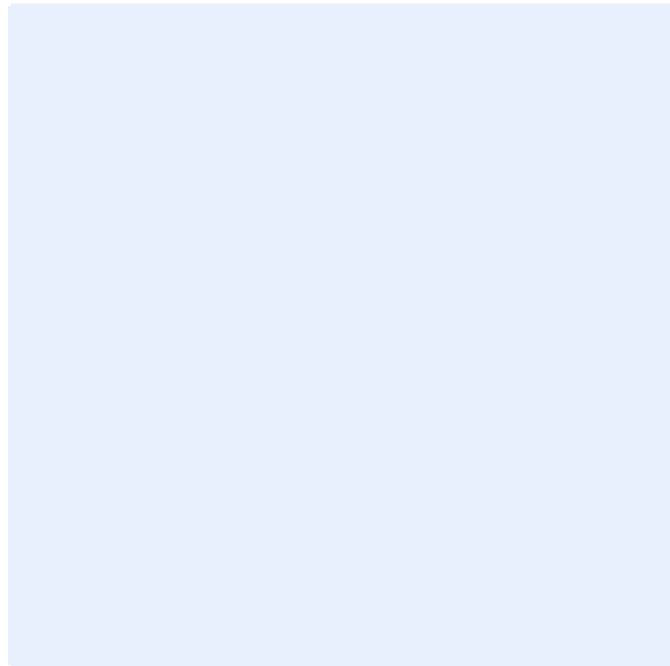




Project BIM Execution Plan

[Project Name]

Revision [Revision Number]
Submitted Date: [Submission Date]
Author Name: [Name]
Author Company: [Name]
Author E-mail: [Name]



BIM Execution Plan Overview

The intent of this project BIM Execution Plan is to provide a framework that will let the owner, architect, engineers, and construction manager to deploy building information modeling (BIM) technology and best practices on this project faster and more cost-effectively. This plan delineates roles and responsibilities of each party, the detail and scope of information to be shared, relevant business processes and supporting software. The BEP will be revisited and updated at each design phase and at the onset of construction. **All text that is RED is for illustrative and guidance purposes by UCSD only and should not be construed as a formalized response to this execution plan. Items in red are for reference only and should be deleted or replaced with relevant project information.**

Section 1: Project Information

Section 1.1 General Project Information

Project Name	[Project Name]
UCSD Project Number	Click or tap here to enter text.
Project Location/Address	Click or tap here to enter text.
Contract Type/Delivery Method	Choose an item.
Project Size (GSF)	Click or tap here to enter text. GSF
Number of Floors	Click or tap here to enter text.
General Project Description	Click or tap here to enter text.

Section 1.2 Project Contacts

Below are the primary contacts from each stakeholder for BIM-related topics. These contacts should be used to obtain information and answer any questions related to their organizations models or downstream needs relevant to BIM and BIM deliverables.

University Contacts

Role	Organization	Contact Name	Location	E-Mail	Phone
UCSD Project Manager	UCSD				
UCSD BIM Lead	UCSD				
UCSD – [Other]	UCSD				
UCSD – [Other]	UCSD				

Design Contacts

Role	Organization	Contact Name	Location	E-Mail	Phone
Architectural BIM Manager					
Structural Engineer BIM-responsible					
Mechanical Engineer BIM-responsible					
Plumbing Engineer BIM-responsible					
Electrical Engineer BIM-responsible					

Civil Engineer BIM-responsible					
Lighting Consultant BIM- responsible					
Landscape Architect BIM- responsible					
[Other] Design Consultant BIM- Responsible					
[Other] Design Consultant BIM- Responsible					

Construction Contacts

Role	Organization	Contact Name	Location	E-Mail	Phone
CM/GC BIM Manager					
Steel Subcontractor BIM-responsible					
Concrete Subcontractor BIM-responsible					
Mechanical Sub BIM-responsible					
Plumbing Sub BIM-responsible					

Electrical Sub BIM-responsible					
Utilities Sub BIM-responsible					
Fire Protection Sub BIM- responsible					
[Other] Sub BIM-responsible					
[Other] Sub BIM-Responsible					
[Other] Sub BIM-Responsible					

