

# *What is bSDD and how can it help you with data management?*

*Oslo, 15th March 2023*

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bSDD

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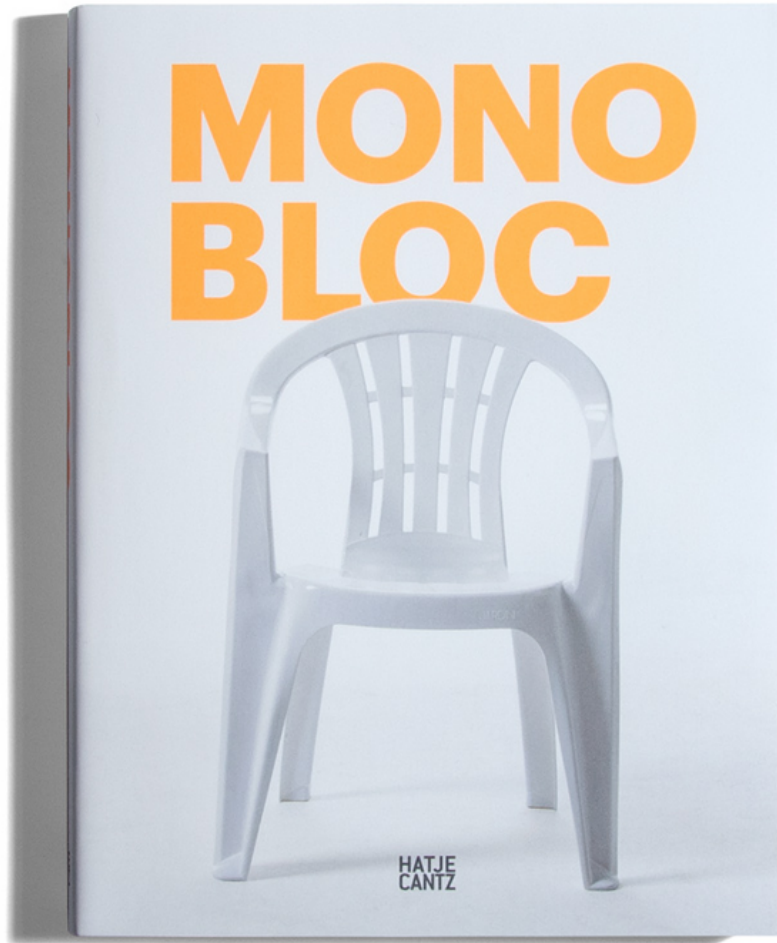
IfcFurniture.CHAIR – IFC  
Stol – IKEA  
Stacking chairs – Uniclass  
Plastikstuhl – Basel  
Allmendverwaltung  
Monobloc – Wikipedia  
Relax lounge – ETIM



Material?  
– plastic  
– polypropylene

Colour?  
– white  
– beige  
– RGB(198,195,177)





Der meistverkaufte Stuhl der Welt

# mono bloc

ein Film von Hauke Wendler

„Eine wunderbare Verneigung vor einem schönen Plastikstuhl, der so viel mehr ist als das.“  
ZDF HEUTE JOURNAL

„Eine Erfolgsgeschichte, die beispielhaft vorführt, wie Globalisierung funktioniert.“  
NDR INFO

„Ein Dokumentarfilm, der den Monobloc zu einem Gradmesser für die Ungleichheit in der Welt werden lässt.“  
DEUTSCHLANDFUNK KULTUR

















„Globalisierung anders erzählt.“  
BLICKPUNKT FILM

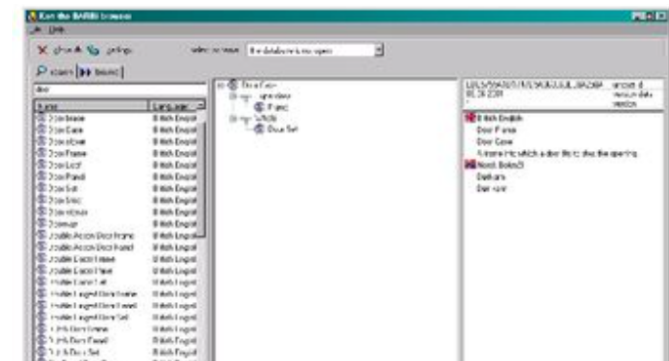
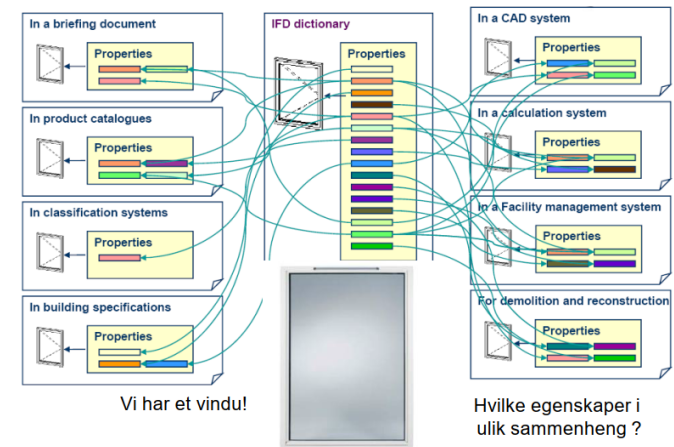


# Luckily we have...

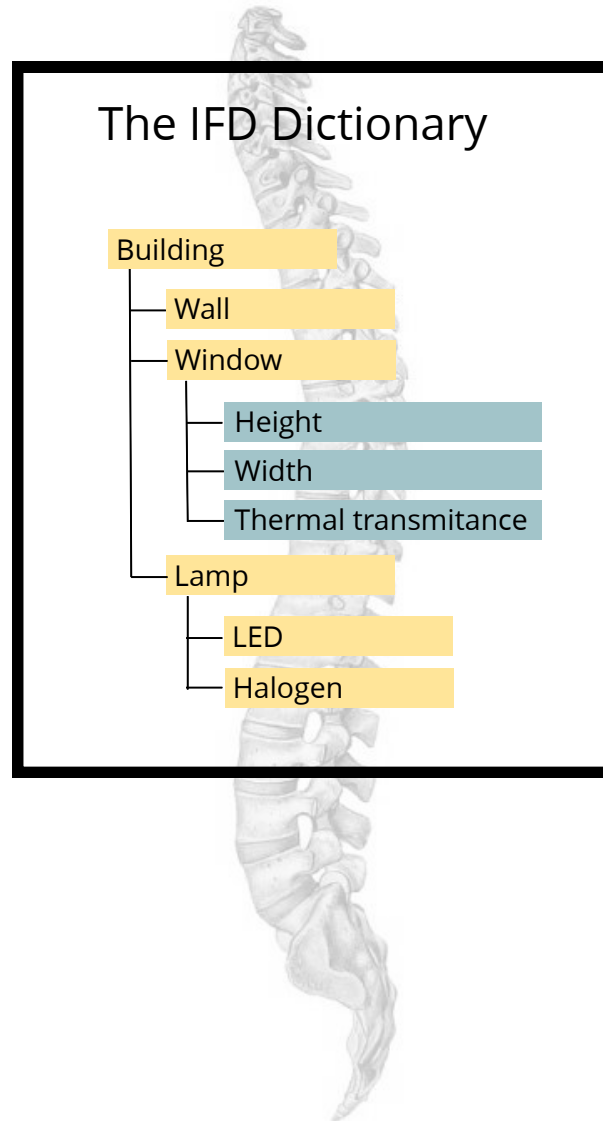
The Definitions Server  
Product Data Template  
**Taxonomy**  
Class Library Industry Classes  
Data Template Encyclopedia  
Knowledge graph IFD Semantics  
**Data Dictionary** Translator  
Classification System  
Linked Data Material library  
Wikipedia Property Sets  
**Classification**  
Reference Library  
**Ontology**

