Quality Control

Quick Reference Sheet

Goal: Establish Quality Control (QC) procedures

Steps:

- ☐ Determine QC Strategy
- ☐ Establish BIM QC procedures
- ☐ Confirm model expectations

Tools Used Word Processor

Objective For this project, the purpose of quality control is to ensure that each project participant is meeting the standards that they have committed to, and that the individual models can be easily compiled. This requires some degree of formally documenting the protocols that the individuals are expected to adhere to.

Decisions What extra responsibilities or accountabilities are necessary to ensure that BIM quality goals are met, and that information is modeled at an appropriate accuracy and completeness for the project?

- What is the (high level) strategy for ensuring quality control?
- What is the accountability mechanism, policy and procedures?
- Are there any other quality expectations that need to be documented?

Conclusions The decision was to document and highlight individual accountability that was already part of the contract language, and to make the quality control role of the BIM Manager more of a facilitator rather than a referee or judge. The project team decided that the individual participants would have the primary responsibility to make sure that they are meeting their already agreed upon targets.

INFORMATION EXCHANG

BIM Use Title			Design Authoring Output			Coordination Input			Design Reviews Input		
Project Stage			20 - Design			20 - Design			20 - Design		
Time of Exchange (SD, DD, CD, Construction)			DD and CD			DD and CD			DD and CD		
Responsible Party (Information Receiver)			All			All			Arch		
Receiver File Format			.rvt, 3D .dwg			.nwd from .rvt, 3D .dwg			.rvt, 3D .dwg		
Application & Version			Revit & AutoCad 2012			Revit & AutoCad 2012			Revit & AutoCad 2012		
Model Element Breakdown - CSI UniFormat			LOD	Resp Party	Notes	LOD	Resp Party	Notes	LOD	Resp Party	Notes
A	SUBSTRUCTURE										
	10	Foundations	<290	AC + SE	only geometry	<290	AC + SE	only geometry	<290	AC	only geometry
	20	Basement Construction	<290	AC + SE	only geometry	<290	AC + SE	only geometry	<290	AC	only geometry
B	SHELL										
	10	Superstructure	<290	AC + SE	only geometry	<290	AC + SE	only geometry	<290	AC	only geometry
	20	Exterior Enclosure									
		10 Exterior Walls (Cladding)	<290	AC + CW		<290	AC + CW		<290	AC + CW	
		Bearing walls	<290	AC + SE	only geometry	<290	AC + SE	only geometry	<290	AC	only geometry
		Shear walls	<290	AC + SE	only geometry	<290	AC + SE	only geometry	<290	AC	only geometry
		Wind posts & girts	<290	AC + SE	only geometry	<290	AC + SE	only geometry	<290	AC	only geometry
		Vertical bracing	<290	AC + SE	only geometry	<290	AC + SE	only geometry	<290	AC	only geometry
		Reinforcement	<290	AC + SE	only geometry	<290	AC + SE	only geometry	<290	AC	only geometry
		Curtain Wall and Structure	<290	CW		<290	CW		<290	CW	
		20 Exterior Windows	<290	AC		<290	AC		<290	AC	
		30 Exterior Doors	<290	AC		<290	AC		<290	AC	
	30	Roofing	<290	AC		<290	AC		<290	AC	
C	INTERIORS										
	10	Interior Construction	<290	AC		<290	AC		<290	AC	
	20	Stairs	<290	AC + SE	only geometry	<290	AC + SE	only geometry	<290	AC	only geometry
	30	Interior Finishes	<290	AC		<290	AC		<290	AC	
D	SERVICES										
	10	Conveying	<290	AC + SE	only geometry	<290	AC + SE	only geometry	<290	AC	only geometry
	20	Plumbing									
		10 Plumbing Fixtures	<290	AC + PE	PE 3D .dwg only	<290	AC		<290	AC	
		20 Domestic Water Distribution	<290	PF	3D .dwg only	<290	PF	3D .dwg only			
