



Creation of the Consensus Model for Spain of INSPIRE Building data



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GOBIERNO DE ESPAÑA
MINISTERIO DE ECONOMÍA Y HACIENDA
SECRETARÍA DE ESTADO DE HACIENDA Y PRESUPUESTO
SECRETARÍA GENERAL DE HACIENDA
DIRECCIÓN GENERAL DE ESTADÍSTICA



The Inspire Buildings model, to fulfill most of user requirements, includes **both**:

- *basic **topographic** data (such as real height, nature of buildings, shape ...)*
- *and **cadastral official data** (such as current use, number of dwellings or building units);*

The image shows the cover page of a document titled "D2.8.III.2 Data Specification on Buildings – Draft Technical Guidelines". It features the INSPIRE logo and the text "INSPIRE Infrastructure for Spatial Information in Europe". Below the title, there is a metadata table with the following entries:

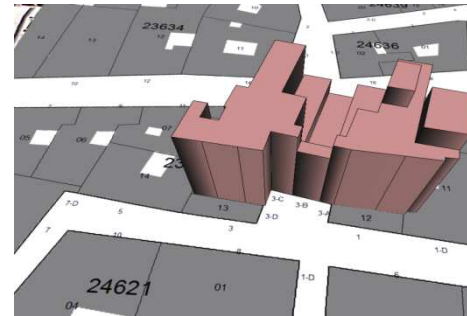
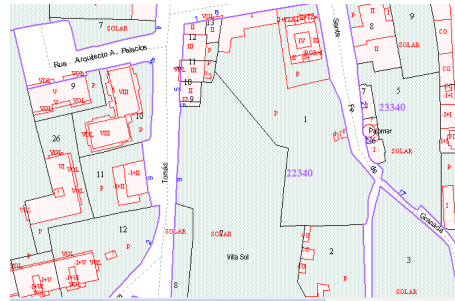
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Creator	INSPIRE Thematic Working Group Buildings
Date	2013-02-04
Subject	INSPIRE Data Specification for the spatial data theme Buildings
Publisher	INSPIRE Thematic Working Group Buildings
Type	Text
Description	This document describes the INSPIRE Data Specification for the spatial data theme Buildings. This version (version 3, release candidate 3) reflects the content of the draft amendment to Commission Regulation (EU) No 1089/2010 for the Annex III spatial data themes as submitted to the INSPIRE Committee.
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Coverage	Project duration



In Spain **coexist** several databases related to the theme Buildings.



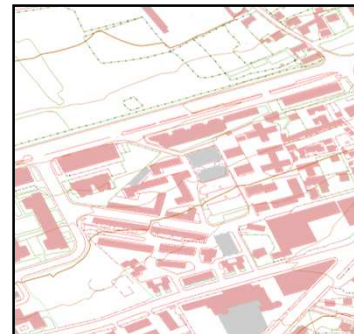
cadastral datasets scales generally larger or equal to 1: 2000. 2D (even if is possible to build 3D)



And **topographic dataset** from regional and local administrations (2D, 2,5D and in some cases even 3D) at scales around 1/ 10 000



Cataluña



Cantabria



Canarias



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DEL CATASTRO



*the buildings data
producers of both
cadastral and
topographic,*

*from different levels of
administration: national,
regional and local,*

*have been working to
reach a consensus on
the Spanish data model
of buildings for INSPIRE*

IDEE	Guía de transformación de Conjuntos de Datos Espaciales de Edificios v1		
	CODIIGE GTT-ED	2017-06-19	Pág. 1



GUÍA DE TRANSFORMACIÓN DE CONJUNTOS DE DATOS ESPACIALES DE EDIFICIOS AL MARCO INSPIRE

Título	Guía de transformación de Conjuntos de Datos Espaciales de Edificios al marco INSPIRE
Creador	Grupo Técnico de Trabajo de Edificios (CODIIGE GTT-ED)
Editor	Dolors Barrot Feixà
Fecha	19 de junio de 2017
Objetivo	Ayudar a la transformación de los Conjuntos de Datos Espaciales de Edificios según las Especificaciones INSPIRE de Edificios.
Estado	Borrador
Descripción	Esta guía incluye un resumen de los Reglamentos INSPIRE de interoperabilidad de datos espaciales, de las Directrices Técnicas para Edificios y explicaciones complementarias
Contribuciones	Miembros del grupo de trabajo de Edificios de CODIIGE
Formato	Portable Document Format (pdf)
Identificador	20150707GuíaTransformaciónCODIIGE-ED.docx
Idioma	Español
Relación	
Periodo de validez	Hasta próxima revisión



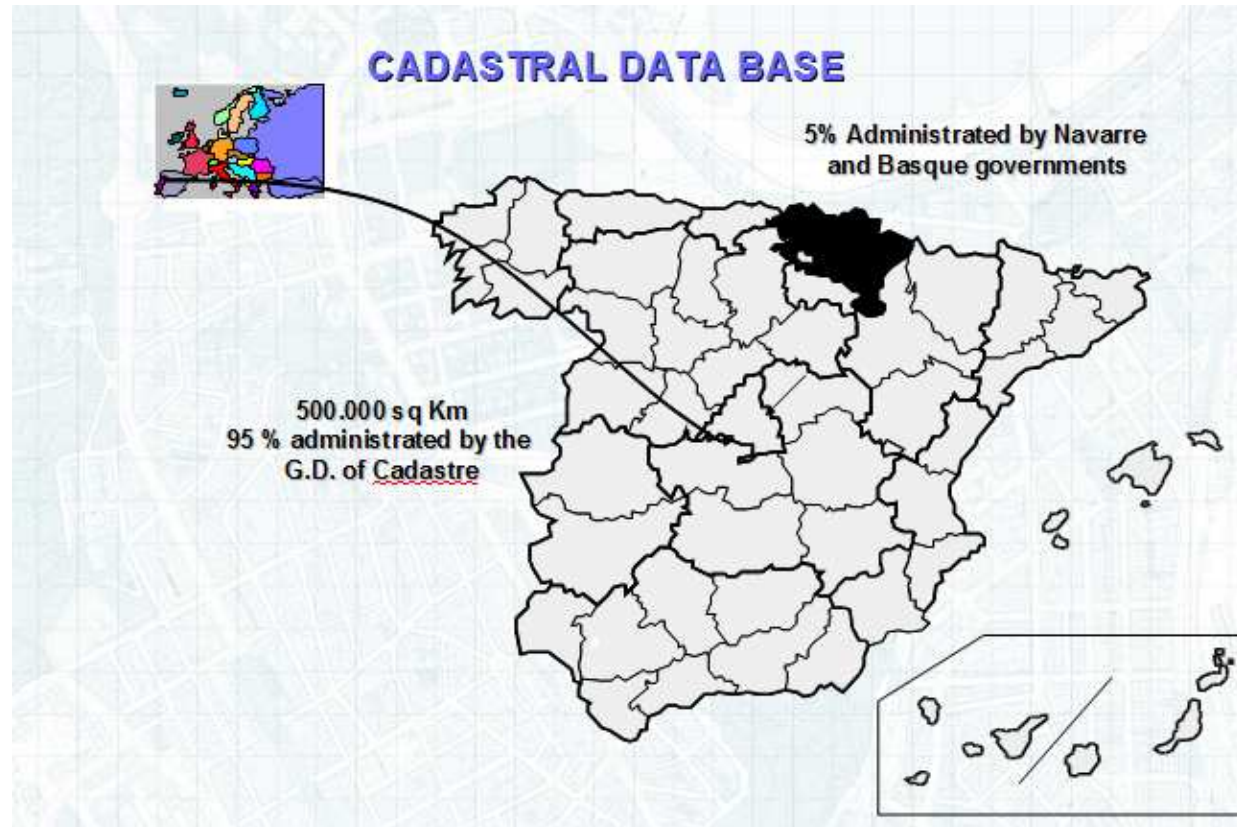
SECRETARÍA DE ESTADO DE HACIENDA Y PRESUPUESTO
SECRETARÍA GENERAL DE HACIENDA
DIRECCIÓN GENERAL DE REGISTRO



At cadastral level:

- **95%** of the Spanish Territory is cover by the General Directorate for cadastre (SDGC)
- The rest **5%** is cover by the Bask land and Navarra´s cadastres.

5 cadastral data set in total.





At topographic level it is much more complicated because there are many different datasets, regional, local, and thematic, with different information, scales ect...and, 2D 2,5 D and in some cases 3D

*17 regions
56 provinces
8000 municipalities*

Some Problems:

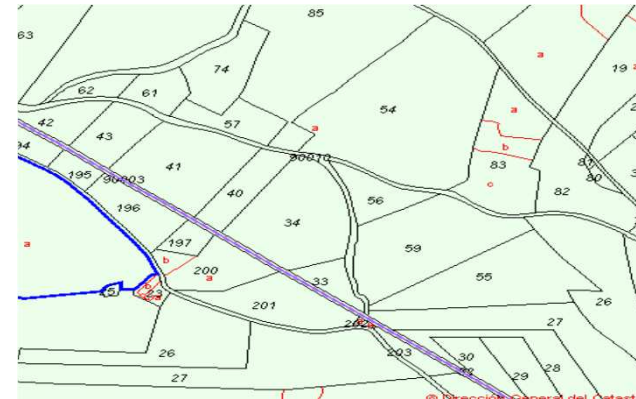
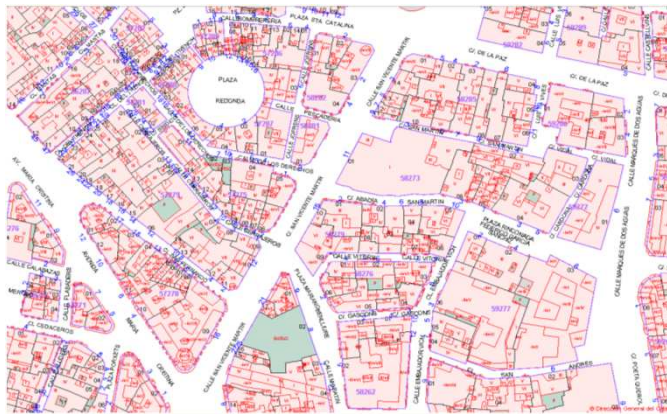
- Information mixed with other topographic information*
- Not complete for the total territory.*
- The range of scales is varied*

How transform these data to INSPIRE model?

We decided to take as basis the **cadastre**

The Spanish Cadastre is a register describing rural and urban real estates.

*This description includes **physical, legal and economic characteristics**, location, cadastral reference, address, areas, uses, class of crop, buildings, time attributes, cadastral value data of title holders (name, national identity number, address, type of title)..... and many other data*



The Spanish Cadastre is principally a fiscal cadastre, whose databases of cadastral values of rural and urban real estate are the basis for the calculation of real estate tax and other local, regional and national taxes.

