



ATHENS
WORKSHOP



Workshop Joint FIG Commissions 3 and 8
Athens – 13th and 14th December 2022



Public Law Restrictions in a Spatial Planning Context

Kitsakis D., National Technical University of Athens

Kalogianni E., Delft University of Technology

Dimopoulou E., National Technical University of Athens



ATHENS WORKSHOP



Workshop Joint FIG Commissions 3 and 8
Athens – 13th and 14th December 2022



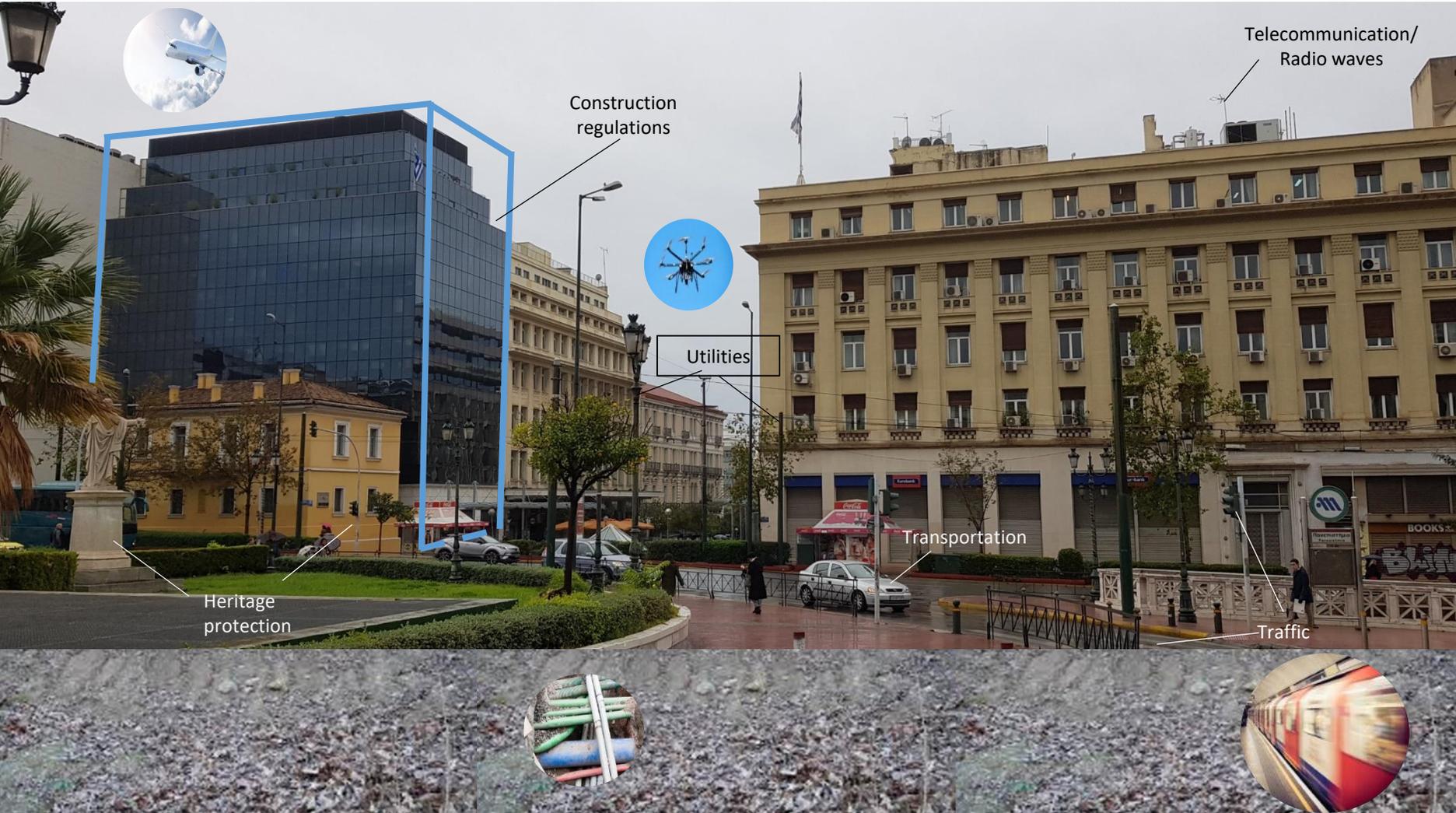
INTRODUCTION



ATHENS WORKSHOP



Workshop Joint FIG Commissions 3 and 8
Athens – 13th and 14th December 2022



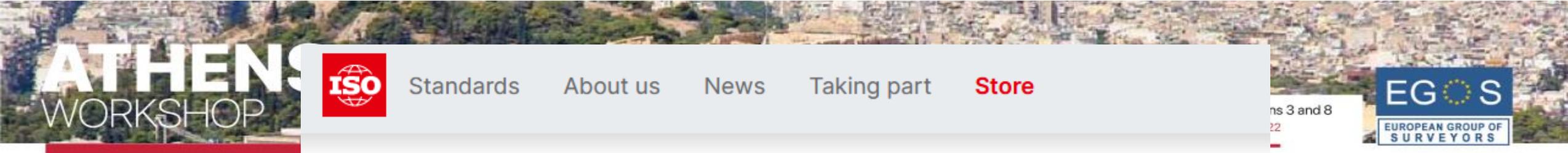
Public Law Restrictions in urban environment





Public Law
Restrictions in rural
environment





ATHENS WORKSHOP



Standards About us News Taking part Store



Land Administration Domain

Life cycle

Now

Will be replaced by

ISO International Organization for Standardization Great things happen together

Standards | All about ISO | Taking part | Store

Standards catalogue | Publications and products

Store | Standards catalogue | Browse by ICS | 35 | 35.240 | 35.240.70 | ISO 19152:2012

ISO 19152:2012 [Preview](#)

Geographic information -- Land Administration Domain Model (LADM)

Published
ISO 19152:2012

A standard is reviewed every 5 years
Stage: **90.92** (To be revised) ▾



Under development
ISO/DIS 19152-1

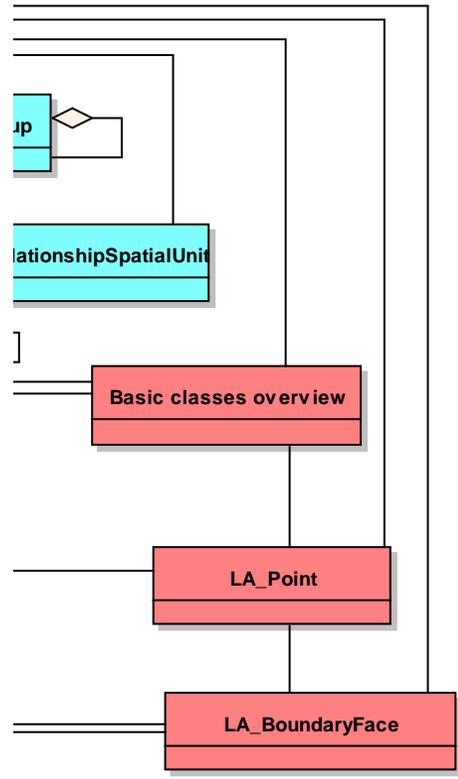
Under development
ISO/AWI 19152-2

Under development
ISO/CD 19152-3

Under development
ISO/AWI 19152-4

Under development
ISO/AWI 19152-5

UN SDGs



ISO 19152, 2012



Aim & Methodology

- Review on registration, modelling, organisation of 3D PLRs
- Identification of requirements and challenges of integrating PLRs into 3D Land Administration Systems
- Standardisation – opportunities deriving from LADM revision



