Exchange Requirement

Name	BIM Exchange for Circulation & Security Analysis

Identifier	ER_Circulation_Security_(Concept)

Change Log		
05-Jun-08	Initial creation – version 0.7 – based on material provided by Yeon-Suk Jeong and Chuck Eastman of Georgia Tech and the GSA BIM Series 06 team.	RichSee@DigitalAlchemyPro.com
24-Jun-08	Changes for version 0.9	RichSee@DigitalAlchemyPro.com
29-Jan-09	Version 0.96 - addresses comments from Statsbygg	RichSee@DigitalAlchemyPro.com
18-Aug-09	Version 1.0 -- addresses further comments from Statsbygg and Senate Properties	RichSee@DigitalAlchemyPro.com

Project Stage	0	Portfolio requirements	
	1	Conception of need	
	2	Outline feasibility	
	3	Substantive feasibility	
	4	Outline conceptual design	✓
	5	Full conceptual design	✓
	6	Coordinated design and procurement	✓
	7	Production information	✓
	8	Construction	
	9	Operation and maintenance	
	10	Disposal	

Overview

Please ensure that you have read the process mapping document "PM_Concept_Design_BIM_2010_Circulation-Security_Analysis_v1.0.doc" before proceeding with this exchange requirement.

The scope of this exchange requirement is the exchange of sufficient information to support human circulation analysis and security analysis --- relative to the building owner's BIM and Design Guide requirements. Examples of building owners providing such requirements include the US General Services Administration (GSA), Statsbygg (the Norwegian state property management organization), and Senate Properties (the Finnish state property management organization).

The exchange requirement assumes that a building model is available from which relevant information required for these analyses can be developed by the architect. It is anticipated that the building model will provide context information about the project including project units of measure, coordinate systems, etc.

As described in the Process Map document cited above, The building owner will perform such analyses at the concept design stage of all new construction and significant remodel projects on a routine basis, beginning in late 2010. These owner organizations will either perform these analyses internally or will contract specialists in circulation and/or security analysis. Submission of BIMs to these owner organizations, including the information defined in this exchange, will be mandated after the vendor implementation and pilot project phases of the 'Concept Design BIM 2010' project.

Information provided through this exchange requirement includes:

- Basic information about the building and its spatial containment topology

- Information about spaces, including identification, geometry, intended use (functional classification), and required security level (zone).

- Information about zones (collections of spaces that are related in the spatial program for the building)
- Information stairs, stair flights, ramps, and ramp flights, their properties, and their geometry

Information Requirements

Type of Information	Information Needed	Required	Optional
Project/Building Information			
Project	The following properties should be included:		
	o Identification		X
	o Owner/Client information		X
Building	The following properties should be included (if not known then probable values should be used):		
	o Identification	X	
	o Location		X
	o Elevation	X	
	o Approval status (?)	X	
Building Stories	The following properties should be included (if not known then probable values should be used):		
	o Identification	X	
	o Story height	X	
	o Elevation (relative to building datum)	X	
Spatial Information			
Space	The following properties should be included (if not known then probable values should be used):		
	o Identification	X	
	o Description		X
	o Classification (national or regional functional classification)		X
	o Inside or Outside space	X	
	o Space Usage (Owner Classification)	X	
	o Space Decomposition Type (complex (multiple spaces), elemental (room), or partial (part of a room))	X	
	o Space Decomposition Tree (e.g. partial space link to an Elemental space)	X	
	o 2D Geometry		X
	o 3D Geometry	X	
	o Links to Space Boundaries	X	

Type of Information	Information Needed	Required	Optional
Space Boundary	The following properties should be included (if not known then probable values should be used):		
	o 3D planar geometry	X	
	o Link to Space	X	
	o Link to bounding Building Element	X	
Zone	The following properties should be included (if not known then probable values should be used):		
	o Identification	X	
	o Description		X
	o Zone Type (security zone type)	X	
	o Member spaces	X	
Building Element Information			
Door	The following properties should be included:		
	o Identification	X	
	o Construction type		X
	o Classification		X
	o Location	X	
	o 3D Geometry	X	
Opening	The following properties should be included:		
	o Identification	X	
	o Location	X	
	o 3D Geometry	X	
Ramp	The following properties should be included:		
	o Identification	X	
	o Construction type		X
	o Classification		X
	o Location	X	
	o 3D Geometry	X	
Ramp Flight	o The following properties should be included:		

Type of Information	Information Needed	Required	Optional
	o Identification	X	
	o 3D Geometry	X	
	o Link to Ramp	X	
Stair	The following properties should be included:		
	o Identification	X	
	o Construction type		X
	o Classification		X
	o Location	X	
	o 3D Geometry	X	
	o Number of risers	X	
	o Number of treads	X	
	o Riser height	X	
	o Tread length	X	
Stair Flight	The following properties should be included:		
	Identification	X	
	3D Geometry	X	
	Link to Ramp	X	
Wall	The following properties should be included:		
	o Identification	X	
	o Construction type		X
	o Classification		X
	o Location	X	
	o 3D Geometry	X	
Window	The following properties should be included:		
	o Identification	X	
	o Construction type		X
	o Classification		X

Type of Information	Information Needed	Required	Optional
	o Location	X	
	o 3D Geometry	X	