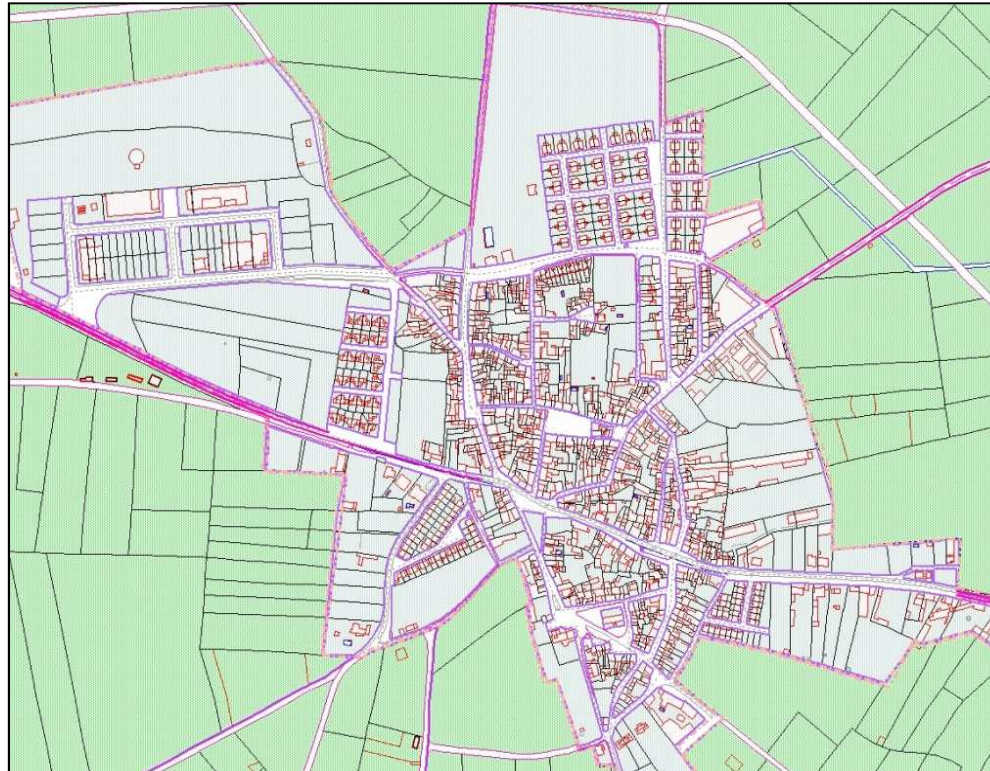


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DIRECCIÓN GENERAL
DEL CATASTRO

The Spanish cadastre has information of

- 13 million urban parcels***
- 40 million rural parcels***
- 62 million constructions (buildings and other constructions)***

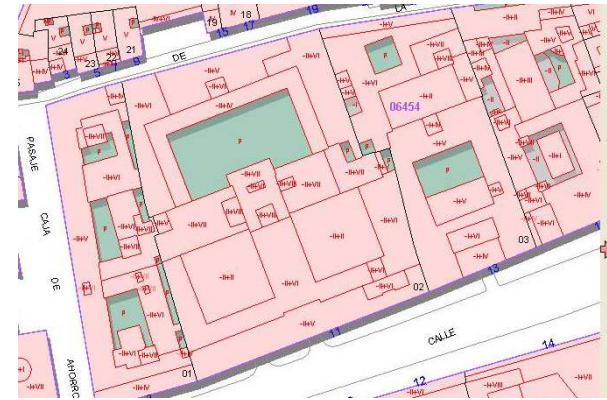
in a continuous and uniform model





SECRETARÍA DE ESTADO DE HACIENDA Y PRESUPUESTO
SECRETARÍA GENERAL DE HACIENDA
DIRECCIÓN GENERAL DEL CADASTRO

The cadastral value for each property is determined objectively from the data in the Real Estate Cadastre.

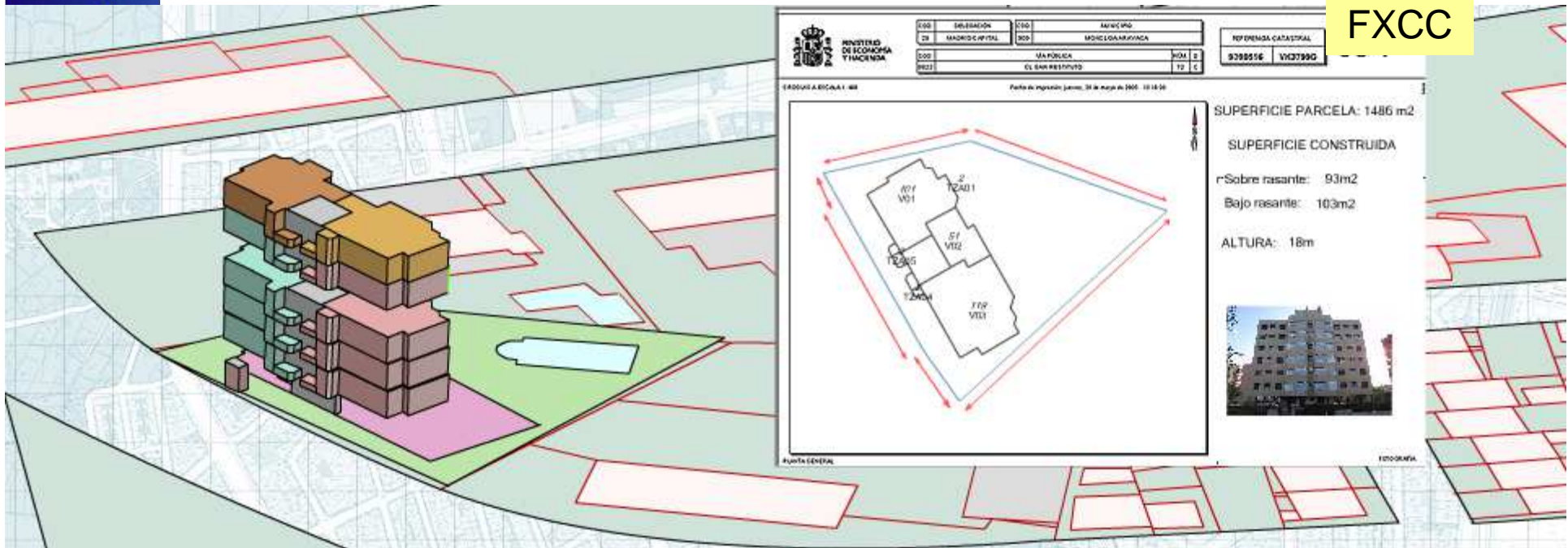


Interesting data for INSPIRE buildings

Physical data of real estate:
*land surface,
buildings surface,
conservation status,
use (legal and actual one),
typology,
year of construction.....*



*We can not have only information about the parcel or the building ,
we need more information inside the building,
the distribution of each property, the common areas etc...*



FXCC

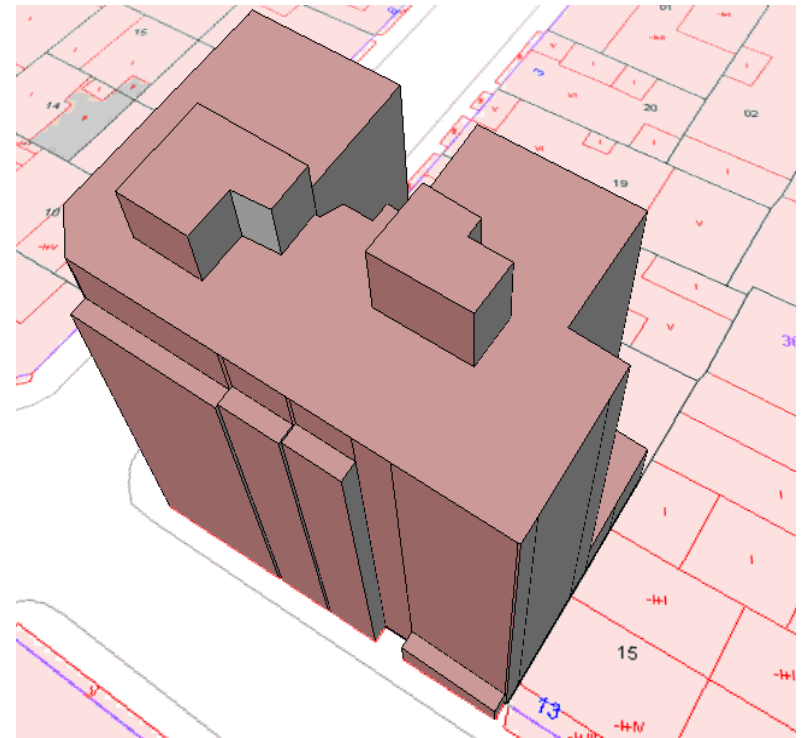
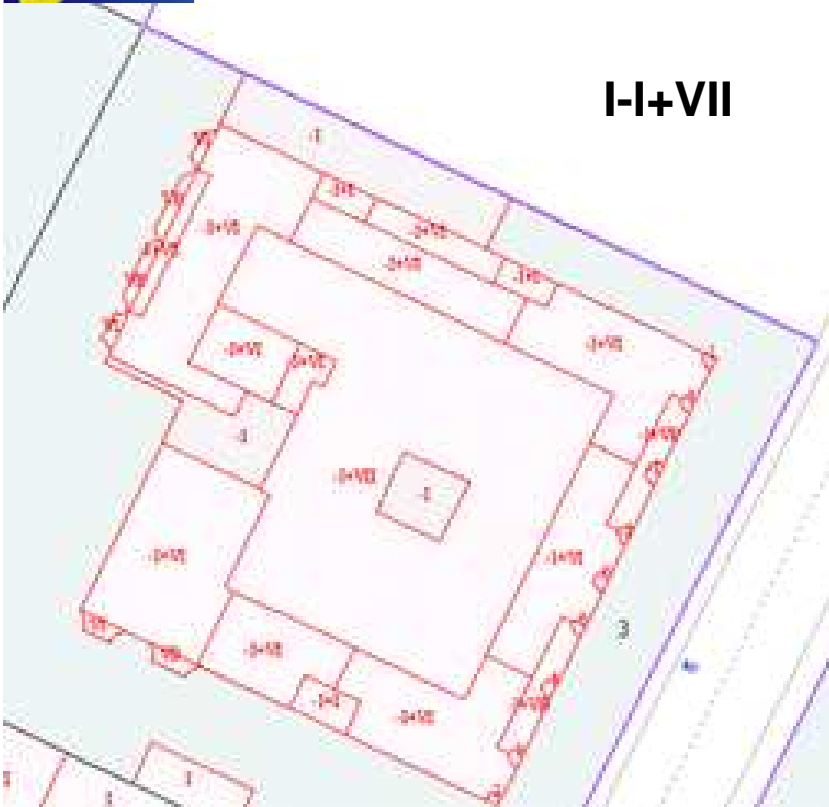
For every building the database contains a sketched floor plan in digital form, the FXCC (Format eXchange for Cadastral Constructions)



How we represented all these information in the index map?

Cadastral cartography, even in only 2D, has the **volumetric information** of the buildings and buildings parts by number of plants in roman numerals in their maps.

