



UML diagrams

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The latest version of this document can be downloaded from: https://github.com/tudelft3d/Energy_ADE/tree/main/documentation

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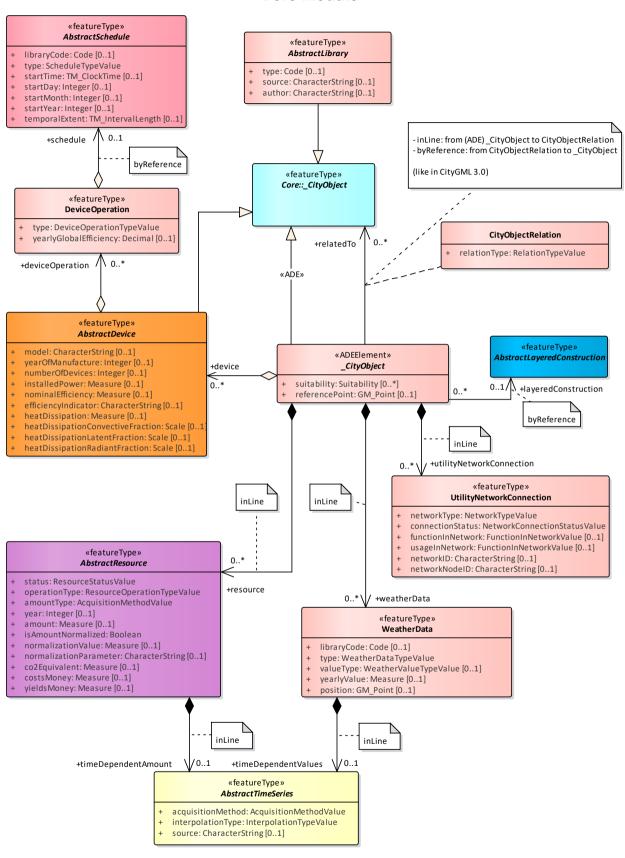
Particular gratitude is due to Daniele Gasparini for designing the Energy ADE logo.

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Overview of the packages «applicationSchema» Core «ApplicationSchema» CityObjectGroup «applicationSchema» Building (from CityGML) (from CityGML) (from CityGML) «leaf» «leaf» Urban Function Areas Weather Station «leaf» Building Physics «leaf» «leaf» Time Series Core **Layered Construction** «leaf» «leaf» «leaf» Schedules Devices Occupancy «leaf» Resources «leaf» CodeLists «leaf» DataTypes «leaf» Enumerations

Core module



«codeList» CodeLists:: AcquisitionMethodValue

- measurement
- simulation
- calibratedSimulation
- estimation
- unknown

«codeList» CodeLists:: **DeviceOperationTypeValue**

- cooking
- domesticHotWater
- electricalAppliances
- lighting
- otherOrCombination
- process
- shading
- spaceCooling
- spaceHeating
- ventilation unknown

«codeList»

- gas districtHeating

«codeList»

CodeLists::

NetworkTypeValue

- districtCooling
- wasteWater
- electicalGrid
- other
- unknown

CodeLists:: RelationTypeValue

- adjacentTo
- installedOn
- sharedWith

«codeList» CodeLists:: FunctionInNetworkValue

- producing
- consuming
- storage
- other
- unknown

«codeList» CodeLists::

ResourceOperationTypeValue

- demands
- has
- hasBalanceOf
- produces
- stores

«codeList» CodeLists:: ScheduleTypeValue

- hour
- day
- week
- month
- season year
- typicalDay
- typicalWeek
- typicalMonth
- typicalSeason
- typicalYear
- monday
- tuesday
- wednesday
- thursday
- friday
- saturday
- sunday
- weekDay
- weekendDay
- beerDay
- holiday
- january
- february
- march
- april
- may june
- july
- august
- september october
- november
- december
- spring
- summer
- autumn
- winter
- other

«codeList» CodeLists::WeatherDataTypeValue

- airTemperature
- humidity
- windSpeed
- windDirection
- cloudiness globalSolarIrradiance
- directSolarIrradiance
- diffuseSolarIrradiance
- terrestrialEmission
- downwardTerrestrialRadiation
- davlightIlluminance
- shadowingFactor precipitation

«codeList» CodeLists::

WeatherValueTypeValue

- absolute maximum average maximum
- average
- average minimum
- absolute minimum unknown

«enumeration» Enumerations:: InterpolationTypeValue

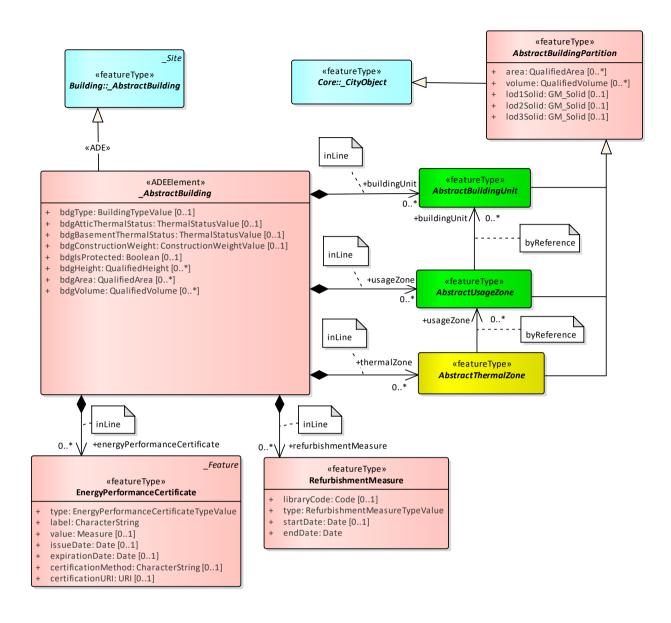
averageInPrecedingInterval averageInSucceedingInterval constantInPrecedingInterval constantInSucceedingInterval continuous discontinuous instantaneousTotal maximumInPrecedingInterval maximumInSucceedingInterval minimumInPrecedingInterval minimumInSucceedingInterval precedingTotal succeedingTotal

