Unleashing the potential of openBIM

openBIM for Architects in Design, Collaboration and Statutory Submission

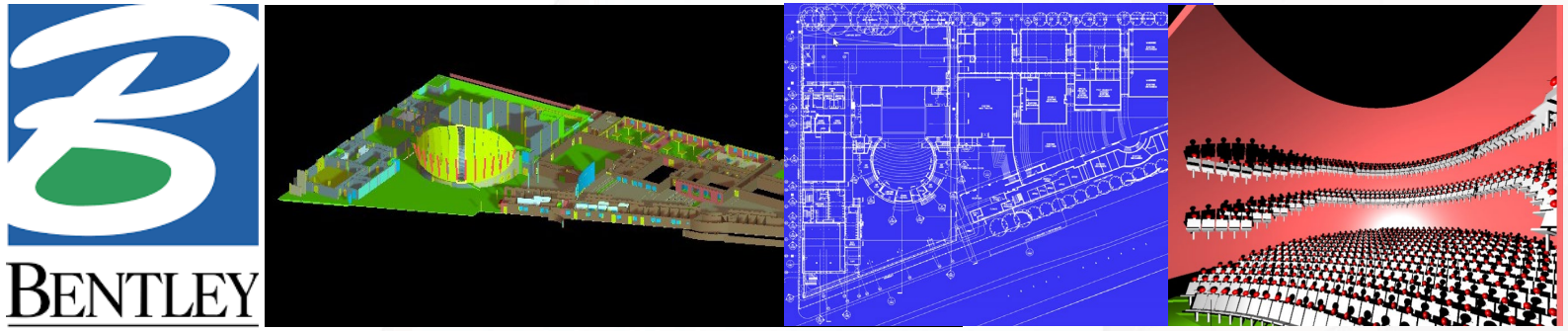
Ar. David Fung

BSI Committee Chairman, HKABAEIMA, HKIA, HKIBIM

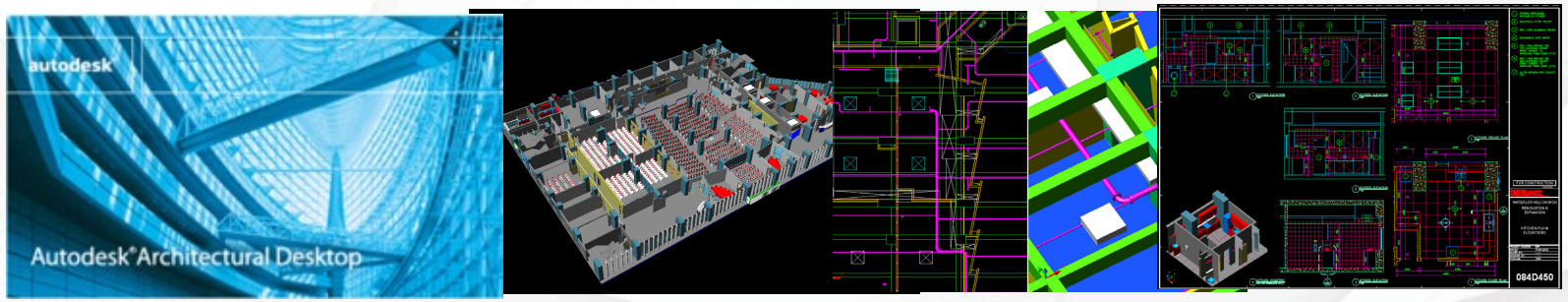
Registered Architect

Managing Director, A.C.I.D.

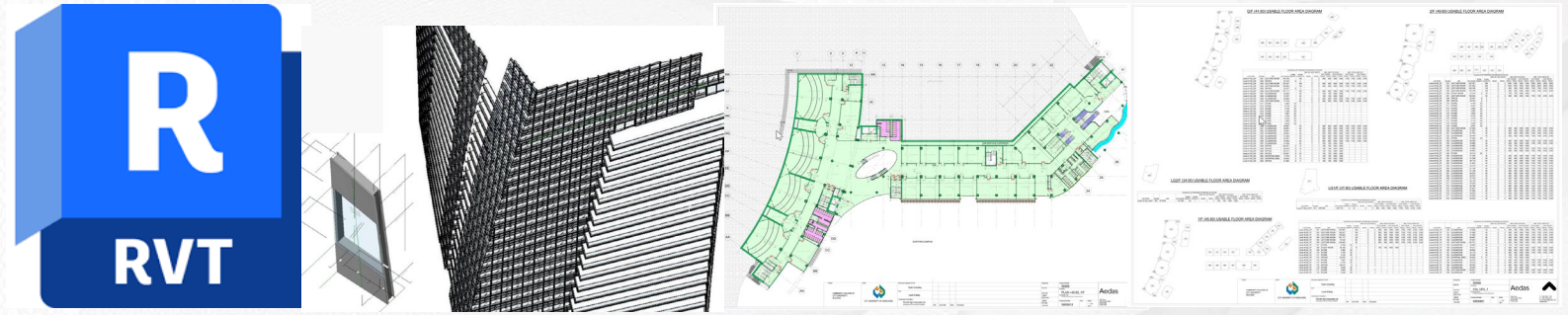
1998 **Triforma**



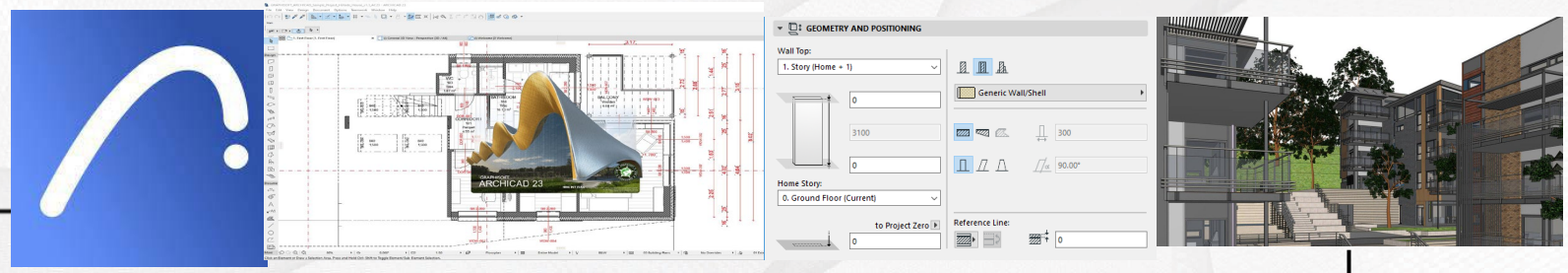
2001 **Architectural Desktop**



2005 **Revit**



2020 **ArchiCAD**



- **Long BIM History in HK and worldwide – 30+ years**

3D BIM Model > Drawing Production > Paperless (BIM Model Only) > Automation, AI

(Legal and Contractual)

Reality > Virtual > Reality

(Scanning) (BIM Models) (Real Construction/ Asset)

- **Many Standards – ISO, National, CIC, Organizational, Project Level ……**
- **Many Specific purposes – Design Authoring, Submission, Tender, QTO, 4D, Medical, Civil, Landscaping .....**
- **Many BIM Platforms – Revit, ArchiCAD, Tekla, AecoSim .....**
- **Multi-Collaboration platforms – PMS, CDE, DMS, CQMS, FM, BMS ……**

Result in:

- **Software do NOT talk to each other**
- **Data loss during conversion**
- **Not Backward compatible – e.g. cannot not save as Revit 2020 to Revit 2018**
- **Different disciplines hard to talk**
- **Information Flow interrupted**
- **Upgrade every year?**
- **High digital maintenance cost**
- **Upgrade every year?**
- **Digital Dark Age**

Thus industry needs one open format

- **alliance of construction and facilities management organizations established to standardize processes, workflows and procedures for building information modelling (BIM)**

- **Proactively facilitate with key leaders the active use and promulgation of standards enabling civil infrastructure and building asset data and life-cycle processes to be seamlessly integrated openBIM standards, improving the value achieved from investments in the built environment and enhancing opportunities for growth.**

- **Vision: Sustainable Building Industry**

香港特別行政區政府
The Government of the Hong Kong Special Administrative Region

政府總部
發展局
工務科

香港添馬添美道 2 號
政府總部西翼 18 樓

Works Branch
Development Bureau
Government Secretariat

18/F, West Wing,
Central Government Offices,
2 Tim Mei Avenue, Tamar,
Hong Kong

Ref : DEVB(W) 430/80/01
Group : 2, 5, 6

20 December 2021

Development Bureau
Technical Circular (Works) No. 2/2021

Adoption of Building Information Modelling for Capital Works Projects in Hong Kong

Scope

This Circular sets out the policy and requirements on the adoption of Building Information Modelling (BIM) technology.

2. This Circular applies to works either by government staff, consultants or contractors.

Effective Date

3. This Circular takes effect on **1 January 2022**.

Effect on Existing Circulars and Circular Memoranda

4. This Circular supersedes DEVB TC(W) No. 12/2020.

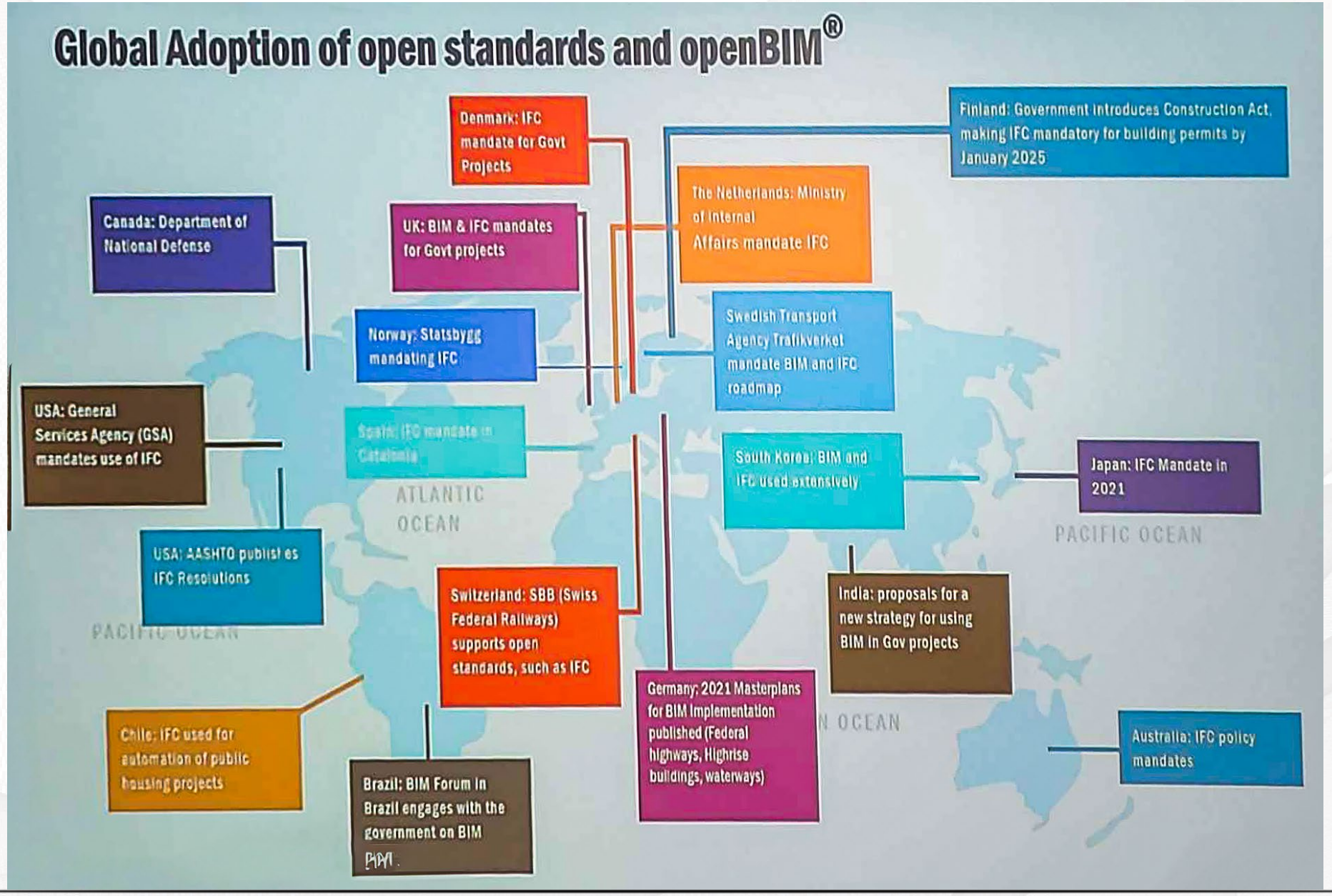
BIM Software

25. Specific brand names and models of BIM software shall not be stated in tender specifications of consultancy agreements and works tenders. Notwithstanding considerations on compatibility, product makes and models should not be specified. WDs shall ensure that tender specifications must be performance and function based to align with the software-neutral policy. An open BIM strategy should be adopted as far as practicable.