Identification of literature type



Time period



Topic



Number of items

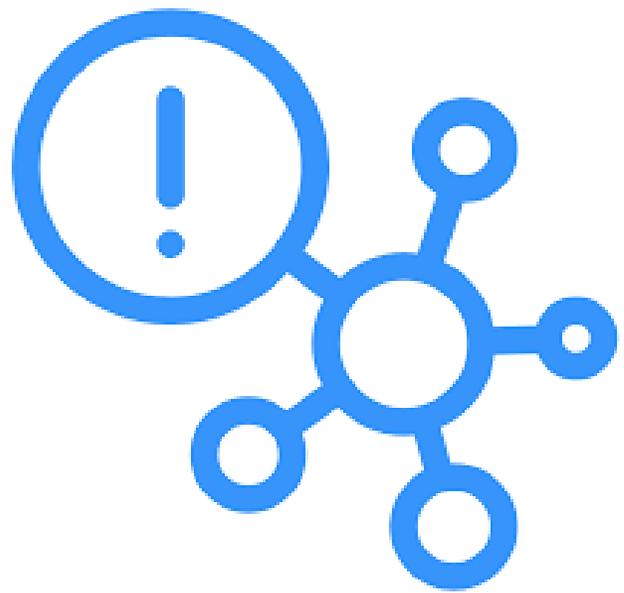
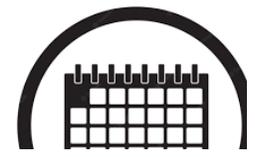




Aim & Methodology



- St
 - Sc
 - O
- rch



**ΕΦΗΜΕΡΙΣ ΤΗΣ ΚΥΒΕΡΝΗΣΕΩΣ
ΤΗΣ ΕΛΛΗΝΙΚΗΣ ΔΗΜΟΚΡΑΤΙΑΣ**

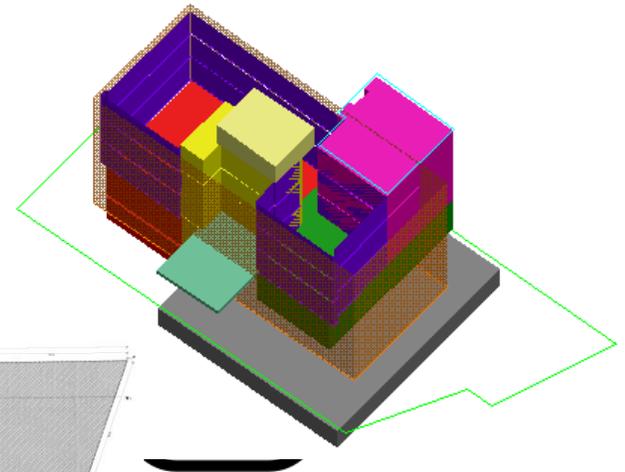
ΑΘΗΝΑ 9 ΟΚΤΩΒΡΙΟΥ 1989 ΤΕΥΧΟΣ ΤΕΤΑΡΤΟ ΑΡΙΘΜΟΣ 6322

ΠΕΡΙΕΧΟΜΕΝΑ
ΠΟΛΕΟΔΟΜΙΑ
ΔΙΑΤΑΓΜΑΤΑ

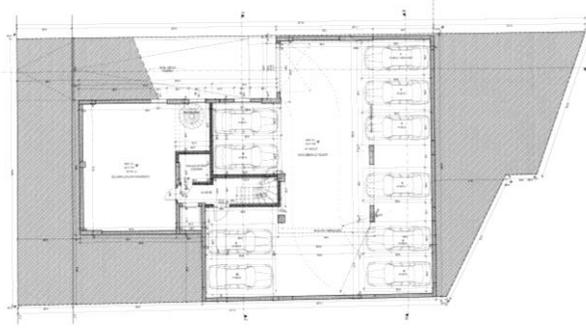
Εγκρίνει τον προϋπολογισμό επίδοσης της Εταιρείας Έλεγχος, Παρακολούθηση, Α.Ε. ΨΕΒΑ
Εγκρίνει τον προϋπολογισμό επίδοσης της Εταιρείας Έλεγχος, Παρακολούθηση, Α.Ε. ΨΕΒΑ
Εγκρίνει τον προϋπολογισμό επίδοσης της Εταιρείας Έλεγχος, Παρακολούθηση, Α.Ε. ΨΕΒΑ
Εγκρίνει τον προϋπολογισμό επίδοσης της Εταιρείας Έλεγχος, Παρακολούθηση, Α.Ε. ΨΕΒΑ

ΤΗΕ
Εγκρίνει τον προϋπολογισμό επίδοσης της Εταιρείας Έλεγχος, Παρακολούθηση, Α.Ε. ΨΕΒΑ
Εγκρίνει τον προϋπολογισμό επίδοσης της Εταιρείας Έλεγχος, Παρακολούθηση, Α.Ε. ΨΕΒΑ
Εγκρίνει τον προϋπολογισμό επίδοσης της Εταιρείας Έλεγχος, Παρακολούθηση, Α.Ε. ΨΕΒΑ
Εγκρίνει τον προϋπολογισμό επίδοσης της Εταιρείας Έλεγχος, Παρακολούθηση, Α.Ε. ΨΕΒΑ

classific

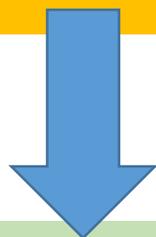


the items



Classification of PLRs

- Different classification approaches
- Individual categories or “thematic” sectors?
- Restrictions classifiable to more categories



- “Thematic” classification in 6 categories
- Sub-categories for further specialisation



Types of PLRs

- Ownership of minerals compared to land parcel ownership
- Restrictions applying to constructions on surface parcels



- Protection restrictions in the surrounding area/space
- Protection of views

- Physical environment
(Soil, surface and groundwater, air, landscape protection)
- Biological environment
(Vegetation, wildlife, habitats, conservation areas)
- Socio-economic environment
(Lifestyle, cultural characteristics, quality of life, health conditions)



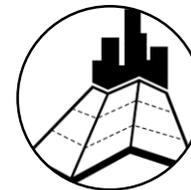
Types of PLRs

- Restriction zones in the vicinity of airports
- Flight restrictions on manned or unmanned air vehicles



- Depth/height restrictions on exploiting surface parcels
- Building restrictions on exploiting surface parcels
- Cultivation restrictions on surface parcels

- Spatial planning restrictions
- Urban planning restrictions
- Construction regulations

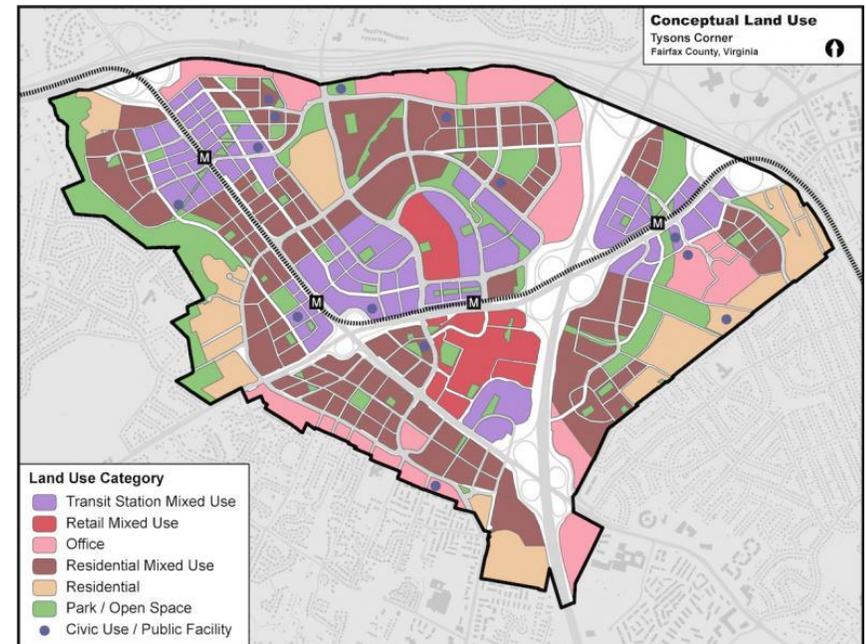
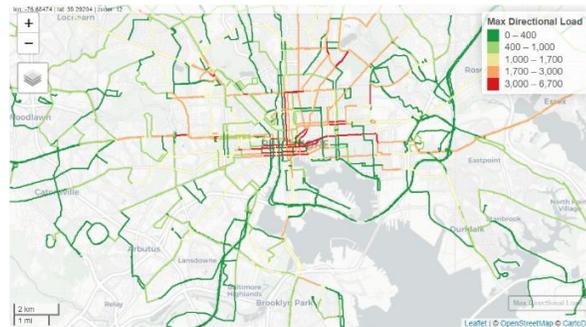
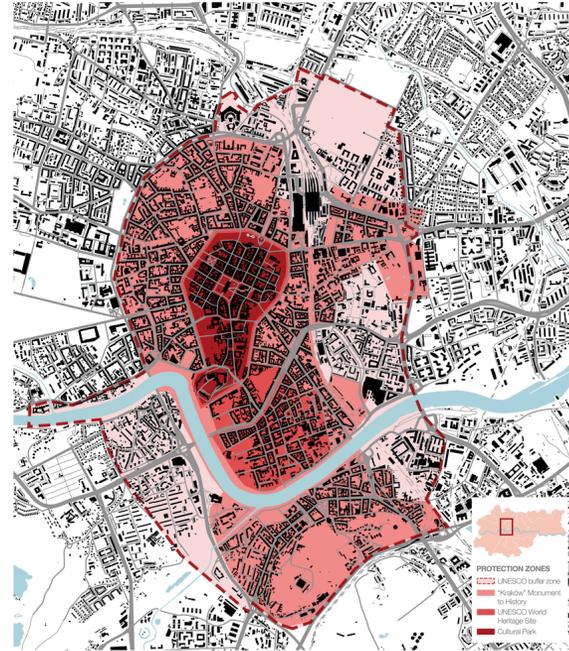




