A picture containing knife, brush

Description automatically generatedA picture containing shape

Description automatically generated



BIM EXECUTION PLAN

March 28, 2023

FOR

PROJECT

DEVELOPED BY

NORTHEASTERN UNIVERSITY

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# BIM EXECUTION PLAN OVERVIEW

This document is a resource for project managers, architects, engineers, and contractors working on Northeastern University construction and renovation projects. The purpose of this document is to convey the requirements for project closeout documentation and provide standards for creating and delivering documentation at the close of Northeastern University projects.

Acknowledged that Northeastern University construction and renovation project deliverables may vary depending on size and type of work. For instance, some projects may not produce drawings in any format, or require regulatory approvals. However, all architects, engineers, and contractors must submit applicable deliverables as described within this document.

These requirements ensure that Northeastern University receives an accurate record of final project work. They clearly identify roles and responsibilities early in the project and promote a standard for consistency that ensures the long-term value and accessibility of construction project deliverables. Architects, Engineers, and Contractors must deliver required documentation (where applicable) and adhere to the standards described herein.

# PROJECT INFORMATION

This section identifies the team, project objectives, phases, and communication plan.

|  |  |
| --- | --- |
| **NU Project Name** |  |
| **NU Project Number** |  |
| **NU Campus** |  |
| **NU Building Name** |  |
| **NU Building Address** |  |
| **Project Type** |  |
| **Contract Type/Delivery Method** |  |
| **Project Gross Square Footage** |  |
| **Brief Project Description** |  |

### KEY CONTACTS

This section identifies the team, including Project Managers, BIM/VDC Managers, Discipline Leads.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Discipline/Trade** | **Organization** | **Contact Name** | **Role/Title** | **E-Mail** | **Phone** |
| Owner |  |  |  |  |  |
| Owner PM |  |  |  |  |  |
| Architect |  |  |  |  |  |
| Landscape Arch |  |  |  |  |  |
| Structure |  |  |  |  |  |
| MEP/FP |  |  |  |  |  |
| Code |  |  |  |  |  |
| CM/GC |  |  |  |  |  |

### Project Goals and BIM Uses

For each of the following job functions, NU intends Building Information Models to:

|  |  |  |  |
| --- | --- | --- | --- |
| **Project Goal** | **Objective** | **Achieved if** | **Project Timeframe** |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

### Project Phases and Milestones

The project’s Prime A/E should provide the following schedule information, with input from the University Project Manager. The table should be updated per specific project delivery requirements such as GMP documents and other milestones.

|  |  |  |  |
| --- | --- | --- | --- |
| **Project Phase / Milestone** | **Estimated Start** | **Estimated Completion** | **Project Stakeholders Involved** |
| Conceptualization/ Programming | --/--/---- | --/--/---- | Owner, Architect, Consulting Engineers, CM |
| Schematic Design |  |  | Owner, Architect, Consulting Engineers, CM, Commission Agent |
| Design Development |  |  | Owner, Architect, Consulting Engineers, CM, Commission Agent |
| Construction Documents |  |  | Owner, Architect, Consulting Engineers, CM |
| Agency Coordination/Final Buyout |  |  | Owner, Architect, Consulting Engineers, CM |
| Construction |  |  | Owner, Architect, Consulting Engineers, CM, Commission Agent |
| Handover/Document Review |  |  | Owner, Architect, Consulting Engineers, CM, Commission Agent |
| Facility Management |  |  | Owner, Architect |

# MODELING PLAN

NU’s asset inventory, along with all relevant information and reference documents, must be accumulated and normalized through a very dynamic construction process from many

### Authoring Software

Revit Version and Year:

|  |  |  |
| --- | --- | --- |
| **SOFTWARE** | **VERSION** | **SERVICE PACK NO.** |
| AUTODESK REVIT | 20\_\_ | TBD |

Due to Revit’s non-backward compatibility, all project stakeholders must work in the same release year of Revit to ensure that everyone is able to collaborate. Additionally, it is best practice and often required that all stakeholders have the same service pack installed.

