Course list

Course Code	Course Name	Duration
[CEI-BR]	CEI Basic (Revit)	8 hours
[CEI-BA]	CEI Basic (ArchiCAD)	8 hours
[CEII-A]	CEII Architecture (Revit)	32 hours
[CEII-AC]	CEII Architecture (ArchiCAD)	32 hours
[CEII-S]	CEII Structure (Revit)	32 hours
[CEII-M]	CEII MEP (Revit)	32 hours
[CEII-F]	CEII Families (Revit)	21 hours
[CEII-D]	CEII Multi-disciplinary Collaboration	24 hours
[CEII-DY]	CEII Advanced BIM Applications using Dynamo	24 hours
[CEII-MA]	CEII BIM Model Audit	8 hours
[CEIII-A]	CEIII Architecture	36 hours
[CEIII-GR]	CEIII GBP Submission (Revit)	24 hours
[CEIII-GA]	CEIII GBP Submission (ArchiCAD)	24 hours
[CEIII-DP]	CEIII Architectural Drawing Production (Revit)	24 hours
[CEIII-S]	CEIII Structure	24 hours
[CEIII-SS]	CEIII Structure Submission and Rebar Schedule (Revit)	24 hours
[CEIII-M]	CEIII MEP	24 hours
[CEIII-Q]	CEIII Cost Management	24 hours
[CEIII-C]	CEIII Construction Management	32 hours
[CEIII-B]	CEIII BIM Management	30 hours

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[CEI-BR] CEI Basic (Revit)

CITF Pre-approved BIM Training Course Code: PBT18-081

Course Objective

This is the fundamental course of BIM. It aims at the overall introduction of BIM – its nature, core concept, process and implications to the industry.

Contents includes the various system settings with Revit environment; the parametric nature of the components and compilation to overall building form; definition and editing of BIM properties, creation of drawings sheets and bill of materials and the overall management of BIM model files.

Course Learning Outcome

- Have general understanding on BIM
- Understand basic implication of BIM to construction industry
- Have exposure to different BIM systems
- Have strategic understanding of BIM on a macro level (national level)
- Have basic understanding of Revit Interface

Course Content

Setting up a drawing and BIM environment

1. Core Concepts
   1.1 Introducing Building Information Modeling (BIM)
   1.2 Working in one model with many views
   1.3 Understanding Revit element hierarchy

2. System Settings
   2.1 Basic Standards for Technical Drawings (drawing size and format, scale, line style, lettering, dimensioning, etc.
   2.2 Setting up a new drawing and BIM modeling environment
   2.3 Basic concepts and operations of BIM software (modeling environment settings, project settings, definition of coordinate systems, creation of levels and grids, input of commands and data)
   2.4 Selection of a suitable template
   2.5 Creation of a template file (parameter, family, view, render scene, walkthrough, input/output and print settings)

3. Parametric BIM modeling
   3.1 Method and skill of parametric BIM modeling
      3.1.1 Process and basic method of parametric BIM modeling
   3.2 Method and skill of editing BIM entities
      3.2.1 Definition of basic model element
      3.2.2 Creation of basic model element and its type
      3.2.3 Method and operation of parametric BIM modeling – Basic building shapes – Basic building elements such as wall, column, door, window, roof, floor, ceiling, railing, ramp, stair, curtain wall etc,
      3.2.4 Editing and operation of BIM entities

3.2.5 Common operations: Actions like move, copy, rotate, array, mirror, delete, group etc.

3.2.6 Sketch operations: Drawing or editing profile of a floor or stair.

3.2.7 Creation and editing of parameters and properties of a family or its instances

4. Definition and editing of BIM properties

4.1 Working with floors

4.1.1 Definition, operation, and editing of BIM properties

4.1.2 Add or edit property value or parameters of a family instance using Property Editor, View Properties

5. Creation of drawing sheets and bill of materials

5.1 Creation of bill of materials based on BIM properties

5.1.1 Creation of BIM property lists: Automatically calculate the parameter values according to relative information from the model. The results are presented as lists of windows, doors, element quantities and materials etc.

5.2 Creation of drawing sheets

5.2.1 Creation of drawing sheets

5.2.2 Setting the margin, border, title and countersign column content of a drawing sheet

5.2.3 Inserting property lists into a drawing sheet

6. Manage model files

6.1 Skill of managing model files and exchanging data

6.1.1 Management and operation of model files Import/Export of model files. File format conversion of BIM models

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[CEI-BA] CEI Basic (ArchiCAD)

Course Objective

This is the fundamental course of BIM. It aims at the overall introduction of BIM – its nature, core concept, process and implications to the industry. Contents includes the various system settings with ArchiCAD environment; the parametric nature of the virtual building elements and compilation to overall building form; definition and editing of BIM properties, creation of drawings sheets and bill of materials and the overall management of BIM model files. Students will learn through hands-on exercises.

Course Learning Outcome

- Have general understanding on BIM
- Understand basic implication of BIM to construction industry
- Have exposure to different BIM systems
- Have basic understanding of ArchiCAD Interface
- Have basic understanding of Reference Model Concept in collaboration

Course Content

1. Core Concepts
    1.1 Introducing Building Information Modeling (BIM)
    1.2 Working in one model with many views
    1.3 Understanding Virtual Building Concept
    1.4 Understanding Reference Model Concept in Collaboration through Open BIM

2. Interaction
    2.1 Navigation
    2.2 On-screen input Aids
    2.3 Virtual Trace
    2.4 Navigator Palette

3. Settings and Visibility Control
    3.1 Configuring project settings, setting up storeys and project gridlines.
    3.2 layers
    3.3 partial structure display
    3.4 penset
    3.5 LOD control
    3.6 Graphic Override
    3.7 Renovation Filter
    3.8 3D Style

4. Parametric BIM modeling
    4.1 Parametric BIM Elements
    4.2 Definition of basic model element
    4.3 Model elements favourites
    4.4 Design modelling tools
    4.5 Common operations

4.6 Finding Objects
4.7 Priority Junction

5. Creation of drawings and bill of materials
5.1 Creation of schedules (e.g. door, concrete quantity, etc)
5.2 Creation of Views
5.3 Creation of Layout drawing sheets
5.4 Creation of Publisher Set
5.2.2 Setting up Master Layout
5.2.3 Inserting Auto-Text into a Layout

6. Managing Models
6.1 Groups
6.2 Hotlink modules
6.3 Model segregation
6.4 External models

[CEII-A] CEII Architecture (Revit)

CITF Pre-approved BIM Training Course Code: PBT18-001

Course Objective

This is the technical operation level of BIM (Revit) in the Architectural Discipline – from the very fundamental of setting up of an architectural project, to the very much sophisticated family (components) building.

The course goes through all of the common operational commands which results in establish an architectural BIM model ready to corporate with other disciplines models for design visualization, co-ordination, and more importantly the production of professional drawings production as delivery.

