CLASH ANALYSIS EXAMPLE

FOR
BIM MODEL MBKT

UNIT BUILDING INFORMATION MODELING

CAWANGAN PERANCANGAN ASET BERSEPADU

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CLASH ANALYSIS USING NAVISWORKS MANAGE

CLASH ANALYSIS OVERVIEW

Clash analysis is not something new in the world of construction. During the old days, it will be done on the construction site which required a lot of changes and causes extra cost and delays. In BIM modelling, the analysis is done during design phase which can resolve many clashes before the construction starts. Hence, clash analysis is one of the important processes in BIM modelling. This process can help to avoid delays, design changes, rising material cost and budget overruns.

By conducting this analysis, clashes in 3D model of all disciplines can be identified, revised and reported. Besides that, clash analysis also can eliminate errors due to incomplete, inaccurate or poorly coordinated design information which can cause a tedious task to do it by manually.

Classes of clash

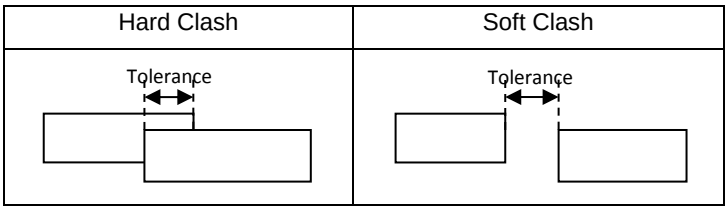
In BIM modelling, clash analysis can be conducted for three classes of clashes which are:

i. Hard clash
   Refer to which two objects or items occupying the same space.
ii. Soft clash
   Refers to objects or items that need a certain tolerance in spatial or geometric or buffers having objects within their buffer zone for access, insulation, maintenance or safety.
iii. Workflow clash detection.
   It refers to the ability of BIM modelling to resolve scheduling clashes for manpower, equipment, materials, delivery process and other project timeline issues.

Clash Tolerance

Tolerance can be defined differently according the usage in clash test type.

1. Tolerance in hard clash is the maximum acceptable distance that two objects can intersect. If these two objects intersect with the distance that is bigger than this tolerance, it is considered as a hard clash.
2. Tolerance in soft clash is a specified distance between two objects. For example, the distance between doors and pedestal water closet must sufficient to ensure the door can be fully opened without stuck because of the pedestal water closet. If the distance is less than the tolerance given, it is considered as a soft clash.

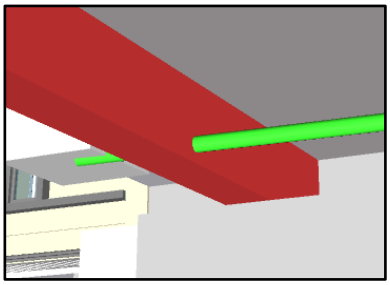


Clash Status

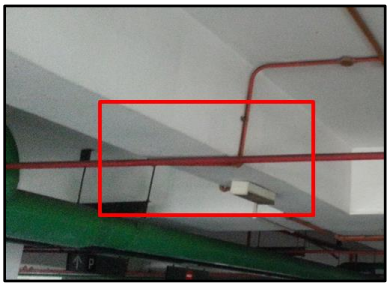
There are six clash statuses that associated with each clash. Three clash statuses are established by Autodesk Navisworks. It will automatically assign these statuses and will overwrite any clash that meets Autodesk Naviswork definition of these fields with the corresponding. The other three clash statuses can be defined by internal workflows.

Clash statuses which established by Autodesk Navisworks are:

STATUS	DEFINITION
New	A clash found for the first time in the current run of the clash test
Resolved	A clash found in a previous run of the test but not found in the current run of test



Clash found in the model and discussed with designer

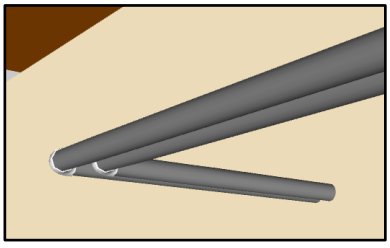


Designer solved the clash during design stage

Old	Any clash in the old test which the items involved have been changed since the last test run

Clash statuses can be defined by internal workflows are:

STATUS	DEFINITION
Active	A clash that has been assigned to someone to solve but is still not resolve from the previous test run
Reviewed	A clash that has been identified and reviewed but no immediate resolution and need a further discussion on it
Approved	A clash found and have been agreed to be worked out by some means in the field



Clash found in the model and approved

Clash have been corrected at site

Flow Chart of the Work Process