Production of Two-Dimensional Drawings

26. The industry used to adopt two-dimensional (2D) Computer Aided Drafting (CAD) drawings and WDs have been following the "CAD Standard for Works Projects (CSWP)" for 2D CAD drawings. For BIM projects, 2D drawings shall be generated from the 3D BIM model. WDs and their engaged consultants/contractors shall cease producing 2D drawings by other platforms if those drawings can be generated from the 3D BIM model. 2D drawings which are generated from the 3D BIM model need not follow CSWP if technically impracticable.


基礎設施與標準 (Infrastructure and standards)
2024年–2025年
顧問研究
屋宇署會委託顧問進行研究，並讓相關持份者參與其中，就全面採用BIM制定技術性框架
按照顧問研究結果和持份者的意見，持續制定和更新BIM的標準和指引
持續推展
「開放式BIM」(openBIM)
研究應用「開放式BIM」標準以及設立核查平台 (checking platform)，作為基礎支援套件的開發



Source: buildingSmart International

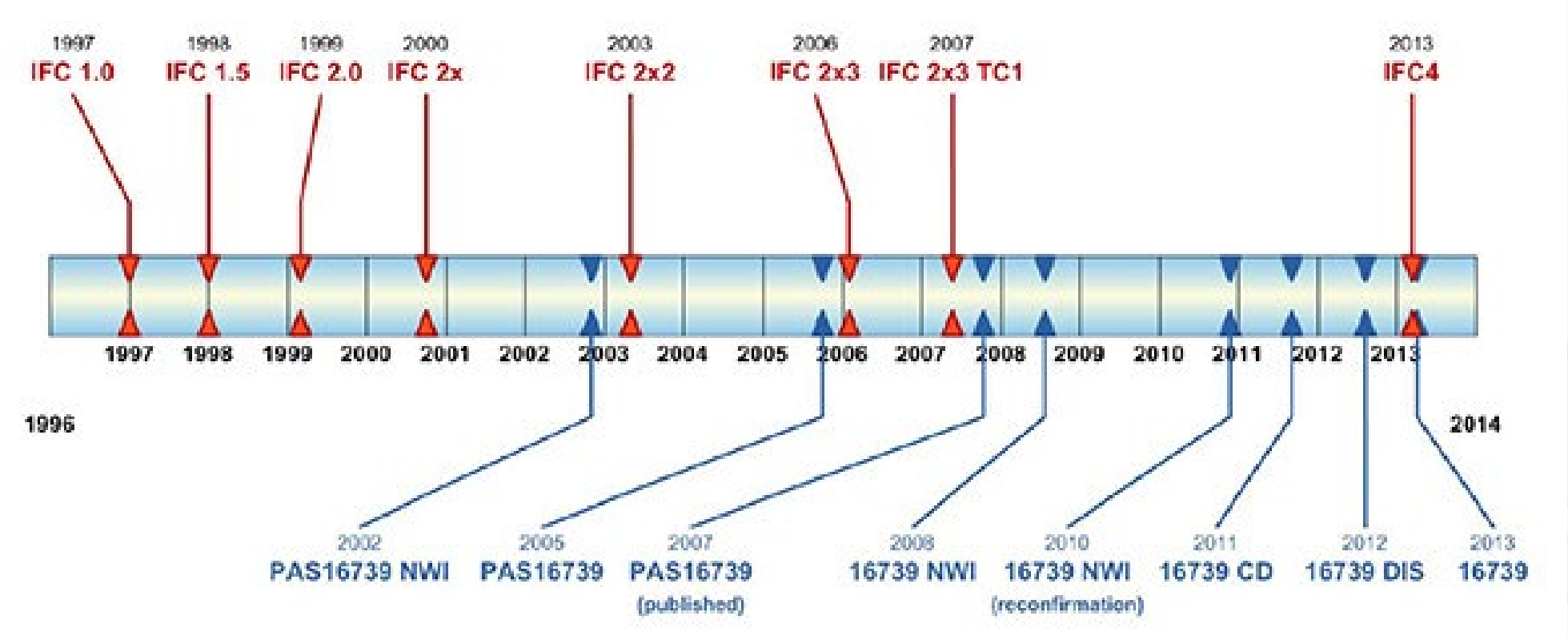
	BIM Use	Investigation, Feasibility and Planning	Design	Construction
1	Design Authoring	M[h]	M	M
2	Design Reviews	M[h]	M	M
3	Existing Conditions Modelling	M[i]	M	M
4	Site Analysis	M[i]	M	
5	3D Coordination		M	M
6	Cost Estimation	O	M[a]	M[b]
7	Engineering Analysis		M[l]	M[l]
8	Facility Energy Analysis		O	O
9	Sustainability Evaluation	O	M[j]	M[j]
10	Space Programming	O	M[c]	
11	Phase Planning (4D Modelling)		M[d]	M
12	Digital Fabrication		M[k]	M[e]
13	Site Utilization Planning			M[f]
14	3D Control and Planning			M[m]
15	As-Built Modelling			M
16	Project Systems Analysis			O
17	Maintenance Scheduling			M[g]
18	Space Management and Tracking			O
19	Asset Management			M[n]
20	Drawing Generation (Drawing Production)		M	M

Different Design Phases

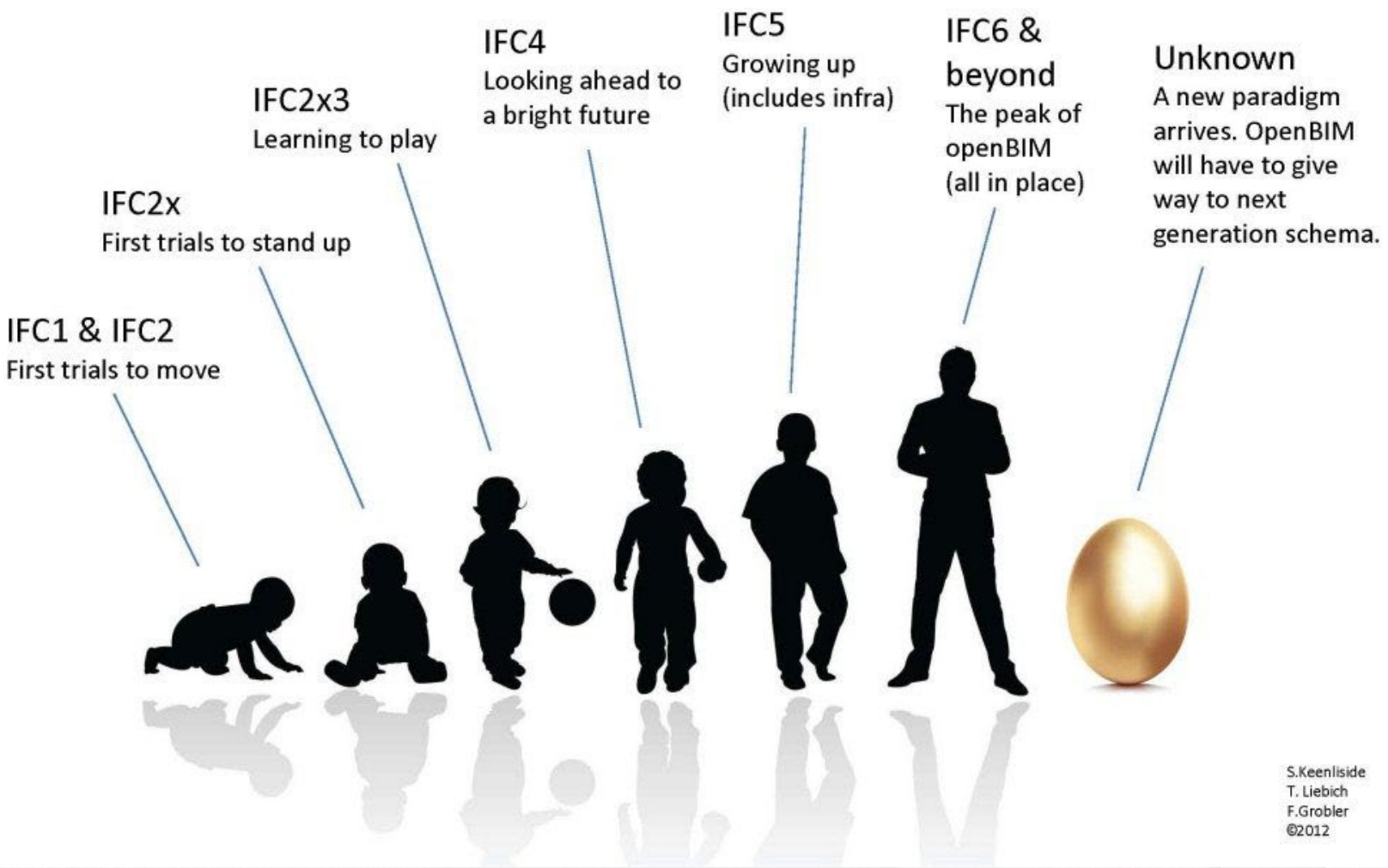
Different Disciplines

Production

IFC has been in development by an industry consortium since 1994



IFC – Levels of Maturity



What is “openBIM”?

Software Support – 37+ International Vendors, 50+ Applications

OPEN BIM™

- … a universal approach to the collaborative design, realization and operation of buildings based on open standards and workflows (ref BuildingSMART, Technical vision)
- allows project team members to participate in building information modelling (BIM) regardless of software tools they use.
- a transparent and collaborative open workflow, creates a common language for widely referenced processes, and provides enduring project data for use throughout the asset life-cycle.
- Open BIM allows building information modelling to focus on workflow compatibility rather than the data compatibility and means that project team members can be selected based on their capability rather than their use of a particular brand of software. As a result, team members can use the software that best suits their needs, and are better able to retain control over their own design data while still being able to collaborate with others.
- It also means that smaller software vendors are better able to compete with larger vendors.

- OPEN BIM supports a transparent, open workflow, allowing project members to participate regardless of the software tools they use.
- OPEN BIM creates a common language for widely referenced processes, allowing industry and government to procure projects with transparent commercial engagement, comparable service evaluation and assured data quality.
- OPEN BIM provides enduring project data for use throughout the asset life--cycle, avoiding multiple input of the same data and consequential errors.
- Small and large (platform) software vendors can participate and compete on system independent, 'best of breed' solutions.
- OPEN BIM energizes the online product supply side with more exact user demand searches and delivers the product data directly into the BIM.