Course Learning Outcome

- Operate Autodesk Revit in Architectural Discipline
- Issue Professional drawings in Architectural Discipline
- Co-ordinate a BIM modelling production among different discipline and perform work sharing
- Deduce information and generate further values from structured information
- Realize the full implication of BIM in the full Project Life Cycle
- Facilitate the information for Facility Management

Course Content

1. Starting a Project
- 1.1 Creating a new project from a template
- 1.2 Accessing multiuser worksharing projects
- 1.3 Configuring project settings
- 1.4 Adding levels
- 1.5 Adding grids
- 1.6 Refining a layout with temporary dimensions
- 1.7 Adding columns

2. Modeling Basics
- 2.1 Adding walls
- 2.2 Using snaps
- 2.3 Wall properties and types
- 2.4 Locating walls
- 2.5 Using the modify tools
- 2.6 Adding doors and windows
- 2.7 Using constraints
- 2.8 Adding plumbing fixtures and other components
- 2.9 Using Autodesk Seek
- 2.10 Wall joins

3. Links, Imports, and Groups
- 3.1 Linking AutoCAD DWG files
- 3.2 Creating topography from a DWG link
- 3.3 Understanding CAD inserts

3.4 Import tips
3.5 Creating a group
3.6 Mirroring groups to create a layout
3.7 Creating Revit links
3.8 Rotating and aligning a Revit link
3.9 Establishing shared coordinates
3.10 Understanding file formats

4. Sketch-Based Modeling Components
4.1 Working with floors
4.2 Working with footprint roofs
4.3 Working with ceilings
4.4 Working with extrusion roofs
4.5 Attaching walls to roofs
4.6 Using the shape editing tools to create a flat roof
4.7 Working with slope arrows
4.8 Adding openings

5. Stairs
5.1 Working with stairs
5.2 Adding railings to stairs
5.3 Working with component-based stairs
5.4 Adding extensions to railings

6. Complex Walls
6.1 Creating a custom basic wall type
6.2 Understanding stacked walls
6.3 Adding curtain walls
6.4 Adding curtain grids, mullions, and panels
6.5 Creating wall sweeps and reveals
6.6 Model lines

7. Visibility and Graphic Controls
7.1 Using object styles
7.2 Working with visibility and graphic overrides
7.3 Using view templates
7.4 Hiding and isolating objects in a model
7.5 Understanding view range
7.6 Displaying objects above and below in plan views
7.7 Using the Linework tool
7.8 Using cutaway views

8. Rooms
8.1 Adding rooms
8.2 Controlling room numbering
8.3 Understanding room bounding elements

9. Schedules and Tags
9.1 Understanding tags
9.2 Adding schedule views
9.3 Modifying schedule views

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9.4   Creating a key schedule

10. Annotation and Details
10.1 Adding text
10.2 Adding dimensions
10.3 Adding symbols
10.4 Adding legend views
10.5 Creating a detail callout
10.6 Adding detail components
10.7 Using arrays to duplicate objects parametrically
10.8 Adding filled and masking regions

11. The Basics of Families
11.1 Understanding families
11.2 Creating a new family from a template
11.3 Using reference planes, parameters, and constraints
11.4 Adding solid geometry
11.5 Cutting holes using void geometry
11.6 Adding blends
11.7 Completing the family

12. Sheets, Plotting, and Publishing
12.1 Adding sheets
12.2 Working with placeholder sheets
12.3 Aligning views with a guide grid
12.4 Outputting sheets to a DWF file
12.5 Exporting to AutoCAD
12.6 Plotting and creating a PDF

13. Project Delivery
13.1 Creating & Saving a Local Copy
13.2 Working with a Central File
13.3 Model Maintenance
13.4 Dealing with a Corrupt Central Model
13.5 Restoring a Backup
13.6 One Way of Showing Work as "Future"
13.7 Copying Model Elements to Clipboard
13.8 Working with Model Groups
13.9 Using Detail Groups
13.10 Filling Out Title Blocks & Title Tags
13.11 Revision Bubbles and Deltas
13.12 Publishing a Sheet Set

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[CEII-AC] CEII Architecture (ArchiCAD)

CITF Pre-approved BIM Training Course Code: PBT18-082

RTTP Pre-approved BIM Training Course

Course Objective

This is the technical operation level of BIM (ArchiCAD) in the Architectural Discipline – from the very fundamental of setting up of an architectural project, general model authoring techniques, to Teamwork setup and collaboration.

The course goes through all of the common operational commands which results in establish an architectural BIM model ready to co-operate with other discipline models for design visualization, co-ordination, and more importantly the production of professional drawings production as delivery.

Course Learning Outcome

- Operate GRAPHISOFT ArchiCAD in Architectural Discipline
- Issue Professional drawings in Architectural Discipline
- Binging in external content such as MEP and structural model for co-ordination.
- Perform Teamwork collaboration
- Deduce information and generate further values from structured information
- Realize the full implication of BIM in the full Project Life Cycle
- Facilitate the information for Facility Management

Course Content

1. Starting a Project
1.1 Creating a new project from a template
1.2 Opening a teamwork project
1.3 Configuring project settings
1.4 Setting up storeys
1.5 Setting project gridlines

2. Navigation and Editing Aids
2.1 Navigation and on screens icon response – good idea!
2.2 Using snaps
2.3 Using tracing
2.4 Using constraints – Please, explain in more detail.
2.5 Using measuring tool
2.6 Using Guidelines
2.7 Understanding the coordinates and editing plane in display

3. Walls and Columns
3.1 Surface, Building Materials and Composites
3.2 Wall Settings
3.3 Adding basic walls
3.4 Editing and modifying walls
3.5 Copying and pasting of element settings
3.6 Column settings and adding columns

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4. Doors, Windows and Objects
4.1 Doors and windows settings
4.2 Adding doors and windows
4.3 Object Settings
4.4 Adding Furniture

5. Editing Groups and External Content
5.1 Using Find and Select
5.2 Creating and suspending a group
5.3 Suggestion: Using the Marquee Tool to Stretch
5.4 Suggestion: Using the Magic Wand
5.5 Linking external Drawings
5.6 Using Mesh to creating topography from an external DWG file
5.7 Creating Modules for repeating elements (use prior furniture layout)

6. Slabs and Roofs
6.1 Slab settings and adding slabs
6.2 Overriding surfaces
6.3 Building material priority
6.4 Creating openings
6.5 Roof settings and adding roofs
6.6 Suggestion: Using the Magic Wand
6.7 Trimming and connect walls to roof
6.8 Beam settings and adding beams
6.9 Adding a skylight
6.10 Working with ceilings

7. Stairs
7.1 Stair settings
7.2 Adding stairs

8. Complex Walls
8.1 Creating a composite wall type
8.2 Creating a profile wall type
8.3 Adding curtain walls
8.4 Modifying curtain wall schemes, frames, and panels
8.5 Editing curtain wall in 3D