Types of PLRs – PLRs in Urban and Spatial Planning

Spatial and Urban Planning, Construction regulations

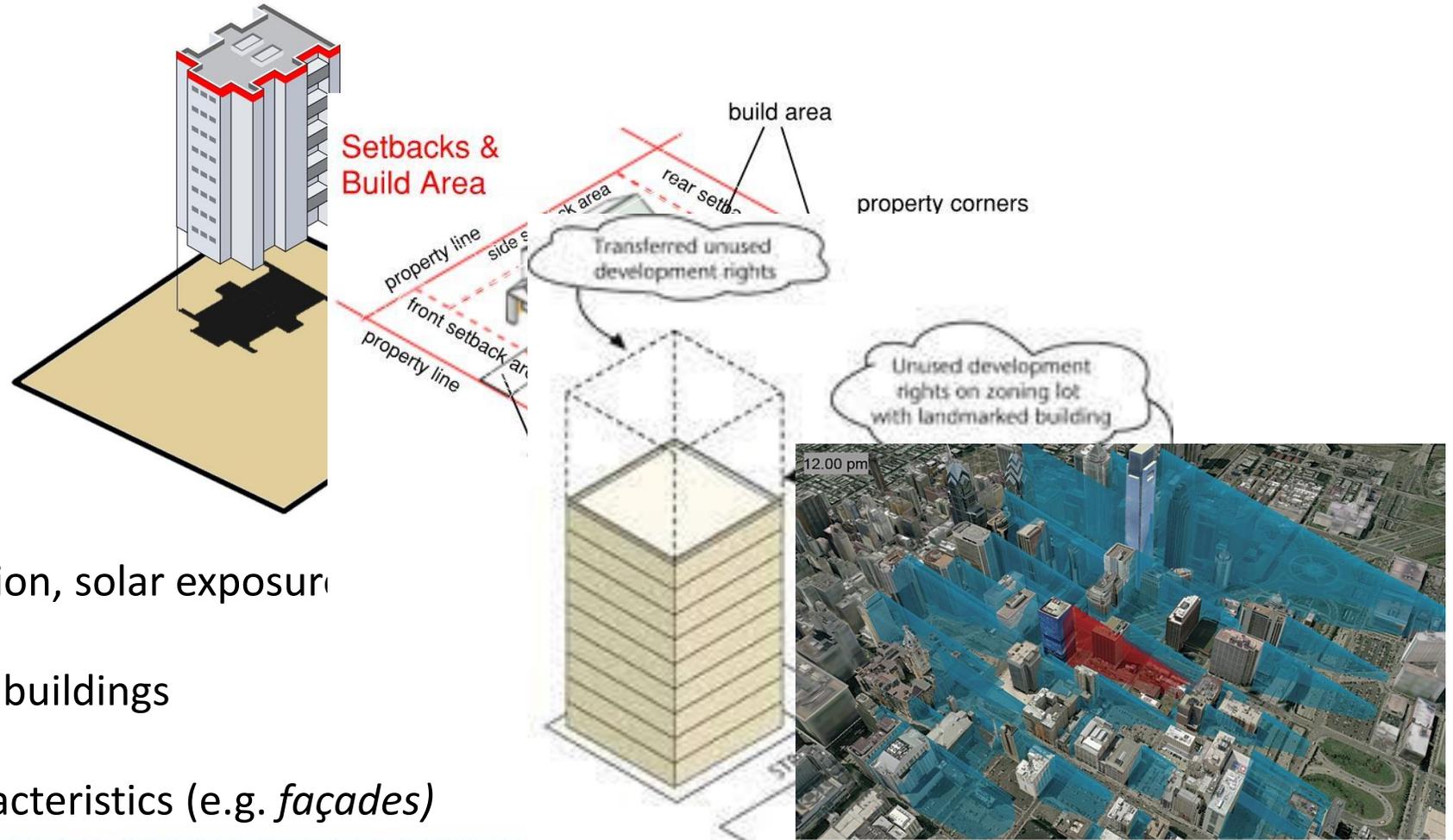
- Land use
- Infrastructure and development
- Special economic policies
- Transport
- Education
- Energy consumption
- Public investments
- Environment
- Traditional architecture preservation



Types of PLRs – PLRs in Urban and Spatial Planning

Construction regulations

- Floor Area Ratio
- Floor Space Index
- Building height
- Transfer of development rights
- Regulations on lighting, ventilation, solar exposure
- Interrelation with neighbouring buildings
- Protection of architectural characteristics (e.g. *façades*)