Revit versions 2020 or higher are acceptable file formats for as-built project drawings. All drawings prepared for Northeastern University must be submitted in \*.rvt format

### Information Exchange Software and Administration

|  |  |  |  |
| --- | --- | --- | --- |
| **FUNCTION** | **SOFTWARE** | **ADMINISTRATOR** | **ADMINISTRATOR CONTACT** |
| Designers’ Transmittals | Newforma |  |  |
| Model Hosting | Autodesk Construction Cloud (ACC) |  |  |
| Construction Document Management | Procore, Unifier, Ebuilder, Digital Exchange |  |  |
| NU Archives | Preservica |  |  |

### File Naming

Model file names shall be formatted as:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **00000** | **-** | **Grafton Hall Lab** | **-** | **A** | **-** | **Core and Shell** | **-** | **2020** |
| NU Project Number | - | Building and Project Description | - | Discipline or Trade Designation | - | Descriptor, when necessary | - | Revit Release |

**Discipline Designator** indicates the category of subject matter contained on the specified layer or file name. The Discipline Designator is a one or two-character field. The first character is the discipline character, and the second character is an optional modifier.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **1 LEVEL DISCIPLINE DESIGNATORS** | | | | |
| A | Architectural |  | M | Mechanical |
| B | Geotechnical |  | O | Operations |
| C | Civil |  | P | Plumbing |
| D | Process |  | Q | Equipment |
| E | Electrical |  | R | Resource |
| F | Fire Protection |  | S | Structural |
| G | General |  | T | Telecommunications |
| H | Hazardous Materials |  | V | Survey / Mapping |
| I | Interiors |  | W | Distributed Energy |
| K | Kitchen Equipment |  | X | Other Disciplines |
| L | Landscape |  | Z | Contract / Shop Drawings |
| LTG | Lighting |  |  |  |

### Data Exchange Matrix

✓ - required  - required for record only

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Originator** | **File Type** | **Receiver** | | | | | | |
| **Arch** | **Struct** | **Land** | **MEP** | **FP** | **CM** | **Owner** |
| Architect | .rvt |  |  |  |  |  |  |  |
| .dwg |  |  |  |  |  |  |  |
| .nwd |  |  |  |  |  |  |  |
| .ifc |  |  |  |  |  |  |  |
| .xls |  |  |  |  |  |  |  |
| .pdf |  |  |  |  |  |  |  |
| .tiff |  |  |  |  |  |  |  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Originator** | **File Type** | **Receiver** | | | | | | |
| **Arch** | **Struct** | **Land** | **MEP** | **FP** | **CM** | **Owner** |
| Structural | .rvt |  |  |  |  |  |  |  |
| .dwg |  |  |  |  |  |  |  |
| .nwd |  |  |  |  |  |  |  |
| .ifc |  |  |  |  |  |  |  |
| .xls |  |  |  |  |  |  |  |
| .pdf |  |  |  |  |  |  |  |
| .tiff |  |  |  |  |  |  |  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Originator** | **File Type** | **Receiver** | | | | | | |
| **Arch** | **Struct** | **Land** | **MEP** | **FP** | **CM** | **Owner** |
| Landscape | .rvt |  |  |  |  |  |  |  |
| .dwg |  |  |  |  |  |  |  |
| .nwd |  |  |  |  |  |  |  |
| .ifc |  |  |  |  |  |  |  |
| .xls |  |  |  |  |  |  |  |
| .pdf |  |  |  |  |  |  |  |
| .tiff |  |  |  |  |  |  |  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Originator** | **File Type** | **Receiver** | | | | | | |
| **Arch** | **Struct** | **Land** | **MEP** | **FP** | **CM** | **Owner** |
| Mechanical/  Electrical/  Plumbing | .rvt |  |  |  |  |  |  |  |
| .dwg |  |  |  |  |  |  |  |
| .nwd |  |  |  |  |  |  |  |
| .ifc |  |  |  |  |  |  |  |
| .xls |  |  |  |  |  |  |  |
| .pdf |  |  |  |  |  |  |  |
| .tiff |  |  |  |  |  |  |  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Originator** | **File Type** | **Receiver** | | | | | | |
| **Arch** | **Struct** | **Land** | **MEP** | **FP** | **CM** | **Owner** |
| Fire Protection | .rvt |  |  |  |  |  |  |  |
| .dwg |  |  |  |  |  |  |  |
| .nwd |  |  |  |  |  |  |  |
| .ifc |  |  |  |  |  |  |  |
| .xls |  |  |  |  |  |  |  |
| .pdf |  |  |  |  |  |  |  |
| .tiff |  |  |  |  |  |  |  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Originator** | **File Type** | **Receiver** | | | | | | |
| **Arch** | **Struct** | **Land** | **MEP** | **FP** | **CM** | **Owner** |
| CM | .rvt |  |  |  |  |  |  |  |
| .dwg |  |  |  |  |  |  |  |
| .nwd |  |  |  |  |  |  |  |
| .ifc |  |  |  |  |  |  |  |
| .xls |  |  |  |  |  |  |  |
| .pdf |  |  |  |  |  |  |  |
| .tiff |  |  |  |  |  |  |  |