# bSDD origins

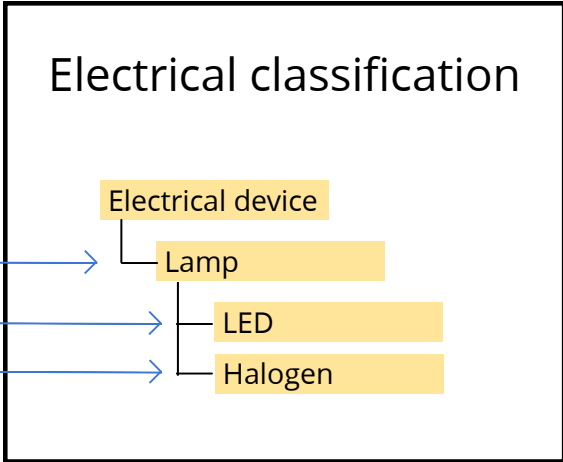
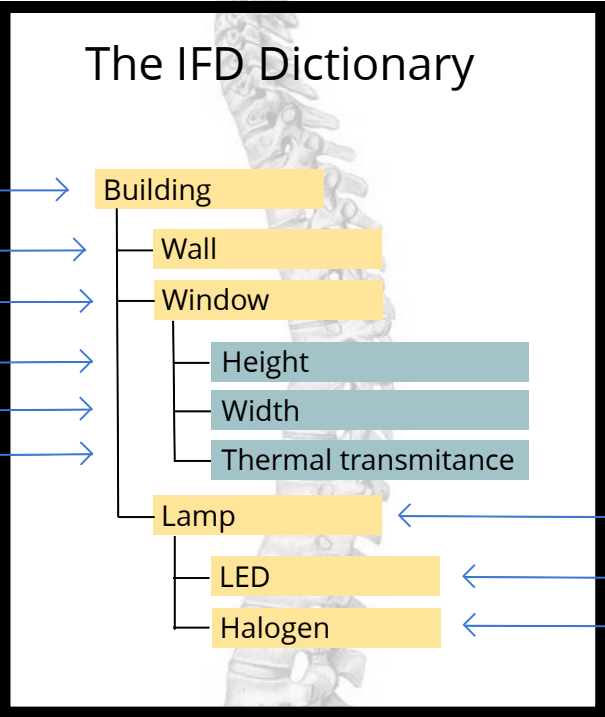
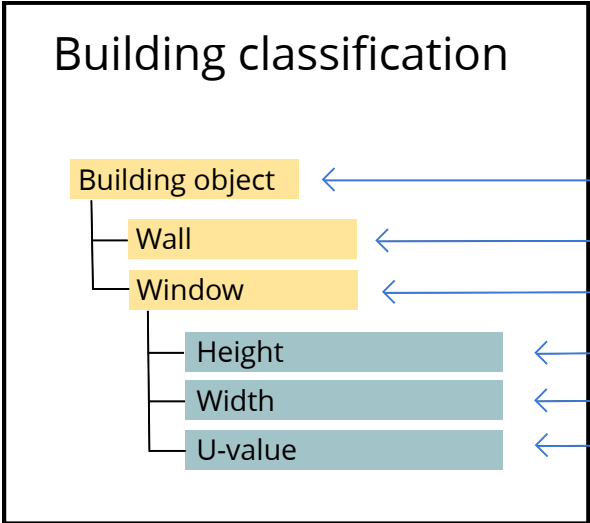
-  ~2000, **ISO 12006-3** — Framework for object-oriented information
-  **LexiCon** (STABU, Kees Woestenenk)
-  **BARBI** (*Bygg og Anlegg Referanse Bibliotek*, NBI, Lars Bjørkhaug, Håvard Bell, Jøns Sjøgren, Kjell Ivar Bakkmoen, Per Jeger)
-  The **IFD Dictionary** (International Framework for Dictionaries)
-  2003 ISO 15926 — EPISTLE, data for oil and gas process plants
-   2005 IAI → buildingSMART
-  2006 **Linked Data**, Semantic Web, Tim Berners-Lee, W3C
-  ~2009 **IFD-SignOn/B-Link**, Innovasjon Norge, Forsvarsbygg, EFO, NRF, Knud Mohn, Halvard Gavelstad, Terje Røysing, ++
-   **bSDD**, Catenda, David Watson, Forsvarsbygg, Statsbygg, DiBK (?)
-   2017 BNL acquires bSDD content from Cobuilder (bygg.no)
-  ISO 23386:2020 — Methodology (...) interconnected **data dictionaries**
-  ISO 23387:2020 — **Data templates** for construction objects (...)
-  ~2020, **bSDD** revival, Frédéric Grand, Léon van Berlo, Erik Baars



# bSDD origins

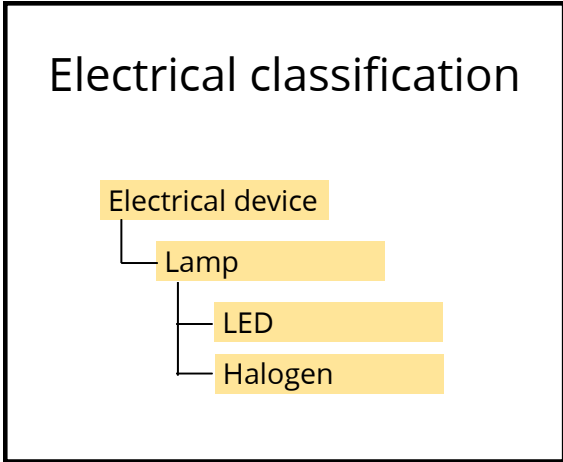
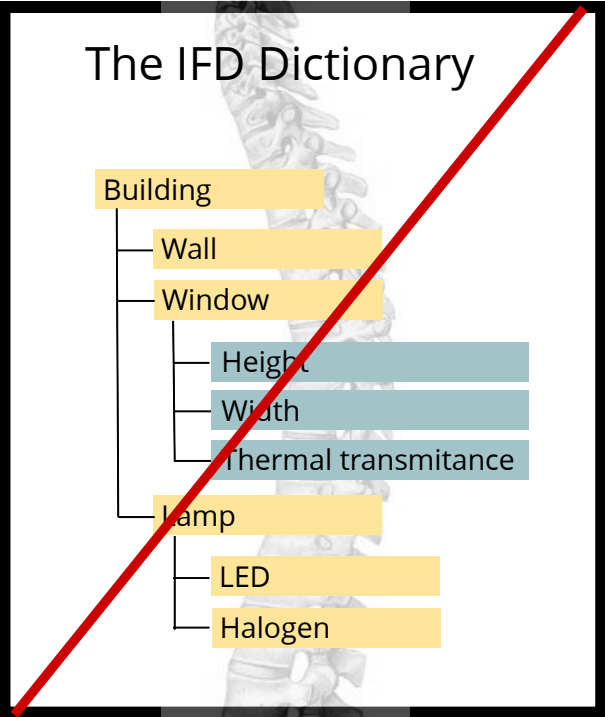
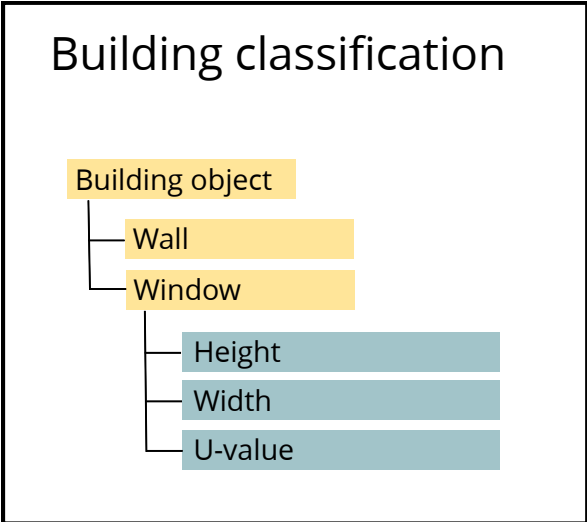


