students move from using Google® SketchUp and Autodesk® AutoCAD® software to learning the features of Revit. Revit software is utilized as a design tool when students are given the task of developing a house design from an initial CAD concept.

Revit software’s workflow enables students to easily go back and forth between designing, visualizing, and documenting during the course of their project.

“We tried to take a familiar approach to modeling as most of the students are experienced with using 3D modeling software such as SketchUp,” says Aswin Indraprastha, PhD, assistant professor in the study program of Architecture at Institut Teknologi Bandung.

Learning The Concept of Collaborative BIM

The Result

Using Revit and Navisworks to take a design from concept to completion gives students valuable hands-on experience in BIM workflows — from integrated 3D modeling to whole project review and analysis — which are a standard in today’s architectural design industry.