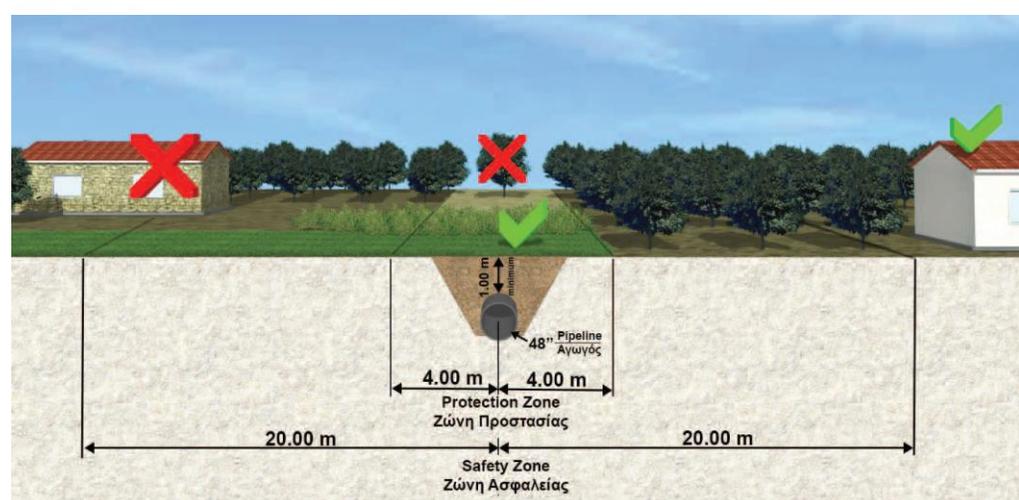
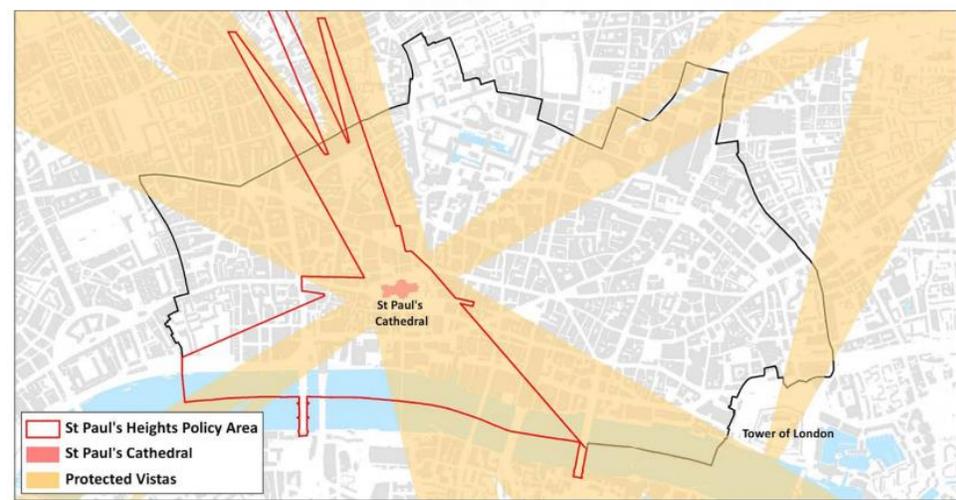
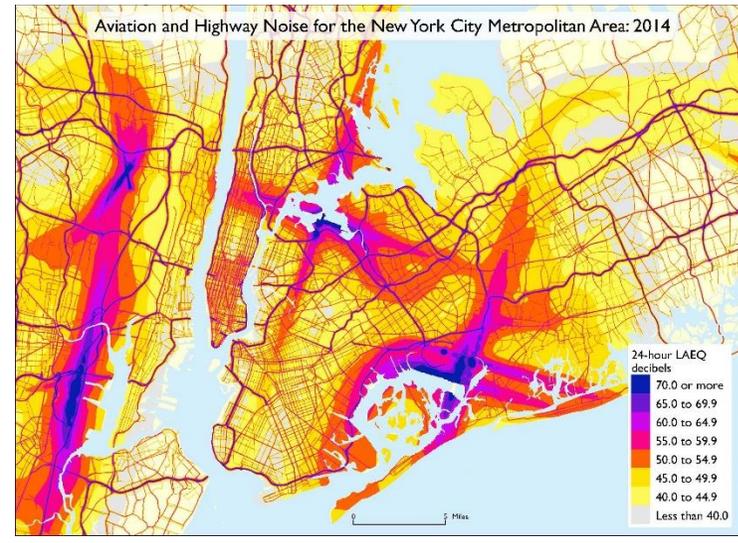
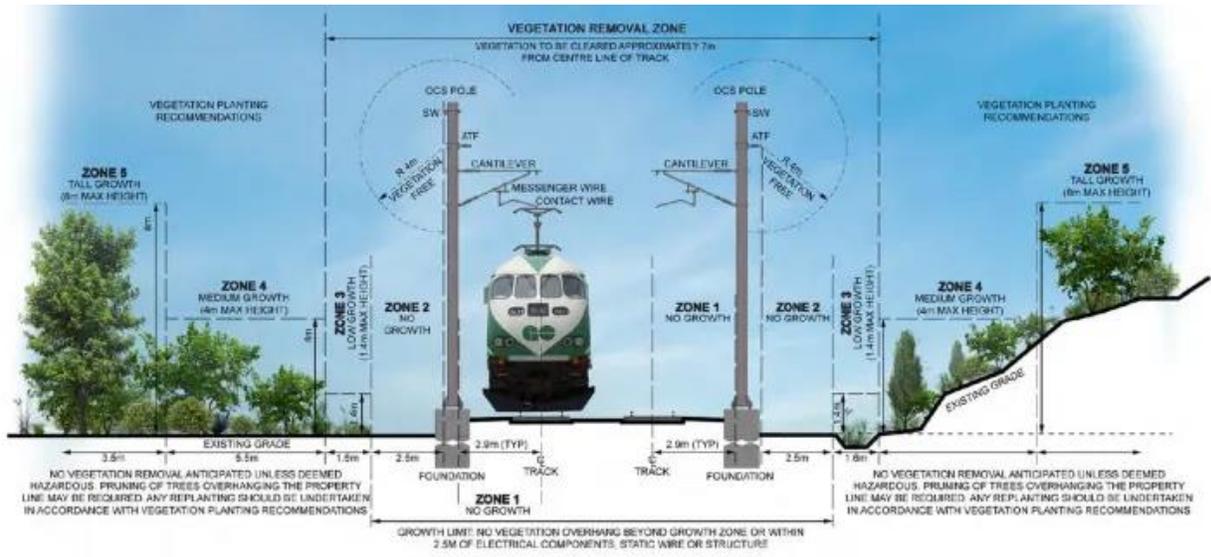
ATHENS WORKSHOP



Workshop Joint FIG Commissions 3 and 8
Athens – 13th and 14th December 2022

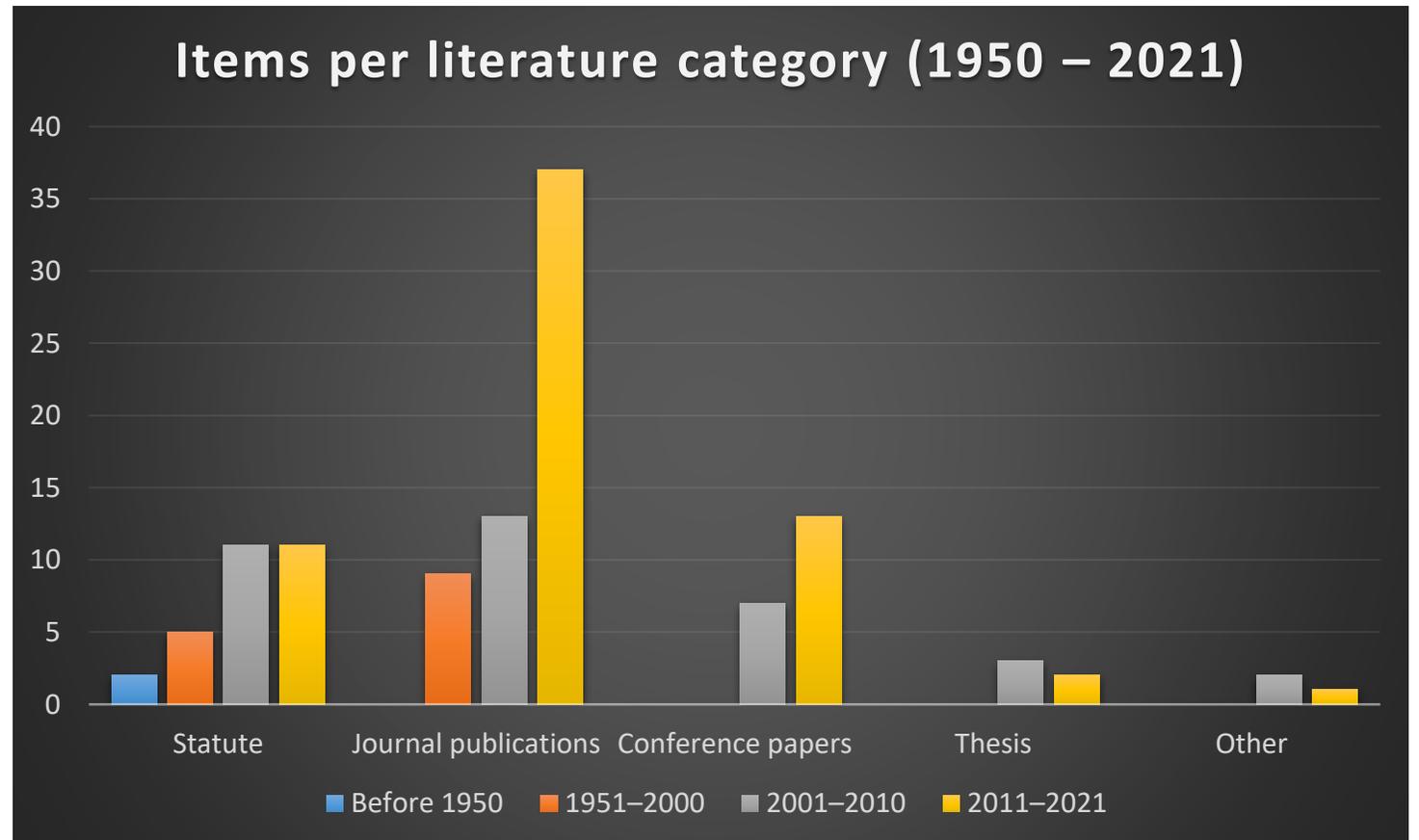


3D PLRs



Development of 3D PLR-related literature (1950 – 2021)