# bSDD origins

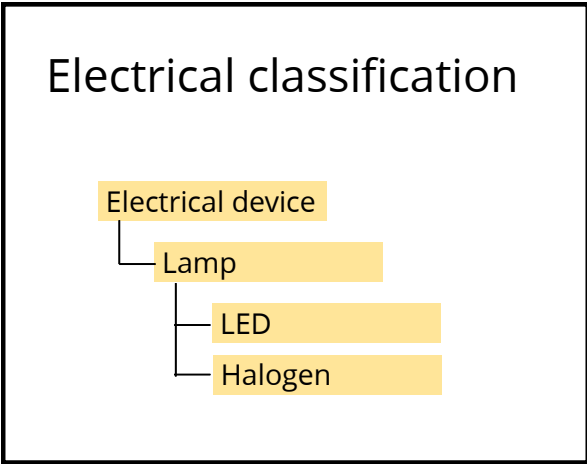
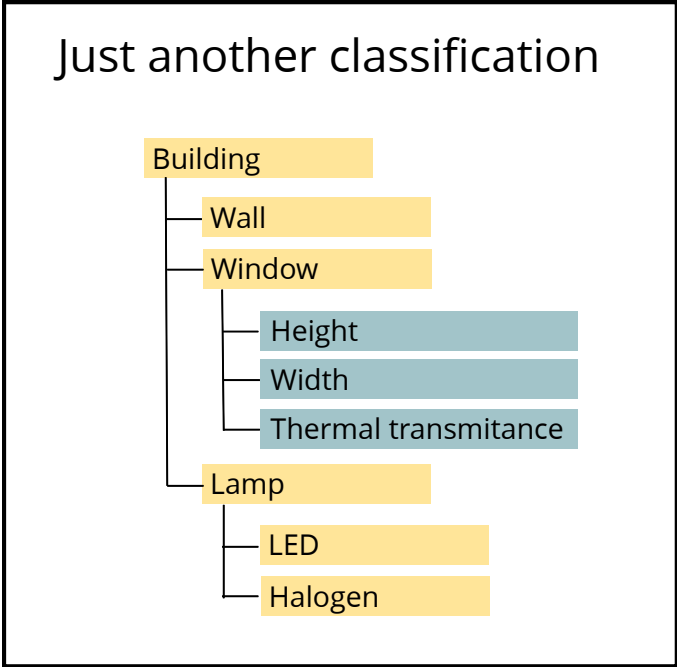
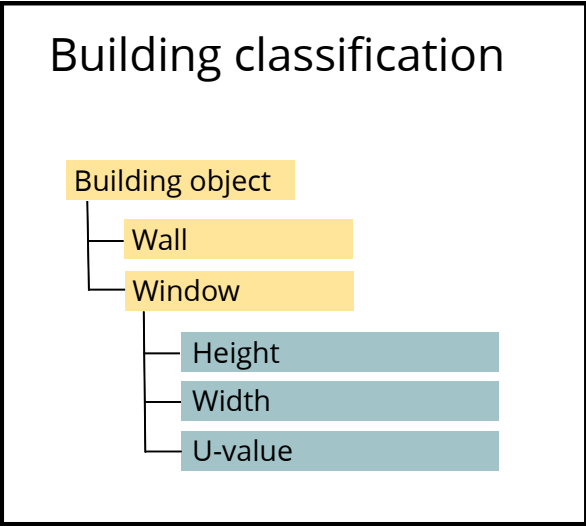