- **OpenBIM <> Conversion**

nor

- **Revit > ArchiCAD**

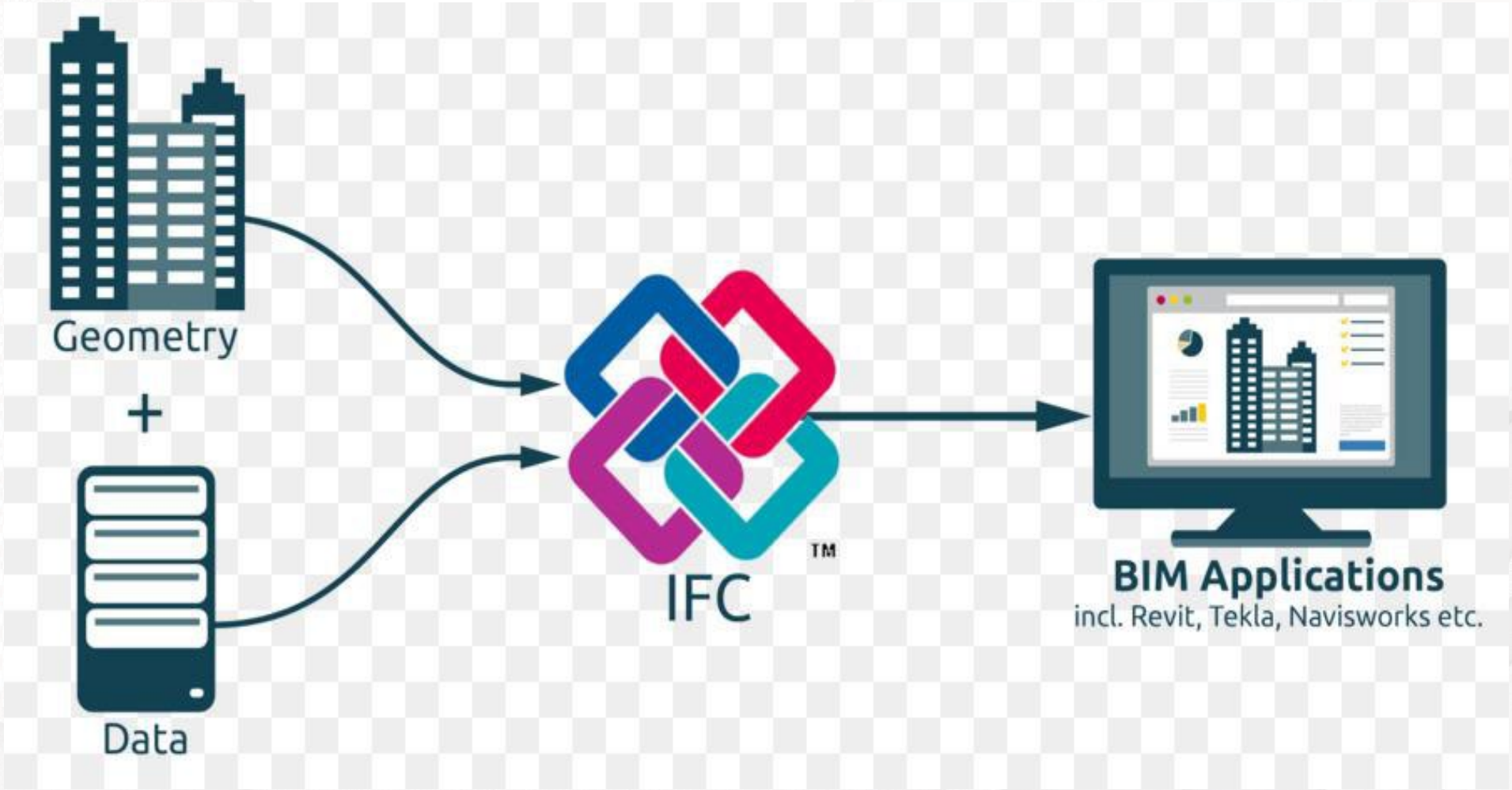
nor

- **Tekla > AecoSIM**

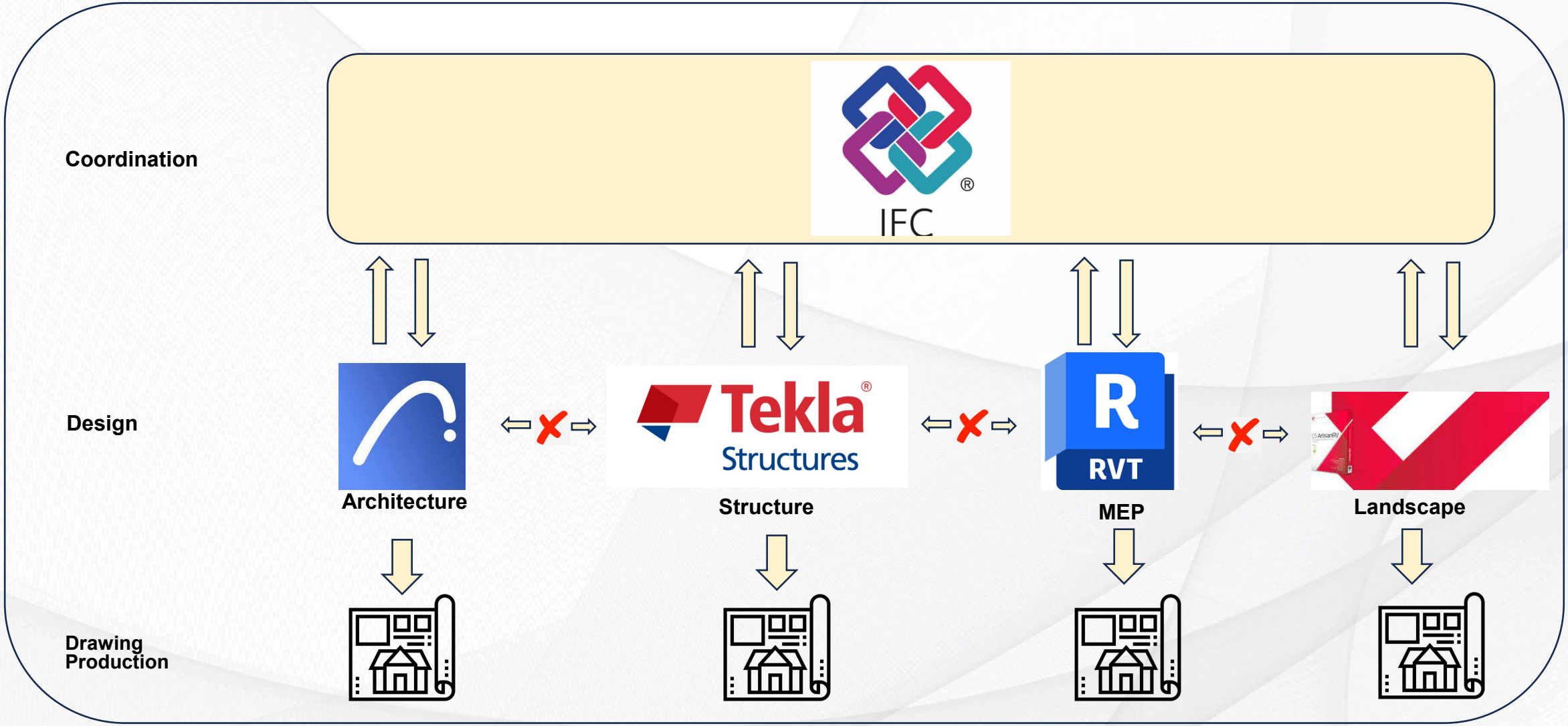
- **…….**

2023 ASD Project

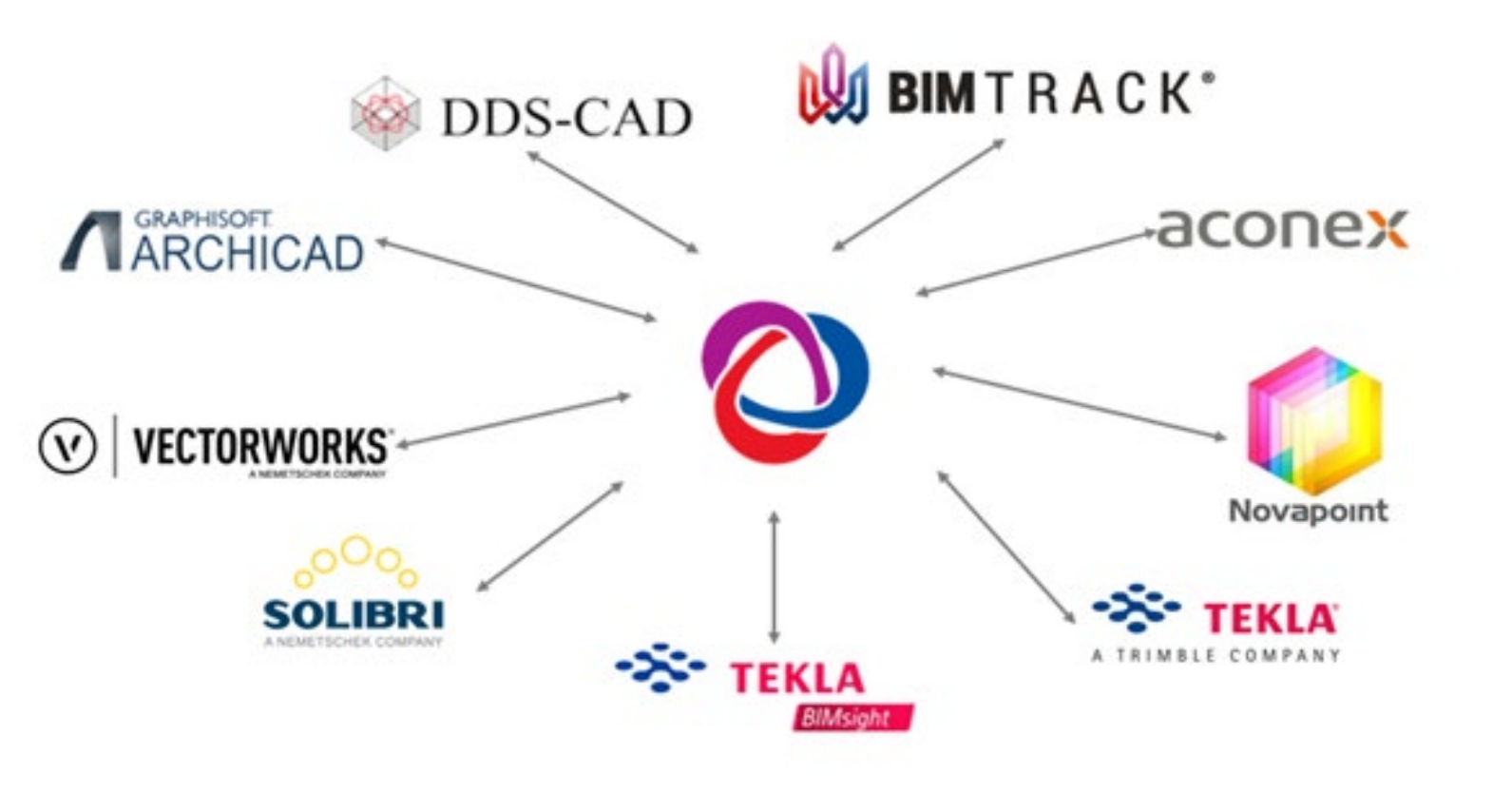
Architecture	ArchiCAD
Structure	Tekla
MEP	Revit
Landscape	Revit/ ArchiCAD
Common Data Environment	Trimble Connect


Geometry
+
Data
IFC
™
BIM Applications
incl. Revit, Tekla, Navisworks etc.