9. Visibility and Graphic Controls
9.1 Using favorites
9.2 Setting up project map, view map and layout
9.3 Using display order
9.4 Documents settings & quick option palette
9.5 Setting up elevations and sections
9.6 Setting 3D views
9.7 Using 3D Cutting Planes

10. Zones
10.1 Zone setting – Automatic vs. Manual Zone
10.2 Adding zones
10.3 Customizing zone stamps

10.4 Editing Zones in 3D (visualize, trim to roof)

11. Schedules and Tags
11.1 Understanding labels
11.2 Adding schedules views
11.3 Modifying schedule views

12. Annotation and Details
12.1 Adding texts & fills
12.2 Adding auto and manual dimensions & levels
12.3 Creating linked and unlinked details
12.4 Creating 3D documents and adding 3D dimensions
12.5 Adding details

13. Morphs and Shells
13.1 Creating shells
13.2 Creating objects from morph

14. Layouts, Printing, and Publishing
14.1 Creating and editing views
14.2 Adding layouts
14.3 Setting up publishing sets
14.4 Using Organizer
14.5 Exporting to DWG and PDF

15. Visualization
15.1 One-click 3D rendering
15.2 Using pre-defined Scenes
15.3 Advanced Surface Settings
15.4 Setting up Cameras
15.5 Using BimX

16. Collaboration using Teamwork
16.1 Joining a Teamwork Project
16.2 Reserving Workspaces
16.3 Managing Changes
16.4 Instant Communication
16.5 Reserving Other Project Data
16.6 Managing BIM Server Libraries
16.7 Setting up Back Up Schedule
16.8 Suggestion here: Creating & Saving a Local Copy

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[CEII-S] CEII Structure (Revit)

CITF Pre-approved BIM Training Course Code: PBT18-083

Course Objective

This is the technical operation level of BIM (Revit) in the Structural Discipline – from the very fundamental of setting up of a structural element including foundation system, Structural floor, column, beam, wall and stair, to the very much sophisticated family (component) building.

The course focuses on the collaboration of other project team disciplines like architects and building services; producing collaborative design, and more importantly the production of professional drawings production as delivery. The course leads to the integration of BIM to the discipline specific structural analysis.

Course Learning Outcome

- Operate Autodesk Revit in Structural Discipline
- Issue Professional drawings in Structural Discipline
- Co-ordinate a BIM modelling production among different discipline and perform work sharing
- Deduce information and generate further values from structured information
- Realize the full implication of BIM in the full Project Life Cycle
- Facilitate the information for Facility Management

Course Outline

1. Creating an Architectural Underlay
    1.1 Working with Architectural Underlays
    1.2 Importing and Linking CAD Files
    1.3 Linking Revit Projects
    1.4 Copying and Monitoring Elements

2. Adding Columns and Walls
    2.1 Placing Structural and Slanted Structural Columns
    2.2 Drawing and Modifying Walls

3. Adding Foundations
    3.1 Strip Footings
    3.2 Step and Spread Footings
    3.3 Piers and Pilasters
    3.4 Structural Slabs

4. Structural Reinforcement
    4.1 Cover Depth
    4.2 Adding Rebar
    4.3 Area and path reinforcement

5. Beams and Framing systems
    5.1 Adding Beams and Beam Systems
    5.2 Modifying Beams
    5.3 Labeling Framing

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6. Brace Frames
6.1 Framing Elevations
6.2 Adding Bracing

7. Floors, Shafts and Stairs
7.1 Creating Floor Systems
7.2 Creating and Framing Shaft Openings
7.3 Understanding Stairs and Ramps

8. Annotation
8.1 Selecting Elements for Editing
8.2 Working with Temporary Dimensions

9. Detailing
9.1 Setting Up Detail Views
9.2 Creating Details
9.3 Annotating Details
9.4 Patterning

10. Scheduling
10.1 Column Schedules
10.2 Modifying Schedules
10.3 Other Schedules
10.4 Legend Views

11. Sheets and Revisions
11.1 Creating Sheets
11.2 Placing and Modifying Views
11.3 Adding Revisions
11.4 Printing Sheets

12. Project Delivery
12.1 Creating & Saving a Local Copy
12.2 Working with a Central File
12.3 Model Maintenance
12.4 Dealing with a Corrupt Central Model
12.5 Restoring a Backup
12.6 One Way of Showing Work as "Future"
12.7 Copying Model Elements to Clipboard
12.8 Working with Model Groups
12.9 Using Detail Groups
12.10 Filling Out Title Blocks & Title Tags
12.11 Revision Bubbles and Deltas
12.12 Publishing a Sheet Set

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[CEII-M] CEII MEP (Revit)

CITF Pre-approved BIM Training Course Code: PBT18-004

Course Objective

This is the technical operation level of BIM (Revit) in the Building Services Discipline – from the very fundamental of setting up of MEP elements including ducts, pipes, fittings, equipment's, wiring, cable trays, etc. very much sophisticated family (component) building.

The course focuses on the collaboration of other project team disciplines like architects, structural engineers; producing collaborative design, and more importantly the production of professional drawings production as delivery. The course leads to the integration of BIM to the discipline specific building services design.

Course Learning Outcome

- Operate Autodesk Revit in MEP Discipline
- Issue Professional drawings in MEP Discipline
- Co-ordinate a BIM modelling production among different discipline and perform work sharing
- Deduce information and generate further values from structured information
- Realize the full implication of BIM in the full Project Life Cycle
- Facilitate the information for Facility Management

Course Content

1. Starting a Revit Project
　　1.1 Starting a project using Revit templates
　　1.2 Touring the user interface
　　1.3 Linking other models
　　1.4 Copying levels and setting up monitoring
　　1.5 Creating floor plans
　　1.6 Viewing the models

2. Revit Electrical
　　2.1 Adding receptacles
　　2.2 Adding panels
　　2.3 Creating spaces
　　2.4 Creating a circuit
　　2.5 Adding lighting fixtures
　　2.6 Adding switches
　　2.7 Creating a lighting circuit
　　2.8 Creating a switching circuit
　　2.9 Creating and labeling a wiring plan
　　2.10 Adding conduit
　　2.11 Creating conduit types
　　2.12 Adding cable tray
　　2.13 Challenge: Electrical
　　2.14 Solution: Electrical

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3. Revit Mechanical
3.1 Starting a mechanical project
3.2 Adding mechanical equipment
3.3 Adding air terminals
3.4 Adding supply duct
3.5 Adding return duct
3.6 Adding duct accessories and fittings
3.7 Sizing duct
3.8 Tagging duct
3.9 Adding zones and heating and cooling loads
3.10 Challenge: Mechanical
3.11 Solution: Mechanical