«enumeration» Enumerations:: NetworkConnectionStatusValue

connected disconnectedButConnectable disconnected And Not Connectableunknown

«enumeration» Enumerations:: ResourceStatusValue

actual potential unknown



«codeList» CodeLists:: BuildingTypeValue

- + single-family house
- + terraced house
- + multi-family house
- + apartment block
- + commercial building
- + industrial building
- + office building
- + religious building
- + hospital+ leisure activity building
- + unknown

«enumeration» Enumerations:: ThermalStatusValue

is Only Heated is Only Cooled is Heated And Cooled is Neither Heated Nor Cooled unknown

«codeList» CodeLists:: ConstructionWeightValue

- + veryLight
- + light + medium
- + heavy
- + heavy + unknown

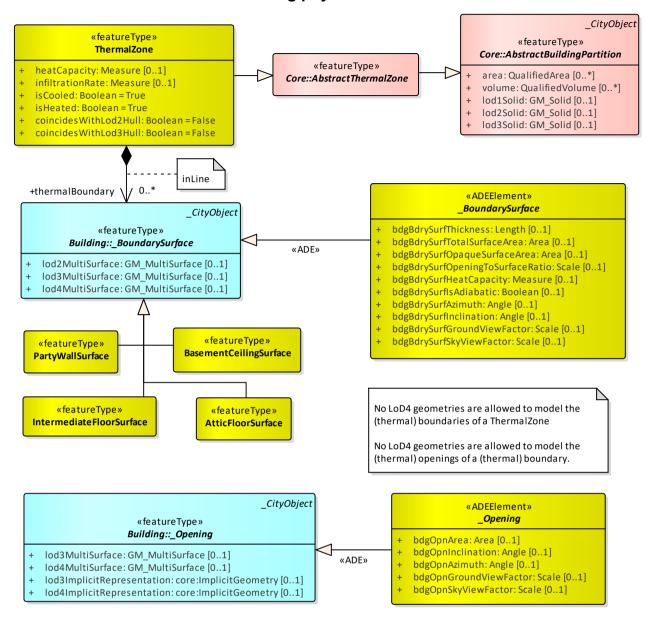
«codeList» CodeLists:: EnergyPerformanceCertificateTypeValue

«codeList» CodeLists::

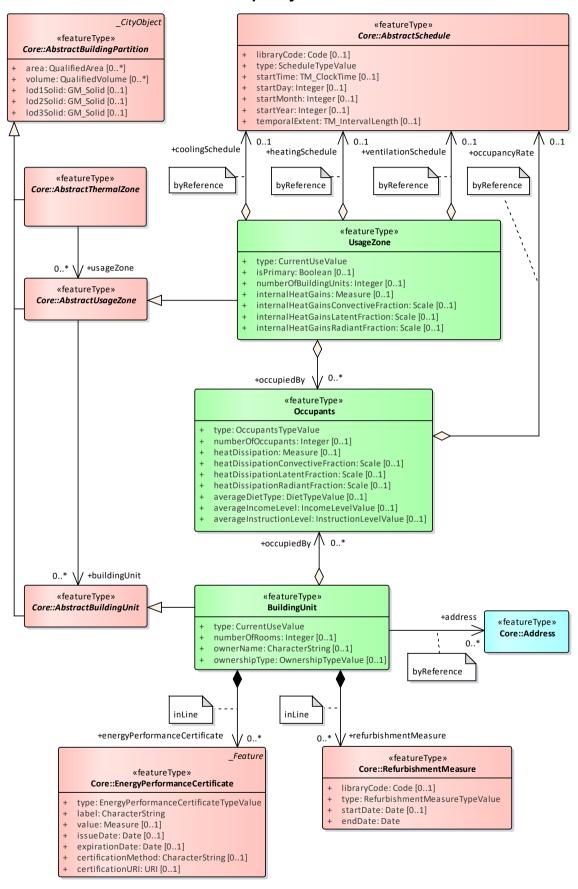
RefurbishmentMeasureTypeValue

- + installedSolarPanels
- + installedPVPanels
- + installedHeatPump + changedBoiler
- + insulatedWholeThermalHull
- + installedFloorHeating
- + changedWindows
- + changedDoors
- + insulatedRoof
- insulatedExteriorWalls
- insulatedGroundFloor
- + other
- + unknown