I-I+VII





Inspire BU model

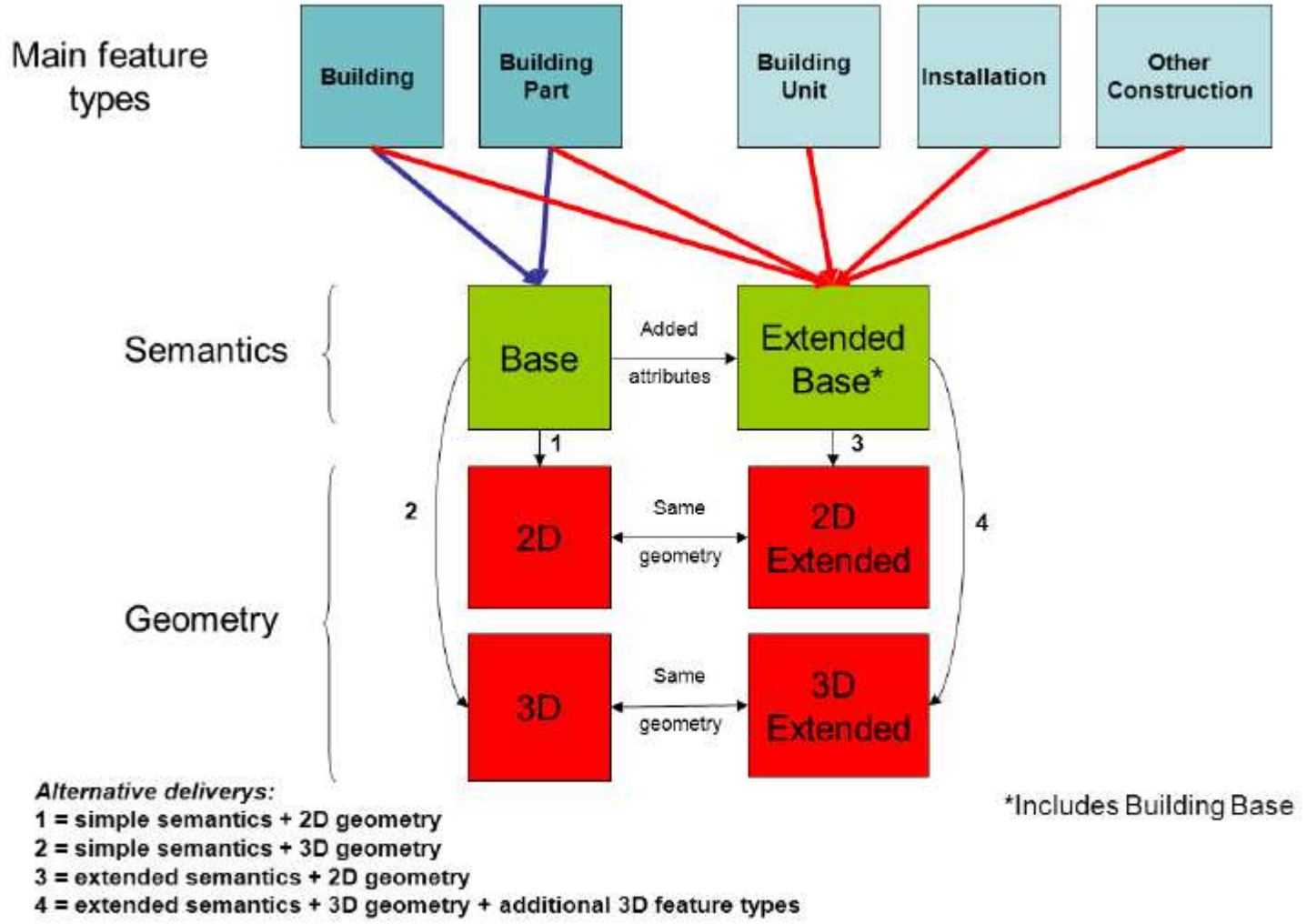


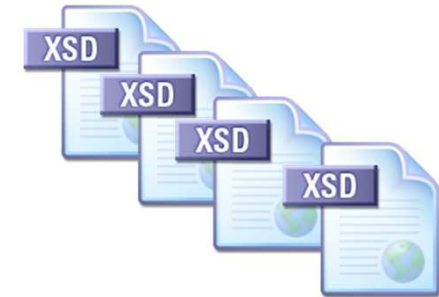
Figure 3: Content and structure of application schemas for theme Buildings

Feature types are represented in blue. Abstract application schemas are represented in green. Instanciable application schemas are represented in red.



schemes XSD for Buildings:

- BuildingCore2D.xsd
- BuildingCore3D.xsd
- BuildingExtended2D.xsd
- BuildingExtended3D.xsd



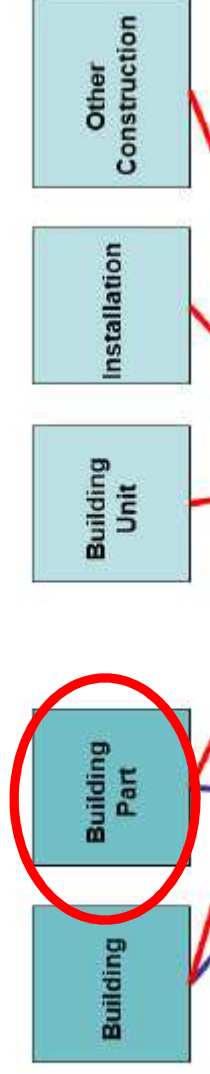
BuildingExtended2D

*Core data is not enough for us because there are attributes as **number of floors below ground** , **values of proprieties** etc... that are important in cadastre .*

*And **other constructions** are important for topographic users*

*But also **openairpools** are important for cadastre.*

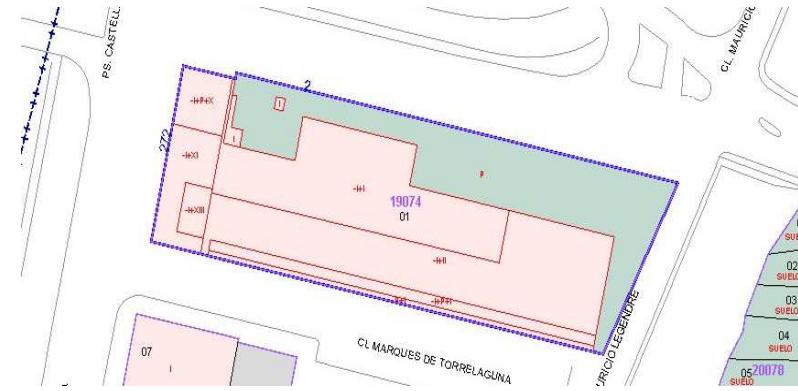
Main feature types



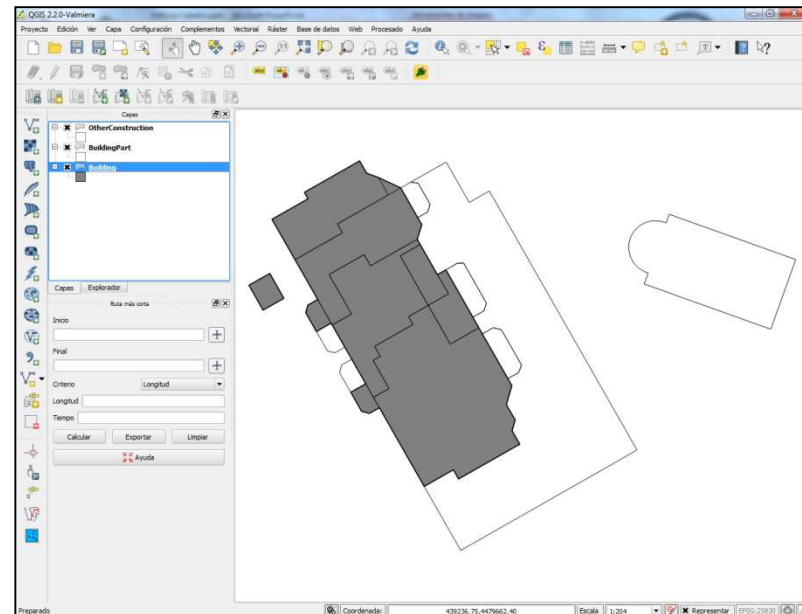
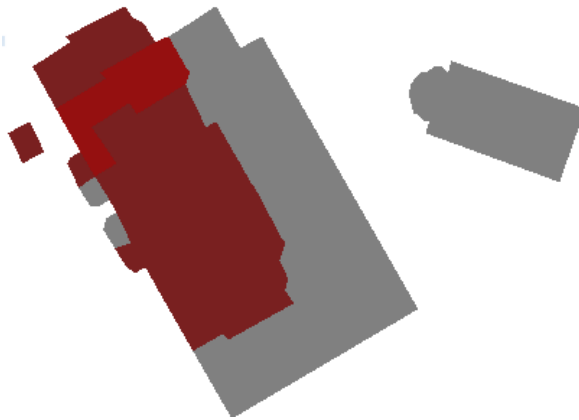
One Building with 2 BuildingParts

Figure n°1 : From City GML

A BuildingPart is a sub-division of a Building that might have been considered as a building and that is homogeneous related to its physical, functional or temporal aspects. It is up to each data producer to define what is considered as a Building and what is considered as a BuildingPart

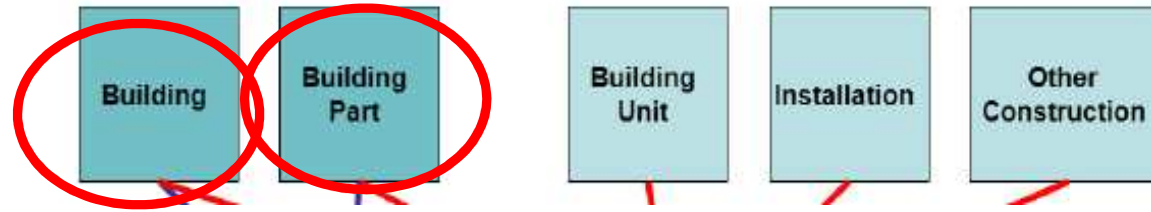


- We have "to build" the building from the buildings parts.
- **Multirecint** defined by the envelope line of all constructions with volume above ground of each parcel





Main feature types



BU:Building contains attributes relating to conservation status, uses, dates of construction, number of units, number of dwellings, external reference to cadastral data and documentation,...

BU:BuildingPart

Contains number attributes of plants and estimated heights, on and below the ground level.