- Combined keywords for the identified PLR types
- Research on PLRs with 3D characteristics
- The development of legal statutes over time not examined



Development of 3D PLR-related literature (1950 – 2021) (1/2)

PLR type	Time Periods/Topics			
	Before 1950	1951–2000	2001–2010	2011–2021
Mining	Statute	Statute	Statute Publication Conference Thesis	Statute Publication Conference Thesis Other
Civil Aviation	Statute	Statute Publication	Statute	Statute Publication Conference Thesis
Environment protection		Publication	Publication Conference Thesis	Statute Publication Conference Thesis





Development of 3D PLR-related literature (1950 – 2021) (2/2)

Spatial Planning	Publication	Publication Thesis Conference	Statute Publication Thesis Conference Thesis
Heritage Protection	Publication	Publication Other	Statute Publication Conference Thesis
Utilities		Publication Conference	Statute Publication Conference Thesis



Organising and modelling PLRs

- Integrated in cadastral systems
- Maintained by responsible authority
- “Themed” cadastres (e.g., archaeological or utility cadastres).
- PLR cadastres

▼ Υπόμνημα

Πολεοδομικές Γραμμές

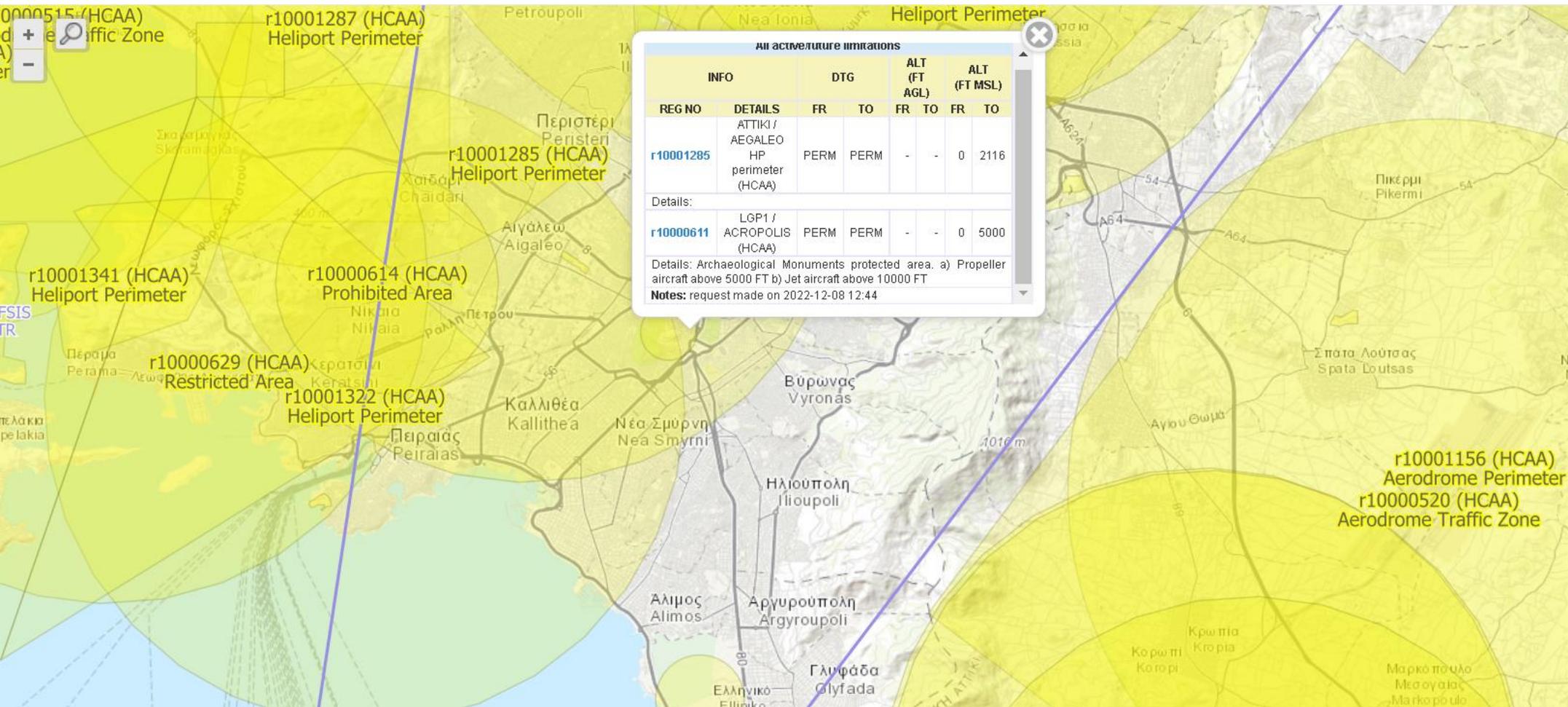
Πολεοδομικές Γραμμές

- Οικοδομική Γραμμή
- Ρυμοτομική Γραμμή
- Ταυτόσημες ΡΓ με ΟΓ με ιδιότητα στοάς (εξωτερική γραμμή)
- Ταυτόσημες Ρυμοτομική και Οικοδομική
- Οικοδομική Γραμμή με ιδιότητα στοάς (εσωτερική γραμμή – ΟΓ ισογείου ή εσωτερική στοά)
- Όριο Ακάλυπτου Χώρου
- Όριο Πεζοδρόμου (εντός του πλάτους της οδού)
- Γραμμή αρχής και τέλους πεζοδρόμου
- Γραμμή ορίου Κοινόχρηστου
- Οικοδομήσιμου χώρου με ιδιωτικούς οικοδομήσιμους εντός του ίδιου ΟΤ (εσωτερική)
- ΟΓ με ιδιότητα περιγράμματος

ΦΕΚ 55/Α/1951-02-17
PLR Stature and link
 Αρχείο ΦΕΚ [Περισσότερες πληροφορίες](#)
 Αριθμός 4197/92
 Απόφασης
 Είδος Απόφασης ΒΑΣΙΛΙΚΟ ΔΙΑΤΑΓΜΑ
 Έναρξη Ισχύος 3/2/1951
 Τίτλος Περι τροποποίησης Πολεοδομικής σχεδίου Αθηνών εις 64 Μελέτης τοπογραφικά φύλλα
 Αρίθμηση ΟΤ 53019
 Κωδικός ΠΕ ή -
 Τομέα
 Εστίαση Όροι Δόμησης Χρήσεις Γης



Organising and modelling PLRs





Organising and modelling PLRs



Ρωμαϊκή Αγορά Θεσσαλονίκης

Όνομασία
Περιφέρεια
Δήμος
Φορέας

Κατηγορία Χώρου

Επιλεγμένες Κατηγορίες: Αρχαιολογικός Χώρος

Όνομα

Κύριο όνομα: Ρωμαϊκή Αγορά Θεσσαλονίκης
Άλλα ονόματα: Αρχαία αγορά

Τύπος προστασίας

Τύπος προστασίας από το Υπουργείο Πολιτισμού: Κήρυξη
Αρμόδια Υπηρεσία: ΕΦΑ Πόλης Θεσσαλονίκης