Building physics module



Occupancy module



«codeList» CodeLists::CurrentUseValue

- + omnivorous
- + vegetarian
- + vegan
- + other
- + unknown

«codeList» CodeLists::IncomeLevelValue

- + very low
- + low
- + middle
- + high
- + very high
- + unknown

«codeList» CodeLists:: InstructionLevelValue

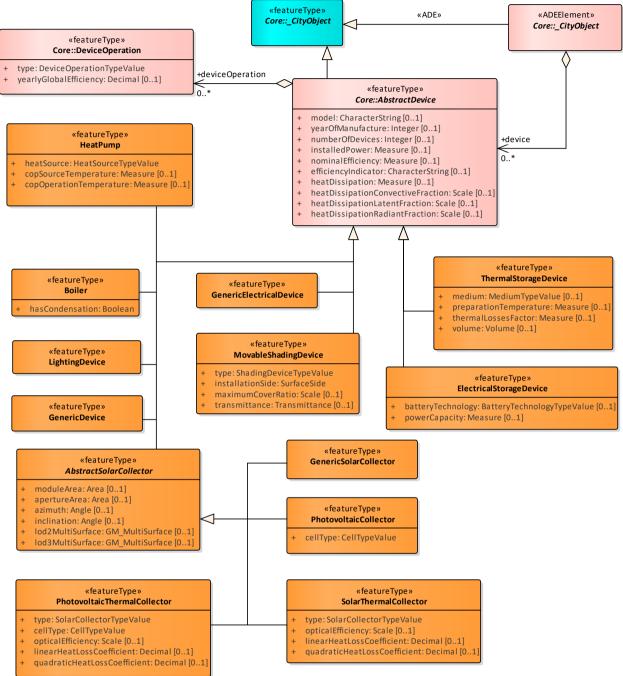
- + no formal education
- + primary school
- + secondary school
- + university
- + postGraduate
- + unknown

«codeList» CodeLists:: OccupantsTypeValue

- + patients
- + residents
- + students
- + visitors
- + workers
- + otherOrCombination
- + unknown

- + corporation
- + government
- nonOccupantPrivateOwner
- nonProfitOrganisation
- + occupantPrivateOwner
- + otherOrCombination
- propertyManagementCompany
- + unknown

Devices module



«codeList» CodeLists:: BatteryTechnologyTypeValue

«codeList» CodeLists::CellTypeValue

«codeList»

CodeLists::

ShadingDeviceTypeValue

curtain

shutter

blind

other unknown

- monocrystalline
- polycrystalline
- amorphous
- unknown

«codeList» CodeLists:: DeviceOperationTypeValue

- cooking
- domesticHotWater
- electrical Appliances
- lighting otherOrCombination
- process
- shading
- spaceCooling
- spaceHeating
- ventilation
- unknown

«codeList» CodeLists::

- flatPlaneCollector
- evacuatedTubeCollector
- unknown

«codeList» CodeLists:: HeatSourceTypeValue

- ambientAir
- aquifer exhaustAir
- horizontalGroundCollector
- verticalGroundCollector
- unknown

«codeList» CodeLists::MediumTypeValue

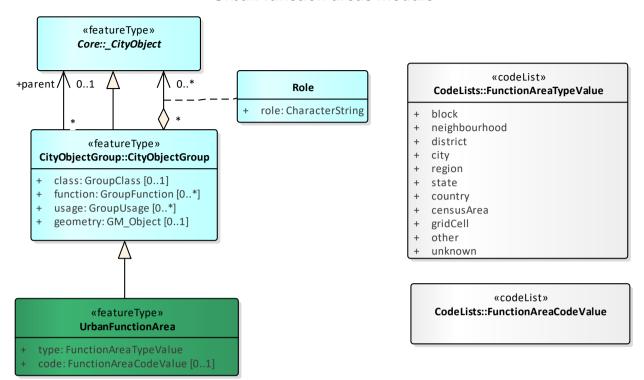
- steam
- water
- unknown

SolarCollectorTypeValue

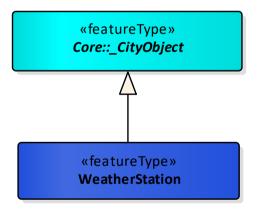
«enumeration» Enumerations:: SurfaceSide

inside outside

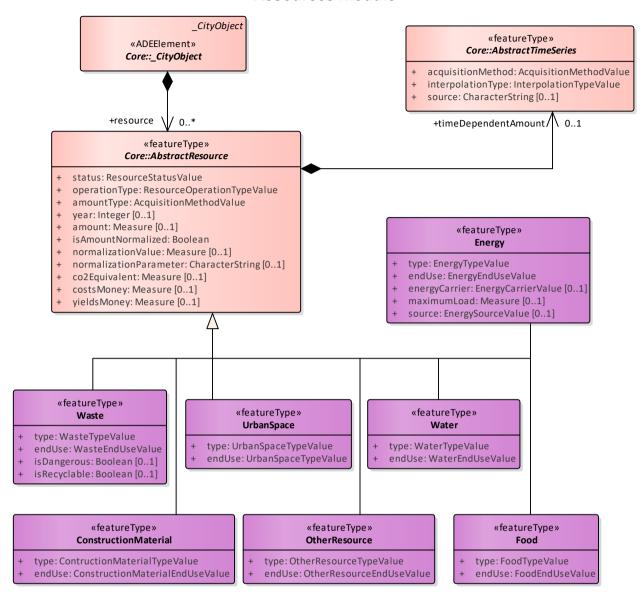
Urban function areas module



Weather station module



Resources module



«codeList» CodeLists::

Construction Material End Use Value

- construction
- refurbishment
- otherOrCombination
- unknown

«codeList» CodeLists::

ContructionMaterialTypeValue

- wood
- tiles
- concrete
- sand soil
- otherOrCombination
- glass
- bricks
- unknown

«codeList» CodeLists:: **EnergyCarrierValue**

- electricity
- coal
- naturalGas
- chilledAir
- chilledWater
- fuelOil
- hotAir
- steam hotWater
- woodChips
- hydrogen propane
- woodPallets
- other
- unknown

«codeList» CodeLists:: EnergyEndUseValue

- cooking
- domestic Hot Water
- electricalAppliances
- lighting
- otherOrCombination
- spaceCooling
- spaceHeating
- ventilation
- process
- construction
- unknown

