**Vertical CADD Standards**

Version 1.3

November 18, 2020

3D Design Review Checklist Examples

3D Design Review Checklist Sample

Model Element and Design Checklist

The tables below provided examples of criteria to be checked during a 3D Design Review process. This content should be developed on a project-specific basis and reviewed in conjunction with the Level of Development (LOD) and Level of Information (LOI) requirements set out in the Region of Peel CAD Standards and the project specific 3D Design Execution Plan. This list below includes examples, it is not necessarily inclusive and items many not be applicable to a specific project.

**Example Design Review Checklists**

| General and Safety | Complete | Comment |
| --- | --- | --- |
| Interdisciplinary model review is conducted, and all the comments are documented |  |  |
| In case of brownfield, the existing information is modelled and checked |  |  |
| Construction access is checked |  |  |
| Eye wash and safety shower locations modelled and checked |  |  |
| The model is updated as per the vendor drawings when pre-purchase items have been specified |  |  |
| Dropout/laydown areas are modelled and checked |  |  |
| The crane/hoist hook limits have been considered when setting crane/monorail elevations |  |  |
| Adequate lay down areas are identified and located for use with cranes, gantries and monorails |  |  |
| Personnel access paths are free from hazards posed by blow out panels, rupture discs and relief valve discharge |  |  |
| Proper space on platform is available for turning the man-way covers and entering the equipment |  |  |
| All escape route paths are obstruction free and no walk way has above head or tripping hazards |  |  |
| All valves required for emergency operations are operable from grade |  |  |
| The model is updated as per the vendor drawings when pre-purchase items have been specified |  |  |
| Dropout/laydown areas are modelled and checked |  |  |
| The Crane/Hoist hook limits have been considered when setting crane/monorail elevations |  |  |
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| All valves required for emergency operations are operable from grade |  |  |
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|  |  |  |

| Layout | Complete | Comment |
| --- | --- | --- |
| Roads, main access ways are modelled and checked |  |  |
| Verify the dimensions of vehicles being used have been checked to ensure that proper vertical clearances, width, and turning radii have been considered |  |  |
| Interdisciplinary model review has been conducted and all the comments are documented |  |  |
| Minimum spacing/distances between equipment/structures are checked. |  |  |
| Space for future equipment and systems have been modelled and checked |  |  |
| The area for large filters, strainers etc. are located within curbed areas to contain the spillage during cartridge/element replacement operations |  |  |
| The bottom of monorails/ hoists/EOT/HOT hook elevation should not be lower than the usable openings of roll-up doors, forklift access aisles, etc. |  |  |
| The adequate clearance availability for the maintenance and removal of rotors/shafts/internals, etc. (including the installation of temporary rigging beams, hoists, chain falls, etc.) should be checked. |  |  |
| Requirements for equipment removal hatches and construction opening in floors, walls and roofs have been identified and shown and checked |  |  |
| Hand wheel/lever location/orientation to be checked for interference with operating access, platforms, structures etc. |  |  |
| Review support strategy for systems and equipment, particularly when they may influence the coordination process of other disciplines |  |  |
| Roads, main access ways are modelled and checked |  |  |
| Verify the dimensions of vehicles being used have been checked to ensure that proper vertical clearances, width, and turning radii have been considered |  |  |
| Interdisciplinary model review has been conducted and all the comments are documented |  |  |
| Minimum spacing/distances between equipment/structures are checked. |  |  |
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| Requirements for equipment removal hatches and construction opening in floors, walls and roofs have been identified and shown and checked |  |  |
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| Process | Complete | Comment |
| --- | --- | --- |
| All process equipment is modelled and checked as per P&IDs. |  |  |
| Major large bore and critical process piping determining the equipment location are modelled and checked |  |  |
| Major underground piping systems including pressurized and gravity lines are modelled and checked |  |  |
| All tags for equipment, valves, specialty items checked as per P&IDs with required PAIDS Tag |  |  |
| All line numbers, line size, pipe class & flow direction are checked as per P&IDs. |  |  |
| The special requirements such as slope, no pocket, removable spool etc. are designed as per P&ID notes |  |  |
| Space allocated for hose bibs and hose racks and utility stations |  |  |
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| Electrical – I&C | Complete | Comment |
| --- | --- | --- |
| Electrical equipment checked as per SLD and or P&ID’s |  |  |
| Cable tray, Conduit, Cable runs checked for minimum bend radius is accommodated in layout |  |  |
| Coordinate Electrical light fixtures and ceiling devices with other services |  |  |
| Check Electrical and Instrumentation Control panel layout and required clearances |  |  |
| Instrumentation equipment and transmitters checked as per P&IDs with required PAIDS Tag |  |  |
| The electrical main cable trays are properly shown and checked. |  |  |
| Underground electrical/instrumentation cable trenches etc. are properly shown and checked. |  |  |
| Underground electrical conduits are properly shown and checked (esp. where crossing is expected). |  |  |
| Reserved space for Arc flash exhaust ducts are shown as required |  |  |
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| Architectural - Structural | Complete | Comment |
| --- | --- | --- |
| Engineered equipment supports modelled to design |  |  |
| Engineered openings have been provided and systems have been coordinated to combine where possible |  |  |
| Check all access platforms, stair runs, ladder lengths, railings for easy of operations and maintenance |  |  |
| Coordinate openings and penetrations to ensure main structural components are not compromised |  |  |
| Verify Door swing and access paths are not impeded by equipment, systems or services |  |  |
| Check below grade service connections to ensure footings are not affected by penetrations |  |  |
| Check all engineered supports for Process, Bldg. Mechanical and Electrical conveyance systems have been modelled for coordination |  |  |
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