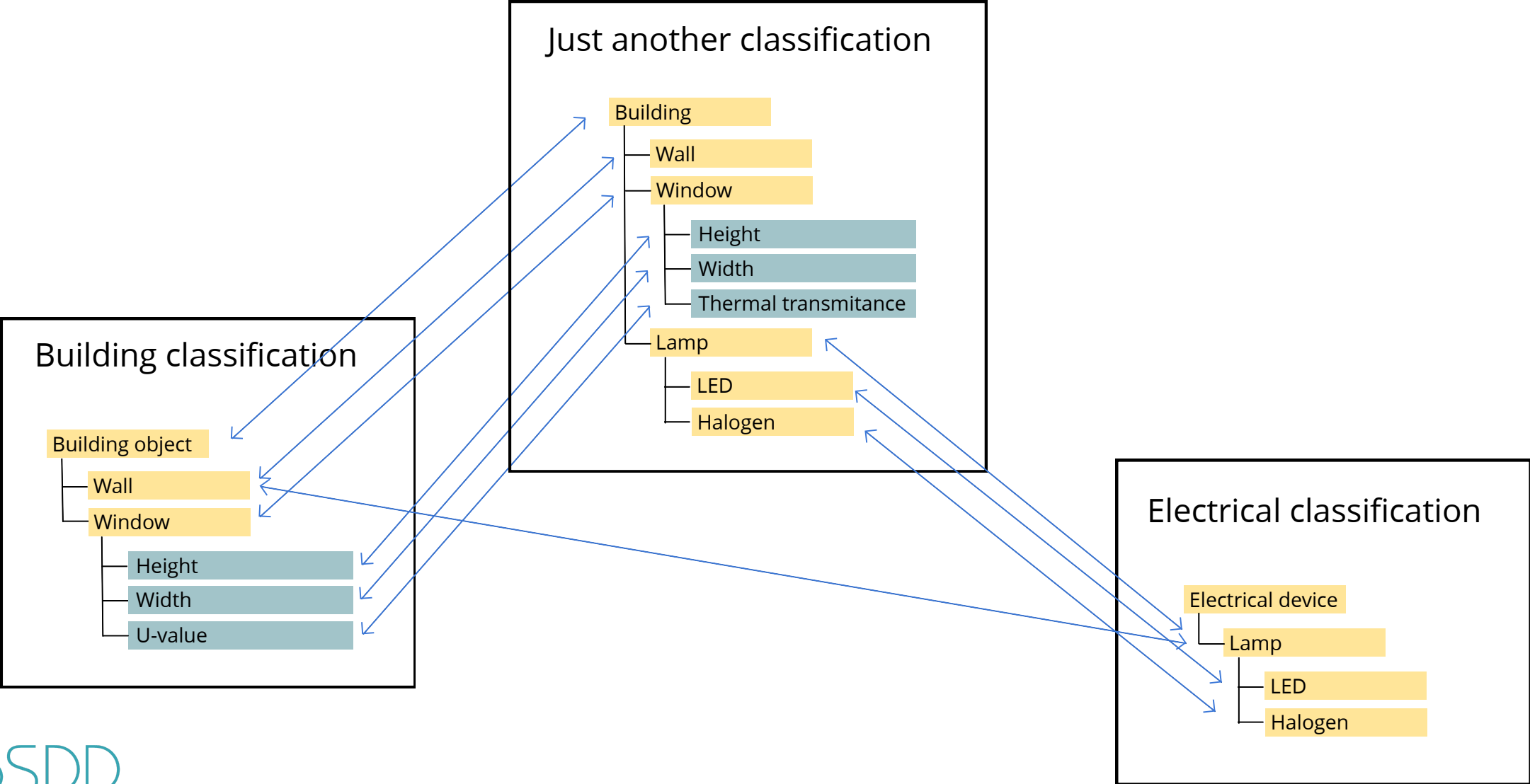
# bSDD origins



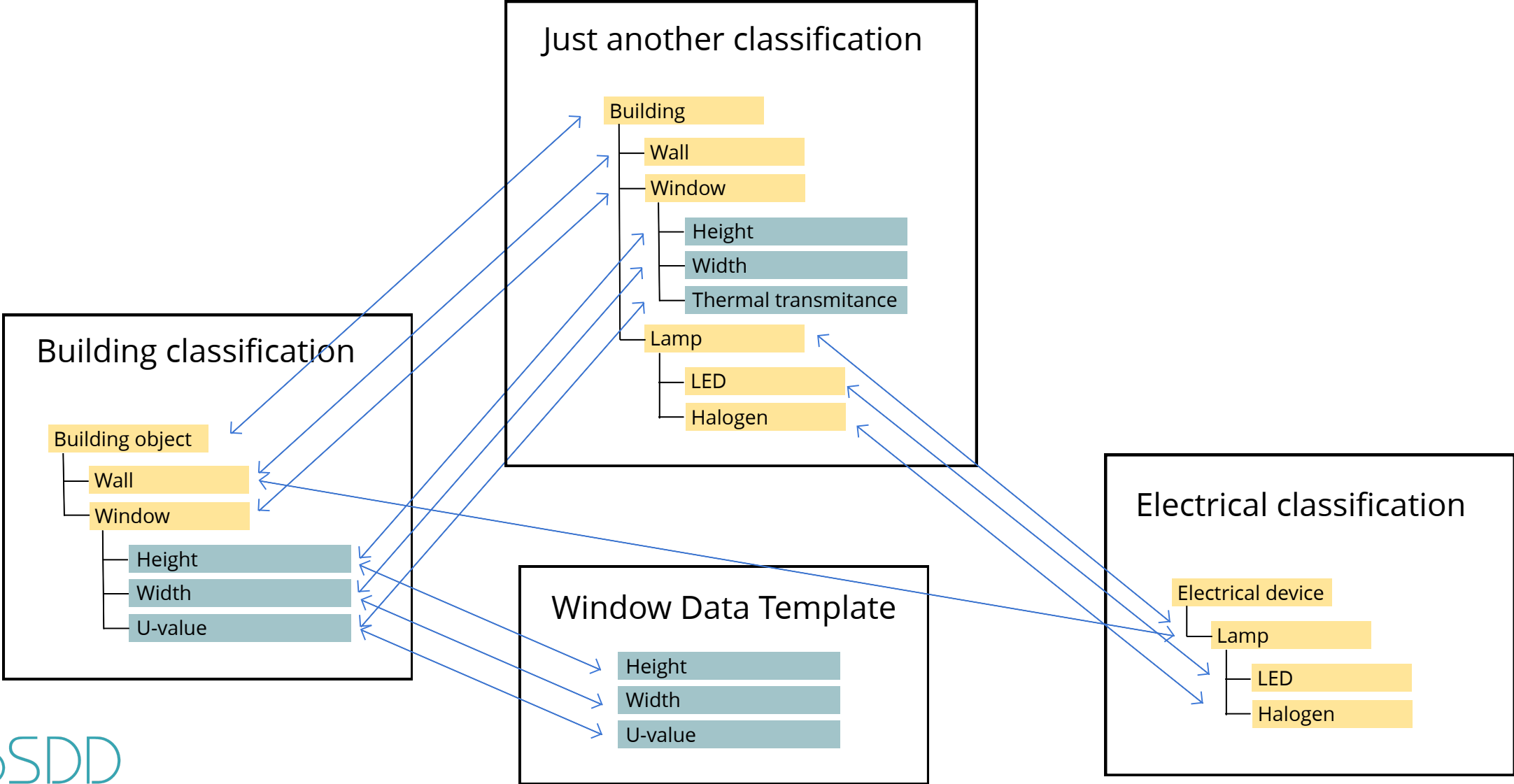
# bSDD today



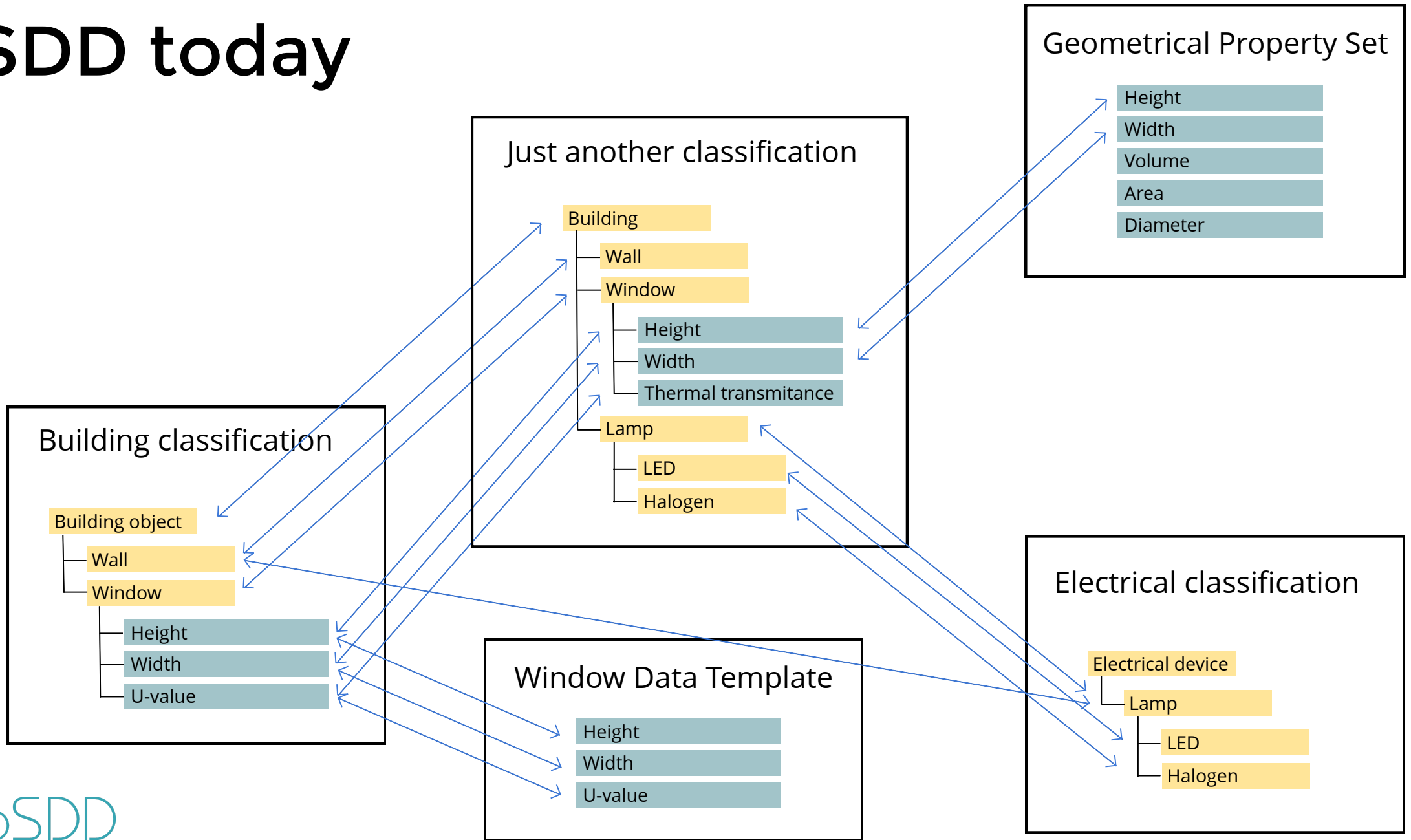
# bSDD today



# bSDD today

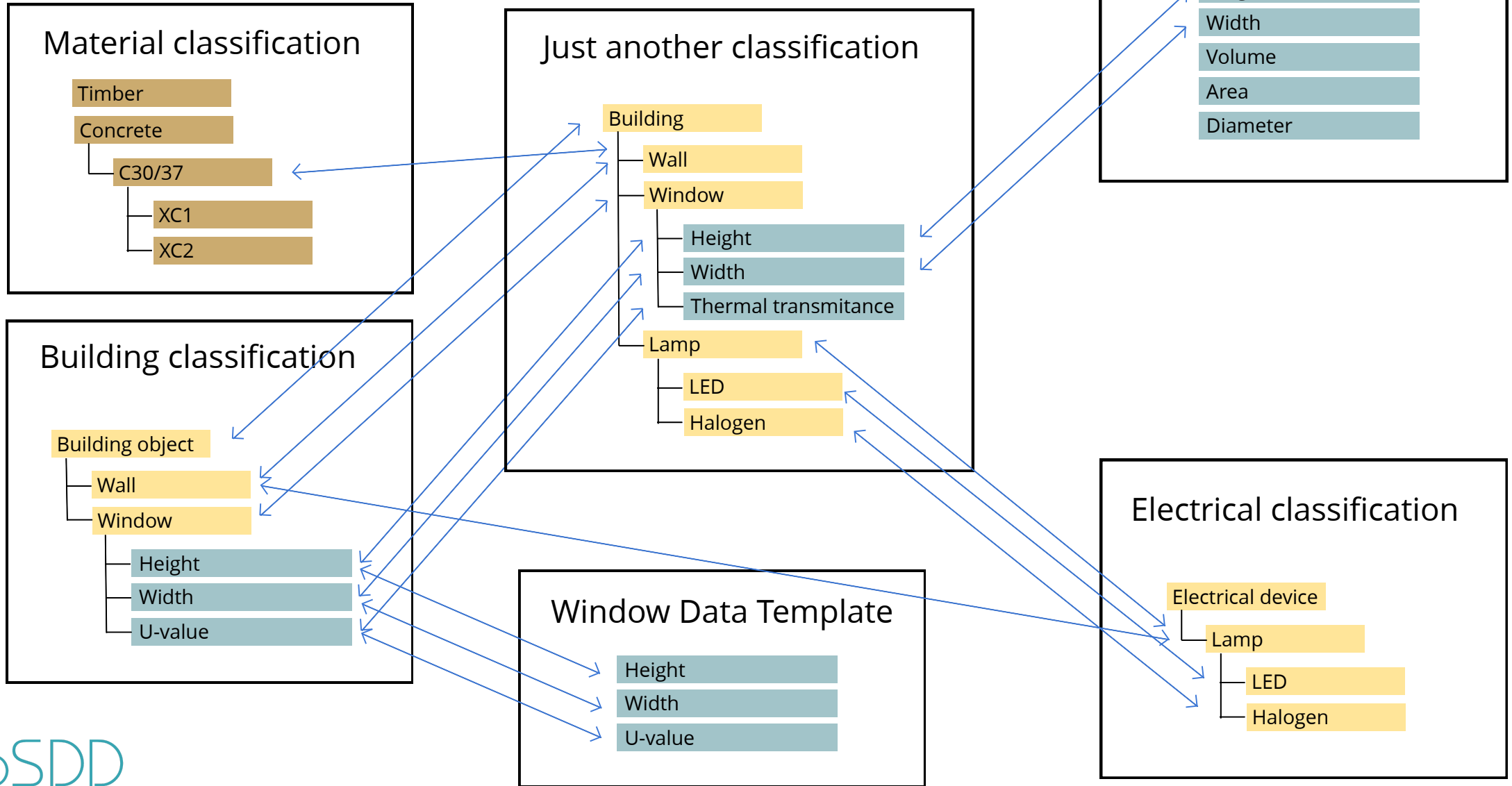


# bSDD today

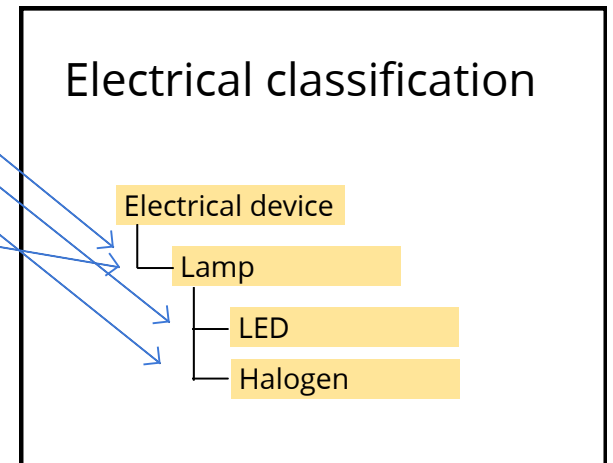