<bu-ext2d:numberOfFloorsAboveGround>

<bu-ext2d:heightBelowGround

<bu-ext2d:numberOfFloorsBelowGround>

plantas bajo rasante	
0	
1	
2	
3	
4	
5	

Nº floors under the ground


















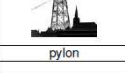


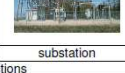

in the wms we will see only the over ground part



Main feature types



«codeList» OtherConstructionNatureValue
+ acousticFence
+ antenna
+ bridge
+ chimney
+ cityWall
+ crane
+ monument
+ openAirPool
+ protectiveStructure
+ pylon
+ retainingWall
+ solarPanel
+ substation
+ tunnel

				
acousticFence	antenna	chimney	bridge	bridge
				
cityWall	crane	monument	monument	monument
				
monument	monument	openAirPool	protectiveStructure	protectiveStructure
				
pylon	retainingWall	solarPanel	substation	tunnel

Illustrations of other constructions

Error in the validation

It is a topographical point of view, very different from cadastral point of view

***Spanish Cadastre only considers Openairpool as "otherconstruction"
Economic value-----real estate taxation***





ExternalReference

- We offer in the model of INSPIRE very few data regarding those that we would have been able to provide.
- But we provide the **national cadastral reference** and a **link** to access to all the Cadastral Information

The core2D profile offers one option to link a spatial object (building or building part) defined in INSPIRE to information in other systems: the attribute externalReference provides the identifier/reference of the object in that foreign system together with the name and the URL of that

<https://www1.sedecatastro.gob.es/CYCBienInmueble/OVCListaBienes.aspx?rc1=0299305&rc2=YH5700S>

CONSULTA DE DATOS CATASTRALES

INFORMACIÓN PROPORCIONADA POR LA DIRECCIÓN GENERAL DEL CATASTRO DEL MINISTERIO DE HACIENDA Y ADMINISTRACIONES PÚBLICAS

Datos del Bien Inmueble

Referencia catastral	9398516VK37990000HA
Localización	CL SAN RESTITUTO 72(C) PL-02 PL-02 28039 MADRID (MADRID)
Clase Urbana	
Superficie (*)	63 m ²
Coefficiente de participación	3,000000 %
Uso	Residencial
Año construcción local principal	1997

Datos de la Física en la que se integra el Bien Inmueble

Localización	CL SAN RESTITUTO 72(C) MADRID (MADRID)
Superficie construida	2.513 m ²
Superficie suelo	1.536 m ²

Elementos Construidos del Bien Inmueble

Uso	Escala	Planta	Puerta	Superficie catastral (m ²)
VIVIENDA	02	02	02	55
ELEMENTOS COMUNES				8

(*) Definición de superficie:
¿Cómo se pueden obtener datos protegidos (titularidad y valor catastral) de los inmuebles?





Temporal attributes



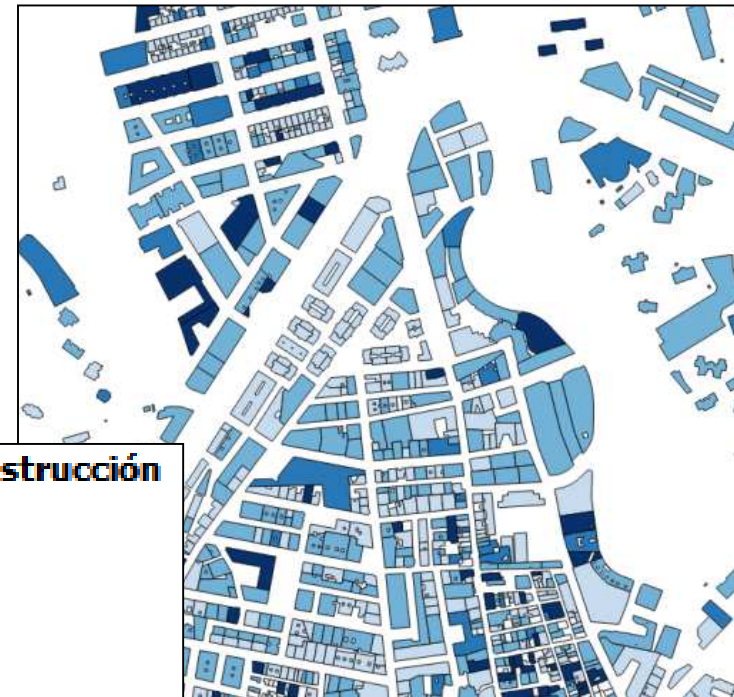
beginLifespanVersion

```
<bu-core2d:beginLifespanVersion>2005-11-21T00:00:00</bu-core2d:beginLifespanVersion>
```

endLifespanVersion

dateOfConstruction

```
<bu-core2d:dateOfConstruction>  
<bu-core2d:DateOfEvent>  
<bu-core2d:anyPoint>1997</bu-core2d:anyPoint>  
</bu-core2d:DateOfEvent>  
</bu-core2d:dateOfConstruction>
```






fecha de construcción
- 1950
1951-1970
1971-1990
1990-2000
200-2014



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conditionOfConstruction

`<bu-core2d:conditionOfConstruction>functional</bu-core2d:conditionOfConstruction>`

	estado conservación
	declined
	functional
	ruin





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SECRETARIA GENERAL DE HACIENDA
DIRECCION GENERAL DE SISTEMAS DE INFORMACION



numberOfBuildingUnits

```
<bu-ext2d:numberOfBuildingUnits>18</bu-ext2d:numberOfBuildingUnits>
```

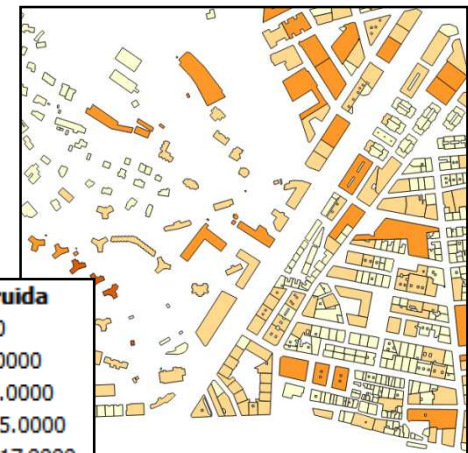
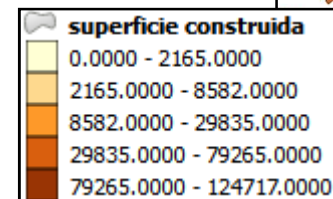
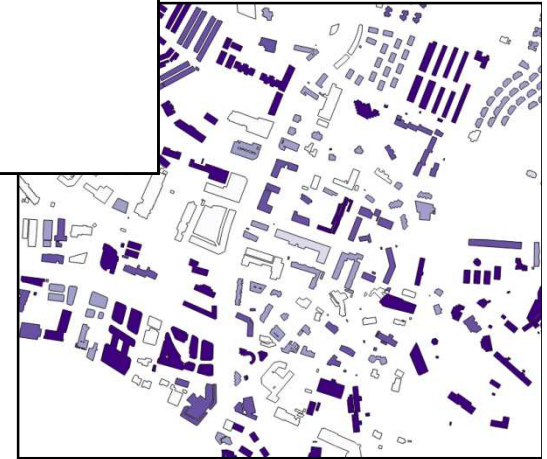
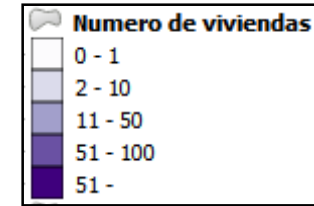
numberOfDwellings

```
<bu-ext2d:numberOfDwellings>17</bu-ext2d:numberOfDwellings>
```

officialArea

```
<bu-ext2d:officialArea>  
<bu-ext2d:OfficialArea>  
<bu-ext2d:officialAreaReference>Superficie construida</bu-ext2d:officialAreaReference>  
<bu-ext2d:value uom="m2">2513</bu-ext2d:value>  
</bu-ext2d:OfficialArea>  
</bu-ext2d:officialArea>
```

officialValue





document

<bu-ext2d:document>

<bu-ext2d:Document>

<bu-ext2d:documentLink>

<https://www.sedecatastro.gob.es/Cartografia/FXCC/FotoFachada.aspx?refcat=9398516VK3799G>

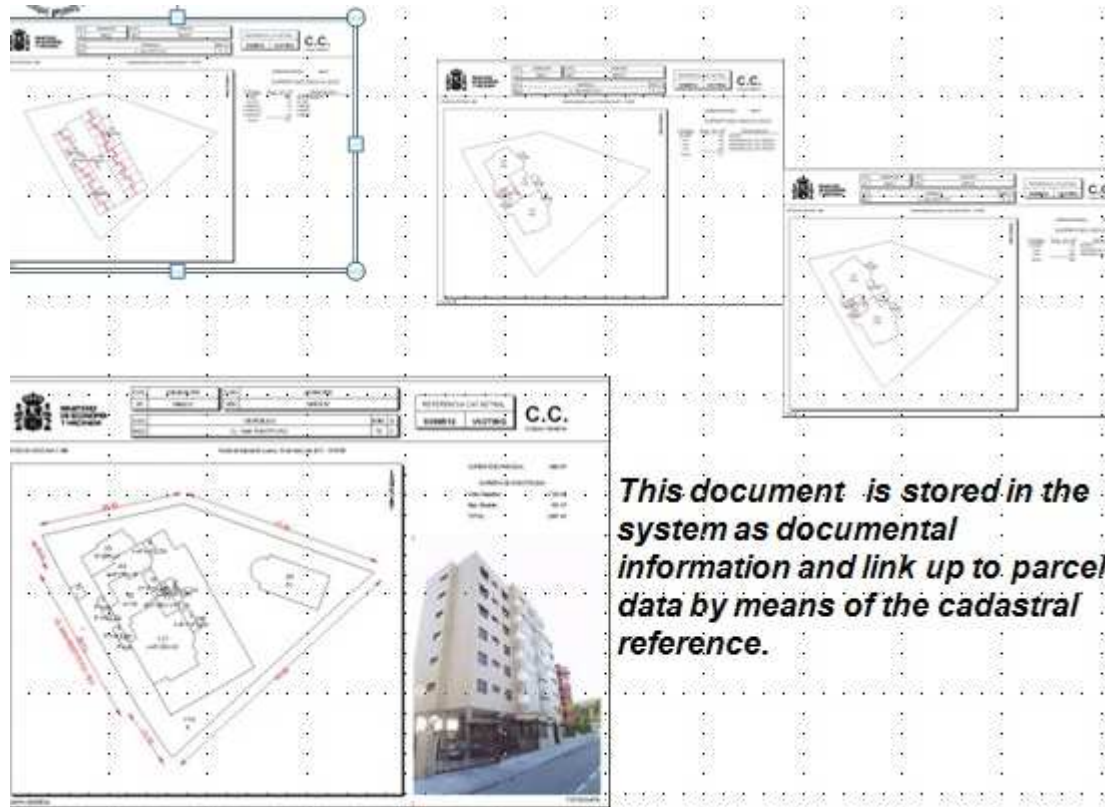
</bu-ext2d:documentLink>

<bu-ext2d:format>jpg</bu-ext2d:format>

<bu-ext2d:sourceStatus>NotOfficial</bu-ext2d:sourceStatus>

</bu-ext2d:Document>

</bu-ext2d:document>



This document is stored in the system as documental information and link up to parcel data by means of the cadastral reference.