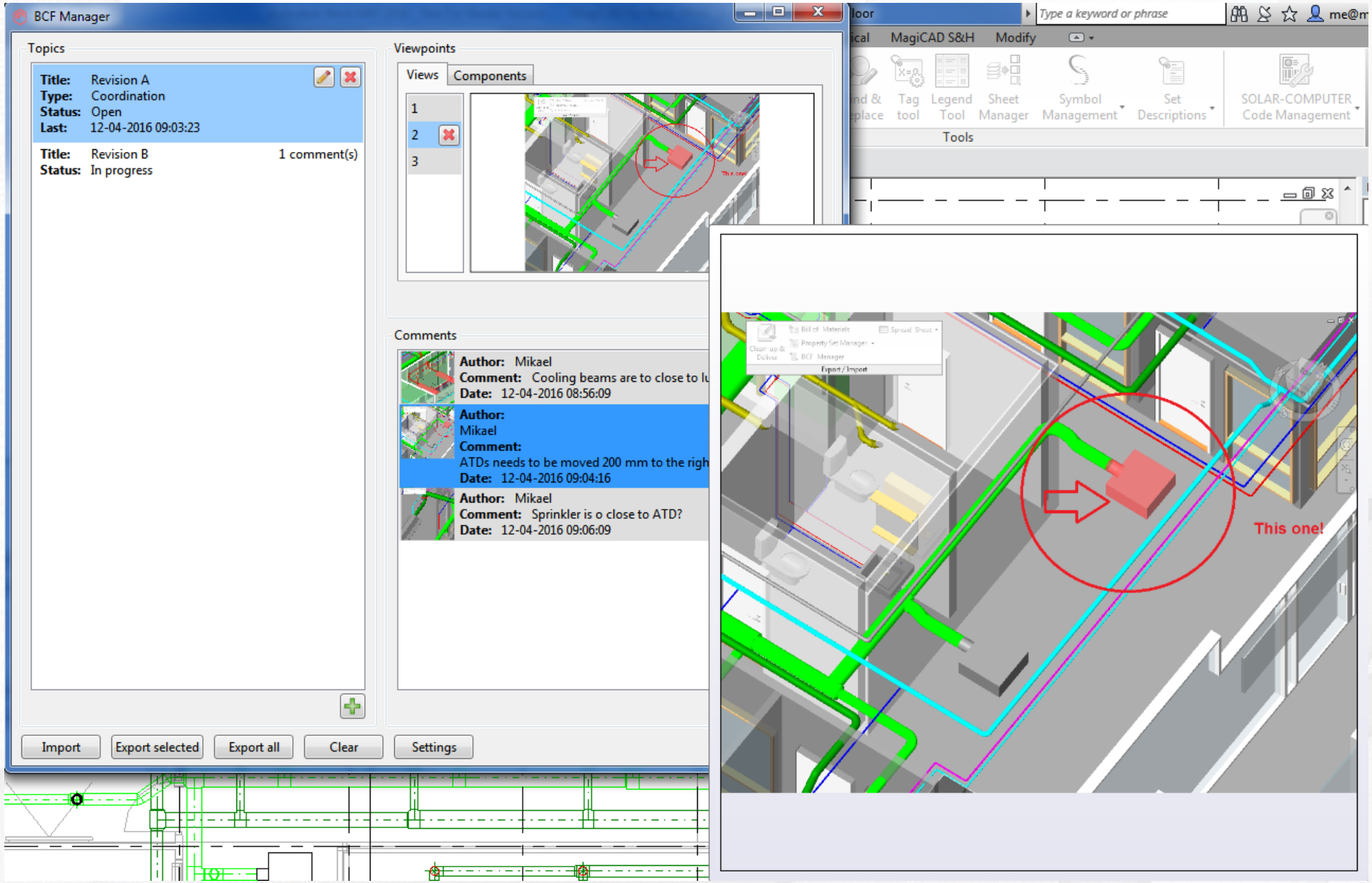
Trimble Connect



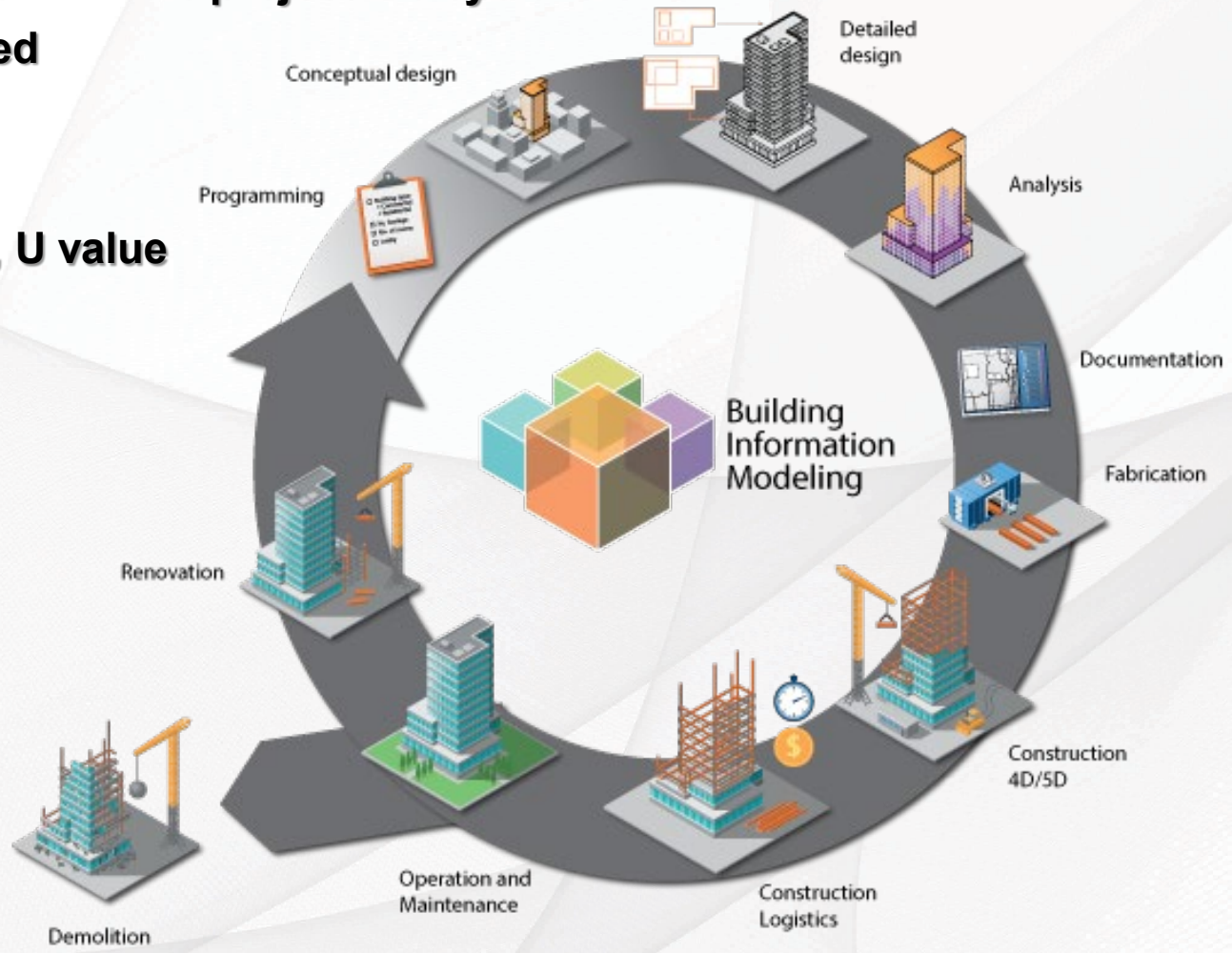
- **BCF – BIM Collaboration Format: Track, Identify and resolves issues**
- **Communicate model-based issues with each other**

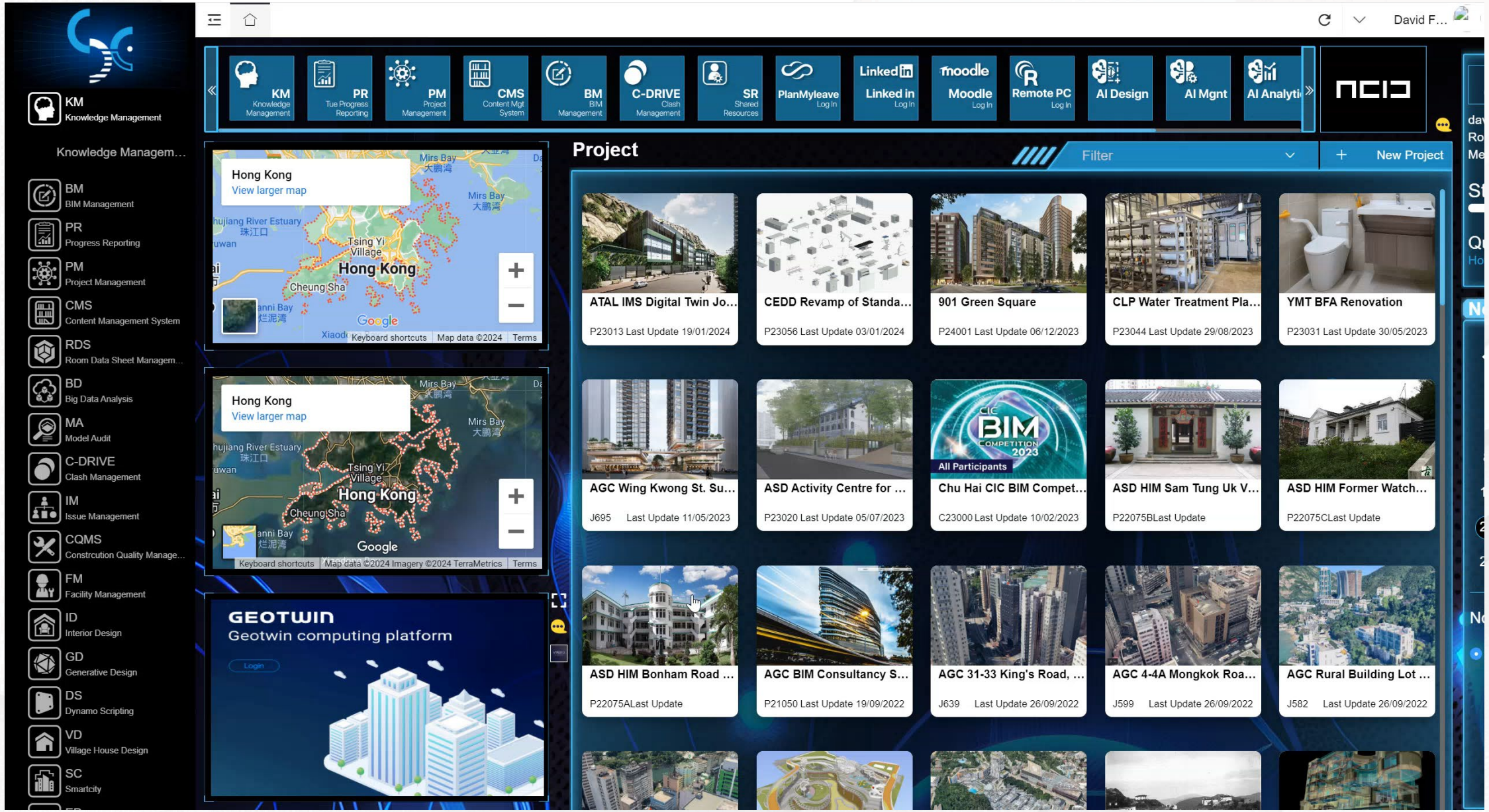


https://bimtrack.co/blog/blog-posts/what-is-a-bcf


BCF Manager
Topics
Title: Revision A
Type: Coordination
Status: Open
Last: 12-04-2016 09:03:23
Title: Revision B
1 comment(s)
Status: In progress
Viewpoints
Views
Components
1
2
3
Comments
Author: Mikael
Comment: Cooling beams are to close to lu
Date: 12-04-2016 08:56:09
Author:
Mikael
Comment:
ATDs needs to be moved 200 mm to the righ
Date: 12-04-2016 09:04:16
Author: Mikael
Comment: Sprinkler is o close to ATD?
Date: 12-04-2016 09:06:09
Import
Export selected
Export all
Clear
Settings
MagiCAD S&H
Modify
Tag tool
Legend Tool
Sheet Manager
Symbol Management
Set Descriptions
SOLAR-COMPUTER Code Management
Tools
This one!

- > Client documents requirement in data base in whole project life cycle
- > design Consultant design according to need
- > Objects from project Library
- > Design Authoring software
- > Input Information eg. Dimension, material, U value
- > Design Production
- > Coordinate disciplines, cost, environment
- > Authority Approval
- > Construction
- > Product Vendor best offer
- > Information to site
- > Facility Manager > handheld devices
- > repair > all information available




KM
Knowledge Management
Knowledge Managem…
BM
BIM Management
PR
Progress Reporting
PM
Project Management
CMS
Content Management System
RDS
Room Data Sheet Managem…
BD
Big Data Analysis
MA
Model Audit
C-DRIVE
Clash Management
IM
Issue Management
CQMS
Constrcution Quality Manage…
FM
Facility Management
ID
Interior Design
GD
Generative Design
DS
Dynamo Scripting
VD
Village House Design
SC
Smartcity
KM Knowledge Management
PR Tue Progress Reporting
PM Project Management
CMS Content Mgt System
BM BIM Management
C-DRIVE Clash Management
SR Shared Resources
PlanMyleave Log In
Linked in Log In
Moodle Log In
Remote PC Log In
AI Design
AI Mgnt
AI Analyti
David F…
Hong Kong
View larger map
Mirs Bay
大鹏湾
Tsing Yi
Village
Hong Kong
Cheung Sha
Google
Keyboard shortcuts
Map data ©2024
Terms
Map data ©2024 Imagery ©2024 TerraMetrics
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Geotwin computing platform
Login
Project
Filter
New Project
ATAL IMS Digital Twin Jo…
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CEDD Revamp of Standa…
P23056 Last Update 03/01/2024
901 Green Square
P24001 Last Update 06/12/2023
CLP Water Treatment Pla…
P23044 Last Update 29/08/2023
YMT BFA Renovation
P23031 Last Update 30/05/2023
AGC Wing Kwong St. Su…
J695 Last Update 11/05/2023
ASD Activity Centre for …
P23020 Last Update 05/07/2023
CIC BIM COMPETITION 2023
All Participants
Chu Hai CIC BIM Compet…
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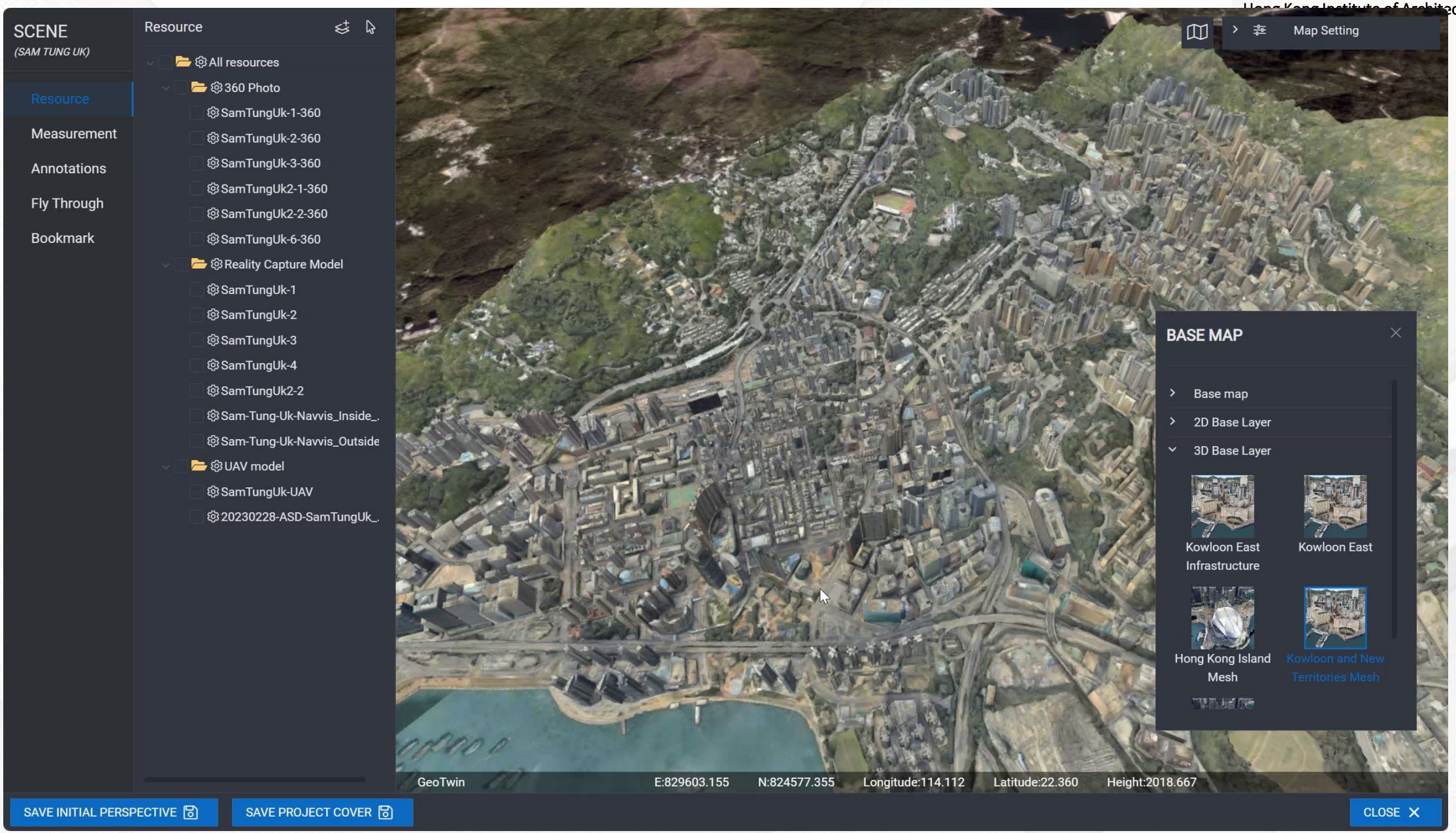
P22075ALast Update
AGC BIM Consultancy S…
P21050 Last Update 19/09/2022
AGC 31-33 King's Road, …
J639 Last Update 26/09/2022
AGC 4-4A Mongkok Roa…
J599 Last Update 26/09/2022
AGC Rural Building Lot …
J582 Last Update 26/09/2022