Section 1.3 Project Schedule

The table below identifies all stakeholders involved in completing the project phase milestones. Start and end dates correspond with the approved project schedule. The intent is to list broad time ranges for when the project team will be developing the design authoring models, construction models, and as-built and/or record models throughout the project. Stakeholders involved should be the contributing parties assigned to those tasks within the phases for the project. For discipline and system-specific model element LOD definitions and authors, the project team should complete a project BIM LOD Matrix (Appendix C of the University BIM Guide). Minimum University requirements for element LODs are denoted in the template BIM LOD Matrix.

Project Stage / Milestone		Estimated Start Date	Estimated Completion Date	Project Stakeholders Involved
Design Phase				
Design Model	Programming/Concept Design LOD 0-100	Click or tap to enter a date.	Click or tap to enter a date.	Click or tap to enter stakeholders.
	Schematic Design LOD 100-200	Click or tap to enter a date.	Click or tap to enter a date.	Click or tap to enter stakeholders.
	Design Development LOD 200-300	Click or tap to enter a date.	Click or tap to enter a date.	Click or tap to enter stakeholders.
	Construction Documents LOD 200-300 Complete	Click or tap to enter a date.	Click or tap to enter a date.	Click or tap to enter stakeholders.
Construction Phase				
Construction Model	Construction Modeling/Coordination LOD 350-400 Complete	Click or tap to enter a date.	Click or tap to enter a date.	Click or tap to enter stakeholders.
	Project close-out phase As-Built/Record Model LOD Complete	Click or tap to enter a date.	Click or tap to enter a date.	Click or tap to enter stakeholders.

Section 1.4 UCSD Standards

The project team acknowledges receipt of and has developed this BIM Execution plan and all other project deliverables referencing the following UCSD Standards:

Considered	Standard Name
<input type="checkbox"/>	University BIM Guide
<input type="checkbox"/>	File Naming Convention
<input type="checkbox"/>	Space Naming Convention
<input type="checkbox"/>	University Facility Data Specification (FDS)
<input type="checkbox"/>	Asset Inventory Form (AIF) Requirements
<input type="checkbox"/>	University CAD Standards
<input type="checkbox"/>	Sheet and View Naming Convention

Section 2: Project Goals

Section 2.1 Project goals leveraging BIM

The projects goals are described in the table below as well as the metric being used to measure their success. The team members have considered the BIM maturity of every stakeholder required to accomplish each goal and confirm that all goals listed are achievable.

The team members acknowledge the success of each goal can only be attained through a combined team effort by all required project participants as listed in the tables in this section.

<i>Priority / Measurement</i>	<i>Goal / Achieved if</i>	<i>Primary Responsibility</i>	
Priority High	Goal: Turn over BIMs for each design discipline that represents the final design intent for use by UCSD to manage facility operations.	Owner / Operator	Request and approve disciplines and systems requiring record models with architect and GC. Ensure these requirements are included as part of the project LOD matrix.
		Architect	Develop and execute process to reincorporate any design-intent changes into record model at end of project. Partake in all meetings necessary to define facility data requirements, BIM element needs at turnover, define and assign model responsibility for record and/or as-built models to ensure responsibility for each BIM scope is assigned to correct team member.
		Builder / Contractor	Buy-out project from design-build subs with record model requirements, ensure each sub has a process to reincorporate design intent changes and update record models at the end of the project.
		Subcontractors	For design-build subs, re-incorporate any design-intent changes into record model at the end of the project. Ensure facility data relates back to record model. Ensure process in place to validate final design intent is reflected in model.
Measurement	Achieved if:	Builder / Contractor	Field verify during walkthrough using field BIM tools reviewing record model with each subcontractor having record model requirements 100% of as-managed assets.

<p>Record models obtained from project team with:</p> <p>100% as-managed components verified in model (components specified in FDS) with accurate locations verified in field +/- 6 inches.</p>	Architect	Field verify record models for 100% as-managed arch components in field, +/-6" with GC present.
	Subcontractors	Updated record models provided with 100% of as-managed components located +/- 6 inches from field locations. Sign-off sheets with list of components verified, observed in field with representative of CM present.