# Delivery Milestones and Deliverables

Any requirements or allowances made in this document are considered for electronic BIM turnover purposes, and do not supersede or replace any requirements, written or implicit, necessary for design, coordination or construction.

BIM turnover requirements also do not supersede submittal requirements for design review. For design review needs, please communicate with the NU PM and NU Commissioning / NU Trades and Services.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Milestone** | **BIM Submittal Item** | **Owner** | **Approximate Due Date** | **Format** | **Notes** |
| SD | BIM Execution Plan | Architect |  | .doc |  |
| 100% DD | Model  Room Inventory  Coarse Asset Inventory | Architect |  | .rvt  .xls  .xls |  |
| Model | Engineers |  | .rvt | BIM contains spaces and required Parameters, though not completed |
| 90% CD | Model  Room Inventory  Coarse Asset Inventory | Architect |  | .rvt  .xls  .xls |  |
| Model  Coarse Asset Inventory | Engineers |  | .rvt  .xls |  |
| 100% CD | Model  Construction Docs  Room Inventory  Design Asset Inventory | Architect |  | .rvt  .pdf  .xls  .xls |  |
| Model  Construction Docs  Design Asset Inventory | Engineers |  | .rvt  .pdf  .xls |  |
| Bulletins | Model | Architect |  |  | Room and Asset Inventory only required if changed |
| Model | Engineers |  |  |  |
| Coordination Complete Level 3 | Model  Asset Inventory | Contractors |  | .rvt  .xls |  |
| Coordination Complete Level 4 | Model  Asset Inventory | Contractors |  | rvt  .xls |  |
| Coordination Complete Level 5 | Model  Asset Inventory | Contractors |  | rvt  .xls |  |
|  |  |  |  |  |  |
| Close Out | Conformed Model  Construction Docs | Architect |  | .rvt  .pdf |  |
| Conformed Model  Construction Docs | Engineers |  | rvt  .pdf |  |
| As-Built Models  Shop Drawings  Final Asset Inventory | Contractors |  | .rvt  .pdf  .xls | Asset inventory provided to Prime A/E for coordination & delivery |

# Quality Assurance

The quality of the finished product depends greatly on the quality of the design. In a BIM environment, the quality of the design depends on the quality of the models, and the documents produced from those models. In order to produce quality models, NU is committed to performing focused, scheduled quality checks throughout our design process.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **QUALITY CONTROL SCHEDULE** | | | | |
| Checks | **Definition** | **Responsible Party** | **Software Program(s)** | **Frequency** |
| Visual Constructability Checks | Ensure there are no unintended model components, the design intent has been followed, and model reflects constructible building elements. | Design Team  Construction Manager | Revit  Navisworks | As-needed |
| Collision check | Detect problems in the model where two building components are clashing including soft and hard clashes. | Construction Manager  Trades | Navisworks Manage | Weekly |
| Model Integrity Checks | Check the models for duplicate elements; ensure that models reflect the current design; ensure that systems models illustrate the as-built conditions. | Design Team  Construction Manager | Miscellaneous | Monthly |
| Model Warnings Review | Check the model warnings for resolvable issues and keep overall quantity low. | Design Team | Revit | Monthly |