BASE MAP
Kowloon East Infrastructure
Kowloon East
Hong Kong Island Mesh
Kowloon and New Territories Mesh
Hong Kong Building Block
3D
836045.605, 817822.803, 32.298
GeoTwin
E:835901.941
N:817729.593
Longitude:114.173
Latitude:22.298
Height:96.323


SCENE
(SAM TUNG UK)
Resource
Measurement
Annotations
Fly Through
Bookmark
Resource
All resources
360 Photo
SamTungUk-1-360
SamTungUk-2-360
SamTungUk-3-360
SamTungUk2-1-360
SamTungUk2-2-360
SamTungUk-6-360
Reality Capture Model
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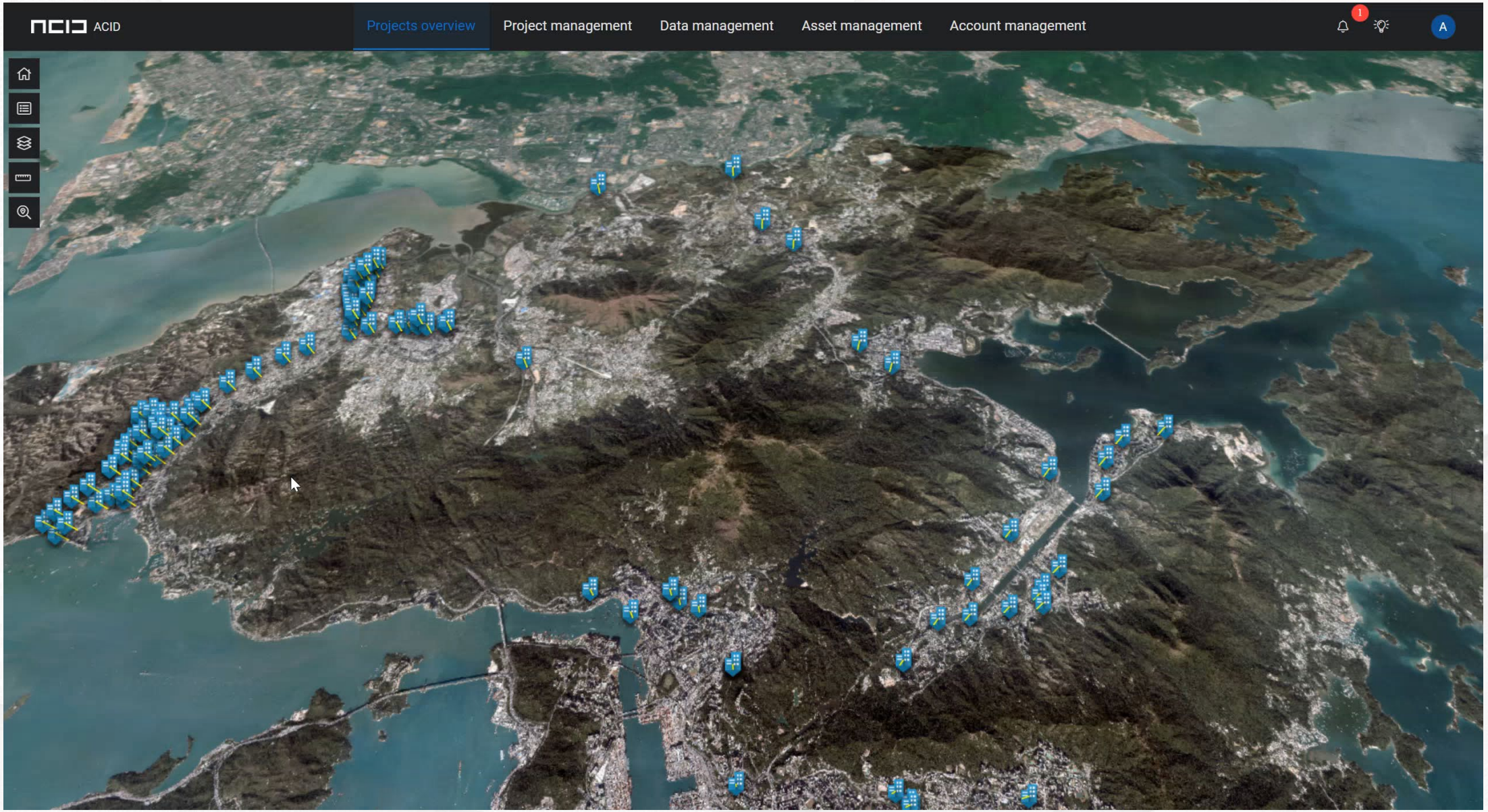
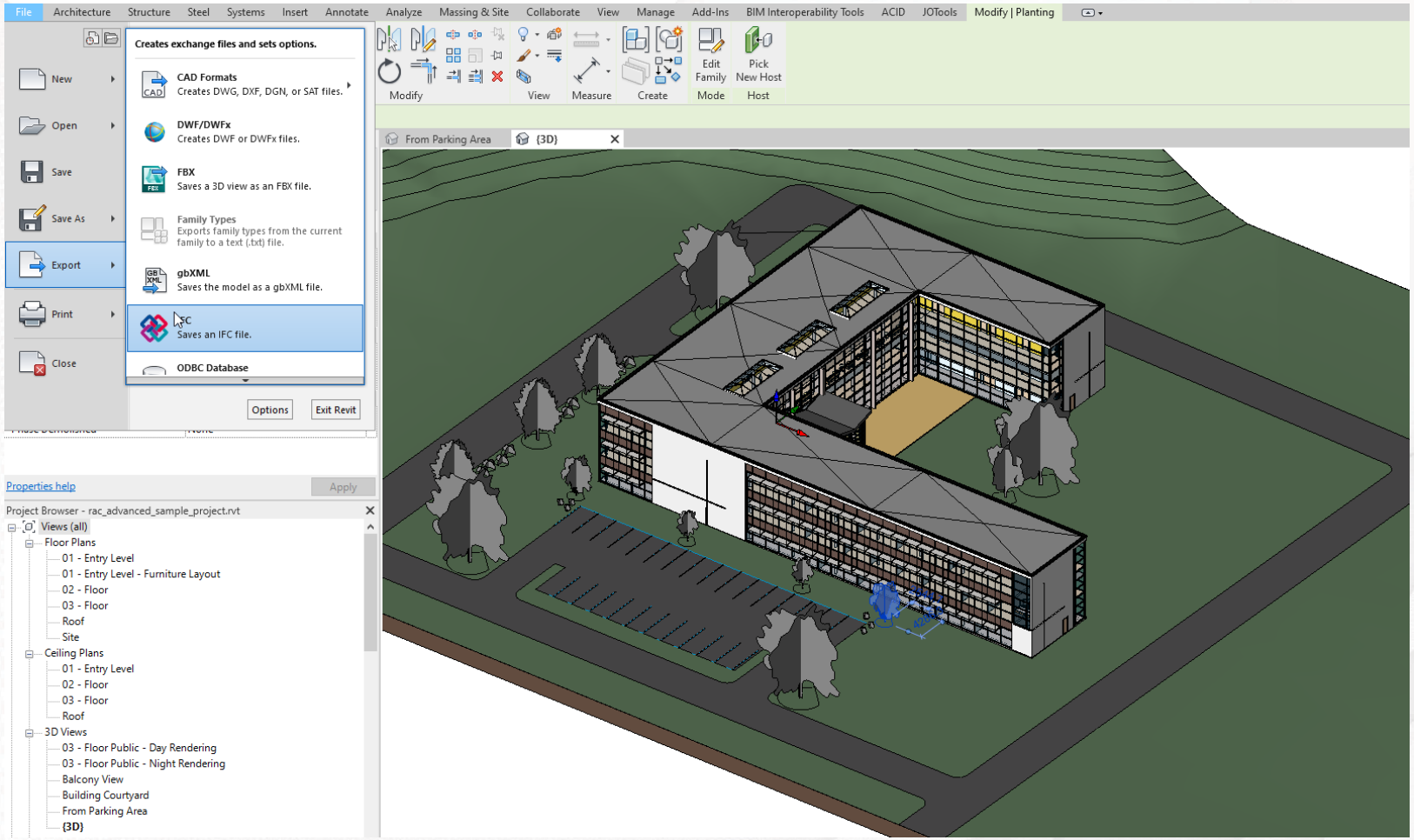
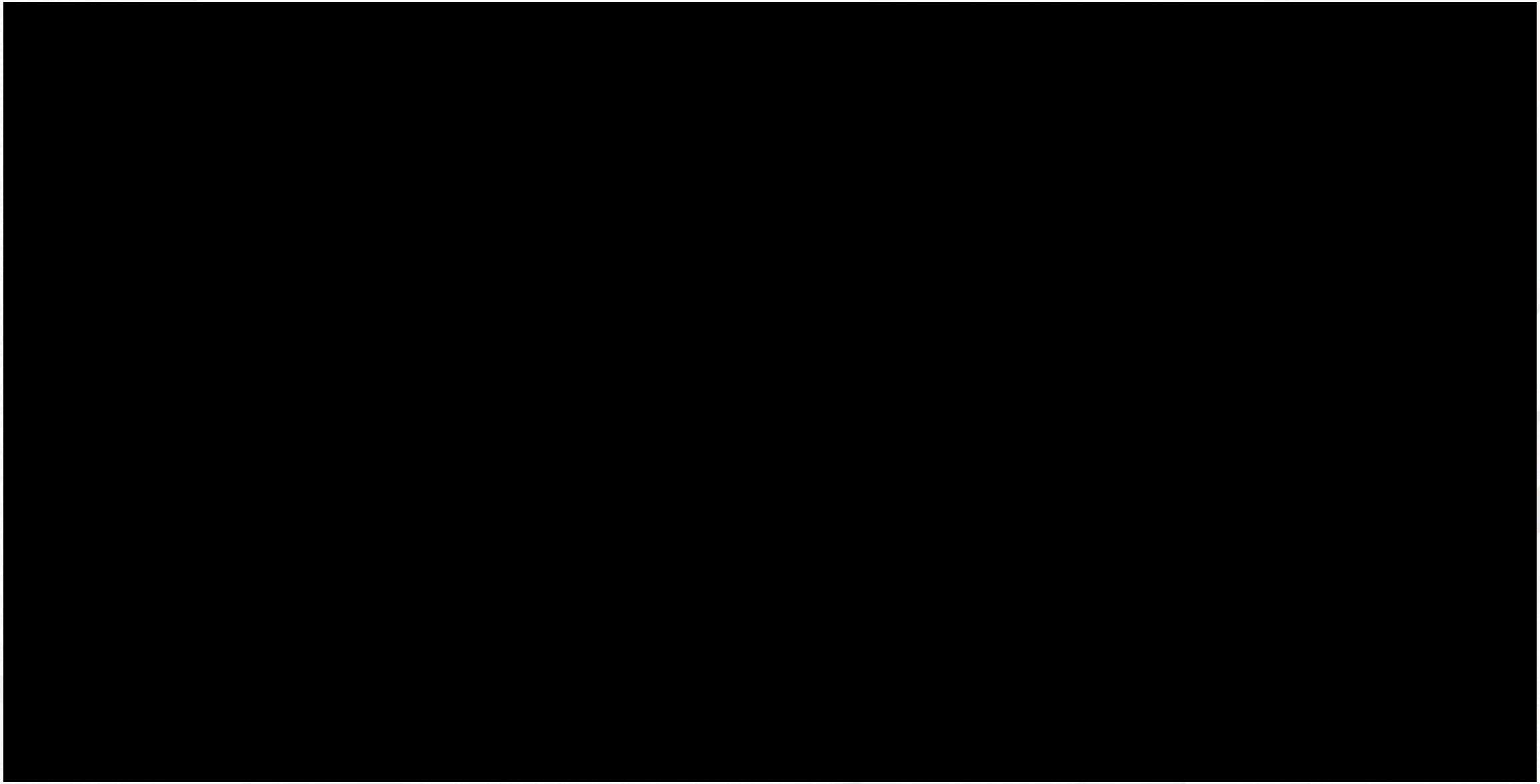
SamTungUk-2
SamTungUk-3
SamTungUk-4
SamTungUk2-2
Sam-Tung-Uk-Navvis_Inside_.
Sam-Tung-Uk-Navvis_Outside
UAV model
SamTungUk-UAV
20230228-ASD-SamTungUk_.
Map Setting
BASE MAP
Base map
2D Base Layer
3D Base Layer
Kowloon East Infrastructure
Kowloon East
Hong Kong Island Mesh
Kowloon and New Territories Mesh
GeoTwin
E:829603.155
N:824577.355
Longitude:114.112
Latitude:22.360
Height:2018.667
SAVE INITIAL PERSPECTIVE
SAVE PROJECT COVER
CLOSE