4. Revit Plumbing
4.1 Creating a plumbing view
4.2 Adding fixtures and domestic supply piping
4.3 Adding sanitary sloped piping
4.4 Adding equipment
4.5 Adding more piping
4.6 Creating a system
4.7 Adding pipe accessories
4.8 Tagging items
4.9 Looking at the System Browser

5. Revit Fire Protection
5.1 Creating a sprinkler view
5.2 Adding sprinklers
5.3 Creating sprinkler pipe types
5.4 Modeling mains
5.5 Modeling branch lines
5.6 Adding pipe accessories
5.7 Tagging items
5.8 Adding specialty items
5.9 Creating a fire alarm circuit
5.10 Adding fire alarm devices

6. Revit Workflow
6.1 Creating detail views
6.2 Importing CAD
6.3 Importing details
6.4 Creating sheets
6.5 Printing sheets
6.6 Creating schedules
6.7 Using phasing
6.8 Working with text
6.9 Working with dimensions
6.10 Looking at mechanical settings
6.11 Simple Modify techniques
6.12 Making and controlling revisions

7. Project Delivery

7.1 Creating & Saving a Local Copy

7.2 Working with a Central File

7.3 Model Maintenance

7.4 Dealing with a Corrupt Central Model

7.5 Restoring a Backup

7.6 One Way of Showing Work as "Future"

7.7 Copying Model Elements to Clipboard

7.8 Working with Model Groups

7.9 Using Detail Groups

7.10 Filling Out Title Blocks & Title Tags

7.11 Revision Bubbles and Deltas

7.12 Publishing a Sheet Set

[CEII-F] CEII Families (Revit)

CITF Pre-approved BIM Training Course Code: PBT18-003

RTTP Pre-approved BIM Training Course

Course Objective

This is the technical operation level of BIM (Revit) in the core modelling technique – families.

Being the core of the BIM (Revit) technology, Families are the most fundamental yet most important part of a BIM project for ALL disciplines.

The course covers from the most fundamental family building using technique including Extrusion, Revolve, Blend, Sweep and Sweep Blend; to the most sophisticated parametric design principles. These techniques can be applied in Architecture, Structure and MEP. The course not only facilitated all disciplines to produce 3D BIM components for modelling purposes, but more importantly on the management of information to facilitate professional issue of drawings from scheduling and tagging, with consistent information flow.

Course Learning Outcome

- Understand the basic operations of families
- Understand parametric modelling
- Understand the assignment of different parameter under different scenario
- Issue professional drawings by using family
- Adopt and apply the Family standards in projects

Course Content

1. Basic Concepts
    1.1 Understanding family hierarchy
    1.2 Using models vs. annotation
    1.3 Exploring libraries and resources

2. Annotation Families
    2.1 Kinds of annotation families
    2.2 Creating an annotation family
    2.3 Creating a tag family
    2.4 Shared parameters for tags

3. Simple Model Families
    3.1 The family creation process
    3.2 Creating a new model family
    3.3 Adding reference planes, constraints, and parameters
    3.4 Adding geometry
    3.5 Using instance parameters
    3.6 Understanding work planes
    3.7 Adding a revolve

4. Family Geometry
    4.1 Understanding reference planes

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4.2 Creating extrusions
4.3 Creating revolves
4.4 Creating blends
4.5 Creating sweeps
4.6 Creating swept blends
4.7 Using void forms

5. Beyond Geometry
5.1 Working with identity data
5.2 Adding family types
5.3 Creating type catalogs
5.4 Using material parameters
5.5 Sharing materials
5.6 Creating visibility parameters
5.7 Understanding subcategories

6. A Family in a Family
6.1 Understanding nested families
6.2 Building parametric arrays
6.3 Creating a family type parameter
6.4 Understanding shared families
6.5 Creating a profile family
6.6 Creating a parametric table edge
6.7 Modifying a profile

7. Controlling Visibility
7.1 Understanding symbolic lines
7.2 Editing element Visibility
7.3 Ensuring the display of overhead items in a plan

8. Building a Complex Parametric Model Family
8.1 Introducing complex families
8.2 Adding reference planes and importing nested families
8.3 Building arrays and applying rules
8.4 Adding formulas
8.5 Working with family type parameters and flip controls
8.6 Loading a model family

9. Creating a Parametric Key Plan
9.1 Tracing a view
9.2 Adding zones
9.3 Adding conditional formulas
9.4 Flexing the key plan

10. Controlling Rotation Work Planes and Shared Parameters
10.1 Understanding rotation in families
10.2 Building geometry on a reference line
10.3 Hosting a nested family on a reference line
10.4 Driving parameters for nested families
10.5 Shared parameters

11. The Tower and the Arch

11.1 Introduction to the arch family

11.2 Setting up reference planes and constraints

11.3 Locking down a curve

11.4 Working with advanced formulas

11.5 Creating a divided surface and completing the arch

11.6 Finalizing the arch

[CEII-D] CEII Multi-disciplinary Collaboration

CITF Pre-approved BIM Training Course Code: PBT18-084

RTTP Pre-approved BIM Training Course

Course Objective

BIM models come from different disciplines requires a coordinated and federated format. A standardized methodology is needed to align all models at the same location. Problem Detection (Clash) is needed to identify the problematic areas for project team to review and resolve the clashes and update the design models. To establish construction sequence to identify any problematic area in the sequencing and safety area. To compare the planned and actual progress.

Course Learning Outcome

- Master basic operation of Navis Works
- Consolidating different BIM Platforms to perform collaboration
- Visualize different objects and properties from different disciplines
- Able to Perform clash detection with prioritized preferences
- Use to produce 4D construction Sequence with respect to planned and actual progress comparison

Course Content

1. Introduction to Navisworks File System
　　1.1 The three Navisworks versions
　　1.2 Navisworks file types
　　1.3 Opening files directly
　　1.4 Exporting from Revit to Navisworks
　　1.5 Appending and merging models

2. Navigating in a Model
　　2.1 Looking at the navigation bar
　　2.2 Walking through your model
　　2.3 Rotating your model with the Orbit tool
　　2.4 Looking around your model
　　2.5 Using the Gravity tool
　　2.6 Using the ViewCube

3. Working with Viewpoints
　　3.1 Saving a viewpoint
　　3.2 Choosing render styles
　　3.3 Changing the background
　　3.4 Slicing your model using sectioning
　　3.5 Getting rid of lines and text

4. The Review Tab
　　4.1 Getting measurements

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4.2 Finding the shortest distance between objects