Section 3: BIM Uses Summary

The preferred authoring platform for UCSD is Autodesk Revit. For convenience, the BIM Uses matrix below denotes the UCSD priority for each BIM use as it relates to design and construction. **Priority level 1 BIM uses are required for every design-construction project team using BIM** on University projects. See the University BIM Guide for more information.

Section 3.1: BIM Uses Matrix

<i>Project Phase</i>	<i>BIM Uses</i>	<i>UCSD Priority</i>	<i>Applied to Project?</i>	<i>Software Applications Used</i>	<i>Team Member(s)</i>
Planning	Programming	3	<input type="checkbox"/>	Enter other application including version/year	Organization Name
	Site Analysis	3	<input type="checkbox"/>	Enter other application including version/year	Organization Name
	Existing Conditions Modeling	2	<input type="checkbox"/>	Revit 20XX Other Enter other application including version/year	Organization Name
	Cost Estimation	3	<input type="checkbox"/>	Enter other application including version/year	Organization Name
Design	Design Authoring - Architecture	1	<input type="checkbox"/>	Revit 20XX Other Enter other application including version/year	Organization Name
	Design Authoring - MEP	1	<input type="checkbox"/>	Revit 20XX Other Enter other application including version/year	Organization Name
	Design Authoring - Structure	1	<input type="checkbox"/>	Revit 20XX Other Enter other application including version/year	Organization Name
	Design Authoring - Civil	1	<input type="checkbox"/>	Civil 3D 20XX Other Enter other application including version/year	Organization Name
	Design Authoring - Landscape	1	<input type="checkbox"/>	Revit 20XX Other Enter other application including version/year	Organization Name
	Design Review/Visualization /Rendering	1	<input type="checkbox"/>	Enter other application including version/year	Organization Name
	3D Coordination	1	<input type="checkbox"/>	Navisworks Manage 20XX Other Enter other application including version/year	Organization Name
	Structural Analysis	3	<input type="checkbox"/>	Enter other application including version/year	Organization Name
	Mechanical/ Energy Analysis	3	<input type="checkbox"/>	Enter other application including version/year	Organization Name
	Other Engineering Analysis	3	<input type="checkbox"/>	Enter other application including version/year	Organization Name
	Lighting Analysis	3	<input type="checkbox"/>	Enter other application including version/year	Organization Name
	Sustainability (LEED) Evaluation	3	<input type="checkbox"/>	Enter other application including version/year	Organization Name
	Phase Planning (4D Modeling)	3	<input type="checkbox"/>	Enter other application including version/year	Organization Name

	Cost Estimation	3	<input type="checkbox"/>	Enter other application including version/year	Organization Name
	Code Validation	3	<input type="checkbox"/>	Enter other application including version/year	Organization Name
	Existing Conditions Modeling	2	<input type="checkbox"/>	Revit 20XX Other Enter other application including version/year	Organization Name
Construction	Construction Modeling	1	<input type="checkbox"/>	Revit 20XX Other Enter other application including version/year	Organization Name
	Digital Fabrication	3	<input type="checkbox"/>	Revit 20XX Other Enter other application including version/year	Organization Name
	3D Coordination	1	<input type="checkbox"/>	Navisworks Manage 20XX Other Enter other application including version/year	Organization Name
	Site Utilization Planning (Logistics)	3	<input type="checkbox"/>	Enter other application including version/year	Organization Name
	Construction System Design	3	<input type="checkbox"/>	Enter other application including version/year	Organization Name
	3D Control and Planning	2	<input type="checkbox"/>	Enter other application including version/year	Organization Name
	Record Modeling	1	<input type="checkbox"/>	Revit 20XX Other Enter other application including version/year	Organization Name
	4D Modeling	3	<input type="checkbox"/>	Enter other application including version/year	Organization Name
	Cost Estimation	3	<input type="checkbox"/>	Enter other application including version/year	Organization Name
	Safety	3	<input type="checkbox"/>	Enter other application including version/year	Organization Name
	Commissioning Data	2	<input type="checkbox"/>	Enter other application including version/year	Organization Name
	As-Built Modeling	1	<input type="checkbox"/>	Revit 20XX Other Enter other application including version/year	Organization Name
	Other BIM Use		<input type="checkbox"/>	Enter other application including version/year	Organization Name
	Other BIM Use		<input type="checkbox"/>	Enter other application including version/year	Organization Name
	Other BIM Use		<input type="checkbox"/>	Enter other application including version/year	Organization Name