ACID
Projects overview
Project management
Data management
Asset management
Account management
1
A

C Viewer

OpenBIM Software





openBIM viewer – Model + Standardized Information

Statutory Approval in ……. ONE Second

Source: ACCA Software

e-Submission common guideline for introduce BIM to building process

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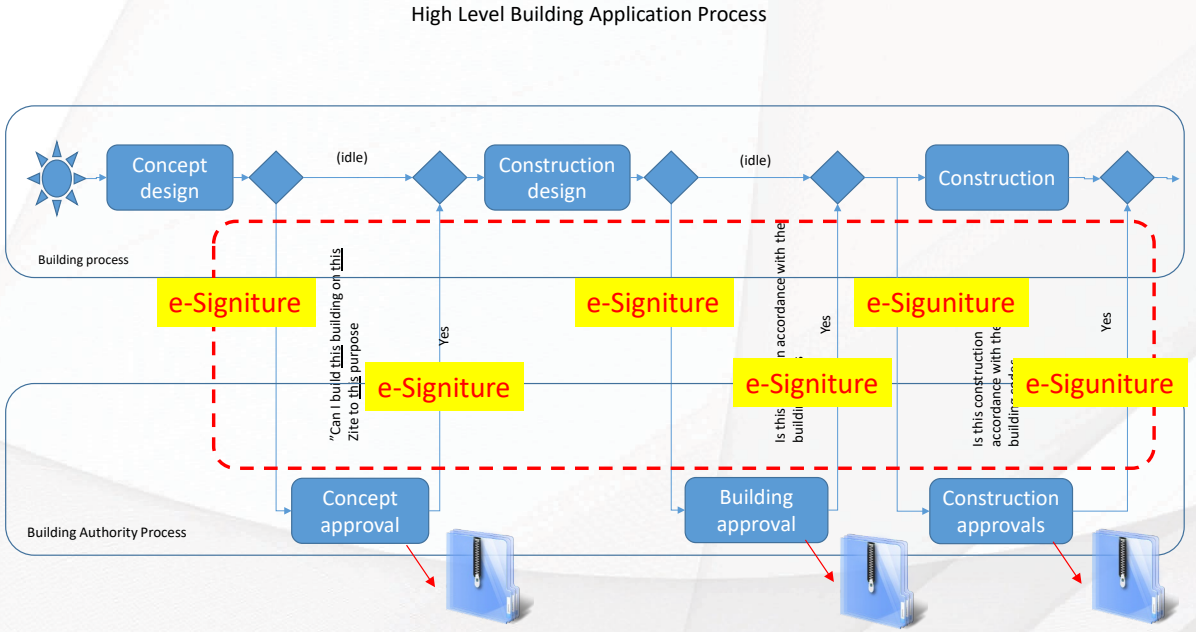
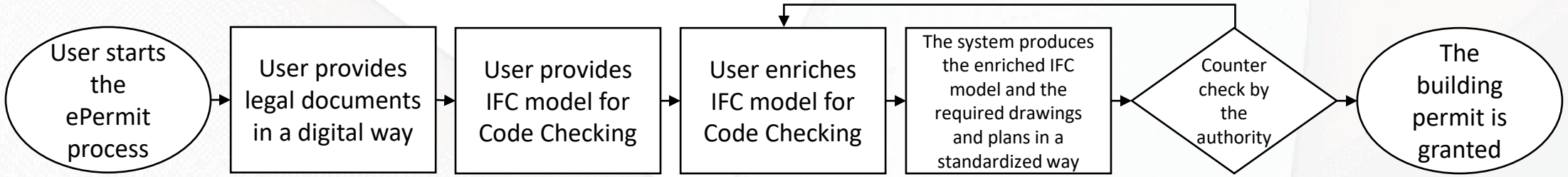


a) Establish e-submission platform
b) Initiation of BIM to paperless process as trial
c) Adaptation of guideline of preparing BIM model for submission
d) Step by step mandatory e-submission
e) Seeking further efficiency

openBIM ePermit and Code Checking

Building ePermit simplified process:

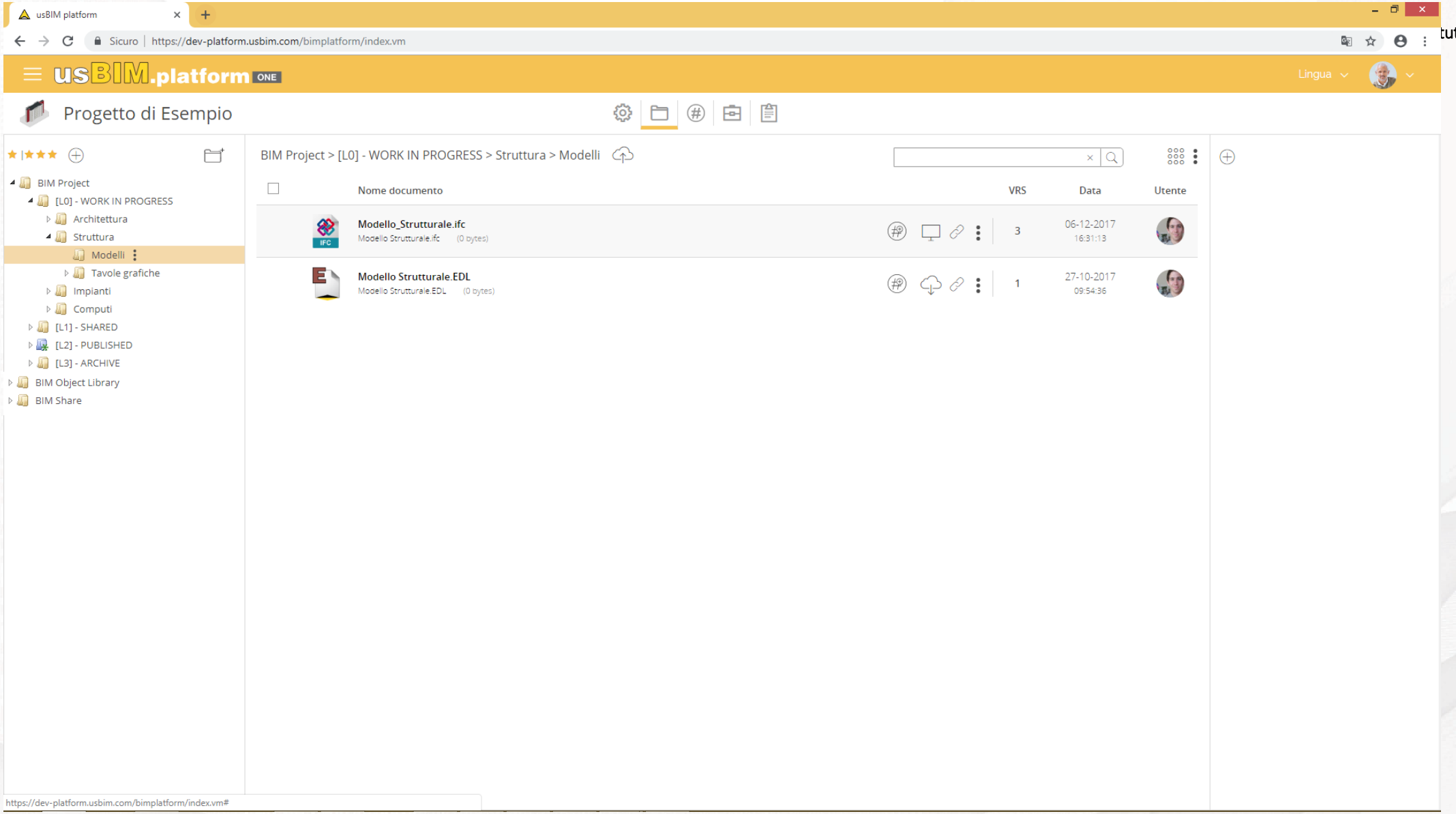


Keypoints:

- **All the data will be exchanged using open formats**
- **All the data will be gathered in one single place, where also the communication between the actors will occur**

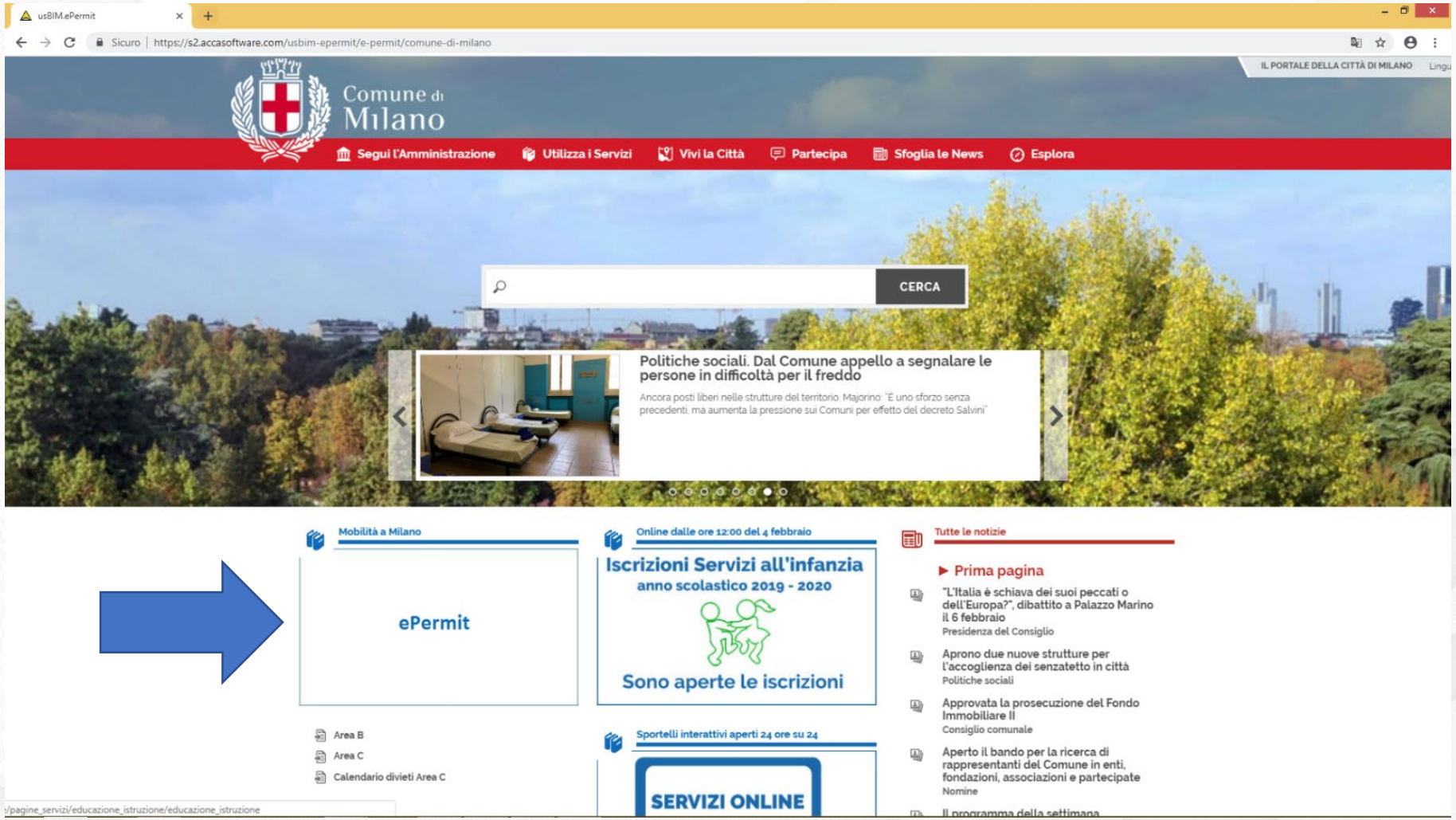
This means that it will be easy to combine all the available open data and make further analysis and it will be evidence of how useful the open formats really are