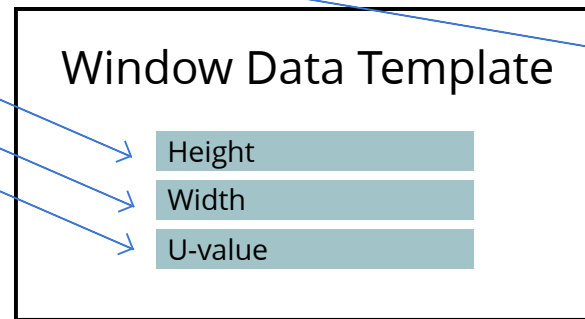
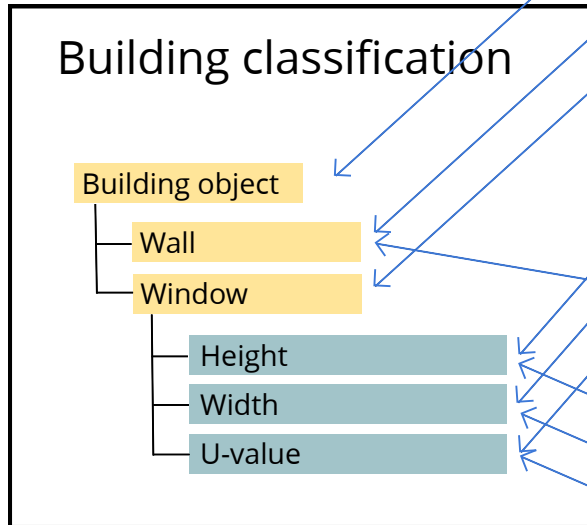
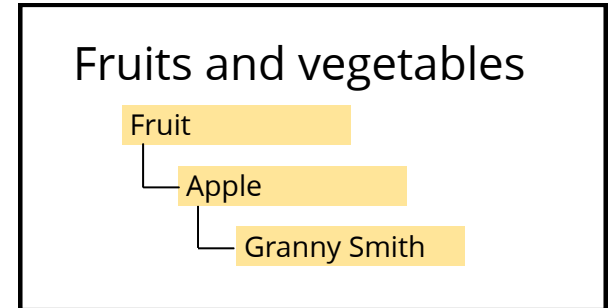
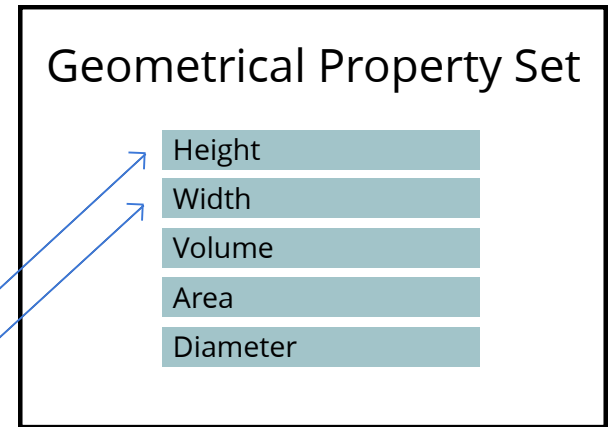
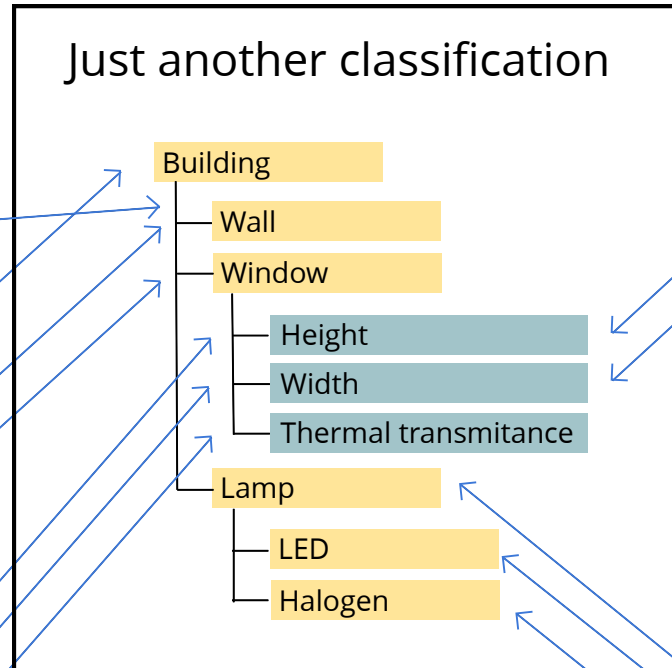
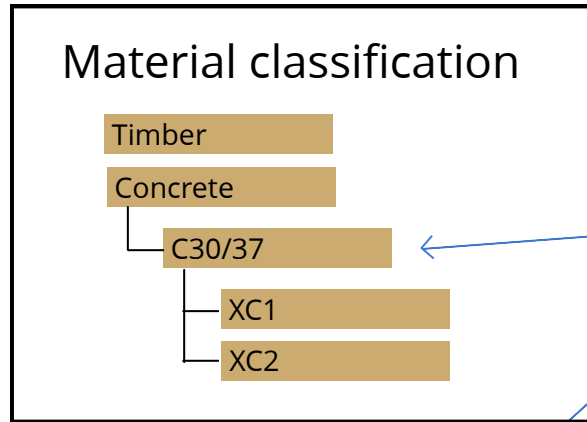