Classifications. Code list

use

residential
individualResidence
collectiveResidence
twoDwellings
moreThanTwoDwellings
residenceForCommunities
agriculture
industrial
commerceAndServices
office
trade
publicServices
ancillary

Building nature

«codeList» BuildingNatureValue

- + arch
- + bunker
- + canopy
- + castle
- + caveBuilding
- + chapel
- + church
- + dam
- + greenhouse
- + lighthouse
- + mosque
- + shed
- + silo
- + stadium
- + storageTank
- + synagogue
- + temple
- + tower
- + windmill
- + windTurbine

Construction nature

«codeList» OtherConstructionNatureValue

- + acousticFence
- + antenna
- + bridge
- + chimney
- + cityWall
- + crane
- + monument
- + openAirPool
- + protectiveStructure
- + pylon
- + retainingWall
- + solarPanel
- + substation
- + tunnel

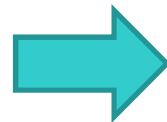


Current use

Code list hierarchical and extensible based on Eurostat classification

We have to adapt our complet classification of buildings to a much more simple classification.

residential
 individualResidence
 collectiveResidence
 twoDwellings
 moreThanTwoDwellings
 residenceForCommunities
 agriculture
 industrial
 commerceAndServices
 office
 trade
 publicServices
 ancillary












catastro		INSPIRE/usa (PROPUESTA)	GML
CODUS	O	Denominacion	
A	Almacen, estac.	warehouseAndParking	warehouseAndParking
B	Almacen agrario	Agriculture, warehouse	agricultureWarehouse
C	Comercial	CommerceAndServices,trade	trade
E	Cultural	CommerceAndServices,culture	Culture
G	Ocio, Hosteleria	CommerceAndServices,RecreationAndH oReCa	recreationAndHoReCa
I	Industrial	Industrial, General	Industrial
J	Industrial agrario	Agriculture, Industrial	agricultureIndustrial
K	Deportivo	CommerceAndServices,sports	sports
M	Suelo sin edificar	-----	
O	Oficinas	CommerceAndService,office	office
P	Edificio singular	singularBuilding	singularBuilding
R	Religioso	CommerceAndService,religious	religious
T	Espectaculos	CommerceAndService,shows	shows
V	Residencial	residential	residential
Y	Sanidad, Benefic	CommerceAndServices,healthAndChar ity	healthAndCharity
Z	Agrario	Agriculture,general	agriculture
1	RDL 1/04 8.2a e) Los destinados a la producción de energía eléctrica y gas y al refino de petróleo, y las centrales nucleares.	Industrial, Energy	energy
2	RDL 1/04 8.2b b) Las presas, saltos de agua y embalses, incluido su lecho o vaso, excepto las destinadas exclusivamente al riego.	Industrial, Hydroelectric	hydroelectric
3	RDL 1.04 8.2c c) Las autopistas, carreteras y túneles de peaje.	CommerceAndServices,tollRoadsAnd Tunnels	tollRoadsAndTunnels
4	RDL 1/04 8.2d d) Los aeropuertos y puertos	CommerceAndServices,airportsAndPor ts	airportsAndPorts



Current use

***In a building we have many uses:
We want to give the predominant and the secondary use with % as the specifications permits***

	<u>Uso dominante</u>
	-
	agriculture
	commerceAndService
	industrial
	office
	publicServices
	residential
	trade



Error in the validation



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«codeList» BuildingNatureValue
+ arch
+ bunker
+ canopy
+ castle
+ caveBuilding
+ chapel
+ church
+ dam
+ greenhouse
+ lighthouse
+ mosque
+ shed
+ silo
+ stadium
+ storageTank
+ synagogue
+ temple
+ tower
+ windmill
+ windTurbine

*Spanish Cadastre dataset has not this attribute
Topographic institutes, well*

BuildingNatureValue

Nature of a building or part of building

*Is classified by its **shape, aspect or purpose** NOT for its use.*

To add

	EL VIGILANTE		
<u>dovecote</u>	palomar		
<u>pigeonnier</u>			
<u>water.mill</u>	molino de agua		
<u>bullring</u>	plaza de toros		
	refugio de montaña		?

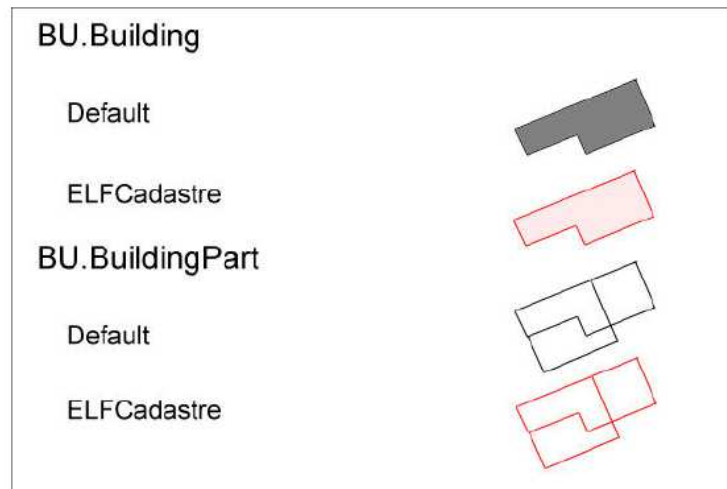




PORTRAYAL

We adapt the symbols defined in the portrayal of the specifications for its representation in the INSPIRE view service, taking into account the overlap with other data sets as cadastral parcels and addresses.

<i>Objeto geográfico</i>	<i>Nombre de la capa</i>	<i>Nombre del estilo</i>	<i>Fuente</i>
<u>Building</u>	<u>BU.Building</u>	<u>BU.Building.default</u>	INSPIRE DS BU
		<u>BU.Building.ELFCadastre</u>	Proyecto ELF
<u>BuildingPart</u>	<u>BU.BuildingPart</u>	<u>BU.BuildingPart.default</u>	INSPIRE DS BU
		<u>BU.BuildingPart.ELFCadastre</u>	Proyecto ELF





6.3.1 BU.BUILDING

Style: Default

Style name	Bu.Building.Default
Title	Default style for building.
Style definition	Perimeter line of building. <ul style="list-style-type: none"> • fill: grey (RGB 128,128,128) • line color: black (RGB 0, 0, 0) • line thickness : 1 px
Display scales	From 1:50 to 1:25.000



6.3.2 BU.Building Part

Style: Default

Style name	Bu.BuildingPart.Default
Title	Default style for building parts.
Style definition	Perimeter line of building part. <ul style="list-style-type: none"> • fill: transparent • line color: black (RGB 0, 0, 0) • line thickness: 1 px
Display scales	From 1:50 to 1:10.000

Style: ELFCadastre

Style name	Bu.Building.ELFCadastre
Title	ELF style for building in ELF Cadastre project.
Style definition	Perimeter line of building. <ul style="list-style-type: none"> • fill: RGB 255, 235, 235 • line color: red (RGB 255, 0, 0) • line thickness: 1 px
Display scales	From 1:100 to 1:10.000

Style: ELFCadastre

Style name	Bu.BuildingPart.ELFCadastre
Title	ELF style for building parts in ELF Cadastre project.
Style definition	Perimeter line of building part. <ul style="list-style-type: none"> • fill: transparent • line color: red (RGB 255, 0, 0) • line thickness : 1 px
Display scales	From 1:100 to 1:2.000



GOBIERNO DE ESPAÑA
MINISTERIO DE ECONOMÍA Y HACIENDA
SISTEMA DE ESTADOS DE HACIENDA (SISTEMAS DE) SISTEMA GENERAL DE HACIENDA DIRECCION GENERAL DE REGISTRO

<http://ovc.catastro.meh.es/cartografia/INSPIRE/spadgcwms.aspx?service=wms&request=getmap&format=image/png&bbox=222500,4019500,222700,4019700&width=500&height=500&srs=epsg:25830&layers=cp.cadastralparcel,bu.building,bu.buildingpart,ad.address,au.administrativeunit,au.administrativeboundary,cp.cadastralzoning&styles=elfcadastre,elfcadastre,elfcadastre,elfcadastre,elfcadastre,elfcadastre,elfcadastre>





SECRETARÍA DE ESTADO DE
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DE HACIENDA
DIRECCIÓN GENERAL
DEL CATASTRO

INSPIRE SERVICES IMPLEMENTATION

We do not change our data base...too much implications-

We produce the INSPIRE services only with some of our data

- *Metadata and WMS and WFS service are already implemented*
- *Own Developing*
- *Continuous map for the whole territory*
- *Integrated in the Cadastral Virtual Office*
 - *7 days , 24 hours , free of charge*



Introduction

Introduction to the data and INSPIRE services implemented by Dirección General del Catastro.
[Access to the document](#)

License of Access and Use

License of access and use of INSPIRE services and data set of the General Directorate for Cadastre.
[Description of the license](#)

View Service WMS

INSPIRE WMS of the DG for Cadastre
<http://www.catastro.mimbap.gob.es/inspire/wms/eng.asp>

This service allows get technical information the the Cadastre Electronic Office.
 METADATA
[Description of the service](#)



Download Services

Download services with INSPIRE information offered by Dirección General del Catastro for Cadastre and:

WFS INSPIRE Services

WFS Buildings (BU)
<http://www.catastro.mimbap.gob.es/inspire/wfsBU.asp>
 METADATA
[Description of the service](#)

WFS Addresses (AD)
<http://www.catastro.mimbap.gob.es/inspire/wfsAD.asp>
 METADATA
[Description of the service](#)

ATOM Services INSPIRE of Predefined Data Sets

This service allows the complete download by municipality of the INSPIRE data set.
[Description of the service](#)

ATOM Cadastral Parcel (CP)
<http://www.catastro.mimbap.gob.es/inspire/wfsCP.asp>
 METADATA

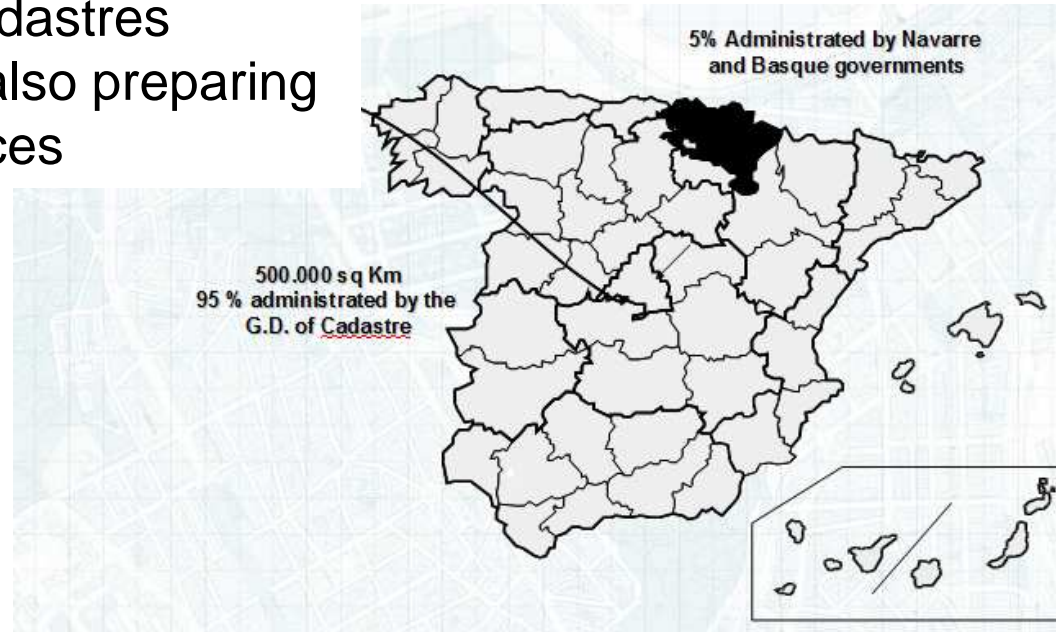
ATOM Addresses (AD)
<http://www.catastro.mimbap.gob.es/inspire/wfsAD.asp>
 METADATA