«codeList» CodeLists:: EnergyTypeValue

- actual
- net
- primary
- secondary final
- useful

«codeList» CodeLists::EnergySourceValue

- photovoltaicPanels
- powerGrid
- districtHeating
- solar Thermal Panels
- heatPump
- wind

«codeList» CodeLists:: FoodEndUseValue

- alimentation
- commerce

«codeList» CodeLists:: FoodTypeValue

- greeneries
- meat
- cereals
- cheese
- milk
- wine
- beer unknown

«codeList» CodeLists:: OtherResourceEndUseValue

CodeLists:: OtherResourceTypeValue

«codeList» CodeLists:: UrbanSpaceEndUseValue

«codeList» CodeLists:: UrbanSpaceTypeValue

«codeList» CodeLists:: WaterEndUseValue

- drinking
- washing
- processing
- otherOrCombination unknown

«codeList» CodeLists:: WaterTypeValue

«codeList»

- drinkWater
- wasteWater
- rainWater
- otherOrCombination
- unknown

«codeList» CodeLists:: WasteEndUseValue

- incineration
- landFilling
- recycling
- other
- unknown

«codeList»

CodeLists::WasteTypeValue

- organic
- plastic
- glass
- paper
- metal water
- otherOrCombination
- unknown

«codeList» CodeLists:: ResourceOperationTypeValue

- demands
- has
- hasBalanceOf
- produces
- stores

«codeList» CodeLists:: **AcquisitionMethodValue**

- measurement
- simulation
- calibratedSimulation estimation unknown

«enumeration» Enumerations:: ResourceStatusValue

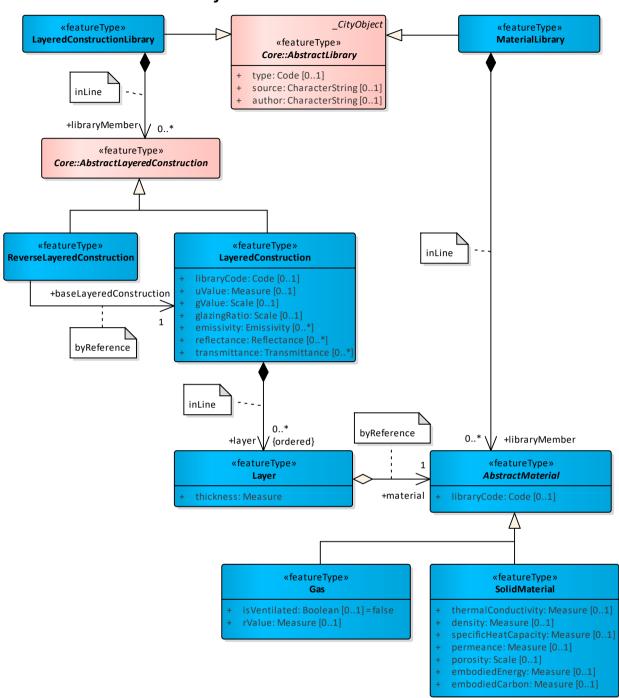
actual potential unknown

«enumeration» Enumerations:: InterpolationTypeValue

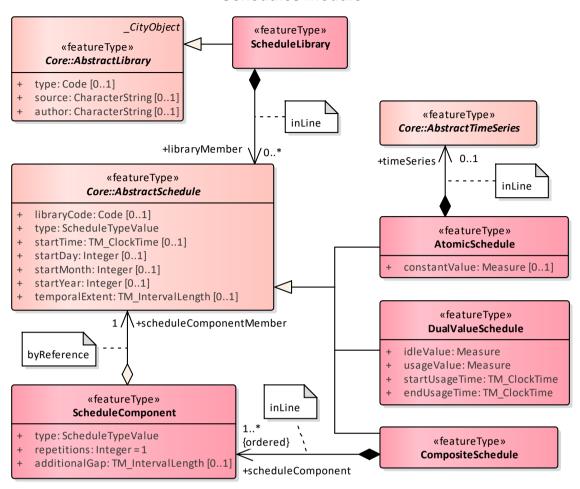
averageInPrecedingInterval averageInSucceedingInterval constant In Preceding Intervalconstant In Succeeding Intervalcontinuous discontinuous

instantaneousTotal maximumInPrecedingInterval maximumInSucceedingInterval minimumInPrecedingInterval minimum In Succeeding Intervalpreceding TotalsucceedingTotal

Layered construction module



Schedules module



Time series module

«featureType» Core::AbstractTimeSeries

- + acquisitionMethod: AcquisitionMethodValue
- + interpolationType: InterpolationTypeValue
- + source: CharacterString [0..1]

«featureType» RegularTimeSeries

- + temporalExtent: TM Period
- + timeInterval: TM_IntervalLength
- + valuesList: MeasureList

«featureType» TypicalValuesTimeSeries

- + startTime: TM_ClockTime [0..1]
- + startDay: Integer [0..1]
- + startMonth: Integer [0..1]
- + temporalExtent: TM IntervalLength
- + timeInterval: TM_IntervalLength
- + valuesList: MeasureList

«featureType» RegularTimeSeriesFile

- + uom: UnitOfMeasure
- + fileURI: URI
- + temporalExtent: TM_Period
- + timeInterval: TM IntervalLength
- + numberOfHeaderLines: Integer [0..1] = 0
- + fieldSeparator: CharacterString
- + recordSeparator: CharacterString [0..1] = \n
- + decimalSymbol: Character [0..1] = .
- + valueColumnNumber: Integer [0..1] = 1