4.3 Creating redlines

5. Dealing with Objects

5.1 Selecting objects

5.2 Overriding color, transparency, and a transform

5.3 Hiding and turning on objects

5.4 Moving items

5.5 Rotating items

5.6 Scaling items

5.7 Adding links

5.8 Viewing properties and adding fields

5.9 Switching back to Revit

5.10 Holding objects

6. Sorting and Grouping

6.1 The Selection Tree

6.2 Finding items

6.3 Saving selections as a set

6.4 Using the Quick Find tool

6.5 Using the Selection Inspector

7. Clash Detection

7.1 Creating a clash test and setting rules

7.2 Selecting objects to clash and adding clearances

7.3 Running the clash

7.4 Resolving and reducing clashes

7.5 Grouping and assigning clashes

7.6 Creating reports: Viewpoints

7.7 Creating reports: HTML

8. The TimeLiner

8.1 Configuring appearances

8.2 Creating tasks

8.3 Adding selection sets to a task

8.4 Adding multiple tasks and running the movie

8.5 Simulating settings

8.6 Exporting the TimeLiner

8.7 Adding a data source

9. Quantification

9.1 Setting up workbook

9.2 Dragging items to the workbook

9.3 Taking off the entire model

9.4 Exporting the takeoff

10. Presenting, Animating, and Exporting

10.1 Animating saved viewpoints

10.2 Animating objects

10.3 Creating a script

[CEII-DY] CEII Advanced BIM Applications using Dynamo

RTTP Pre-approved BIM Training Course

Course Content

The course dedicates to professionals in AEC realm. It will explore ideas that facilitates day-to-day work and tackles particularly complex cases. What and how visual programming and parametric design brings to reality will be illustrated. Parameterization, visualization and productivity and tackling complexity will be the focuses. Course designed for advanced Revit User.

Course Learning Outcome

Underpin the solid foundation for using Dynamo. Obtain the mindset for learning traditional coding further. Learn how to increase productivity. Understand how Revit and Dynamo interacts with each other.

Course Content

1. Introduction to Visual Programming
    1.1 Why Dynamo
    1.2 Stand-alone Dynamo and Dynamo for Revit

2. Dynamo Basic
    2.1 Introduction to Nodes
    2.2 Standard Library
    2.3 Data types
    2.4 Math
    2.5 List

3. Work with geometry
    3.1 Creating and editing shapes
    3.2 Curve essential
    3.3 Creating and editing surface
    3.4 Geometry Utility

4. Dynamo with Revit
    4.1 Creating Building Elements
    4.2 Query and modify data

5. Dynamo Intermediate
    5.1 Code Block and Design Script
    5.2 Custom nodes

6. String Intermediate

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6.1 String essential
6.2 Ways to manipulate string

7. Boolean Computation

7.1 Union
7.2 Difference

8. Things to pick up

8.1 Analytic Geometry
8.2 Linear Algebra and Transformation

9. Things to avoid

9.1 Troublesome habits

10. Advanced approach

10.1 Ruby, Visual Basic, Python and C#

10.2 Revit API

[CEII-MA] CEII BIM Model Audit

CITF Pre-approved BIM Training Course Code: PBT18-085

RTTP Pre-approved BIM Training Course

Course Objective

The quality of models is a major factor towards a successful BIM Delivery. 5 tiers of quality assurance is required.
1. Visual Check via navigation walk through;
2. Interference Check using Software to identify clashes of individual discipline;
3. Standard Check to identify established BIM Standard Compliance;
4. Model Data Check to ensure the integrity of Information contained with BIM Models;
5. Multi-disciplinary Clash to identify, priorities, report, visualize and resolving problems.

Course Learning Outcome

- Able to audit the quality of BIM models.
- Thorough understanding of BIM Standards, from Design, Construction and Facility Management stages.
- Able to perform the 5 tiers of checking standards.
- Independently perform Clash Detection, Clash Reporting, Clash Prioritization, Clash Visualization, Clash Solving tasks.

Course Content

1 BIM Modelling standard
   1.1 CIC standard
   1.2 Internal standard

2 BIM Object Standard
   2.1 CIC General Requirement Object Standard
   2.2 CIC Standard for Revit

3 Project Execution Plan
   3.1 BIM Use matrix
   3.2 LOD level
   3.3 Standards

4 BIM Roles - Modeler, Discipline Lead, BIM Manager/ Information Manager, Auditor

5 Model Audit Procedure
   5.1 Submission log
   5.2 Comparison of versioning
   5.3 Collaboration Check
   5.4 Navis works checking
   5.5 Clash Detection, Prioritization, visualization and Solving

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[CEIII-A] CEIII Architecture

CITF Pre-approved BIM Training Course Code: PBT18-086

RTTP Pre-approved BIM Training Course

Course Objective

CEIII course is the professional level course dedicated to professional architectural designers. It is concentrating on BIM Management level rather than operational level.

The course highlights how BIM can be and shall be implemented in the architectural discipline. Starting from Concept Design, Detailed Design, Statutory Submission, Contract Documentations to the Project Management level; the course ties in with the whole professional services in using BIM.

Being the information originator, architect leads the information flow and facilitates the project collaboratively. Analytical value of BIM can be experienced through the BIM process to come up with better design decisions.

Course Learning Outcome

- Able to integrate Professional Architectural Practice integrate with the BIM Workflow.
- Able to use BIM as a design tool, collaboration tool and Project Management Tool.
- Able to use BIM to produce Statutory Drawings.
- Able to produce Contractual Documentation using BIM.
- Understand the BIM workflow in Project Management through construction Stage.
- Able to specify BIM specification.
- Able to colloborate with other design discpline for a federated model and produce co-ordinated Architectural Design.

Course Content

1. Project Inception
    1.1 Project Execution Plan
    1.2 BIM Standard
    1.3 Proactive BIM vs Reactive BIM

2. Conceptual Design
    2.1 Space Planning using BIM
    2.2 Master Planning
    2.3 Method of Volume analysis
    2.4 Landscape Planning using BIM
    2.5 Conceptual Mass Planning and Schematic Design
    2.6 Design Options and Phasing
    2.7 Organic Architecture and Parametric Design
    2.8 Conditional Formulas and schedules
    2.9 Roles and Responsibility in BIM context
    2.10 How to set up BIM architectural office
    2.11 Inter-operability and Open BIM

3. Detailed Design
    3.1 Sustainable Design

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3.2 Daylight, Wind, Noise Analysis

3.3 Energy Analysis

3.4 BIM in Alteration and Addition

3.5 BIM-based building performance analysis

3.6 Collaboration among different disciplines

4. Statutory Submission

4.1 Government Submission Drawing and Area Calculation

4.2 BIM in Heritage Building Conservation

5. Contract Documentation

5.1 Creation and modeling of architectural detail drawings

5.2 Contract Management in BIM

5.3 Legal Implications

5.4 Contractual Implications

6. Project Management

6.1 Safety Analysis

6.2 From Design, Documentation, Construction to Manufacturing

6.3 Cost benefit

6.4 Extracting and statistical analysis of volume or form

6.5 Importing BIM into related building performance analysis software for daylight, ventilation, acoustic or energy consumption analysis

6.6 Intellectual Property Rights

[CEIII-GR] CEIII GBP Submission (Revit)

CITF Pre-approved BIM Training Course Code: PBT18-087

RTTP Pre-approved BIM Training Course

Course Objective

This is the advanced course for the formal Architectural Submission to the Authority using BIM technology. Submission includes:
1. Drawing generation of plans - section and elevations in prescribed format;
2. Area information extraction such as GFA, UFA, UFS, Site Coverage etc and prepare those areas plans;
3. Statutory calculation such as Means of Escape, Discharge Value, Sanitary Fitments requirements etc.