Section 3.2 Other Tools

List other supporting tools (computational design, model checking/validation, field data collection, etc.) that will be used on the project, what they will be used to accomplish, and who will be the primary users:

Other Tools	Software Applications Used	Mobile App?	Purpose/Use	Team Member(s)
	Application name and version.	<input type="checkbox"/>	Purpose or use of application.	Organization Name
	Application name and version.	<input type="checkbox"/>	Purpose or use of application.	Organization Name
	Application name and version.	<input type="checkbox"/>	Purpose or use of application.	Organization Name

	Application name and version.	<input type="checkbox"/>	Purpose or use of application.	Organization Name
	Application name and version.	<input type="checkbox"/>	Purpose or use of application.	Organization Name
	Application name and version.	<input type="checkbox"/>	Purpose or use of application.	Organization Name
	Application name and version.	<input type="checkbox"/>	Purpose or use of application.	Organization Name
	Application name and version.	<input type="checkbox"/>	Purpose or use of application.	Organization Name
	Application name and version.	<input type="checkbox"/>	Purpose or use of application.	Organization Name
	Application name and version.	<input type="checkbox"/>	Purpose or use of application.	Organization Name
	Application name and version.	<input type="checkbox"/>	Purpose or use of application.	Organization Name
	Application name and version.	<input type="checkbox"/>	Purpose or use of application.	Organization Name

Section 3.3 BIM Application Version Transition Plan

Describe the project teams plan for revisiting and managing software version upgrades throughout the project. This is especially important for multi-year projects:

Click or tap here to enter text.

Section 3.4 Training Plan

Certain uses of BIM require multiple team members to access and use applications and tools administered by one lead team member who may have the most experience with the BIM tool in question. This section should describe any tools training offered by lead team members to align other contributing team members on best practices for these tools. List the tool or platform, team member who is offering the training, the team members who are recommended to receive the training.

Enter description of training program here.

Section 4: Collaboration

Section 4.1 Collaboration Strategy

Describe strategies for collaboration amongst the project team or between the project team and University stakeholders. These include approaches to alternative methods for setting up the project team offices, new structures for how meetings are conducted, and supporting tools and technologies for exchanging information and communicating.

Document Management System: E.g. BIM 360 Docs, Sharepoint, Box, etc.

Model Collaboration/Exchange Platform or Common Data Environment (CDE) (if different from DMS): E.g. BIM 360 Glue, Trimble Connect, Projectwise, Sharepoint, etc. Note if this changes from design into construction.

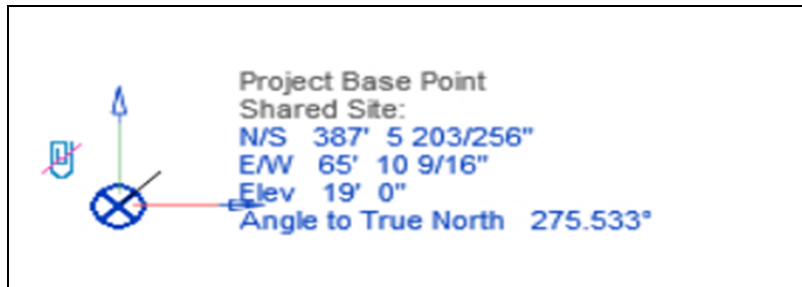
Collaboration methods: Will a Big Room approach be used? Will Lean methodologies be used and in between which project team members? Will video conferencing or other remote meeting tools be used? How does the team expect these methods to improve project outcomes?