«featureType» TypicalValuesTimeSeriesFile

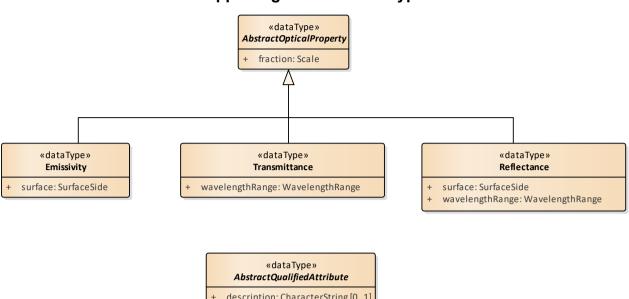
- startTime: TM_ClockTime [0..1]
- + startDay: Integer [0..1]
- startMonth: Integer [0..1]
- + uom: UnitOfMeasure
- + fileURI: URI
- + temporalExtent: TM_IntervalLength
- + timeInterval: TM IntervalLength
- + numberOfHeaderLines: Integer [0..1] = 0
- + fieldSeparator: CharacterString
- + recordSeparator: CharacterString [0..1] = \n
- + decimalSymbol: Character [0..1] = .
- + valueColumnNumber: Integer [0..1] = 1

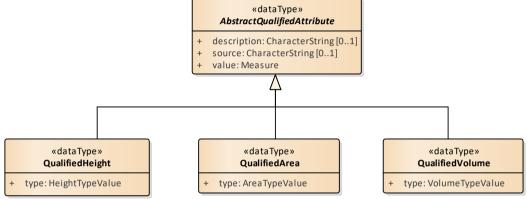
«featureType» SensorConnection

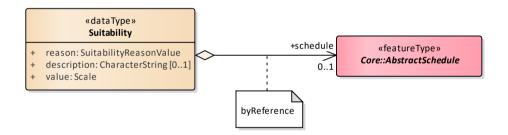
- + temporalExtent: TM_IntervalLength
- + connectionType: SensorConnectionTypeValue
- + observationProperty: CharacterString
- + uom: UnitOfMeasure [0..1]
- + sensorID: CharacterString [0..1]
- + sensorName: CharacterString [0..1]
- + observationID: CharacterString [0..1]
- + datastreamID: CharacterString [0..1]
- + baseURL: URI [0..1]
- + authType: AuthenticationTypeValue [0..1]
- + mqttServer: CharacterString [0..1]
- + mqttTopic: CharacterString [0..1]
 + linkToObservation: CharacterString [0..1]
- + linkToSensorDescription: CharacterString [0..1]

«codeList»
CodeLists::
AuthenticationTypeValue

Supporting classes: DataTypes







Supporting classes: Enumerations

«enumeration» InterpolationTypeValue

averageInPrecedingInterval averageInSucceedingInterval constantInPrecedingInterval constantInSucceedingInterval continuous discontinuous instantaneousTotal maximumInPrecedingInterval maximumInSucceedingInterval minimumInPrecedingInterval minimumInSucceedingInterval precedingTotal succeedingTotal

«enumeration» NetworkConnectionStatusValue

connected disconnectedButConnectable disconnectedAndNotConnectable unknown

«enumeration» ResourceStatusValue

actual potential unknown

«enumeration» SurfaceSide

inside outside

«enumeration» ThermalStatusValue

is Only Heated is Only Cooled is Heated And Cooled is Neither Heated Nor Cooled unknown

«enumeration» WavelengthRange

solar infrared visible total

Supporting classes: Codelists

«codeList»

AuthenticationTypeValue

«codeList»

BatteryTechnologyTypeValue

«codelist» AcquisitionMethodValue

- measurement
- simulation
- calibratedSimulation
- estimation

«codeList» AreaTypeValue

- footprintArea netFloorArea
- grossFloorArea
- energyReferenceArea
- heatedArea
- cooledArea
- totalRoofArea
- totalWallSurfaceArea
- totalPartyWallSurfaceArea
- totalGroundSurfaceArea totalExteriorEnvelopeArea

«codeList» BuildingTypeValue

- single-family house
- terraced house
- multi-family house apartment block
- commercial building
- industrial building
- office building
- religious building
- hospital
- leisure activity building
- unknown

«codeList» CellTypeValue

- monocrystalline
- polycrystalline
- amorphous
- unknown

«codeList» EnergyPerformanceCertificateTypeValue

«codeList»

Construction Material End Use Value

- construction
- refurbishment
- otherOrCombination
- unknown

«codeList» ConstructionWeightValue

- veryLight
- light
- medium
- heavy unknown

«codeList»

- wood
- tiles
- concrete
- sand
- soil
- otherOrCombination
- glass
- bricks

«codeList» CurrentUseValue

«codeList» DietTypeValue

- omnivorous
- vegetarian
- vegan
- other unknown

«codeList» **DeviceOperationTypeValue**

- cooking
 - domesticHotWater
- electricalAppliances
- lighting
- otherOrCombination
- process
- . shading
- spaceCooling
- spaceHeating
- ventilation
- unknown

«codeList» EnergyCarrierValue

- electricity
- coal
- naturalGas
- chilledAir
- chilledWater
- fuelOil
- hotAir
- steam hotWater
- woodChips hydrogen
- propane
- woodPalletsother
- unknown

«codeList»

- greeneries
- meat
- cereals cheese
- milk
- beer
- unknown

«codeList» EnergyEndUseValue

- cooking
- domestic Hot WaterelectricalAppliances
- lighting
- otherOrCombination spaceCooling
- spaceHeating
- ventilation
- process unknown
 - construction

«codeList» EnergySourceValue

- photovoltaicPanels
- powerGrid
- districtHeating
- solarThermalPanels
- heatPump
- wind