Καθεστώς Προστασίας

YA 15189 Reference to PLR statute
ΦΕΚ: 653/Β/1969-10-06

Γεωγραφική Περιοχή

Διοικητική Δικαιοδοσία
Καλλικράτης
ΚΕΝΤΡΙΚΗΣ ΜΑΚΕΔΟΝΙΑΣ, ΘΕΣΣΑΛΟΝΙΚΗΣ, ΘΕΣΣΑΛΟΝΙΚΗΣ, ΘΕΣΣΑΛΟΝΙΚΗΣ, ΘΕΣΣΑΛΟΝΙΚΗΣ
Σύγχρονα Τοπωνύμια
Δεν υπάρχουν διαθέσιμα μοντέρνα τοπωνύμια

Επιστημονική Τεκμηρίωση

Χρονολόγηση
Από: Ρωμαϊκή Περίοδος
Έως: Ρωμαϊκή Περίοδος

Τύπος χώρου / μνημείου: Δημόσιος Βίος
Τεκμηρίωση: Τεκμηρίωση: Κατάλοπα Μνημεία: Ρωμαϊκή αγορά Θέση στο χώρο: Μεταξύ των οδών των οδών Κασσάνδρου - Εγνατίας, Πλάτωνος και Σοφοκλέους - Βενιζέλου και Φ. Δραγούμη



Organising and modelling PLRs

Selecteer een dataset

- Publiekrechtelijke Beperkingen (toon alles)
- Gedoogplicht archeologisch onderzoek, Erfgoedwet (EW)
- Erfgoedwet: Gedoogplicht archeologisch onderzoek opgelegd door minister OCW (EWA)
- Erfgoedwet: Gedoogplicht archeologisch onderzoek opgelegd door minister OCW (EWB)
- Erfgoedwet: Gedoogplicht archeologisch onderzoek opgelegd door bestuursorgaan (EWC)
- Erfgoedwet: Toezending ontwerpbesluit aanwijzing rijksmonument door minister OCW (voorbescherming) (EWD)
- Erfgoedwet: Afschrift inschrijving monument of archeologisch monument in rijksmonumentenregister door minister (EWE)
- Monumentenwet 1988: Besluit (MW)

2 actieve datasets

Object informatie

grondslag_code	HS
grondslag_omschrijving	Huisvestingswet 2014
identificatie	15119
meerdere_brondocumenten_ingeschreven	Nee
organisatie_informatie_nummer_oin	00000001002691760000
statutaire_naam_bestuursorgaan	Gemeente Wijk Bij Duurste