Course Learning Outcome

- Understand technical know-how of GBP submission using Revit.
- Able to produce GBP drawings in accordance to PNAP ADM-9 requriements.
- Able to extract information from BIM Model to form GFA, UFA, Site Coverage etc area diagrammes.
- Able to prepare statuory requirements as per PNAP ADM-19.

Course Content

1. Introduction to GBP Submission
    1.1 Introducing Traditional General Building Plan Process

2. Current Practice Note on BIM for GBP Requirements
    2.1 ADM 9 Colouring of Plans
    2.2 ADV 33 Essential Information in Plan Submissions
    2.3 ADV 34 Building Information Modelling

3. BIM Statutory Submission Drawings
    3.1 BIM Workflow of producing GBP
    3.2 Drawing Graphics Standards

4. BIM Produced Drawing Graphics
    4.1 Visibility Override
    4.2 Tag Control
    4.3 Location Plan, Site Plan
    4.4 Legend and Abbreviations
    4.5 Text Node and Notes
    4.6 Colour Indications
    4.7 Emergency Vehicle Access
    4.8 Floor Plans
    4.9 Sections
    4.10 Elevations

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[CEIII-GA] CEIII GBP Submission (ArchiCAD)

RTTP Pre-approved BIM Training Course

Course Objective

This is the advanced course for the formal Architectural Submission to the Authority using BIM technology. Submission includes:

1. Drawing generation of plans - section and elevations in prescribed format;
2. Area information extraction such as GFA, UFA, UFS, Site Coverage etc and prepare those areas plans;
3. Statutory calculation such as Means of Escape, Discharge Value, Sanitary Fitments requirements etc.

Course Learning Outcome

- Understand technical know-how of GBP submission using Revit.
- Able to produce GBP drawings in accordance to PNAP ADM-9 requriements.
- Able to extract information from BIM Model to form GFA, UFA, Site Coverage etc area diagrammes.
- Able to prepare statuory requirements as per PNAP ADM-19.

Course Content

1. Introduction to GBP Submission
   1.1 Introducing Traditional General Building Plan Process

2. Current Practice Note on BIM for GBP Requirements
   2.1 ADM 9 Colouring of Plans
   2.2 ADV 33 Essential Information in Plan Submissions
   2.3 ADV 34 Building Information Modelling

3. BIM Statutory Submission Drawings
   3.1 BIM Workflow of producing GBP
   3.2 Drawing Graphics Standards

4. BIM Produced Drawing Graphics
   4.1 Layers
   4.2 Labelling
   4.3 Location Plan, Site Plan
   4.4 Legend and Abbreviations
   4.5 Notes
   4.7 Emergency Vehicle Access
   4.6 Graphic Overrides
   4.6 Colouring
   4.8 Floor Plans
   4.9 Sections
   4.10 Elevations
   4.11 Fire Services Provisions Graphical Presentation

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5. Data Extraction
5.1 UFA diagrams
5.2 GFA diagrams
5.3 Site Coverage diagram

6. Statutory Calculations
6.1 Fundamental Checking as per Current Practice Notes
6.2 Checking of Site Coverage, Plot Ratio, and dedication
6.3 Checking of Means of Escape
6.4 Checking of Sanitary Fitment Provision
6.5 Checking of Fire Compartment and Fire Resisting Construction
6.6 Discharge Value
6.7 TBE and Refuse Collection Point Calculations

7 Creation of drawing sheets
7.1 Creation of drawing sheets
7.2 Setting the margin, border, title and countersign column content of a drawing sheet

8. Alteration & Addition
8.1 Existing Plan
8.2 Demolition Plan
8.3 New Construction

9. Archiving
9.1 Submission Version Control
9.2 Retrieval of Submission Drawings

10. Amendments
10.1 Current Practice – Hand amended information
10.2 Existing Information
10.3 New amendments

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[CEIII-DP] CEIII Architectural Drawing Production (Revit)

RTTP Pre-approved BIM Training Course

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Training Programme

Course Objective

This is the advanced course for the formal Architectural drawings to be produced from the Architectural BIM Model and Structural BIM Models.

Coached by experienced industry professional practitioners who understand the industry drawing practices with contractual context.   Students shall be able to produce truly BIM Generated Drawing Production for technical drawings.

Able to include drawings: Title block, Automatic Drawing List, General Notes, Legends, Block Plan, Location Plan, Site Plan, General Arrangement plans, Sections, Elevations, Isometric, Perspective, Rendering, Walkthrough, Sectional Perspective, Exploded Assembly drawings, Blow up drawings, door schedule, finishes schedule, area schedule, Window Schedule, signage schedule, detail drawings....

Course Learning Outcome

- Able to produce truly BIM Generated Drawing Production for technical drawings.
- Able to include drawings: Title block, Automatic Drawing List, General Notes, Legends, Block Plan, Location Plan, Site Plan, General Arrangement plans, Sections, Elevations, Isometric, Perspective, Rendering, Walkthrough, Sectional Perspective, Exploded Assembly drawings, Blow up drawings, door schedule, finishes schedule, area schedule, Window Scheudle, signage schedule, detail drawings....

Course Content

1. Introduction to Architectural Drawings
   1.1 Content
   1.2 Graphical Requirements
   1.3 Scheduled Requirements
   1.4 Annotation Requirements
   1.5 Accessories Settings – paper size, line weight, line type

2. From Model to Drawing
   2.1 View to Sheets
   2.2 Alignment of Views on sheet
   2.3 View Naming
   2.4 View Scale/ Sheet scale
   2.5 Colour
   2.6 Conditional Formatting
   2.7 Title Block
   2.8 Project Information setting up
   2.9 Colour Fill Legend
   2.10 Annotation
   2.11 Auto-dimentioning

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3. Presentation Drawing

3.1 Isometric/ Perspective
3.2 Section Perspective
3.3 Exploded View
3.4 BIM rendering
3.5 Walkthrough
3.6 Area Plan
3.7 Landscape Plan
3.8 Schedule of Accommodation and its compliance
3.9 Design Options
3.10 Master Plan