ATOM Buildings (BU)
<http://www.catastro.mimbap.gob.es/inspire/wfsBU.asp>
 METADATA



SECRETARÍA DE ESTADO DE HACIENDA Y PRESUPUESTO
SECRETARÍA GENERAL DE HACIENDA
DIRECCIÓN GENERAL DE CADASTRO

The other 4 small cadastres (together 5%) are also preparing the INSPIRE services



Cascading service

The Spanish Spatial Data Infraestructure developing cascading service to join the 5 cadastres



SECRETARÍA DE ESTADO DE HACIENDA Y PRESUPUESTO
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IMPORTANT APPLICATION



From law 13/2015
INSPIRE GML ARE USED IN
THE REAL ESTATE TRANSACTIONS



SEDE
ELECTRÓNICA
DEL
CATASTRO





In Spain the Cadastre and the Property Rights Registry are institutions with differentiated competences which need the coordination of their information for a better identification and description of real estates and an adequate provision of services to citizens and administrations.

Law 13/2015

To give real estate traffic greater legal certainty by incorporating the **georeferenced** graphic information of the parcels in the Property Rights Registry,

-using cadastral mapping as the basis of its graphic representation,



The Directorate General for Cadastre, Registrars and Notaries have had to develop applications for the new coordination process

The process begins with GML INSPIRE of the origin cadastral parcel

it can be obtained at the Electronic Office of Cadastre

Web Services



using INSPIRE cadastral Parcel and



1. Free access from the screen, as query results.



Sede Electrónica del Catastro

18/05/2014 00:31:09

Secretaría de Estado de Hacienda Dirección General del Catastro

Inicio/Desconectar Consulta de Datos Catastrales Ayuda Contactar

Castellano Gallego Català English

Consulta y certificación de Bienes Inmueble

Cartografía

- Consulta Descriptiva y Gráfica
- Imprimir Datos

Cartografía Catastro APLICACIÓN EN EL MUNICIPIO EN EL QUE SE ENCUENTRA ESTE INMUEBLE

Otras Cartografías

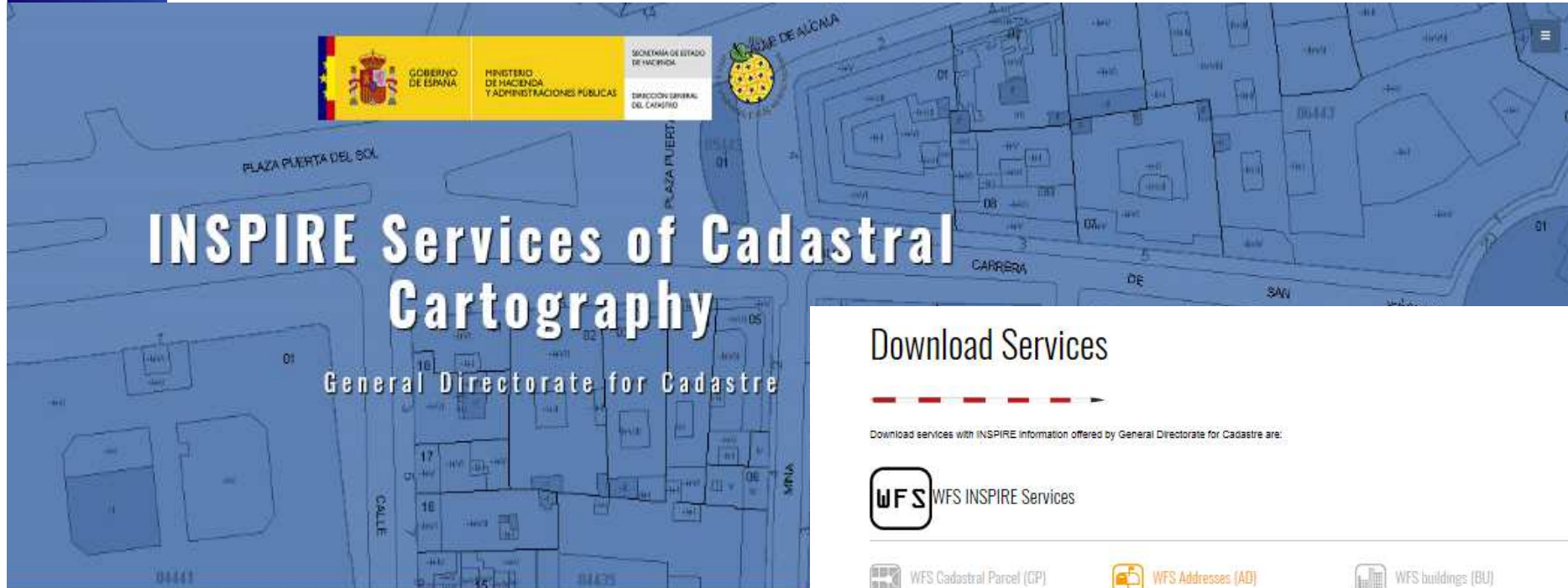
Sección por plantas (PXCC), foto de fachada, GML 10H0001W1

Localización	PS CASTELLANA 272 28046 MADRID (MADRID)
Clase	Urbano
Superficie (*)	12.716 m ²
Coefficiente de participación	100,000000 %
Uso	Oficinas
Año construcción local principal	1996

```
<cp:geometry>
  <!-- Geometria en formato GML -->
  - <gml:MultiSurface gml:id="MultiSurface_ES.LOCAL.1A" srsName="urn:ogc:def:crs:EPSG::25830">
    <!-- srsName código del sistema de referencia en el que se dan las coordenadas -->
    - <gml:surfaceMember>
      - <gml:Surface gml:id="Surface_ES.LOCAL.1A" srsName="urn:ogc:def:crs:EPSG::25830">
        - <gml:patches>
          - <gml:PolygonPatch>
            - <gml:exterior>
              - <gml:LinearRing>
                <gml:posList srsDimension="2">269206.53 4805322.37 269208.05 4805321.49 269213.18 4805318.58 269214.32
                4805318.03 269217.09 4805316.71 269215.45 4805312.97 269215.07 4805312 269214.02 4805309.29 269213.49
                4805308.53 269210.73 4805304.61 269208.93 4805301.04 269214.33 4805297.84 269218.83 4805295.18 269222.32
                4805293.13 269220.9 4805290.06 269217.22 4805282.12 269213.26 4805280.82 269193.37 4805292.4 269194.81
                4805295.18 269197.19 4805299.77 269198.41 4805302.03 269200.19 4805305.32 269197.13 4805307.24 269203.13
                4805318.29 269203.85 4805317.84 269206.53 4805322.37 </gml:posList>
              </gml:LinearRing>
            </gml:exterior>
          </gml:PolygonPatch>
        </gml:patches>
      </gml:Surface>
    </gml:surfaceMember>
  </gml:MultiSurface>
```



2. As a service using the WFS INSPIRE cadastral Parcel



Download Services

Download services with INSPIRE information offered by General Directorate for Cadastre are:

WFS WFS INSPIRE Services



<http://ovc.catastre.meh.es/INSPIRE/wfsCP.aspx?>

METADATA

[Description of the service](#)



<http://ovc.catastre.meh.es/INSPIRE/wfsAD.aspx?>

METADATA

[Description of the service](#)



<http://ovc.catastre.meh.es/INSPIRE/wfsBU.aspx?>

METADATA

[Description of the service](#)

ATOM ATOM Services INSPIRE of Predefined Data Sets

This services allow the completed download by municipality of the INSPIRE data set.

[Description of the service](#)



<http://www.catastre.meh.es/INSPIRE/CadastralParcel/ES.SDEC.CP.atom.xml>

METADATA



<http://www.catastre.meh.es/INSPIRE/Addresses/ES.SDEC.AD.atom.xml>

METADATA



<http://www.catastre.meh.es/INSPIRE/buildings/ES.SDEC.BU.atom.xml>

METADATA



3. With the cadastral certification, obtained by the title holders and public partners agents

The cadastral certification is an electronic document (PDF format).

It includes embedded the GML INSPIRE of cadastral parcel.

The certificate and its attached file are signed electronically using a Secure Verification Code (CSV)

CERTIFICACIÓN CATASTRAL DESCRIPTIVA Y GRÁFICA
 Referencia catastral: 89B4704TF388S0001YA

DATOS DESCRIPTIVOS DEL INMUEBLE

Localización: CL CLARA CAMPOAMOR 35 Suolo 41730 LAS CABEZAS DE SAN JUAN (SEVILLA)

Categoría: Urbano
 Uso principal: Residencial
 Superficie construida: 414 m² Año construcción: 2005

Valor catastral [2016]:
 Valor catastral suelo: 1.000.000,00 €
 Valor catastral construcción: 1.000.000,00 €

Titularidad

Apellidos Nombre / Razón social	NIF/NIE	Derecho	Dominio Social
		100% de propiedad	

Construcción

Esp./Pta./Pta.	Destino	Superficie m ²	Esp./Pta./Pta.	Destino	Superficie m ²
ES1A	APARCAMIENTO	133	ES05B	VIVIENDA	87
EX02C	OTROS USOS	10	EX02D	OTROS USOS	39
EX02E	DEPORTIVO	49	EX01F	VIVIENDA	81

PARCELA CATASTRAL

Superficie gráfica: 500 m² Parcela construida sin división horizontal

Documento firmado con CSV y sellado de la DIRECCIÓN GENERAL DEL CATASTRO
 CSV: 89B4704TF388S0001YA (ver más en https://www.seccatastro.gob.es) | Fecha de firma: 13/10/2018

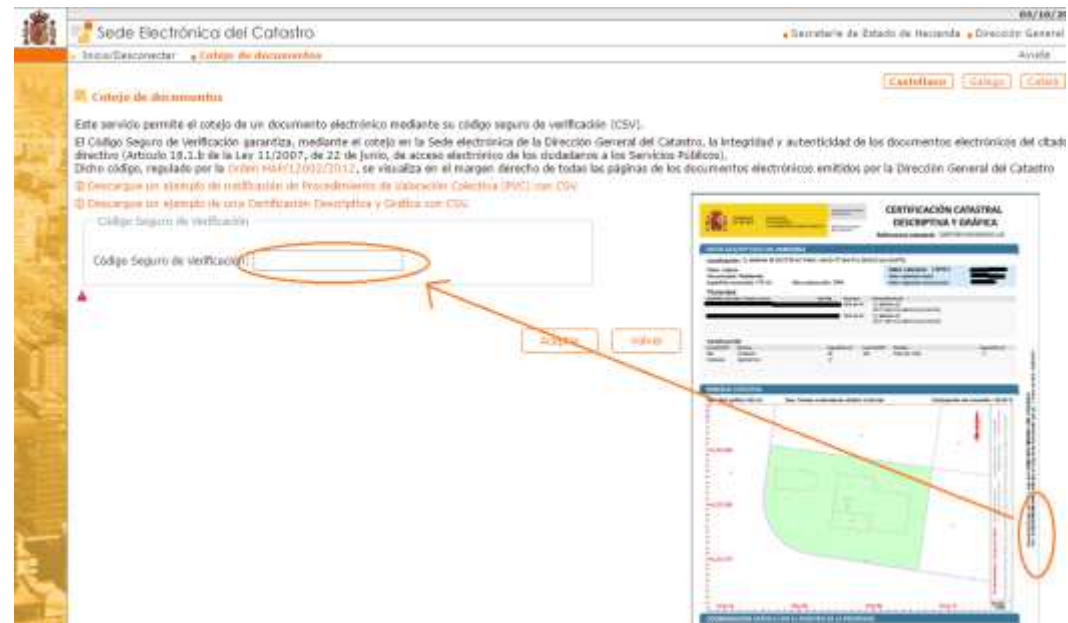


Composed by 16 digits

These 16 digits are the only information that is exchanged



With this code CSV on the document it is possible to access in any moment by internet to the digital file in the Electronic Office of Cadastre.