Section 4.2 Coordinate System and Units

All models will be coordinated around one control point, determined at the beginning of the project. UCSD will provide survey information to the team.

The composite model must contain a 3D target element that is a visual reference point to assist in aligning the Revit models. The 3D target also contains the reference data found in the site survey from the project (e.g. elevation above sea level, compass orientation, etc.)

Replace the example 3D target below with the project specific target.



Section 4.3 Meeting Procedures

The following is a summary list of meetings that the project team will conduct to facilitate progress in the development and definition of design and planning and execution of construction works facilitated by BIM. The below list is a starting point and the team should add all meetings related to successfully executing BIM uses for the specific project in this table.

<i>Meeting Type</i>	<i>Project Stage</i>	<i>Frequency</i>	<i>Participants</i>	<i>Location</i>
<i>BIM requirements design kick-off</i>	<i>Programming</i>	<i>Once</i>		
<i>BIM Execution Plan Review - Design</i>	<i>Programming</i>	<i>As-needed</i>		
<i>FDS Planning - Design</i>	<i>SD</i>	<i>Once</i>		
<i>Design Coordination/QC</i>	<i>SD/DD/Bidding</i>	<i>Once per Stage</i>		
<i>Design Coordination/QC</i>	<i>CD</i>	<i>Monthly</i>		
<i>BIM Requirements CM Kick-off</i>	<i>CM Award</i>	<i>Once</i>		
<i>BIM Execution Plan Review</i>	<i>Post-Award</i>	<i>As-needed</i>		
<i>FDS Planning - Construction</i>	<i>Post-Award CM</i>	<i>Once</i>		
<i>Constructability Coordination/QC</i>	<i>Construction</i>	<i>Monthly</i>		
<i>FDS and Model Deliverable Checks</i>	<i>Design/Construction</i>	<i>Each Data Milestone</i>		
<i>Final Punch list</i>	<i>Construction</i>	<i>Once</i>		
<i>Lifecycle BIM Planning</i>	<i>Construction</i>	<i>As-needed</i>		
<i>Any other BIM meetings that occurs with multiple parties</i>				

Section 4.4 Information Exchanges

See the Information Exchanges worksheet in the companion Excel file. The Information Exchanges worksheet is intended to communicate all required model delivery and exports required between project team members to facilitate coordination and follow-on uses of BIM across the project.

Section 4.4 Information Exchanges

The successful use of BIM requires the exchange of models between team members at specified intervals to support collaboration. The table below should capture all exchanges between team members and include the file type provided to the recipient if the model is a file conversion from the BIM authoring tool used

		To: Data will be delivered to the party in the format listed.												
		Design Authoring							Fabrication Installation					
		Architect	Civil Engineer	Structural Engineer	Mechanical Engineer	Electrical Engineer	Fire Protection	Structural Fabricator	Mechanical Sub	Electrical Sub	Fire Protection Sub	CM/GC (Lead Coordinator)		
From: Data will be delivered from the party in the format listed.	Design Authoring	Architect	IFC 2x3	Revit 2019	Revit 2019	Revit 2019	DWG 2018	IFC 2x3	DWG 2018	DWG 2018	DWG 2018	NWC 2018		
		Civil Engineer	DWG 2018		DWG 2018	DWG 2018	DWG 2018	DWG 2018	N/A	N/A	N/A	N/A	NWC 2018	
		Structural Engineer	Revit 2019	IFC 2x3		Revit 2019	Revit 2019	DWG 2018	CIS/2	N/A	N/A	N/A	NWC 2018	
		Mechanical Engineer	Revit 2019	IFC 2x3	Revit 2019		Revit 2019	DWG 2018	N/A	IFC 2x3	N/A	N/A	NWC 2018	
		Electrical Engineer	Revit 2019	IFC 2x3	Revit 2019	Revit 2019		DWG 2018	N/A	N/A	IFC 2x3	N/A	NWC 2018	
		Fire Protection	DWG 2018	DWG 2018	DWG 2018	DWG 2018	DWG 2018		N/A	N/A	N/A	DWG 2018	NWC 2018	
	Fabrication Installation	Structural Fabricator	Via. Stru. Eng.	N/A	IFC 2x3	N/A	N/A	N/A		IFC 2x3	IFC 2x3	IFC 2x3	IFC 2x3	
		Mechanical Sub	IFC 2x3	N/A	N/A	IFC 2x3	N/A	N/A	DWG 2018		DWG 2018	DWG 2018	NWC 2018	
		Electrical Sub	IFC 2x3	N/A	N/A	N/A	IFC 2x3	N/A	DWG 2018	DWG 2018		DWG 2018	NWC 2018	
		Fire Protection Sub	DWG 2018	N/A	N/A	N/A	N/A	DWG 2018	DWG 2018	DWG 2018	DWG 2018		NWC 2018	