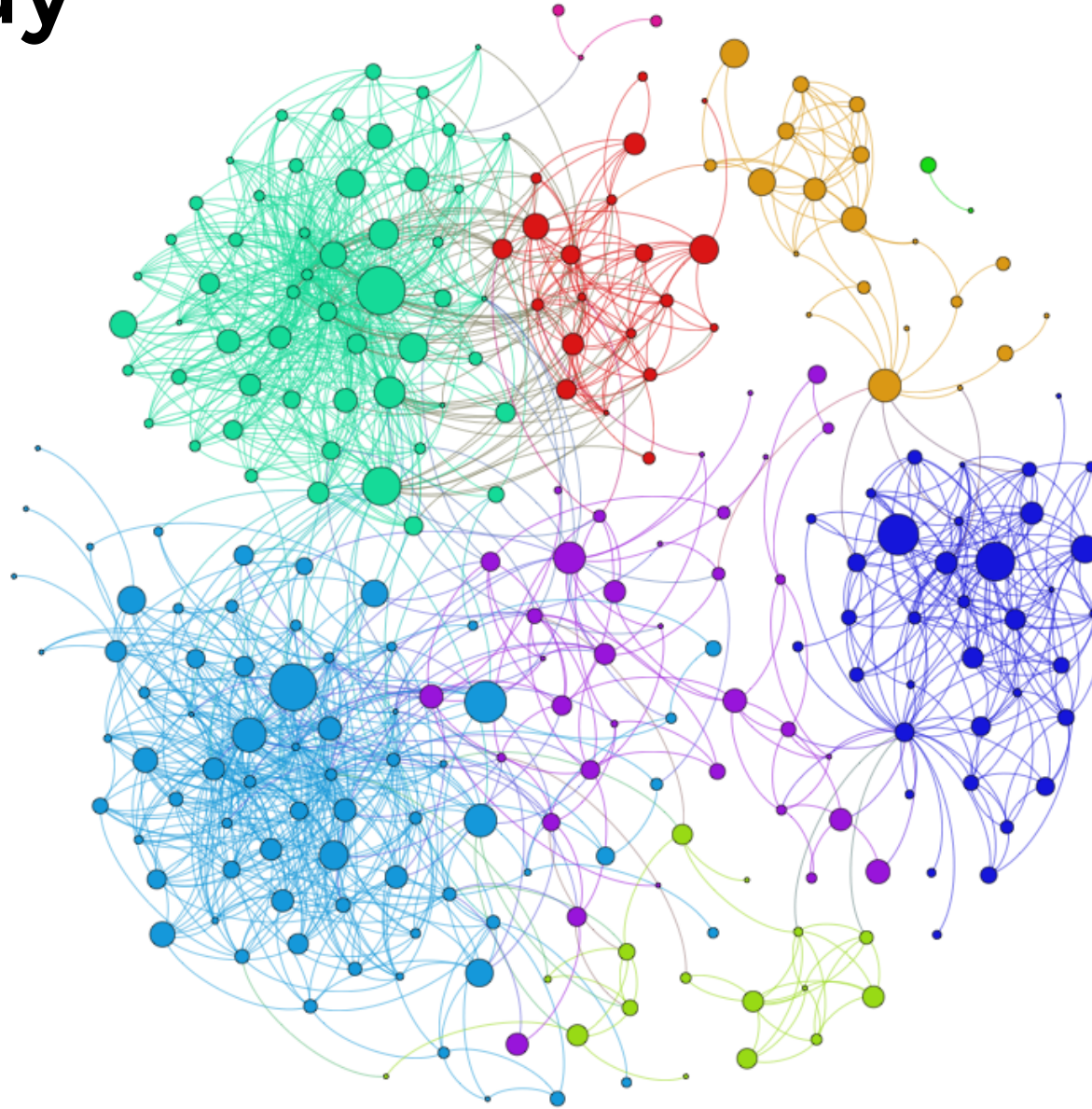
# bSDD today



# bSDD today





# bSDD today





# bSDD today


Search results for "wall":


Classification Uniclass 2015 > ... > Monolithic wall structure systems  
**Concrete wall systems** 

Classification CCI Construction > ... > Finishing object  
**Wall covering**  finishing object of a wall

Classification CCI Construction > ... > Structural system  
**Wall structure**  structural system in a vertical separation

Classification IFC > ... > IfcWall  
**IfcWall.RETAININGWALL**  A supporting wall used to protect against soil layers behind. Special types of a retaining wall may be e.g. Gabion wall and Grib w...

Classification Swedish materials > ... >  
**spackelmasa, vägg**  spackelmasa för väggyta

Classification NL-SfB 2005 > ... > (21.1) buitenwanden; niet constructief  
**(21.14) buitenwanden; niet constructief, vlieswanden** 

# bSDD origins – GUID

(Globally Unique Identifier)





# bSDD today – URI

(Uniform Resource Identifier)

<https://identifier.buildingsmart.org/uri/bs-agri/fruitvegs-1.0/class/1>



# bSDD today – URI

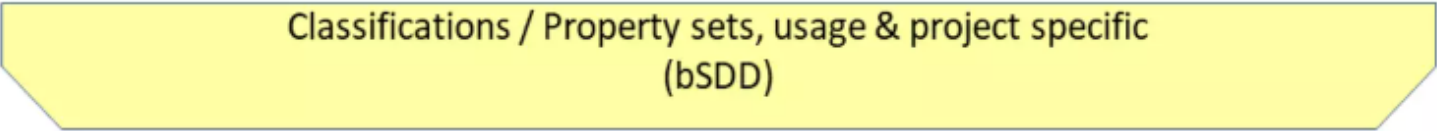
(Uniform Resource Identifier)