«codeList» EnergyTypeValue

secondary

- actual
- net primary

final

useful

«codeList» FoodEndUseValue

alimentation commerce

FoodTypeValue

- wine

«codeList» FunctionAreaCodeValue

«codeList» FunctionAreaTypeValue

- neighbourhood
- district city
- region
- state country
- censusArea gridCell
- other unknown

«codeList» FunctionInNetworkValue

- producing
- consuming storage
- other unknown

«codeList» HeatSourceTypeValue

- ambientAir
- aquifer
- exhaustAir
- horizontalGroundCollector
- verticalGroundCollector unknown

«codeList» HeightTypeValue

- bottomOfConstruction
- entrancePoint
- generalEave generalRoof
- generalRoofEdge
- highestEave highestPoint
- highestRoofEdge IowestEave
- lowestFloorAboveGround IowestRoofEdge topOfConstruction
- topThermalBoundary bottomThermalBoundary

«codeList» IncomeLevelValue

- very low
- low middle
- high very high unknown

«codeList» InstructionLevelValue

- no formal education
- primary school
- secondary school university
- postGraduate
- unknown

21

«codeList» OccupantsTypeValue

- patients
- residents
- students
- visitors
- workers
- otherOrCombination
- unknown

«codelist»

- districtHeating
- districtCooling
- wasteWater
- electicalGrid
- other

«codeList» OtherResourceEndUseValue

«codeList» OtherResourceTypeValue

«codeList» MediumTypeValue

- steam
- water
- unknown

«codeList»

RelationTypeValue

adjacentTo

installedOn

sharedWith

NetworkTypeValue

- data
- gas

«codeList» ScheduleTypeValue

- unknown

«codeList» OwnershipTypeValue

- corporation
- government
- nonOccupantPrivateOwner
- nonProfitOrganisation
- occupantPrivateOwner
- otherOrCombination
- property Management Company
- unknown

«codelist» RefurbishmentMeasureTypeValue

- installedSolarPanels
- installedPVPanels
- installedHeatPump
- changedBoiler
- insulatedWholeThermalHull
- installedFloorHeating
- changedWindows changedDoors
- insulatedRoof
- insulatedExteriorWalls
- insulated Ground Floor
- other
- unknown

- hour
- dav
- week
- month season
- vear
- typicalDay
- typicalWeek
- typicalMonth
- typicalSeason
- typicalYear
- monday
- tuesday
- wednesday
- thursday
- friday
- saturday
- sunday weekDay
- weekendDay
- beerDay
- holiday
- january february
- march
- april
- may
- june july
- august
- september october
- november
- december
- spring summer
- autumn winter
- other

- «codeList» ResourceOperationTypeValue
- demands
- hasBalanceOf
- produces
- stores

- evacuatedTubeCollector

«codeList» SensorConnectionTypeValue

«codeList» ShadingDeviceTypeValue

- curtain
- shutter
- blind other
- unknown

«codeList» SolarCollectorTypeValue

- flatPlaneCollector
- unknown

«codeList» SuitabilityReasonValue

«codeList» UrbanSpaceEndUseValue

«codeList» UrbanSpaceTypeValue

«codeList»

VolumeTypeValue

- netVolume
- grossVolume
- energyReferenceVolume
- heatedVolume
- cooledVolume

«codeList» WasteTypeValue

- organic
- plastic
- glass
- paper
- metal water
- otherOrCombination
- unknown

«codeList» Waste End Use Value

- incineration
- landFilling recycling
- other unknown
- «codeList» WaterEndUseValue
 - drinking washing
 - processing
 - otherOrCombination unknown

«codeList» WaterTypeValue

otherOrCombination

- drinkWater
- wasteWater rainWater

unknown

«codeList» WeatherDataTypeValue

- airTemperature
- humidity
- windSpeed
- windDirection cloudiness
- globalSolarIrradiance
- directSolarIrradiance diffuseSolarIrradiance
- terrestrialEmission
- downward Terrestrial RadiationdaylightIlluminance
- shadowingFactor precipitation

«codeList» WeatherValueTypeValue

- absolute maximum
- average maximum
- average
- average minimum absolute minimum
- unknown

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Changelog

Version 3.0 beta 7

2025-10-14

No changes, except new version from 2.0 to 3.0.

Version 2.0 beta 7

2025-06-25

Schedules package:

- Class ScheduleLibrary
 - Changed relation type of libraryMember to composition

Layered Construction package:

- Class LayeredConstructionLibrary
 - Changed relation type of libraryMember to composition
- Class LayeredConstruction
 - Added property gValue
- Class MaterialLibrary
 - Changed relation type of *libraryMember* to composition

2025-05-30

Schedules package:

- Class AtomicSchedule
 - Changed multiplicity of relation *timeSeries* to [0..1]
 - Added property constantValue

2025-05-13

Building physics package:

- Class ThermalZone
 - Changed relation type of thermalBoundary to composition

2025-05-07

Core package:

- Class ADE CityObject
 - Changed relation type of *device* to aggregation
 - Changed relation type of weather Data to composition
- Class AbstractThermalZone
 - Changed relation type of usageZone to association
- Class AbstractUsageZone
 - Changed relation type of *buildingUnit* to association
- Class AbstractResource
 - Made relation to **AbstractTimeSeries** explicit and set to composition
- Class DeviceOperation
 - Made relation to AbstractSchedule explicit and set to aggregation
- Class WeatherData
 - Made relation to AbstractTimeSeries explicit and set to composition

Occupancy package:

- Class UsageZone
 - Changed relation type of *occupiedBy* to aggregation
 - Made all relations to **AbstractSchedule** explicit and set to aggregation
- Class BuildingUnit
 - Changed relation type of *occupiedBy* to aggregation
- Class Occupants
 - Made relation to AbstractSchedule explicit and set to aggregation

Layered Construction package:

- Class LayeredConstruction
 - Changed relation type of *layer* to composition
- Class Laver
 - Changed relation type of material to aggregation

Schedules package:

- Class ScheduleComponent
 - Changed relation type of *scheduleComponentMember* to aggregation

2025-05-01

Core package:

- Class ADE AbstractSchedule
 - Moved from package Schedules to Core
- Class ADE AbstractTimeSeries
 - Moved from package Time Series to Core

Occupancy package:

- Class Occupants:
 - Added property averageDietType
 - Added property averageIncomeLevel
 - Added property averageInstructionLevel

CodeLists package:

- Added class DietTypeValue
- Added class InstructionLevelValue
- Added class IncomeLevelValue

2025-04-23

CodeLists package:

- Added values to class AreaTypeValue
- Renamed class HeightReferenceValue to HeightTypeValue
- Added class SuitabilityReasonValue
- Added class UrbanSpaceTypeValue
- Added class UrbanSpaceEndUseValue

DataTypes package:

Added class Suitability

Core package:

- Class ADE CityObject
 - Added property suitability
 - Class ADE _AbstractBuilding
 - Renamed property bdgFloorArea to bdgArea
 - Renamed property bdgHeightAboveGround to bdgHeight
- Class AbstractBuildingPartition
 - Renamed property *floorArea* to *area*

Resources package:

• Added class UrbanSpace

2025-04-12

Core package:

• Added class AbstractLibrary

Layered Construction package:

- Added class LayeredConstructionLibrary
- Added class MaterialLibrary

Schedules package:

Added class ScheduleLibrary

CodeLists package:

• Class FunctionInNetwork renamed to FunctionInNetworkValue

Version 2.0 beta 6

2025-02-06

DataTypes package:

- Dropped class HeatExchangeType
- Dropped class OpticalProperties

Core package:

- Class ADE CityObject:
 - Renamed property from operationSchedule to deviceOperation
- Class **AbstractDevice**:
 - Changed type of property heatDissipation to gml:Measure
 - Added property heatDissipationConvectiveFraction
 - Added property heatDissipationLatentFraction
 - Added property heatDissipationRadiantFraction

Occupancy package:

- Class UsageZone:
 - Renamed property averageInternalGains to internalGains and changed type to gml:Measure
 - Added property internal Gains Convective Fraction
 - Added property internalGainsLatentFraction
 - Added property internal Gains Radiant Fraction
- Class Occupants:
 - Changed type of property *heatDissipation* to gml:Measure
 - Added property heatDissipationConvectiveFraction
 - Added property heatDissipationLatentFraction
 - Added property heatDissipationRadiantFraction

Layered Construction package:

- Class LaveredConstruction:
 - Dropped property opticalProperties
 - Added property glazingRatio
 - Added property emissivity
 - Added property reflectance
 - Added property transmittance
- Class Layer:
 - Changed multiplicity of property thickness to [1]
- Class AbstractMaterial:

- Added property libraryCode

Version 2.0 beta 5

Resources package:

No changes since beta 4

Weather Station package:

No changes since beta 4

2025-01-30

Packages

- Created TimeSeries package and moved all related classes into it
- Created Schedule package and moved all related classes into it
- Dropped Supporting classes package

CodeLists package:

Class CertificateTypeValue renamed to EnergyPerformanceCertificateTypeValue

2025-01-28

CodeLists package:

• Added class ScheduleTypeValue

Enumerations package:

• Dropped class DayTypeValue

Supporting classes package:

- Dropped class TimeSeriesSchedule
- Dropped class DailyPatternSchedule
- Dropped class PeriodOfYear
- Dropped class DailySchedule
- Added class AtomicSchedule
- Added class CompositeSchedule
- Added class ScheduleComponent
- Class AbstractSchedule:
 - Added properties type, startTime, startDay, startMonth, startYear, temporalExtent

2025-01-22

Devices package:

- Class AbstractSolarCollector:
 - Added properties azimuth and inclination
 - Dropped property *surfaceGeometry*
 - Added properties lod2MultiSurface and lod3MultiSurface

2025-01-13

CodeLists package:

- Dropped class ThermalBoundaryTypeValue
- Added class ShadingDeviceTypeValue
- Added class WeatherValueTypeValue

DataTypes package:

• Moved class PeriodOfYear from package DataTypes to Supporting classes

- Moved class DailySchedule from package DataTypes to Supporting classes
- Class AbstractQualifiedAttribute:
 - Added properties source and value
- Classes QualifiedHeight, QualifiedArea, QualifiedVolume:
 - Dropped property value

Supporting classes package:

- Class AbstractTimeSeries:
 - Moved back from package Core to Supporting classes
 - Changed multiplicity of property acquisitionMethod to [1]
 - Changed multiplicity of property *interpolationType* to [1]
- ClassTypicalValuesTimeSeries:
 - Added properties startTime, startDay, startMonth
- Class TypicalValuesTimeSeriesFile:
 - Added properties startTime, startDay, startMonth
- Added class DualValueSchedule:
- Class PeriodOfYear:
 - Changed stereotype from dataType to featureType
 - Added properties startDay, startMonth, endDay, endMonth
 - Dropped property *period*
- Class DailySchedule:
 - Changed stereotype from dataType to featureType
 - Added property repetition
 - Renamed property from schedule to timeSeries

Layered Construction package:

- Added class ReverseLaveredConstruction
- Dropped class LayerComponent
- Class Layer:
 - Removed property layerComponent
 - Added property thickness
 - Added property material
- Class SolidMaterial:
 - Renamed property from specificHeat to specificHeatCapacity
 - (Re)added and renamed property from conductivity to thermalConductivity
 - (Re)added property *embodiedEnergy*
 - (Re)added property embodiedCarbon
 - (Re)added property porosity

Core package:

- Class **AbstractDevice**:
 - Class is renamed from AbstractEnergySystem to AbstractDevice
 - Added property heatDissipation
 - Added property operationSchedule
 - Added property efficienctIndicator
 - Added property installedPower
 - Added property nominalEfficiency
- Class AbstractTimeSeries:
 - Moved back from package Core to Supporting classes
- Class (ADE) _CityObject:
 - Renamed property from energySystem to device
- Class OperationSchedule:
 - Moved from package Devices to Core
- Class WeatherData:
 - Renamed property from timeseries to timeDependentValues
 - Renamed property from singleValue to yearlyValue
 - Renamed property from *singleValueType* to *valueType*
 - Changed type of property valueType from CharacterString to CodeList
- Added class AbstractBuildingPartition

- Classes AbstractBuildingUnit, AbstractUsageZone, AbstractThermalZone
 - Changed parent class

Building physics package:

- Dropped class ThermalBoundary
- Dropped class **ThermalOpening**
- Class ThermalZone
 - Removed property *floorArea* (now inherited via **AbstractBuildingPartition**)
 - Removed property *volume* (now inherited via **AbstractBuildingPartition**)
 - Removed property volumeGeometry (now inherited via AbstractBuildingPartition)
 - Removed property boundedBy
 - Added property heatCapacity
 - Added property coincidesWithLod2Hull
 - Added property coincidesWithLod3Hull
 - Added property thermalBoundary
- Added class PartyWallSurface
- Added class BasementCeilingSurface
- Added class IntermediateFloorSurface
- Added class AtticFloorSurface
- Class (ADE) BoundarySurface:
 - Renamed property from bdgBdrySrfWindowToWallRatio to bdgBdrySrfOpeningToSurfaceRatio
 - Renamed property from bdgBdrySrfArea to bdgBdryTotalSurfaceArea
 - Added property bdgBdryOpaqueSurfaceArea
 - Added property bdgBdrySrfThickness
 - Added property bdgBdrySrfHeatCapacity

Occupancy package:

- Dropped class AbstractFacilities
- Dropped class **DHWFacilities**
- Dropped class LightingFacilities
- Dropped class Electrical Appliances
- Dropped class GenericFacilities
- Class BuildingUnit:
 - Removed property *floorArea* (now inherited via **AbstractBuildingPartition**)
 - Removed property *volume* (now inherited via **AbstractBuildingPartition**)
 - Removed property *equippedWith*
- Class UsageZone:
 - Removed property *floorArea* (now inherited via **AbstractBuildingPartition**)
 - Removed property *volume* (now inherited via **AbstractBuildingPartition**)
 - Removed property volumeGeometry (now inherited via AbstractBuildingPartition)
 - Removed property equippedWith

Devices package:

The former EnergySystems package is renamed to Devices package

- Class OperationSchedule:
 - Moved from package Devices to Core
- Dropped class AbstractEnergyConversionSystem
 - Now all subclasses are derived directly from AbstractDevice
- Dropped class AbstractStorageSystem
 - Now all subclasses are derived directly from **AbstractDevice**
- Class GenericDevice:
 - Renamed from class **GenericEnergyConversionSystem**
- Class ElectricalStorageDevice:
 - Renamed from class PowerStorageSystem
- Class ThermalStorageDevice:
 - Renamed from class ThermalStorageSystem
- Class AbstractSolarCollector:
 - Renamed from class AbstractSolarEnergySystem
- Class PhotovoltaicThermalCollector:

- Renamed from class PhotovoltaicThermalSystem
- Class PhotovoltaicCollector:
 - Renamed from class **PhotovoltaicSystem**
- Class SolarThermalCollector:
 - Renamed from class SolarThermalSystem
- Class GenericSolarCollector:
 - Renamed from class GenericSolarEnergySystem
- Added class LightingDevice
- Added class GenericElectricalDevice
- Added class MovableShadingDevice

Urban Function Areas package:

- Class UrbanFunctionArea:
 - Removed property rank

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2024-09-25

- Codelist ThermalBoundaryTypeValue
 - Renamed outerWall to exteriorWall
 - Renamed intermediaryFloor to intermediateFloor

2024-09-20

- Minor edits to the layout of the UML diagrams
- Polished Codelist ThermalBoundaryTypeValue

2024-08-12

- Class ADE CityObject:
 - Renamed association connected To to utility Network Connection
 - Remodelled association class CityObjectRelation
- Class AbstractTimeSeries:
 - Moved to Core module
- Class WeatherData:
 - renamed property valuesList to timeSeries
 - made the association to **AbstractTimeSeries** explicit
- Added some values to codelist RelationTypeValue
- Class TimeSeriesSchedule:
 - Changed association to AbstractTimeSeries to Composition
- Class DailySchedule:
 - Changed association to AbstractTimeSeries to Composition
- Class SensorConnection:
 - Changed type of *uom* to UnitOfMeasure
 - Renamed linkTosensortDescription to linkToSensorDescription
- Class AbstractSolarEnergySystem:
 - Removed association installedOn (now taken over by CityObjectRelation)
- Class Energy:
 - Changed multiplicity of *EnergyCarrier* to [0..1]
- Class Waste:
 - Changed multiplicity of isDanegerous and isRecyclable to [0..1]