		30 Sanitary Waste	<290	PF	3D .dwg only	<290	PF	3D .dwg only			
		40 Rain Water Drainage	<290	PF	3D .dwg only	<290	PF	3D .dwg only			
		90 Other Plumbing Systems	<290	PF	3D .dwg only	<290	PF	3D .dwg only	<290	AC	only visible
	30	Heating, Ventilation and Air Condition									
		10 Energy Supply	<290	AC + ME		<290	AC + ME		<290	AC + ME	visual or
		20 Heat Generating Systems	<290	AC + ME		<290	AC + ME		<290	AC + ME	schedules
		30 Cooling Generating Systems	<290	AC + ME		<290	AC + ME		<290	AC + ME	visual or
		40 Distribution Systems	<290	AC + ME		<290	AC + ME		<290	AC + ME	schedules
		50 Terminal & Package Units	<290	AC + ME		<290	AC + ME		<290	AC + ME	
		60 Controls & Instrumentation	<290	ME		<290	ME				
		70 Systems Testing & Balancing	<290	ME		<290	ME				
		90 Other HVAC Systems & Equipr	<290	ME		<290	ME				
	40	Fire Protection									
		10 Sprinklers	<290	AC + PF	PE 3D .dwg only	<290	AC + PF	3D .dwg only	<290	AC + PF	visual or
		20 Standpipes	<290	AC + PF	PE 3D .dwg only	<290	AC + PF	3D .dwg only	<290	AC + PF	schedules
		30 Fire Protection Specialties	<290	AC + PF	PE 3D .dwg only	<290	AC + PF	3D .dwg only	<290	AC + PF	visual or
		40 Other Fire Protection Systems	<290	PF	PE 3D .dwg only	<290	PF	3D .dwg only	<290	PF	schedules
	50	Electrical									
		10 Electrical Service & Distributior	<290	AC + EE	.dxf to AC only	<290	AC	major	<290	AC	major
		20 Lighting & Branch Wiring	<290	AC + EE	.dxf to AC only	<290	AC	components	<290	AC	components
		30 Communications & Security	<290	EE	.dxf to AC only						
		90 Other Electrical Systems	<290	EE	.dxf to AC only						
E	EQUPMENT AND FURNISHINGS										
	10	Equipment	<290	AC		<290	AC		<290	AC	
	20	Furnishings	<290	AC		<290	AC		<290	AC	
F	SPECIAL CONSTRUCATION AND DEMOLITI										
	10	Special Construction	<290	AC		<290	AC		<290	AC	
	20	Selective Bldg Demo			N.A.			N.A.			N.A.
G	BUILDING SITEWORK										
	10	Site Preparation			N.A.			N.A.			N.A.
	20	Site Improvements	<290	AC		<290	AC		<290	AC	
	30	Site Civil/Mech Utilities									
		10 Water Supply & Distribution Sy	<290	AC + PF	PE 3D .dwg only	<290	AC + PF	3D .dwg only	<290	AC + PF	visual or
		20 Sanitary Sewer Systems	<290	AC + PF	PE 3D .dwg only	<290	AC + PF	3D .dwg only	<290	AC + PF	schedules
		30 Storm Sewer Systems	<290	AC + PF	PE 3D .dwg only	<290	AC + PF	3D .dwg only	<290	AC + PF	visual or
		40 Heating Distribution	<290	ME		<290	ME		<290	ME	schedules
		50 Cooling Distribution	<290	ME		<290	ME		<290	ME	visual or
		60 Fuel Distribution	<290	ME		<290	ME		<290	ME	schedules
		90 Other Civil/Mechanical Utilities	<290	ME		<290	ME		<290	ME	
	40	Site Electrical Utilities									
		10 Electrical Distribution	<290	AC + EE	.dxf to AC only	<290	AC		<290	AC	
		20 Site Lighting	<290	AC + EE	.dxf to AC only	<290	AC		<290	AC	
		30 Site Communications & Securit	<290	EE	.dxf to AC only	<290	AC		<290	AC	
		90 Other Electrical Utilities	<290	EE	.dxf to AC only	<290	AC		<290	AC	
	50	Other Site Construction									
		10 Service Tunnels	<290	AC + ME		<290	AC + ME		<290	AC + ME	
		90 Other Site Systems & Equipme	<290	ME		<290	ME		<290	ME	

LOD <290: iterative progression from LOD 200 "Show Elements" to LOD 290 "Systems, assemblies, quantities , size, shape, location & orientation of major elements. May include element metadata & other data."

Abbreviation	Role
AC	Architect Company
AC + Cons	Both AC & 2nd Contributor
CW	Curtain Wall Architect
SE	Structural Engineer
ME	Mechanical Engineer
EE	Electrical Engineer
PF	Plumbing & Fire Engineer