<https://identifier.buildingsmart.org/uri/bs-agri/fruitvegs-1.0/class/apple>

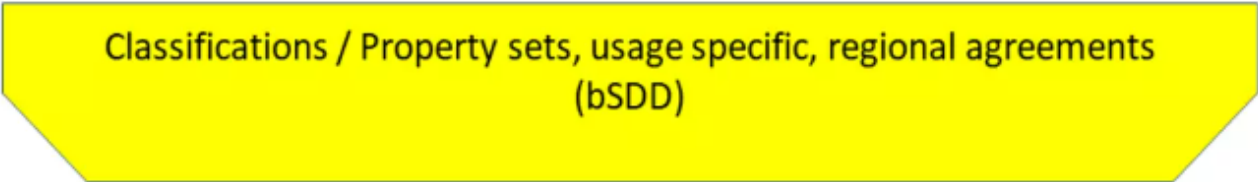


<https://identifier.buildingsmart.org/uri/bs-agri/fruitvegs-1.0/prop/guid>

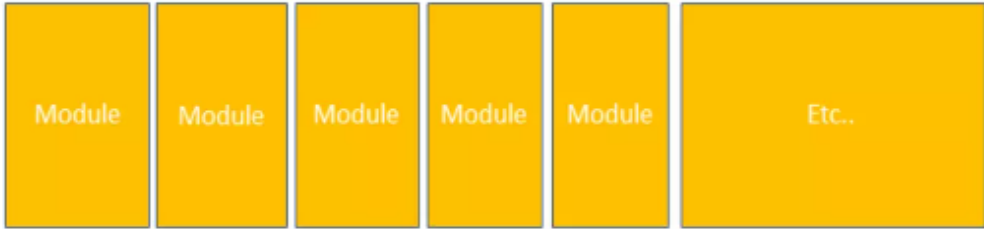
Company, project, etc



Omniclass, ETIM, NL-Sfb, UniversalTypes, etc



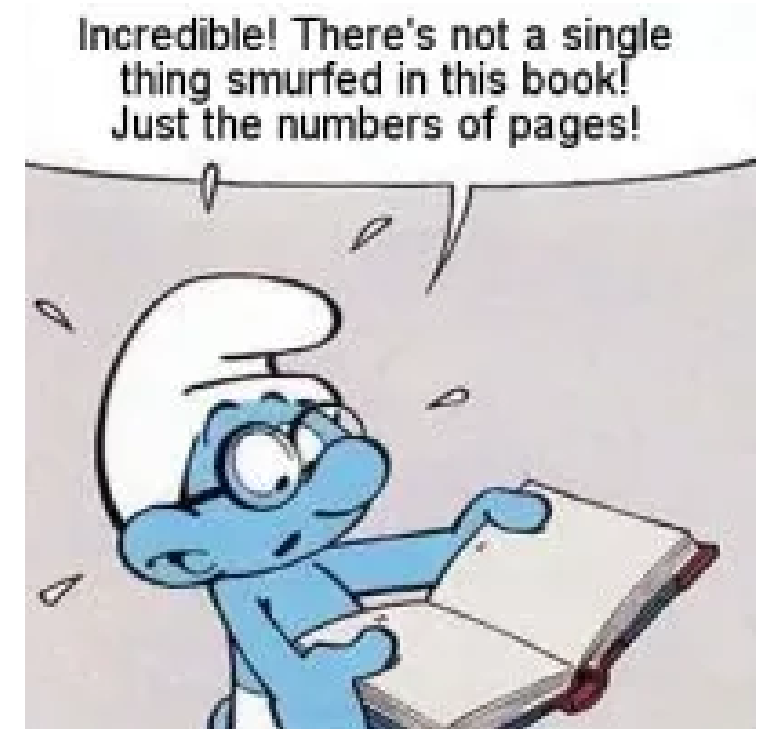
IfcRail, IfcRoad, IfcBuilding, etc..



IfcRoot, IfcProduct, etc..



- Can you store project values?
- Who can publish in bSDD?
- Costs?
- Current status?
- Governance procedure?
- Plans?



# How can it help you manage data?

- Publish classification (ontology, material library, property sets)
- Enrich BIM model (extend IFC) with properties relevant to your context.
- Classify your model according to a certain classification.
- Provides a reference for creating IDS requirements
- Search for definitions of concepts
- Knowledgeable translation between languages
- Conversion from one classification to another
- ++



# How can it help you manage data?

The screenshot shows the 'bsDD classification' web application. It features a search interface with filters for 'Domain filter' (set to 'NL-SfB 2005'), 'Related IFC entity' (set to 'IfcWall'), and 'Language filter' (set to '-'). A search bar is present with the placeholder 'Enter free search query'. Below the filters is a table listing various building element classifications. The table has columns for 'Name', 'Domain', 'Property', 'Value', and 'Domain'. The entry '(21.22) buitenwanden: constructief, spouwwallen' is highlighted in orange. To the right of the table, a detailed view of the selected entry shows its properties: 'IsExternal' is TRUE and 'LoadBearing' is TRUE, both within the IFC domain.

Name	Domain	Property	Value	Domain
(16.21) funderingsconstructies: keurwanden, grondkerende wanden	NL-SfB 2005	IsExternal	TRUE	IFC
(16.22) funderingsconstructies: keurwanden, waterkerende wanden	NL-SfB 2005	LoadBearing	TRUE	IFC
(16.23) funderingsconstructies: keurwanden, gevelwanden (-200)	NL-SfB 2005			
(16.25) funderingsconstructies: keurwanden, grondverbeteringen	NL-SfB 2005			
(21.23) buitenwanden: constructief, systeemwanden	NL-SfB 2005			
(21.22) buitenwanden: constructief, spouwwallen	NL-SfB 2005			
(21.21) buitenwanden: constructief, massieve wanden	NL-SfB 2005			
(21.15) buitenwanden: niet constructief, borstweringen	NL-SfB 2005			
(21.13) buitenwanden: niet constructief, systeemwanden	NL-SfB 2005			
(21.12) buitenwanden: niet constructief, spouwwallen	NL-SfB 2005			
(21.11) buitenwanden: niet constructief, massieve wanden	NL-SfB 2005			
(22.23) binnenwanden: constructief, systeemwanden, vast	NL-SfB 2005			
(22.22) binnenwanden: constructief, spouwwallen	NL-SfB 2005			

**DigiBase**  
DigitalConstructor © ValueWork

The screenshot shows the 'usBIM.browser' web application. The top navigation bar includes the 'usBIM.browser' logo and several utility icons. The main content area displays a list of items under the heading 'usBIM.bSDD'. A section titled 'ALL-SECTORS (ETIM 8.0)' lists various categories. The 'Renewable energy' category is expanded, showing a list of photovoltaics modules. The 'Photovoltaics module' (EC001746) is highlighted, showing a quantity of 10. Below this, a detailed view for 'EC001746 (Photovoltaics module) [10/10]' is shown, featuring input fields for 'Temperature coefficient Uoc [EF012466] (%/K)', 'Temperature coefficient Isc [EF012465] (%/K)', 'Length [EF001438] (mm)', and 'Width [EF000008] (mm)'. The 'Length' field is currently empty and has a blue border.

**usBIM.bSDD**

**ALL-SECTORS (ETIM 8.0)**

- + EG000051 Power tools
- + EG000052 Tools (Press, cut and isolate)
- + EG000053 Batteries, chargers and power cords
- + EG000054 Alarm installations, emergency call and signalling
- EG000055 Renewable energy
- EC001746** Photovoltaics module 10
- EC001747 DC/AC grid inverter
- EC001748 Photovoltaics charge controller
- EC001749 Photovoltaics standalone inverter
- EC001750 Photovoltaics complete set
- EC001751 Photovoltaics roof-/facade fastener

**EC001746 (Photovoltaics module) [10/10]**

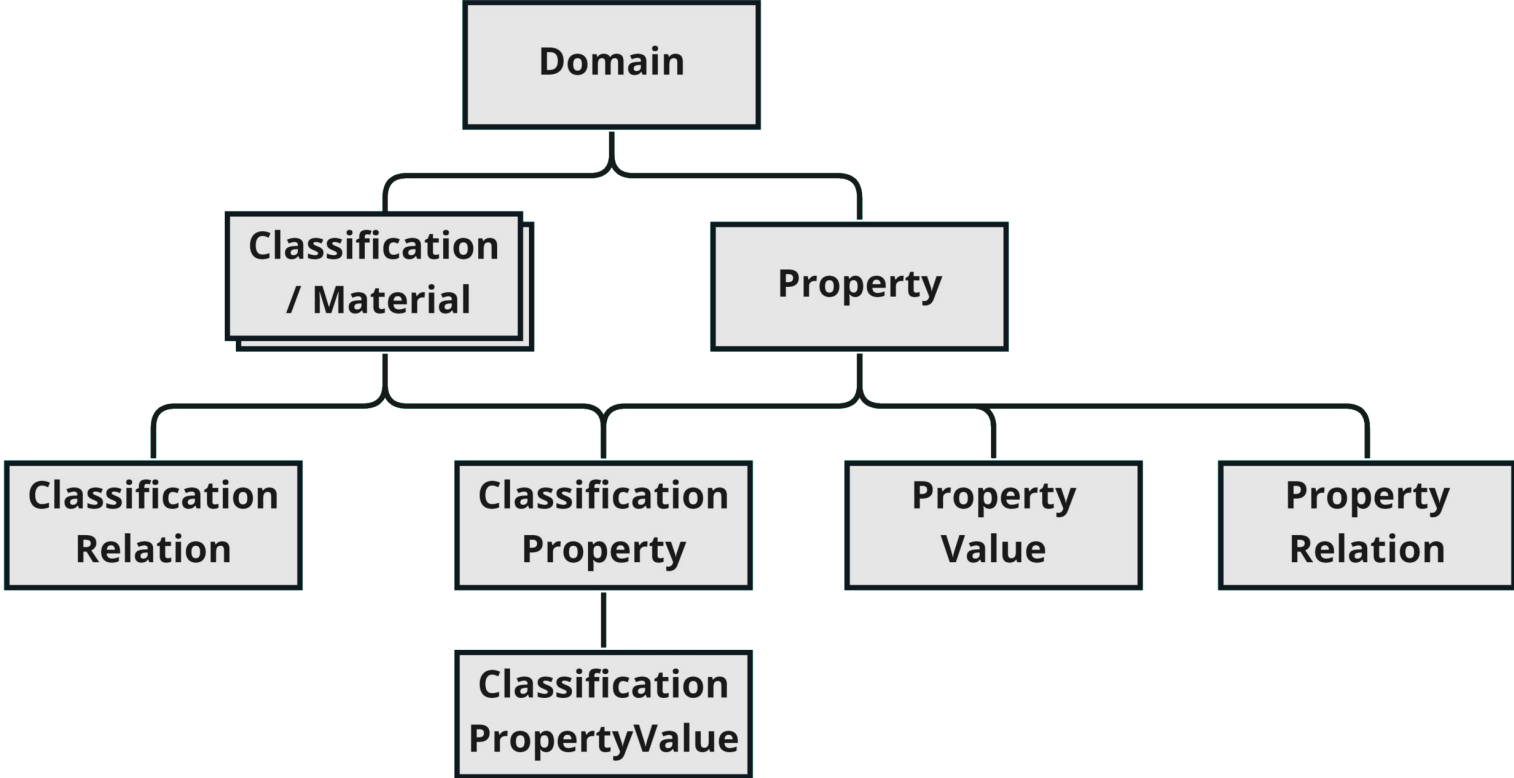
Temperature coefficient Uoc [EF012466] (%/K)