RD: x = 148.569,57 m; y = 445.522,26 m

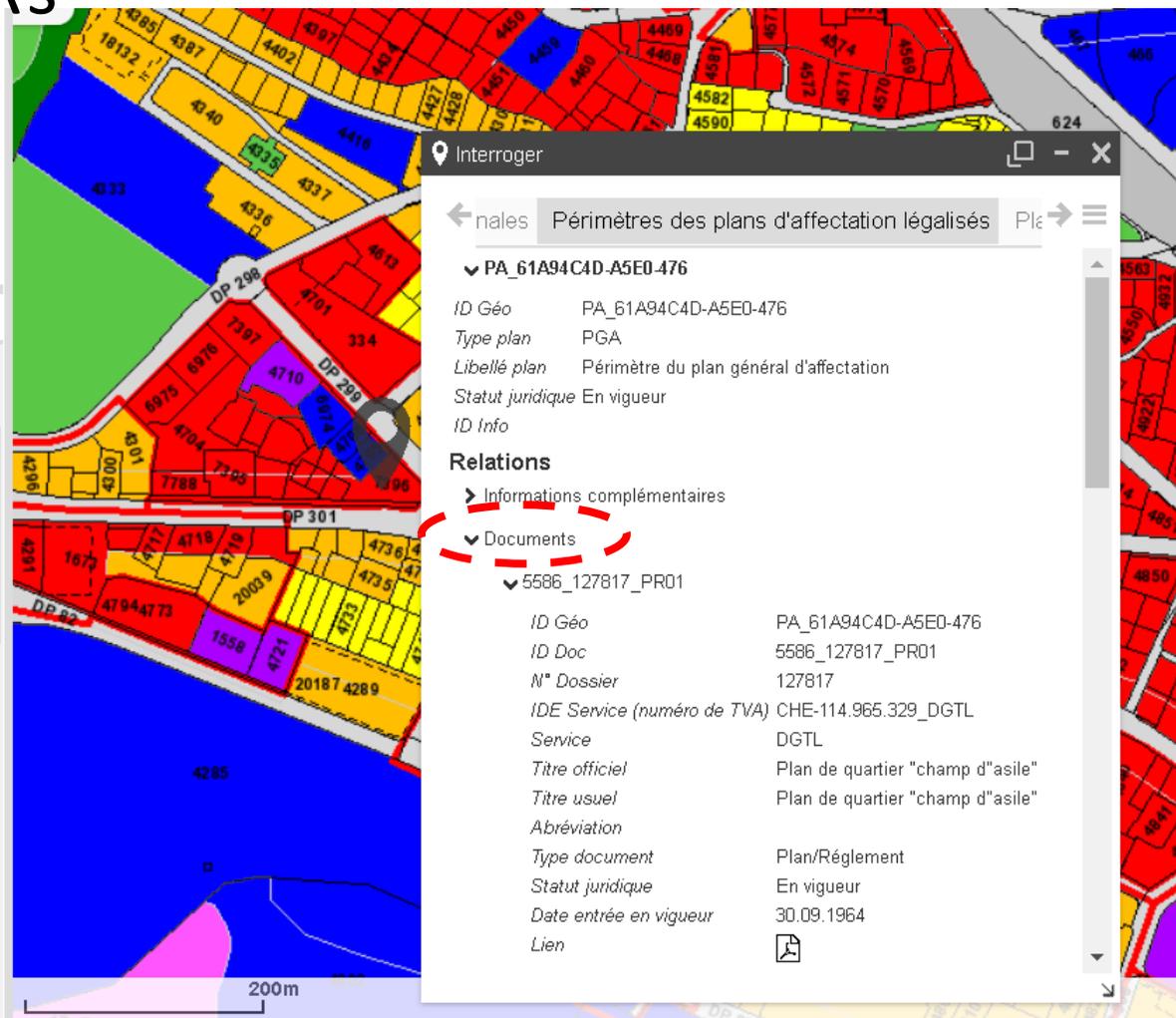


Organising and modelling PLRs

Couches affichées Légende

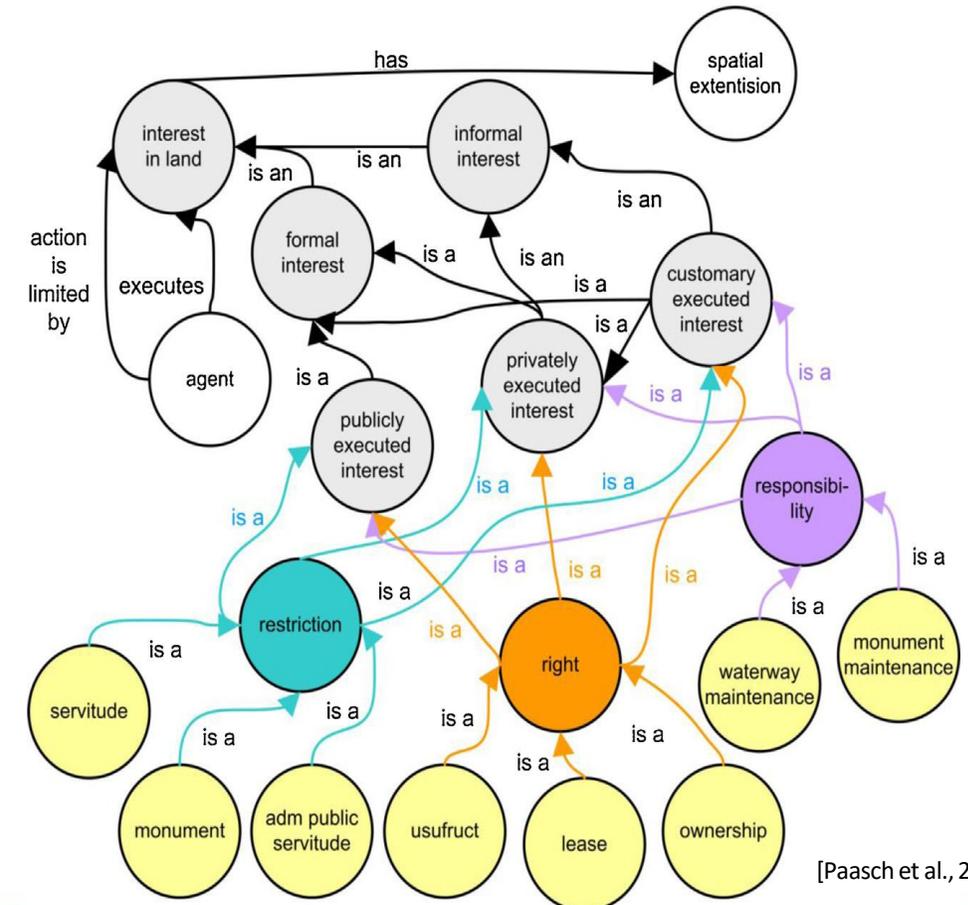
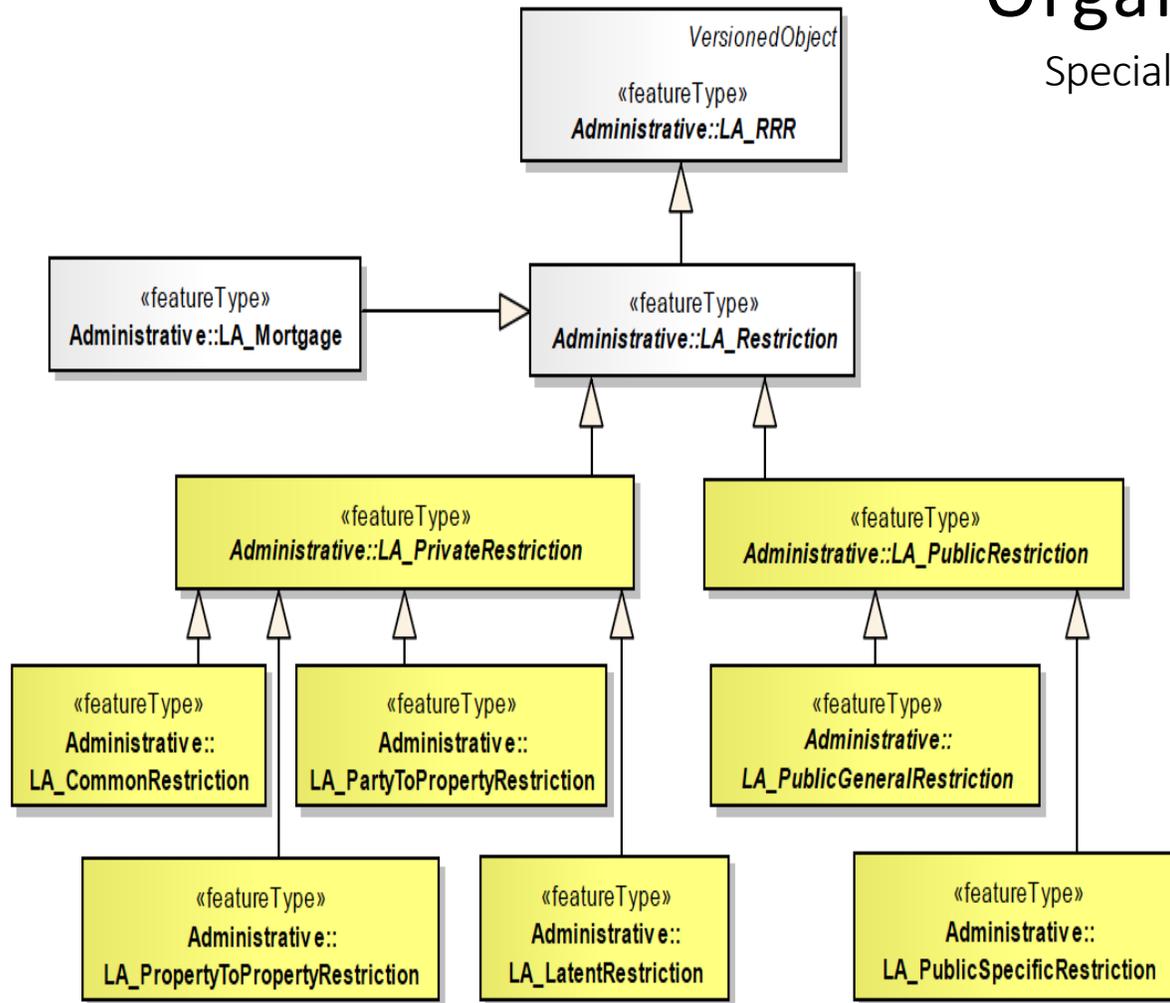
Aménagement du territoire

- Périètres des plans d'affectation légalisés
 - Périètres des plans d'affectation légalisés
- Zones réservées
- Plans d'affectation (cantonaux/communaux)
 - Zone d'habitation de très faible densité 15 LAT
 - Zone d'habitation de faible densité 15 LAT
 - Zone d'habitation de moyenne densité 15 LAT
 - Zone d'habitation de forte densité 15 LAT
 - Zone d'activités économiques 15 LAT
 - Zone mixte 15 LAT
 - Zone centrale 15 LAT
 - Zone affectée à des besoins publics 15 LAT
 - Zone de verdure 15 LAT
 - Zone de tourisme et de loisirs 15 LAT
 - Zone de desserte 15 LAT
 - Zone ferroviaire 15 LAT
 - Zone d'aérodrome 15 LAT



Organising and modelling PLRs - LADM

Specialisation of LADM code lists, using Legal Cadastral Domain Model & Social Tenure Domain Model (Paasch et al., 2015)