Notes:

Section 4.5 Facility Data

Develop and document a plan for collecting facility data from various project team members including procedures for delivery and storage of data such that data can be accumulated and carried forward from design to construction and closeout.

Determine if model data will be stored as BIM element attributes or in a separate set of files or database with a method to relate between the facility dataset and models (e.g. BIMlink, Assemble Systems, Ecodomus, VueOps, etc.). Define the tool set used to accomplish delivery of the facility data set. If alternative methods are used, then document how the data will be transferred to the LCM systems and the steps to accomplish that.

For CM/GC, describe how FDS requirements will be incorporated for each trade contractor into contract documents/exhibits.

For assets not being modeled but having a facility data requirement, describe the approach that will be taken to collect and provide to UCSD facility data for these sets of assets.

Section 4.6 File Naming Structure

The model file names below will be used for this project. Refer to BIM Guide Attachment 1 – File Naming Convention for University file naming requirements. Request the facility ID and project number from the University PM if uncertain.

File Names for Models Should Be Formatted as:

Facility ID-Project #-Discipline-Style of File-Scope Designation-Scope Modifier-Floor-Zone-File Extension

(example: MCH-9421-A-M-CS-0-0000.rvt)

Design Authoring BIM File Naming

Architectural Model	
Architectural Interiors Model	
Civil Sitework Model	
Civil Utilities Model	
Landscape Model	
Mechanical Model	
Electrical Model	
Plumbing Model	
Fire Protection	
Food Service Model	
Structural Model	
Telecommunications Model	

Audio Visual Model	
Lighting Consultant Model	
Energy Model	
Constructability Model	
Estimating Model	
Coordination Model	

Construction Models BIM File Naming	
Drywall and Framing	
Masonry	
Concrete	
Mechanical Model	
Electrical Model	
Plumbing Model	
Fire Protection Model	
Mechanical Pipe Model	
Process Piping/Med Gas Model	
Security Model	
Structural Steel Model	
Utilities Models	
Telecommunications Model	
Construction Models	
Coordination Models	

Section 5: Deliverables Matrix

Section 5.1 Major Model and Data Delivery Schedule

Document the deliverable schedule for models and model-related data that will occur on the project where the University is involved. The intent of the table below is to provide a **high-level summary** of all of the model-related deliverables across the project. Extend the table for additional project-specific deliverables if needed. Detailed information exchanges between project team members should be defined in the Information Exchanges worksheet and Section 7 BIM Use-specific section of this Plan.

Use the Excel version of the table below when filling out this table for a project-specific BIM Execution Plan.

BIM Submittal Item	File Sender/ Author	File Received/ Location	Distributed or Available	Stage	Frequency of Delivery	File Type	Notes
Complete BEP Development Schedule							
BEP (Design)							
Schematic Design Phase Models for Review							
Facility Data Deliverables Schedule							
Design Development Models for Review							
Design Coordination Reports (DD)							
Construction Document Models for Review							
Space Management Floorplans (CD)							

Design Coordination Reports (CD)							
Facility Data Deliverables (Design)							
Construction Documents Model for Bidding							
Project-Specific FDS							
BEP (Construction)							
Construction Models (for Coordination)							
Submittal and Shop Drawings							
Facility Data Deliverables (Construction)							
Space Management Floorplans (Closeout)							
Change Orders							
Record Models							
As-Built Models							

Section 6: Model Quality

Section 6.1 Model and Data Quality Overview

Describe the major strategies in place to ensure model and data quality at each deliverable and information exchange on the project.