4. Tender Drawings

4.1 Title block
4.2 Automatic Drawing List
4.3 General Notes
4.4 Legend
4.5 Block Plan
4.6 Location Plan
4.7 Site Plan
4.8 General Arrangement plans
4.9 Sections
4.10 Elevations
4.11 Exploded Assembly drawings
4.12 Blow up drawings
4.13 door schedule
4.14 Finishes schedule
4.15 Precast Schedule
4.16 Curtain Wall Detailing
4.17 Area schedules
4.18 Window Schedule
4.19 Signage schedule
4.20 Detail drawings

5. Change Management

5.1 Revision and Clouding
5.2 DWFx issuing and commenting
5.3 Design
5.3 E-Transmittal
5.4 Archiving
5.5 Printing

6. Exchange of Data Format

6.1 Import and Export to CAD system
6.2 Import and Export of other 3D platforms e.g. SAT
6.3 Import and Export through IFC
6.3 Import and Export with other Rending FBX
6.4 Export of OBDC database

[CEIII-S] CEIII Structure

CITF Pre-approved BIM Training Course Code: PBT18-088

RTTP Pre-approved BIM Training Course

Course Objective

CEIII course is the professional level course dedicated to professional structural engineers. It is concentrating on BIM Management level rather than operational level.

The course highlights how BIM can be and shall be implemented in the structural discipline. Starting from Concept Design, Detailed Design, Statutory Submission, Contract Documentations to the Project Management level; the course ties in with the whole professional services in using BIM.

Being an important part of the project team, structural engineers collaboratively integrate the architectural designs with professional inputs. Analytical value of BIM can be experienced through the BIM process to come up with better design decisions.

Course Learning Outcome

- Manage the BIM project as structural professional in project
- Coordinate the design intent and structural submission drawings with other discipline
- Keep up the latest design changes during the project coordination including loading schedule and rebar schedule
- Assign suitable BIM modeller / Coordinator to facilitate the BIM process
- Manage the LOD requirements with BIM spec for the structural objects
- Coordinate rebar schedule and fixing details with fabricators.

Course Content

1 Inception
    1.1 Project Execution Plan
    1.2 BIM Standard

2. Conceptual Design
    2.1 Preliminary BIM Structural Design
    2.2 Concrete Superstructure Design
    2.3 Steel Structure Design
    2.4 Roads and Bridges Modelling
    2.5 Extracting and statistical analysis of volume or form

3. Detailed Design
    3.1 Site Analysis and bore logging
    3.2 Excavation & Lateral Support design
    3.3 Foundation Design
    3.4 Piling & Pile Cap Design
    3.5 Creation and modeling of structural detail drawings
    3.6 BIM-based Structural Analysis
    3.7 Discrepancy between modelling quantities and measured quantities

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4. Statutory Submission

    4.1 Preparation of Government Submission Drawing

    4.2 Structural Calculation

5. Contract Documentation

    5.1 Production of tender/ Construction drawings

    5.2 Structural detailing

    5.3 Precast

6. Project Management

    6.1 Structural Plugins

    6.2 Cost benefit

    6.3 Intellectual Property Rights

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[CEIII-SS] CEIII Structure Submission and Rebar Schedule (Revit)

CITF Pre-approved BIM Training Course Code: PBT18-089

RTTP Pre-approved BIM Training Course

Course Objective

This is an advanced BIM course in structural discipline emphasizing on the statutory submission and producing streamlined bar bending schedule for off-site steel fabrication following the DevB's new BIM requirements. The course focus on the advance modelling technics on producing the BD submission drawing based on the parametric BIM structural Model.

The 3D reinforcement model will also be taught in order to produce Rebar Schedule and fixing details for local steel fixer and steel fabricator. This special course is aimed to make the streamline BIM process from Design, submission, and downstream rebar fixing becoming smooth process in order to increase the construction productivity.

Course Learning Outcome

- Understanding relationship between structural modelling and analytical modelling.
- Prepare parametric structural BIM elements for producing statutory Submission Documents.
- Establish Structural Templates for Government Submissions.
- 3D reinforcement modelling for different elements
- Producing Bar Bending Schedule for fabricators.
- Steel and concrete quantity taking-off for project estimations

Course Content

1 Brief highlights on BIM for structural engineers and design professionals

2 Prepare Revit Structural model for analysis and design

3 Analytical links in structural models

4 Prepare Load case and Load Combination

5 Prepare support conditions

6 Revit two way BIM links with Robot Structural Analysis

7 Information exchange between structural Analysis output and BIM model

8 3D to 2D Drawing submission - Steel member and connection design

9 3D to 2D Drawing submission - Concrete structure design Bar Bending schedule extracted from BIM model for pre-fabricated off-site

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10 Bar Bending schedule extracted from BIM model for Re-bar prefabricated off-site

[CEIII-M] CEIII MEP (Revit)

CITF Pre-approved BIM Training Course Code: PBT18-090

RTTP Pre-approved BIM Training Course

Course Objective

CEIII course is the professional level course dedicated to professional building engineers. It is concentrating on BIM Management level rather than operational level.

The course highlights how BIM can be and shall be implemented in the MEP discipline. Starting from Concept Design, Detailed Design, Statutory Submission, Contract Documentations to the Project Management level; the course ties in with the whole professional services in using BIM.

Being an important part of the project team, Building Services Engineers collaboratively integrate the architectural and structural designs with professional inputs. Analytical value of BIM can be experienced through the BIM process to come up with better design decisions.

Course Learning Outcome

- Able to apply BIM in the MEP design and co-ordination.
- Able to produce Veritical line diagrammes to describe the MEP systems.
- Able to produce MEP drawings of individual MEP discipline.
- Able to colloborate with other design discipline for a federated model and produce co-ordinated MEP Design.

Course Content

1. Inception
- 1.1 Project Execution Plan
- 1.2 BIM Standard

2. Conceptual Design
- 2.1 MEP BIM modeling
- 2.2 Preliminary MEP loading calculation
- 2.3 Extracting and statistical analysis of MEP elements
- 2.4 Spatial Planning for E/M provisions
- 2.5 Spatial data modeling and acquisition

3. Detailed Design
- 3.1 HVAC System Design (building)
- 3.2 Fire Service System Design (building)
- 3.3 Plumbing & Drainage System Design (building)
- 3.4 Electrical System Design (building)
- 3.5 Water supply network design (underground)
- 3.6 Drainage and sewerage network design (underground)
- 3.7 Power cable, gas and telecommunication network design (underground)
- 3.8 Duct Sizing
- 3.9 Creation and modeling of MEP detail drawings
- 3.10 Discrepancy between modelling quantities and measured quantities

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3.11 Method of load calculation and analysis

3.12 Connection of Revit with other Analytical software

4. Statutory Submission

4.1 Preparation of Government Submission Drawing

4.2 MEP Calculation

5. Contract Documentation

5.1 Production of tender/ Construction drawings

5.2 MEP Symbolization

5.3 Clash Detection Matrix

6. Construction

6.1 Contractor submissions

6.2 As built BIM information

7. Project Management

7.1 MEP Plugins

7.2 Cost benefit

7.3 Intellectual Property Rights

7.4 Cloud Collaboration

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[CEIII-Q] CEIII Cost Management

CITF Pre-approved BIM Training Course Code: PBT18-091

Course Objective

CEIII course is the professional level course dedicated to professional Cost Estimator and Quantity Surveyors. It is concentrating on BIM Management level rather than operational level.