The keypoints aims to give an **EVOLUTION** of the current process and procedures rather than a REVOLUTION from the actors point of view, using tools and instruments already available today



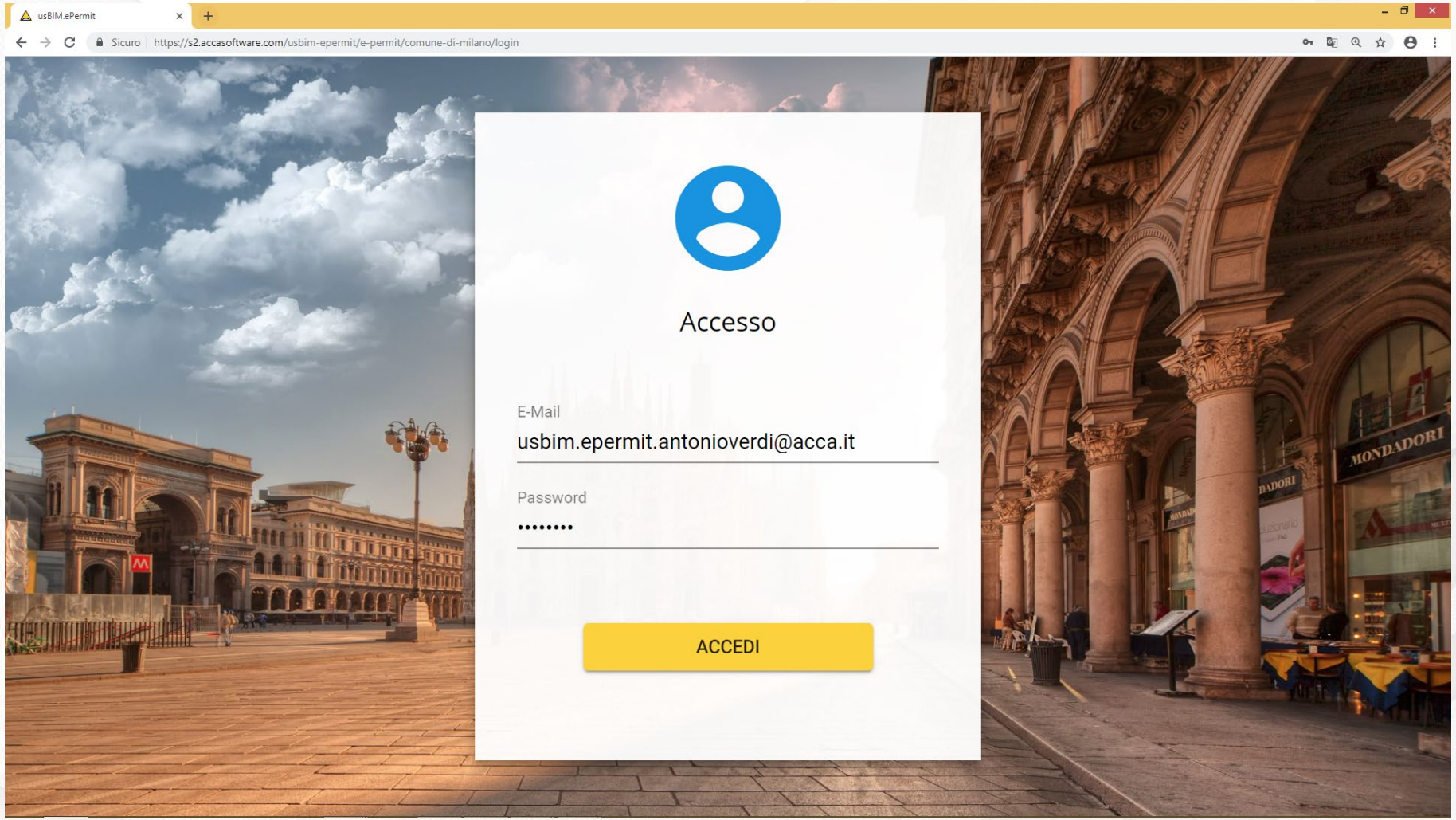
tute of Architects

User starts the ePermit process

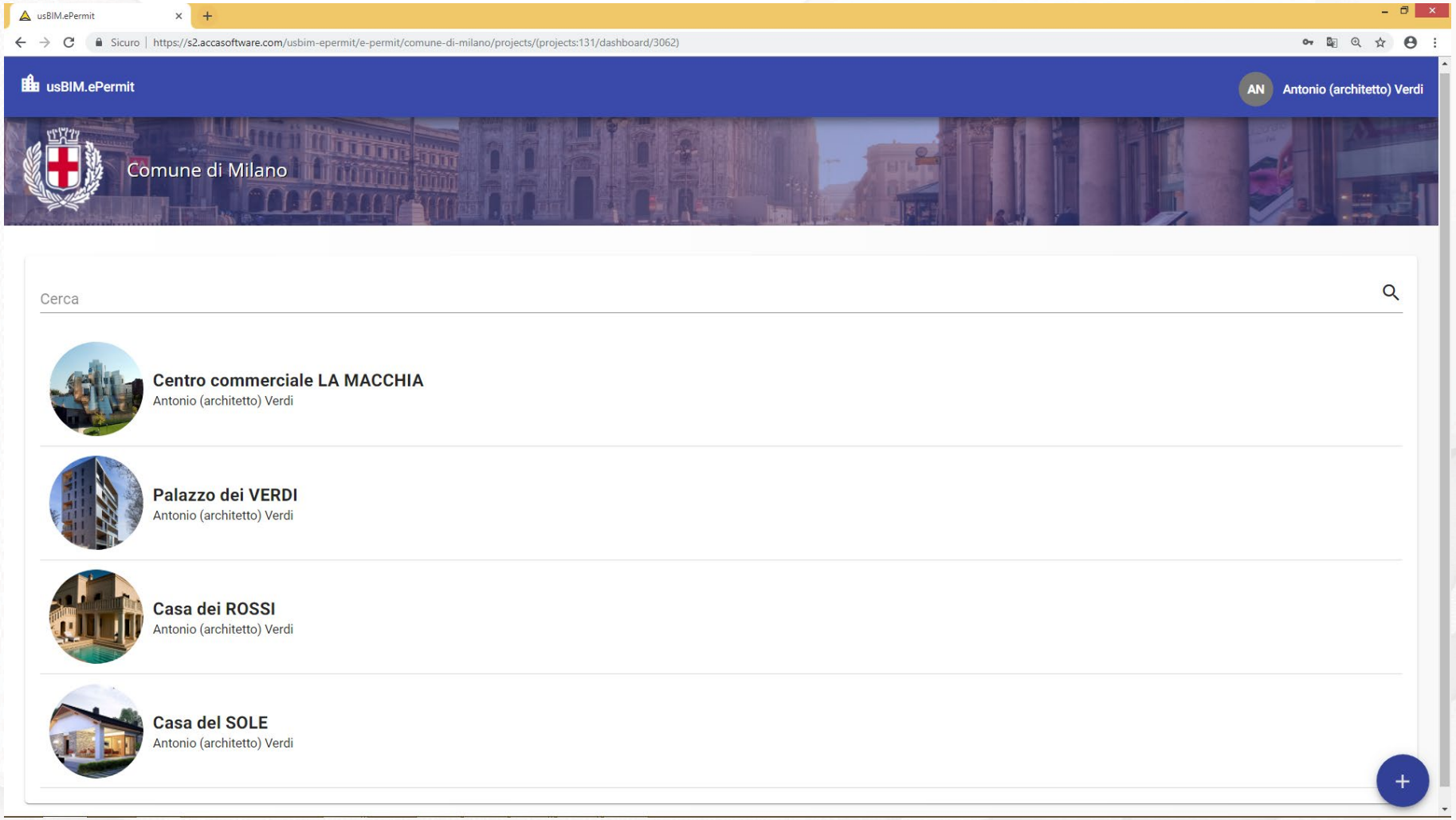


User starts the ePermit process → User provides legal documents in a digital way → User provides IFC model for Code Checking

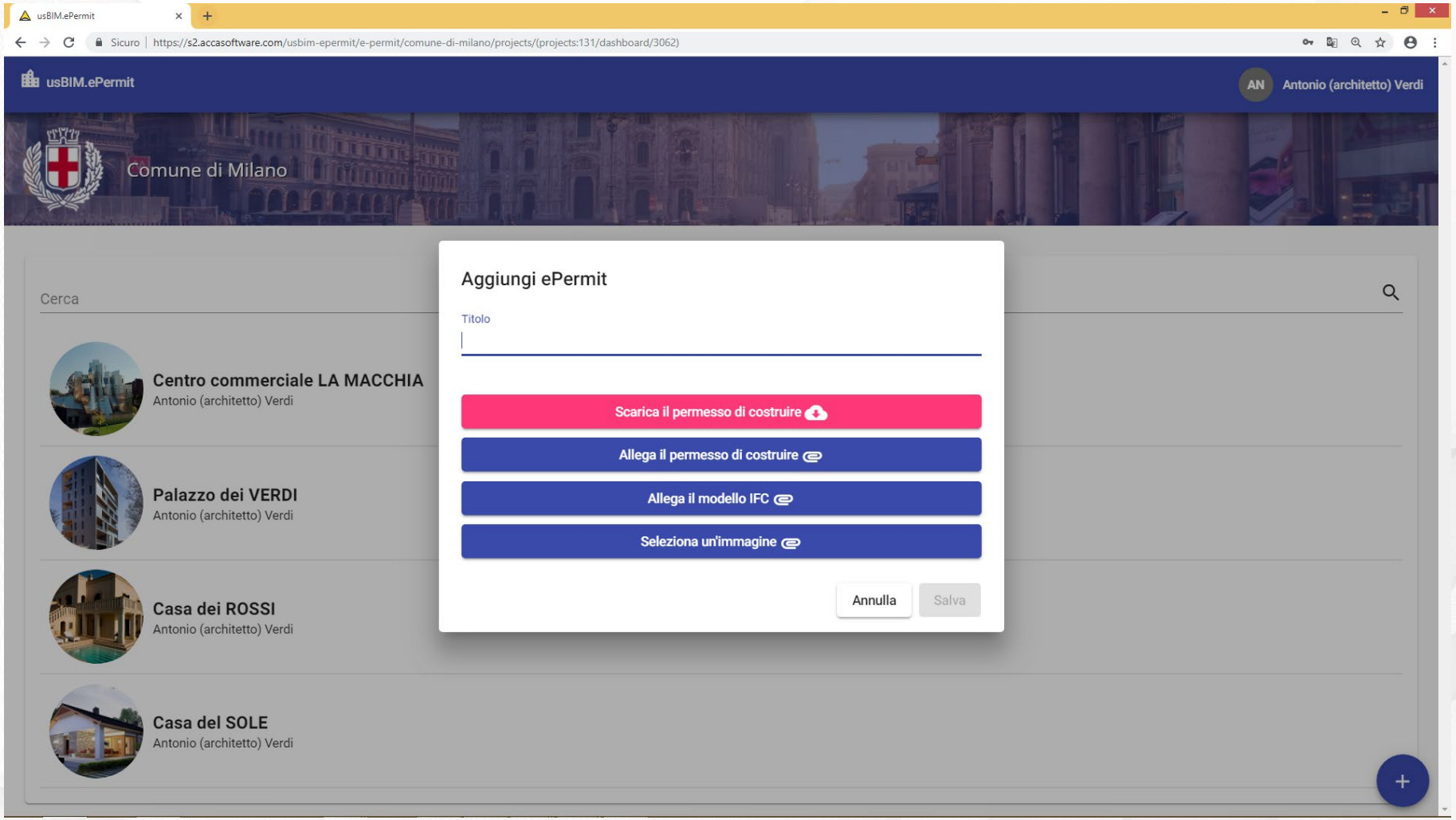
User login


usBIM.ePermit
Sicuro | https://s2.accasoftware.com/usbim-epermit/e-permit/comune-di-milano/login
Accesso
E-Mail
usbim.epermit.antonioverdi@acca.it
Password
ACCEDI
MONDADORI