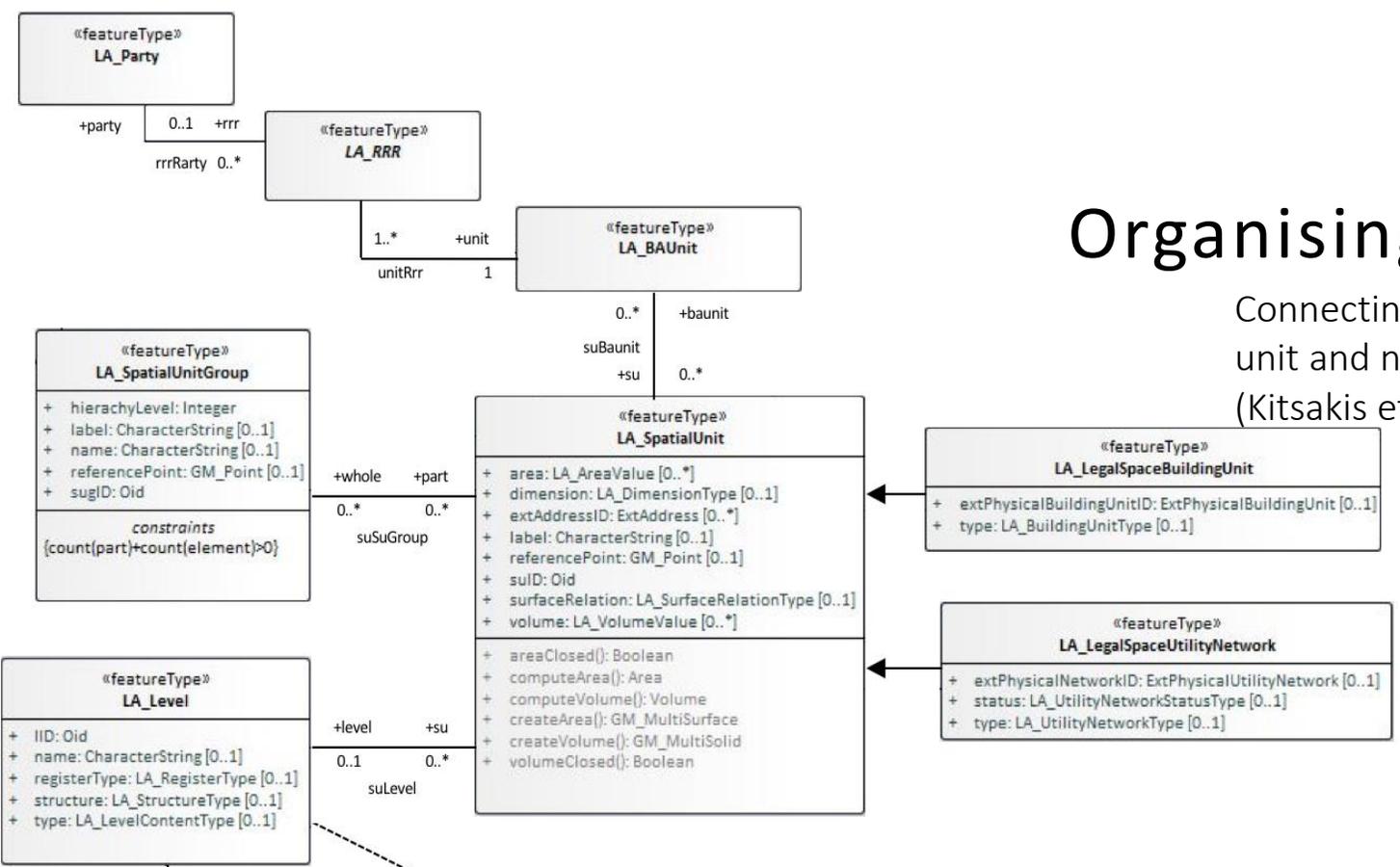


[Paasch et al., 2013]

[Paasch et al., 2015]

Organising and modelling PLRs - LADM

Connecting the object/zone, on which a PLR is attached, to the spatial unit and not directly to the restriction using the 'level' concept of LADM (Kitsakis et al., 2018)



Restrictions_level 0 for mining areas,
Restrictions_level 1 for cultural heritage,
Restrictions_level 2 for landscape,
Restrictions_level 3 for soil,
Restrictions_level 4 water,
Restrictions_level 5 for air,
Restrictions_level 6 for noise,
Restrictions_level 7 for natural protection areas,
Restrictions_level 8 for civil aviation,
Restrictions_level 9 for spatial planning,
Restrictions_level 10 for public utility networks,
Restrictions_level 11 for major infrastructure
Restrictions_level 12 for military zones

Rights_level 0 for archaeological,
Rights_level 1 for 2D parcel,
Rights_level 2 for 3D parcel,
Rights_level 3 for mine,
Rights_level 4 Special Right Property Objects,
Rights_level 5 for planning zone,
Rights_level 6 for marine parcel,
Rights_level 7 for network

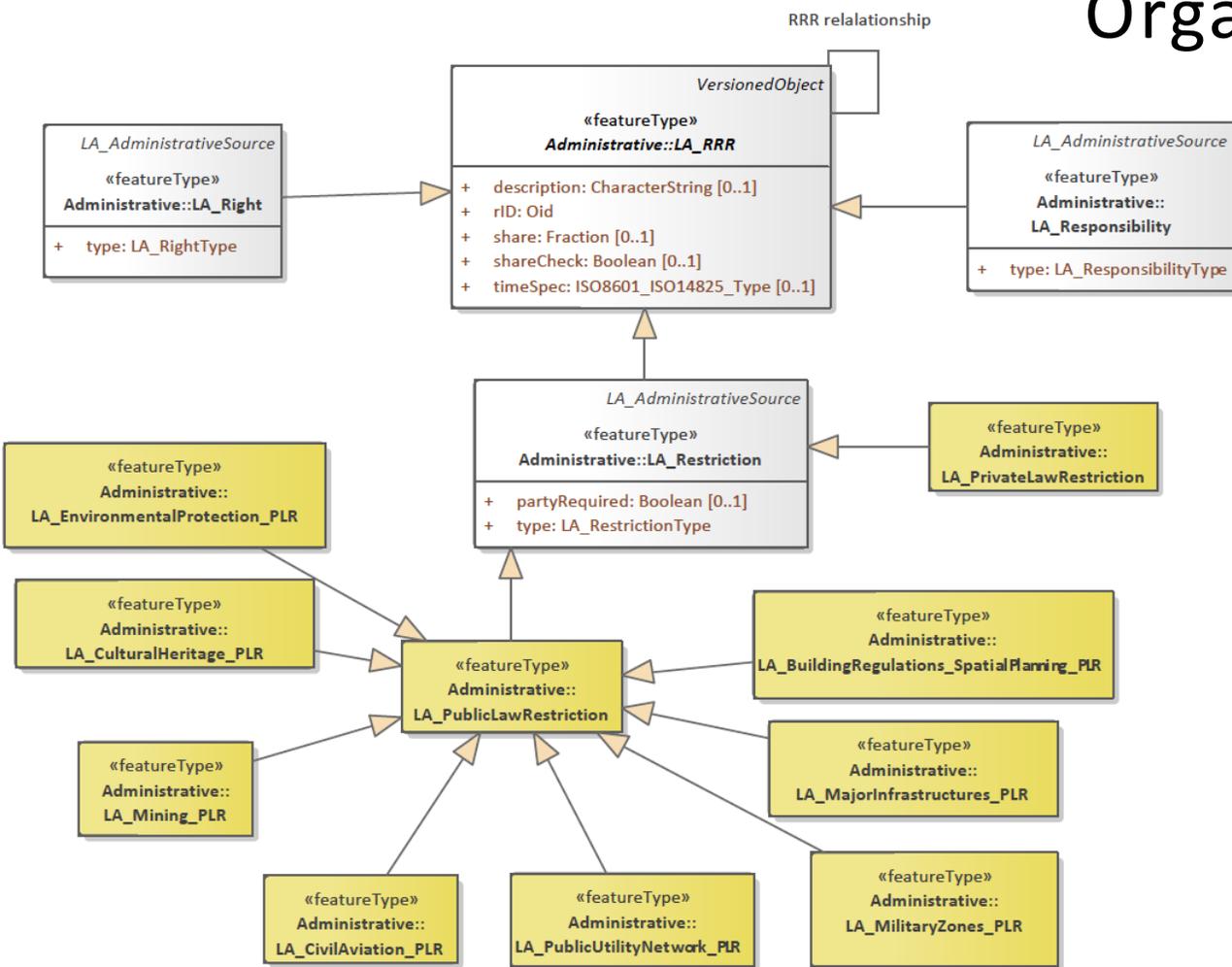
7 proposed Rights levels [Kalogianni, 2015]

13 proposed Restrictions levels according to the PLRs types

«codeList» Administrative:: LA_RestrictionType
+ adminPublicServitude
+ monument
+ monumentPartly
+ mortgage
+ noBuilding
+ PLRcivilAviation
+ PLRculturalHeritage
+ PLRlandscape
+ PLRmajorInfrastructure
+ PLRmilitaryZones
+ PLRminingArea
+ PLRnaturalProtectionArea
+ PLRnoise
+ PLRpublicUtilityNetwork
+ PLRsoil
+ PLRspatialPlanning
+ PLRwater
+ servitude
+ servitudePartly

Organising and modelling PLRs - LADM

Modelling PLRs on the legal part of LADM (Kitsakis et al., 2021)



Conclusions

- Extensive research on the different fields related to PLRs
- Slow growth on individual PLR research
- Mainly the 2D aspect of PLRs is considered
- Private-Law approach is mainly followed
- Which PLRs are and need to be registered/shown on 3D?
- Several PLRs defined by qualitative parameters, not easily quantifiable
- Thematic cadastres do not always present the restriction, but the object itself
- Restrictions can be classified in multiple groups depending on classification's objective
- Selection and organisation based on national priorities of LAS
- Organisation in LADM for specific fields (e.g. Spatial Planning Package)
- Organisation of PLRs within LADM remains complex (number of PLRs, complex definitions of restrictions, different approaches on modelling and classification of PLRs)

T h a n k y o u !

Kitsakis D., Kalogianni E., Dimopoulou E.