The value of BIM lies in the extraction of useful information from the BIM models. Cost estimation is a direct accessible information calculable from the quantities of BIM objects. The consistency of information bridging the design and the cost with direct feedback.

This course concentrates on the information extraction to facilitate estimation, tendering process and cost control over the BIM process.

Course Learning Outcome

- Able to extract useful information from BIM models.
- Identify the need to supplement requirements from raw BIM information to Processed professional cost information.
- Able to raise the initial requirements for the BIM Modelling techniques in costing.
- Understand the BIM in tendering and cost control using BIM methodology.

Course Content

1. Overview
   1.1 Overview of BIM for Quantity Surveying
   1.2 Collaboration
   1.3 Communication

2. Standards
   2.1 BIM Standard
   2.2 Standard Method of Modelling in BIM
   2.3 Standard Method of Measurement (SMM) and BIM measurement

3. Quantity Take Off (QTO)
   3.1 Quantities from Architecture Model
   3.2 Quantities from Structural Model
   3.3 Quantities from MEP Models
   3.4 Quantities not from BIM Models

4. Measure the Immeasurable
   4.1 Organic Architecture Measurement
   4.2 Comparison of Design, Progress and As-Built

5. Generation of Bills of Quantities
   5.1 Automatic Quantity + Specifications
   5.2 Standardization of Element codings

6. 4D Construction
   6.1 Time Management

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[CEIII-C] CEIII Construction Management

CITF Pre-approved BIM Training Course Code: PBT18-092

Course Objective

CEIII course is the professional level course dedicated to professional contractors. It is concentrating on BIM Management level rather than operational level.

While BIM has been used in design phase, this course concentrates on the application of BIM during the construction phase to improve the constructability, efficiency, and extensive project management and logistic tasks on site. BIM does not involve the Main Contractor but also all the next tier sub-contractors and suppliers.

Mobility in BIM and information sources is the key to successful implementation of BIM. Cloud based integration is the main focus.

Course Learning Outcome

- Able to extract useful information from BIM models.
- Identify the need to supplement requirements from raw BIM information to Processed professional cost information.
- Able to raise the initial requirements for the BIM Modelling techniques in costing.
- Understand the BIM in tendering and cost control using BIM methodology.

Course Content

1. Information-focused BIM
    1.1 Site formation and referencing
        1.1.1 Hong Kong coordinate systems
        1.1.2 Site survey planning and control
    1.2 3D Spatial data acquisition techniques
        1.2.1 GPS
        1.2.2 Land and engineering surveying
        1.2.3 Hydrographic and underground utility surveying
    1.3 UAV and terrestrial photogrammetry (including IR imagery) and laser scanning
        1.3.1 3D model creation
        1.3.2 Cloud data capture, processing and error modeling

2. Application-focused BIM
    2.1 Site Planning and Space Management
    2.2 Design Authoring
    2.3 Design Review
    2.4 3D Project visualization
    2.5 Site Analysis and Site utilization planning
    2.6 3D MEP coordination/ Clash Analysis/ Building Systems' analysis
    2.7 4D Construction Programming and Scheduling
    2.8 5D (five-dimensional) Cost Estimating, Value Engineering analysis
    2.9 6D Safety Management
    2.10 Cloud

3. Integration-focused BIM
    3.1 BIM Job Bidding
    3.2 BIM-integrated construction
    3.3 Integrated project delivery
    3.4 Project Team Collaboration
    3.5 Cloud-based Collaboration

4. Level of Detail / Level of Development

5. Contractual Implication of BIM model

6. BIM in Prefabrication and Manufacturing

7. Material Delivery
    7.1 RFID
    7.2 Reporting

8. How does BIM-related Quantity extraction, SMM vs BIM, Quantity and Specification, Preparation of BQ.

9. Roles and Responsibilities

[CEIII-B] CEIII BIM Management

CITF Pre-approved BIM Training Course Code: PBT18-002

RTTP Pre-approved BIM Training Course

Course Objective

CEIII course is the professional level course dedicated to professional BIM Manager. It is concentrating on BIM Management level rather than operational level.

Being a new role in the construction industry, BIM Management use BIM as a unifying tool to collaborate all design professionals, from design stage to construction stage and even extends to the Facility Management Stage.

This course concentrates on the BIM Management implementations with Project Execution Plan, uphold and maintenance of BIM requirements and standards govern the implementation of successful BIM process. BIM Managers are the drive force of the team to obtain values for all team players.

Course Learning Outcome

- Full understanding of BIM workflow in Design, Construction and FM stages.
- Understanding of BIM workflow and terminology.
- Able to prepare and administer BIM Project Execution Plan.
- Able to specify LOD levels at all stages.
- Able to require and assess appropriate BIM practitioners and contractual procurements.

Course Content

1. Hardware, Software, Network requirements
    1.1 Scale/ Location of Project
    1.2 Scale/ Location/ Composition of Firm and Design/Construction/Operation Team

2. Role and Responsibility
    2.1 Role of BIM Manager, Designers, Contractors, Operators
    2.2 Information Management; Design Content Management
    2.3 Legal Implication and Intellectual Property Right Issues

3. Establishment of BIM Strategy
    3.1 Project Specifications
    3.2 Project Delivery Methods
    3.2 Level of Development
    3.4 Project Execution Plan

4. Modeling and Processing BIM Data
    4.1 Geo-spatial data acquisition techniques
4.1.1 Topographic and 3D terrain
4.1.2 Sub-surface – hydrographic and 3D underground utility
    4.2 Geo-spatial referencing of BIM data
4.2.1 Hong Kong coordinate systems
4.2.2 Local coordinate systems

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4.2.3 Geographic and Cartesian coordinate systems
4.3 Spatial data modeling and management
4.3.1 Transformation of raw data to spatial data
4.3.2 Geometric and attribute modeling
4.3.3 Geographic information system
4.3.4 Data accuracy and representation

5. Inter-operability
5.1 Integration of different BIM Platforms
5.2 IFC Standard – limitations and capabilities
5.3 Integration of CAD and BIM technologies

6. BIM Standard
6.1 BIM Protocol
6.2 International & National Standard, Company Standard, Project Standard
6.3 3D Spatial data infrastructure and BIM

7. Establishment of BIM Team
7.1 BIM Training and Recruitment

8. Communication & Collaboration
8.1 Traditional Work Process
8.2 Cloud-based BIM process
8.3 Project Management Platforms

9. History and Archiving of BIM information

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