

Flow of Events for Use Case - Set Utilization Extent

Change Log	
09/09/2004	Renamed from UC_SetUtilizationExtent
30/10/2004	Finalized for pre-integrated model

Overview

For a given property, regulations may specify the maximum percentage area that can be allocated for a construction. This use case allows for assignment of the information defining the percentage area.

Process

Preconditions

Property must be defined, located and identified.

Actors

xxx

Main Flow

Flow	Entity
1. Specify the property concerned	IfcSpace OR IfcSite
2. Determine the maximum area allowed for a construction on this property	
3. Check if a value defining the maximum construction area has already been assigned to the property.	Pset_SiteCommon.BuildableArea OR Pset_SiteCommon.BuildableAreaRatio
4. If not, then assign the value	Pset_SiteCommon.BuildableArea OR Pset_SiteCommon.BuildableAreaRatio

Post Conditions

The maximum percentage area allowed for construction on a 'physical property' will be defined in a property set.

IFC Usage and Extension Requirements

Existing Entity/Class Usage

Entity Class Name	Usage
IfcSpace OR IfcSite	This is used to designate the property and act as the container for the property set that incorporates the BuildableArea property.

Existing Property Set with Proposed Modification

Property Set Name	Usage
Pset_SiteCommon	This property set already has a property 'BuildableArea' that is defined as the area of site that can be covered by buildings - according to local building codes. The unit of measure assigned to this property is IfcAreaMeasure which implies that it should be measured in m2 or ft2 rather than as a percentage.

<i>A R M</i>	<i>Property</i>	<i>Type</i>	<i>Datatype</i>	<i>Unit</i>	<i>Definition</i>
M	BuildableArea	IfcPropertyBoundValue	IfcAreaMeasure		The area of utilization expressed as a minimum value and a maximum value.
A	BuildableAreaRatio	IfcPropertyBoundValue	IfcPositiveRatioMeasure		The ratio of the utilization extent expressed as a minimum value and a maximum value. The ratio value may be used to derive BuildableArea.

Issue List

<i>Question</i>	<i>Answer</i>
Property may have a minimum utilization requirement as well as a maximum value.	This needs to be captured by amending the datatype of BuildableArea to being an IfcPropertyBoundValue.
Should we add a property 'BuildingAreaRatio' to capture ratio requirements as well as buildable area?	In Norway the utilization extent [no: "Utnyttelsesgrad", or short "U-grad"] is either stated as a percentage fram 0% til 100%, or a number between 0 and 100 (representing percentage), and there may exist both a minimum and a maximum utilization extent (the most common being a maximum value only). Thus the utilization extent is a "BuildingAreaRatio" - where as the derived parameter may be a #sq.meters buildable area.