Section 6.2 Model Quality Tools

List tools used in performing or automating model quality and data checks. Confirm these are consistent with the tools listed in section 3.

Section 6.2 Model Quality Checklists

The lists below are a starting point for best-practices when it comes to model health and maintenance tasks in Revit. Model data quality checklists are also listed in the tables below. The project team should use these checklists as a starting point and extend them according to their own firm-specific practices and needs at the project level between project team members.

Revit Model Quality Checklist – General and Settings	
	Does the model authoring firm perform a model audit in Revit weekly?
	Are user-models recreated on a weekly basis?
	Are old/un-used views purged on a weekly basis?
	Are warnings reviewed and resolved on a weekly basis?
	Have the use of design options been limited and used sparingly?
	When a design option is accepted, has the model been archived and other design options removed that are no longer relevant?
	At final turnover, have all design options been removed?
	Have all unnecessary raster images been removed in the model?

Revit Model Quality Checklist – Elements	
	Has the use of Generic Model category elements been minimized? Only special circumstances should elicit the use of a generic model family.
	Have all unnecessary Groups in the model and linked model been removed?
	Do family and type names describe the element adequately? Avoid any vague naming that does not give at least a general description of the element.
	Has manufacturer/vendor or project-specific wording in the family and type name been avoided?

Revit Model Quality Checklist – Views	
	Have views not on sheets been limited to working views only? Review views not on sheet and remove unneeded views on a periodic basis.

	Have the use of hidden lines been limited? Use visibility settings and overrides to control category and element visibility.

Revit Model Quality Checklist – Worksharing	
	Have linked files/models been placed on unique worksets? Worksets should be turned off when content is not needed to improve model performance.

Revit Model Quality Checklist – Rooms/Spaces	
	Have room schedules been reviewed to identify and resolve any unbounded rooms?
	Have rooms been reviewed to eliminate any overlapping room or space elements?
	Do room number and levels correspond to the intended numbering convention and base level?

Revit Model Quality Checklist – Data (for elements required in FDS)	
	Has the FDS Products and Attributes worksheets been completed prior to the start of modeling?
	Have all models with FDS requirements added a Shared Parameters file and using approved names of parameters per the “Master-ATTRIBUTES” worksheet?
	Have model elements that require facility data been checked in the parameter “Scope”?
	Are all OmniClass Names and Codes parameters populated for in-scope elements?
	Has the Asset Class parameter been populated per the approved UCSD list?
	Has the System name been populated?
	Have space (room) names and numbers been populated for the element?
	Has the building name been populated in the correct parameter for each element?
	Has a general description been populated in the correct parameter for each element?
	Has a tag number been populated for elements requiring a tag? Only assets that need to be uniquely identified require a tag.
	Are UCSD-approved tag abbreviations being used?

Section 7: BIM Use Specific Instructions

This section should be used to document the BIM use-specific information related to each required and optional BIM use that the project team will employ. The section headings below are recommended; however, the project team should expand or modify these sections as required by the particular BIM use in question.

Section 7.1 BIM Use Overview and Expected Benefits

Give a general overview of the BIM use and why it is being applied to the project and expected benefits.

Section 7.2 Team Members Involved

List the team members involved in developing models or other information required for this BIM use.

Section 7.3 BIM Use Deliverables and Project Timing

List the deliverables that will be provided out of the BIM Use both between project team members and to the University. Ensure these deliverables align with those listed in Section 5. Indicate the frequency and timing of these deliverables.

Section 7.4 BIM Use Process Information

Use this section to describe any processes related to the BIM use. For example, a coordination/clash detection BIM use would describe the specific clash tests being used, how the models will be tested and exports required (e.g. by level, by zone) out of authoring tools to perform clash tests, any meetings required to review the results, frequency of review, who should attend, where meetings will be held, etc.

Section 7.5 BIM Use Procedural Guides

Use this section to document or attach any best practices or procedural guides that the project team will use related to the specific BIM use.