- Applications of notaries and registrars use a web service to access the content of the GML attached file using only the code CSV.



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What happens when it is necessary to change the representation of the parcel?

- declarations of citizens: segregations, divisions, joints ..
- land consolidations,
- reparcelling,
- administrative demarcation,
- expropriation
- acts of urban planning and urban managing
- first registration in the PRR or renewal

- or errors

Citizens and administrations must provide an **alternative geo-referenced representation**

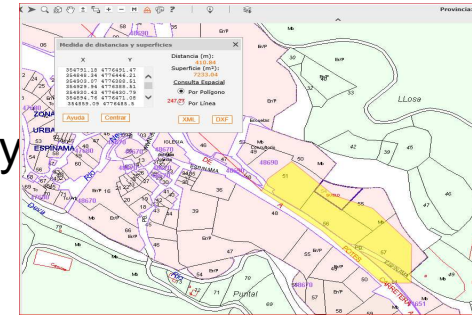


Alternative geo-referenced representation

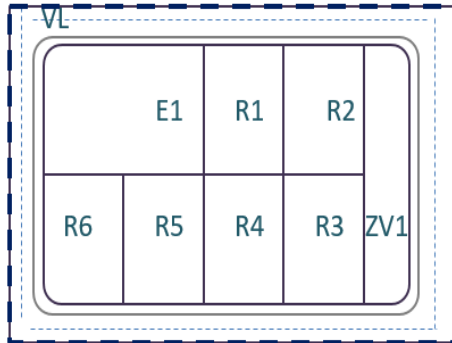


The cadastral cartography is the basis of the new representation.

The technicians are required to represent the reality as an overlay on the cadastral cartography,



New parcelation



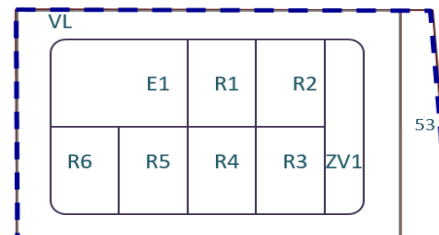
1. Download GML or other formats: DXF, etc
2. Modify by private tools (autocad, qgis, etc..)
3. Include the alternative geo-referenced representation

That must be expressed in GML of CP

Cadastral original data



Alternative georeferenced representation

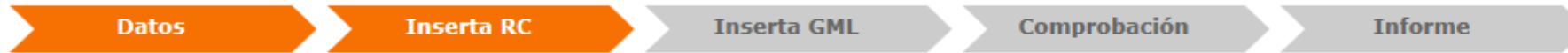




“Graphical validation report”



VALIDAR



Parcelas Catastrales inicialmente afectadas (primeras 14 posiciones de la Referencia Catastral)

Selección de Parcelas (separadas por comas o en diferentes líneas)		Parcelas confirmadas
4869055UN5746N 4869054UN5746N	<input type="button" value="Añadir"/> <input type="button" value="Quitar"/> <input type="button" value="Quitar todos"/>	4869055UN5746N 4869054UN5746N

Anterior

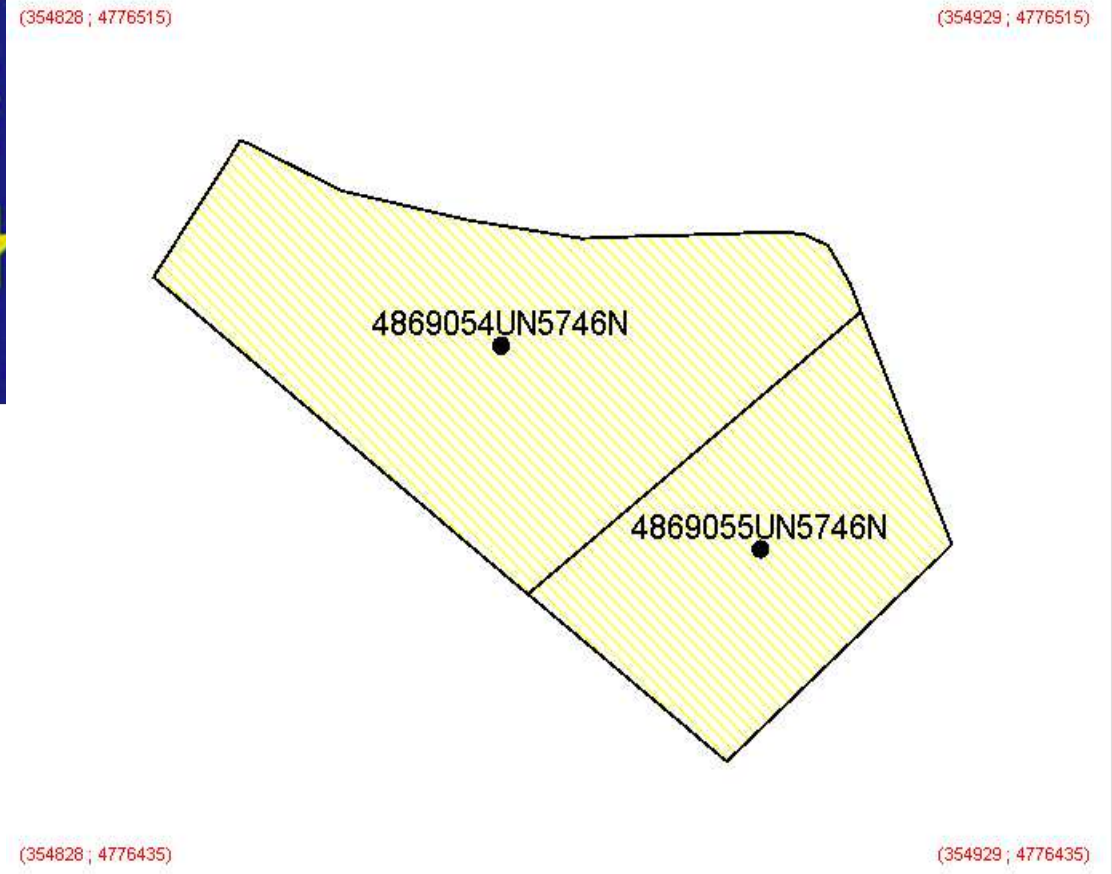
Siguiente



¿Cómo funciona este servicio?



Resultados de trabajo



Subida de ficheros GML

Seleccione archivos
Agregue archivos a la lista y pulse el botón de Iniciar carga

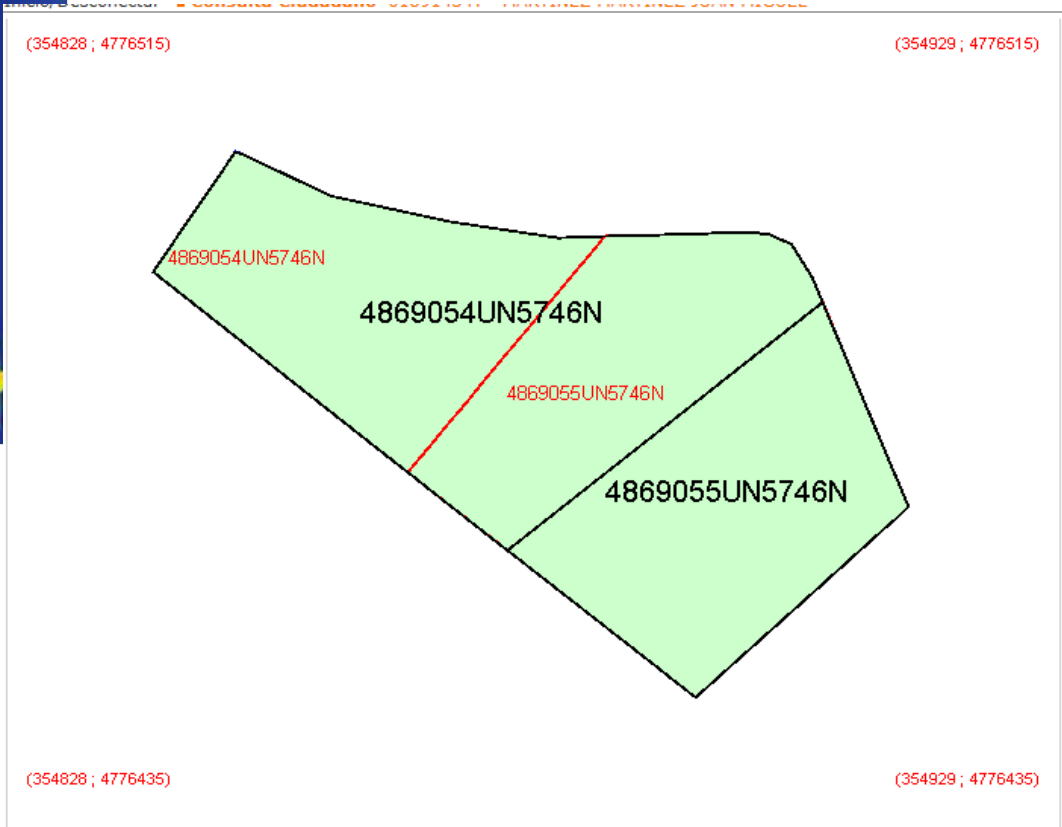
Nombre de archivo	Tamaño
Arrastre archivos aquí	

Ficheros subidos actualmente

Fichero	Eliminar
RESULTANTES QGIS.gml	X



GOBIERNO DE ESPAÑA
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Leyenda

- Superficie de la parcela catastral fuera de la representación gráfica aportada
- Superficie de la representación gráfica aportada fuera de la parcela catastral
- Superficie coincidente