Temperature coefficient Isc [EF012465] (%/K)

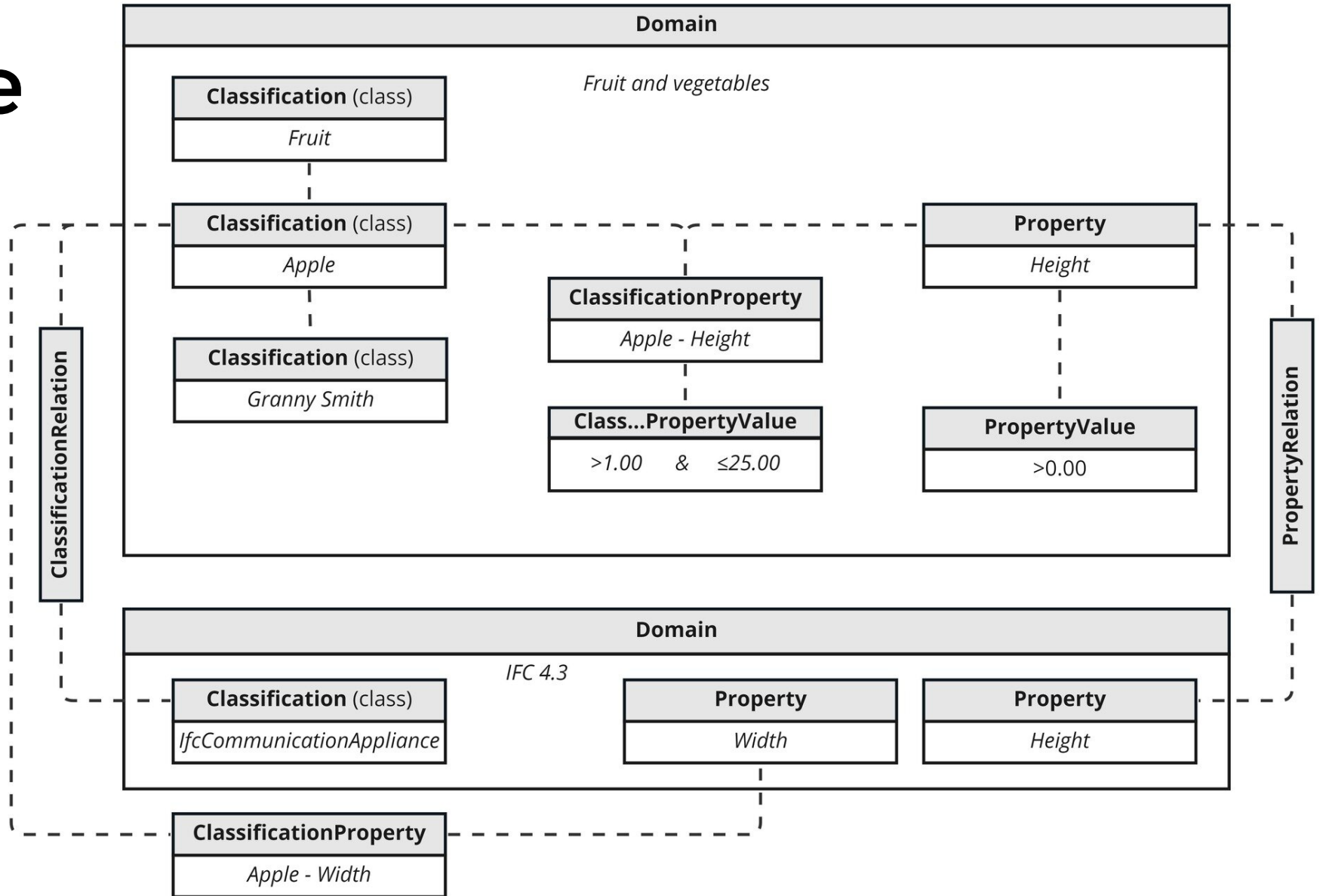
Length [EF001438] (mm)

Width [EF000008] (mm)

# bSDD data model



# bSDD example




# bSDD API

```
https://test.bsdd.buildingsmart.org/api/Classification/v4?  
namespaceUri=https%3A%2F%2Fidentifier.buildingsmart.org%2Furi%2Fbs-agri%2Ffruitvegs-1.0%2Fclass%2Fapple
```

```
{  
  "referenceCode": "apple",  
  "relatedIfcEntityNames": [  
    "IfcCommunicationAppliance"  
  ],  
  "parentClassificationReference": {  
    "namespaceUri": "https://identifier.buildingsmart.org/uri/bs-agri/fruitvegs-1.0/class/fruit",  
    "name": "Fruit",  
    "code": "fruit"  
  },  
  "classificationProperties": [  
    {  
      "name": "Volume",  
      "description": "The volume of an apple",  
      "dataType": "Real",  
      "dimension": "3 0 0 0 0 0 0",  
      "dimensionLength": 3,  
      "dimensionMass": 0,  
      "dimensionTime": 0,  
      "dimensionElectricCurrent": 0,  
      "dimensionThermodynamicTemperature": 0
```

<https://test.bsdd.buildingsmart.org/swagger/index.html>

# bSDD.web

 **bSDD**  
® a service by buildingSMART International

YOUR SEARCH TERM HERE...

Search

<https://search.bsdd.buildingsmart.org/>

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# bSDD.web

## Classification

Apple

English (US)

Namespace URI	https://identifier.buildingsmart.org/uri/bs-agri/fruitvegs-1.0/class/apple
Domain	Fruit and vegetables
Domain version	1.0
Domain release date	2022-09-26
Domain license	No license
Domain state	Preview
Domain quality assurance procedure	Use at own risk - this is for demo purposes only
Owner	bSDD Agri demo company
Parent classification	<a href="#">Fruit</a>
Related IFC entity	IfcCommunicationAppliance
Description	The round fruit of a tree of the rose family, which typically has thin green or red skin and crisp flesh

## Classification properties

<a href="#">Height</a>	The height of an apple
<a href="#">Volume</a>	The volume of an apple

## Classification relations

URI	Name	Relation type
https://identifier.buildingsmart.org/uri/buildingsmart/ifc-4.3/class/IfcCommunicationAppliance		HasReference

<https://search-test.bsdd.buildingsmart.org/Classification/Index/97762?Id=97762&LanguageCode=en-US>

# Using bSDD in IFC

## *IfcClassification*

```
1 #1=IFCCLASSIFICATION($,$,$,'My Classification System',$,'https://.../uri/myorg',$);
2 #2=IFCCLASSIFICATIONREFERENCE($,'My Wall Class',$,#1,'https://.../uri/myorg/myclass',$);
3 #3=IFCSLAB('0B...zH',$,$,$,$,$,$,$,$);
4 #4=IFCRELASSOCIATESCLASSIFICATION('2n...7J',$,$,$,(#3),#2);
```

## *IfcPropertySingleValue*

```
1 #1 = IFCPROPERTY('Area',
2     'https://identifier.buildingsmart.org/uri/buildingsmart/ifc-4.3/prop/Area',
3     IFCAREAMEASURE(21.37),$);
```

## *IfcMaterial*

```
1 #1=IFCMATERIAL('Timber',
2     'https://identifier.buildingsmart.org/uri/myorg/materialclass/mat/timber');
```



## **Artur Tomczak**

bSDD Product Manager

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