Section 8: Record Modeling

The items below should be specifically addressed in the Record Modeling-specific BIM Use section **in addition to** the general requirements for the BIM use sections described in Section 7.

Section 8.1 Record Modeling Strategy

Define the process of how design or construction models will be updated to represent the final design intent in the record models. Include the frequency for incorporating RFI responses and change orders that affect design intent into the design authoring models. Demonstrate how team members will know definitively if an RFI response affects design intent and a process for how to track and follow through on these required updates into the design authoring models.

Record models should remove all unused views and design options and purge all unused content to optimize file size and performance as much as possible.

Section 8.2 Facility Data Strategy

Use this section to describe how facility data will be provided so that it satisfies the requirement to have a relationship back to the record model deliverables. The most common way to satisfy this requirement is to store facility data in element parameters, however, some teams may use external tools such as spreadsheets, cloud-based databases, or local databases, to store facility data and a Revit add-in to connect the data back to Revit. If external tools outside Revit or add-in's are to be used, describe how the University should maintain the use of data and record models after project completion (e.g. can cloud-based data be pushed to Excel files with a certain element parameter used as a lookup/key for connectivity back to the model?).

If record models are the final model deliverable in Revit and as-built models for the same system will be provided in CAD-based formats, describe how facility data provided in as-built models and/or through other means by CM/GC/subcontractors will be merged and conformed with designer provided facility data or if they will be conveyed through an external data deliverable. Identify the project team member(s) who will be responsible for this process.

Section 8.3 Record Modeling Responsibility

Ensure the project BIM LOD Matrix (University BIM Guidelines Appendix C) is complete and has a designated project team member in the model element author (MEA) column for record modeling when there is a record model required for a particular system or scope. Ensure the MEA is aware of their record modeling requirement and document in this section the timing and acceptance criteria for the record model submission.

Section 9: As-Built Modeling

The items below should be specifically addressed in the As-Built Modeling-specific BIM Use section **in addition to** the general requirements for the BIM use sections described in Section 7.

Section 8.1 Record Modeling Strategy

Define the process of construction models will be updated to represent the field conditions in the as-built models. Include the timing for when as-built models will be expected from each trade partner. As-built models should be provided in native model formats with Revit being the performed modeling platform.

If CAD-based models are to be provided, freeze all annotations, linework, and points.

If as-built models in Revit are provided, they will supersede any Record models. Describe how facility data from record models and earlier data drops will be merged and conformed into the as-built models or if they will be conveyed through an external data deliverable.

Milestone	Information Required	Deliverable and Specification/Exhibit Reference(s)	Responsibility
1 – Design (no later than 100%DD)	Incorporate required UCSD facility data attribute fields (no values) into model elements, Spatial Elements defined (Floor, Area, Space, Room, etc.)	Design documents and design-intent models. Design team member according to BEP and LOD Matrix provides.	Design Team
2 – Design (no later than 50% CD – varies by discipline)	Models with scope aligned to FDS (Asset Class defined), full scope of managed assets listed. Asset ID should exist at this stage.	Design documents and design-intent models. Design team member according to BEP and LOD Matrix provides.	Design Team
3 – Design (no later than 100% CD)	Full scope of managed assets modeled with Asset Class, Omniclass Name and Number, Space Name and Number, Level, Building, Unit Tag, and all other design team specified data.	Design documents and design-intent models	Design Team
4x* - Procurement	Procurement Facility Data (Common and Extended Attributes). Update to any facility data from milestone 1-3 if they require updates.	Vendor and/or installing subcontractor provides facility data through procurement facility data submittals. Incremental and cumulative as procurement progresses.	Installing Contractor or Vendor through CM/GC
5x* - Installation	As-Installed Facility Data (ex. Serial number, Warranty Start Date, Installation Date)	Installing subcontractors provides facility data and as-installed facility data submittal. Incremental and cumulative as construction progresses.	Installing Contractor or Vendor through CM/GC

*The “x” in the table above denotes deliverables that may be broken down into smaller, partial deliverables and cumulative over the course of the project.