Resumen

La geometría proporcionada coincide exactamente con la cartografía catastral
Superficie de la cartografía catastral: 2140 m2



“Graphical validation report”



Validación de una representación gráfica alternativa

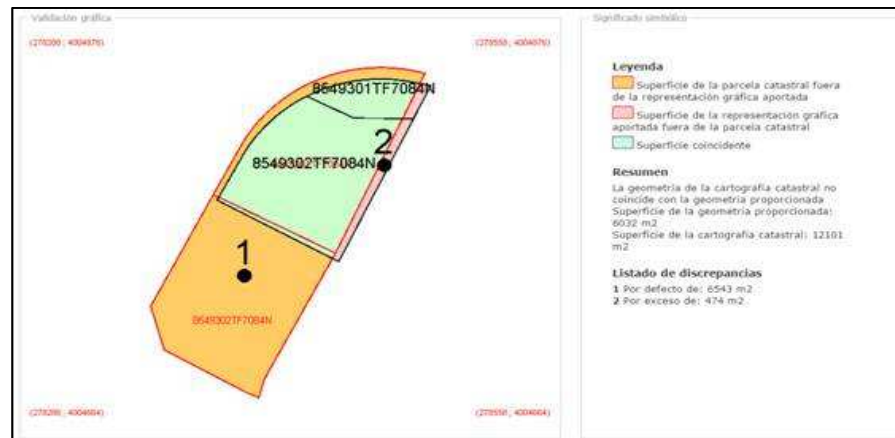
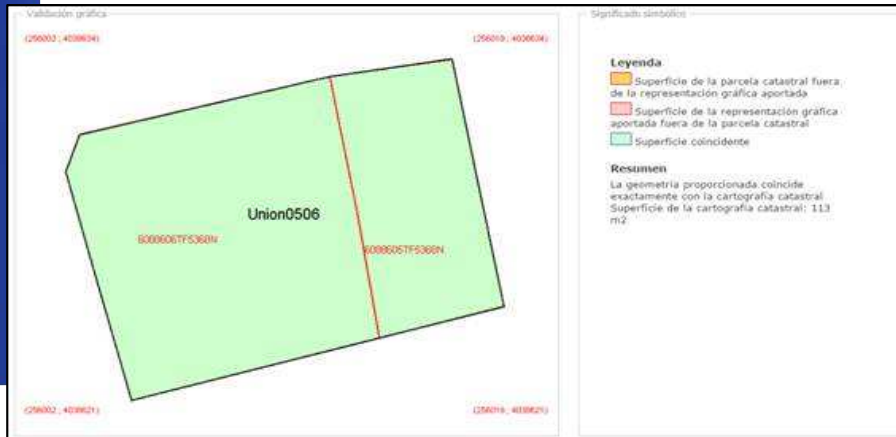
Descarga del informe de validación gráfica alternativa

① ¿Cómo funciona este servicio?



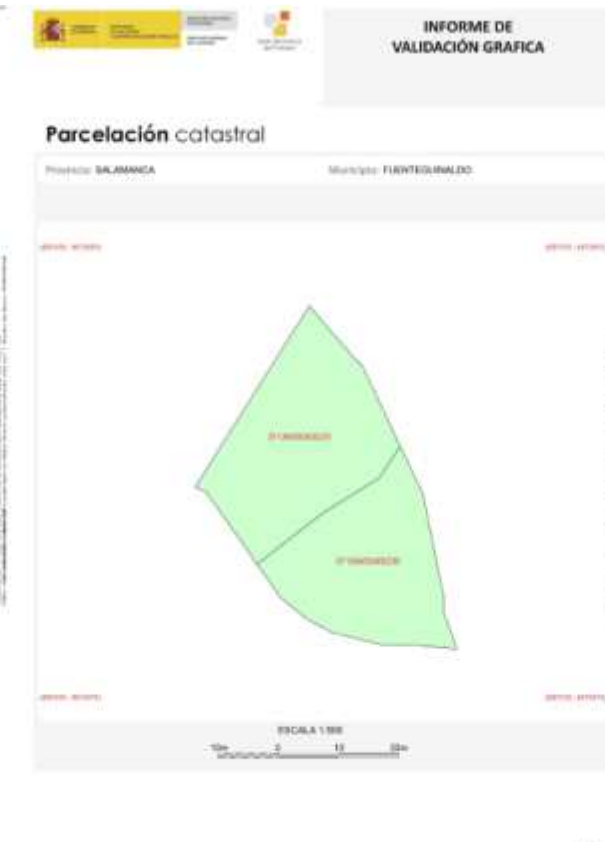
Datos del documento

Tipo de documento : Informe de Validación Gráfica Alternativa
Código Seguro de Verificación : EBZWM873DKS7SN18



Obligatory to quote to adjacent affected.

Recommended: extend until positive report





GOBIERNO DE ESPAÑA
 MINISTERIO DE ECONOMÍA Y HACIENDA
 SECRETARÍA DE ESTADO DE HACIENDA Y PRESUPUESTO
 SECRETARÍA GENERAL DE HACIENDA
 DIRECCIÓN GENERAL DEL CATASTRO



INFORME DE VALIDACIÓN GRÁFICA

Parcelas catastrales afectadas

La representación gráfica alternativa adopta del presente informe afecta a las parcelas catastrales que se relacionan a continuación. La correspondencia de esta representación gráfica en la cartografía catastral podrá producir una alteración de la delimitación y superficie de estas parcelas, por lo que se requiere la actualización previa a los planos catastrales de las mismas en el procedimiento correspondiente.



Referencia Catastral: 37136A50405231
 Dirección: FUENTEGUALDO (SALAMANCA)
AFFECTADA TOTALMENTE



Referencia Catastral: 37136A50405230
 Dirección: FUENTEGUALDO (SALAMANCA)
AFFECTADA TOTALMENTE

Documento firmado con CSD y validado en la DIRECCIÓN GENERAL DEL CATASTRO (CSD) (https://portal.sede.sede.gob.es/portal/portal/validacion) (verificado en https://www.validacion.gob.es/) Fecha de firma: 06/05/2016

INFORME DE VALIDACIÓN GRÁFICA

Parcelas resultantes



PARCELA: UOK_30-31
 superficie: 1370 m²

LINDEROS EXTERNOS:
 37136A50405228
 37136A50405232
 37136A50409032
 37136A50409032

COORDENADA LTM					
	X	Y			
1.-	697475.37	4473518.82	11.-	697451.47	4473499.16
2.-	697479.14	4473510.93	12.-	697446.36	4473509.46
3.-	697482.07	4473493.55	13.-	697442.04	4473511.29
4.-	697482.89	4473491.04	14.-	697441.10	4473512.00
5.-	697484.96	4473484.96	15.-	697460.22	4473542.28
6.-	697477.97	4473485.65	16.-	697463.45	4473538.43
7.-	697472.85	4473485.61	17.-	697467.80	4473533.45
8.-	697463.89	4473487.78	18.-	697469.16	4473532.08
9.-	697459.70	4473490.06	19.-	697475.37	4473518.82
10.-	697455.36	4473493.61			

Documento firmado con CSD y validado en la DIRECCIÓN GENERAL DEL CATASTRO (CSD) (https://portal.sede.sede.gob.es/portal/portal/validacion) (verificado en https://www.validacion.gob.es/) Fecha de firma: 06/05/2016



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SECRETARÍA GENERAL DE HACIENDA
DIRECCIÓN GENERAL DE REGISTRO

The report avoids physical exchange of files, only 16 digits are exchanged between cadastre and notary



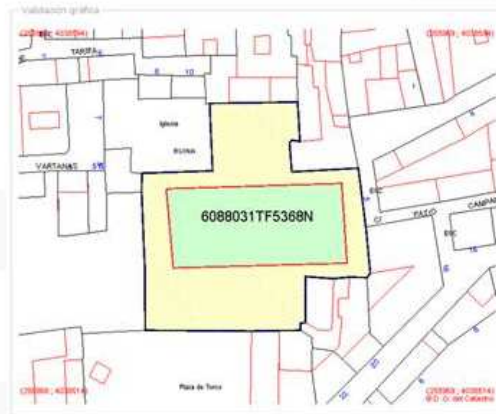
- The report shows the new representation and enables the automated capture of its contents preventing transcription errors.
- All the exchange of information is made through web services
- Notaries don't need to use GIS. And they can check the content using its CSV code in a service available in the Electronic Office of the Cadastre.
- If the validation report is correct, in between 5 days the cadastre send the new cadastral certificate to the Notary



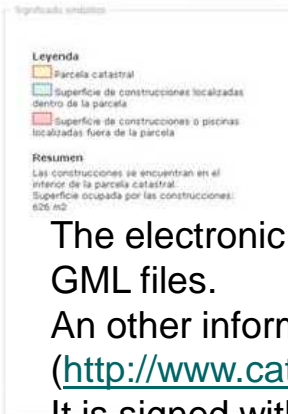
In the same way



Validation report of georeferencing constructions



Informe positivo



The electronic document includes as attachments, the provided GML files.

Another information

(<http://www.catastro.minhfp.es/ws/esquemas/informelCUC.xsd>).

It is signed with a CSV



Informe negativo



http://www.catastro.minhfp.es/ayuda/vga/ayuda_ICUC.htm



(1) El esquema Building Extended 2D de INSPIRE (<http://inspire.ec.europa.eu/draft-schemas/bu-ext2d/2.0/BuildingExtended2D.xsd>) se encuentra aún en fase de draft, y tiene pendiente la incorporación de algunos detalles que figuran en el estándar. Entre ellos, añadir el valor openAirPool al atributo constructionNature del featureMember OtherConstruction.

La D.G.C. usa dicho atributo con ese valor para calificar las piscinas al aire libre, lo que hace que los gml de edificio que incluyen piscina proporcionados por la SEC no validan frente al draft de esquema actual. Por ello las validaciones de esquema se realizan contra un esquema ligeramente modificado que se mantiene en local. La url de este esquema es: <http://www.catastro.minhfp.es/ws/esquemas/GML/inspire.ec.europa.eu/draft-schemas/bu-ext2d/2.0/BuildingExtended2D.xsd>



Conclusions

Spanish Cadastre can already provide the INSPIRE BU services with the cadastral attributes : geometry 2d, surface, use, number of floors, below and over the floor, conservation status, year of construction, number of dwellings, cadastral reference, address etc...

Core data is not enough for us because

- *there are attributes as **number of floors below ground** , **values of properties** etc... that are important in cadastre.*
- *And also **other constructions** openairpools are important for cadastre*

- **We are already using the GML INSPIRE for the georeference of the buildings in the real estate traffic**



Conclusions

We have started with the building cadastral data of the 5 cadastres

*But **we need to combine these data with the topographic data** that provide regional and local organizations and that has **totally other information**, other geometry (2,5D or 3D) for Building and Building part and other attributes as building nature, height, roof-edge etc... and also they have other construction as (bridges, walls,) that are not in the cadastral data*





Thanks for the attention

Creation of the Consensus Model for Spain of INSPIRE Building data



Amalia Velasco
General Directorate for Cadastre