User panel

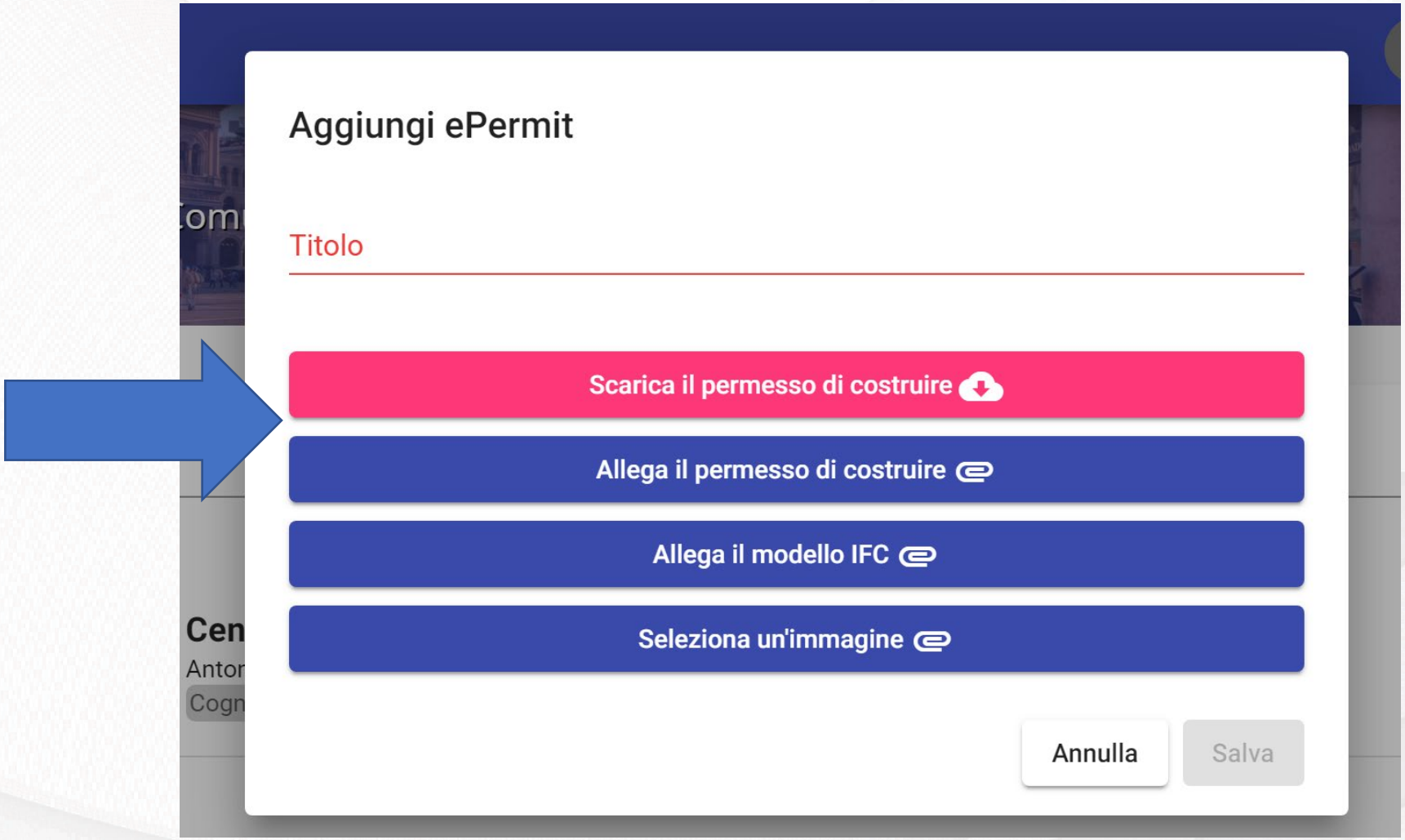

usBIM.ePermit
Sicuro | https://s2.accasoftware.com/usbim-epermit/e-permit/comune-di-milano/projects/(projects:131/dashboard/3062)
usBIM.ePermit
AN
Antonio (architetto) Verdi
Comune di Milano
Cerca
Centro commerciale LA MACCHIA
Antonio (architetto) Verdi
Palazzo dei VERDI
Antonio (architetto) Verdi
Casa dei ROSSI
Antonio (architetto) Verdi
Casa del SOLE
Antonio (architetto) Verdi

User provides legal documents in a digital way

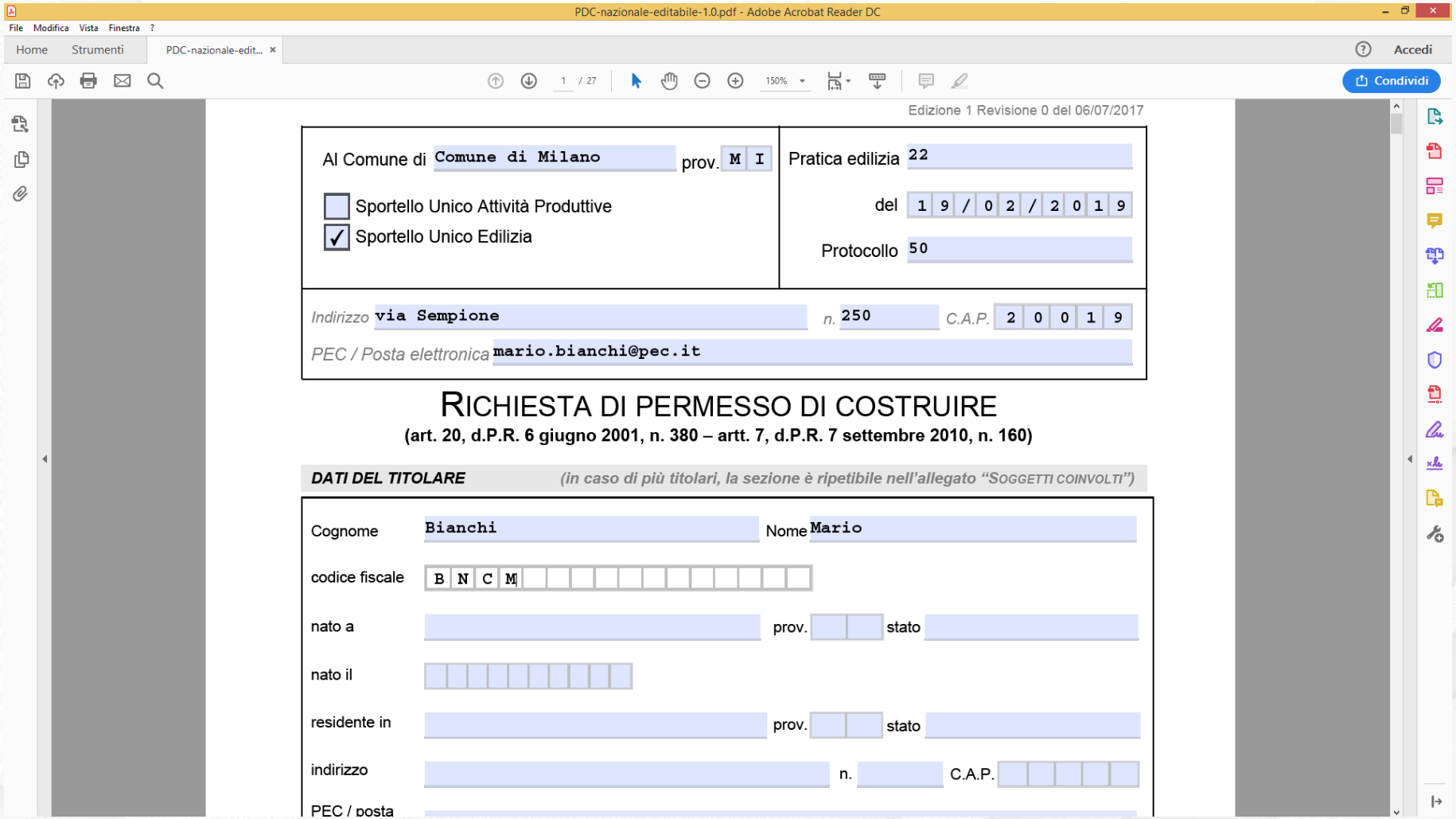


User starts the ePermit process → **User provides legal documents in a digital way** → User provides IFC model for Code Checking

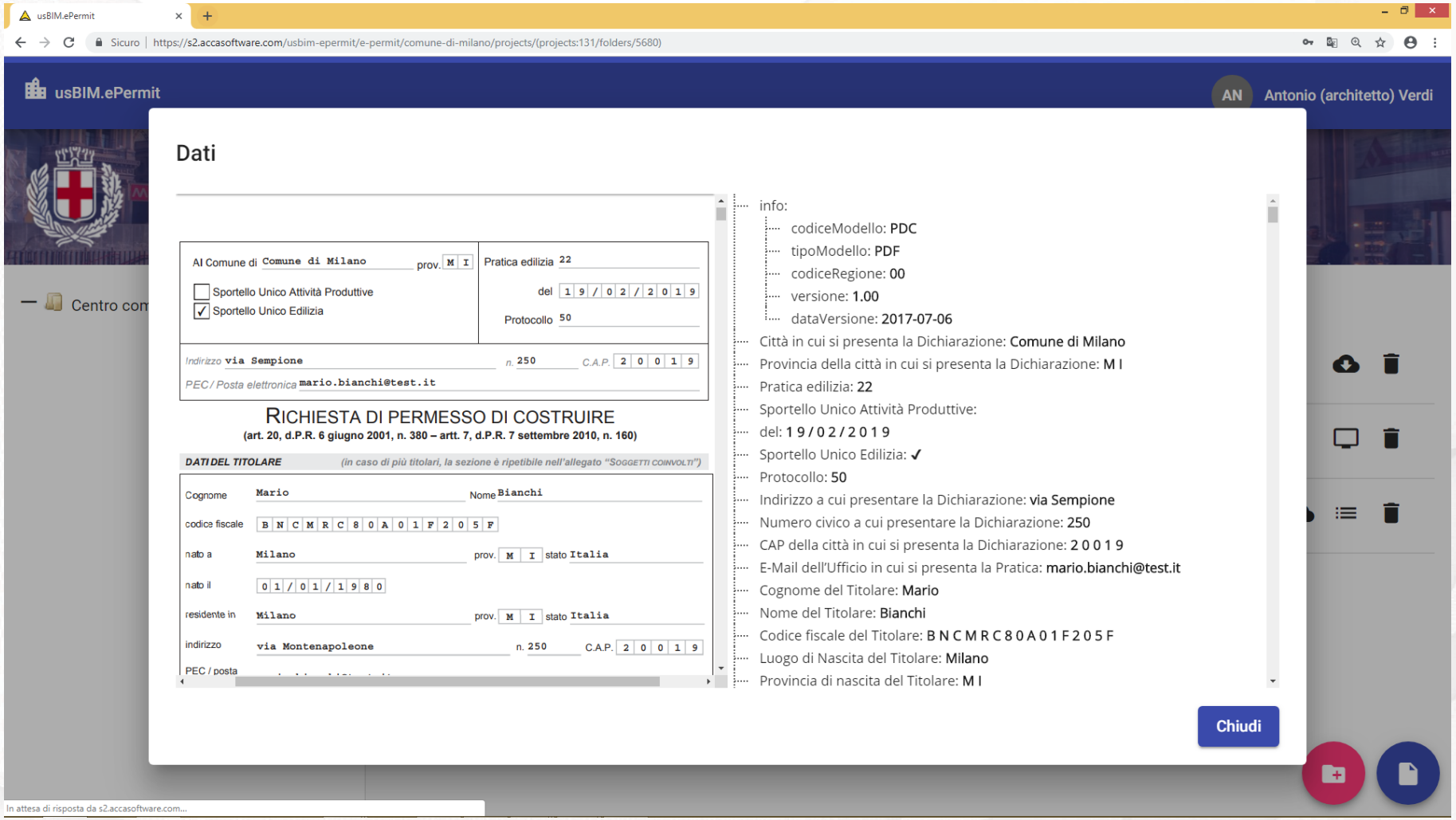
User provides legal documents in a digital way



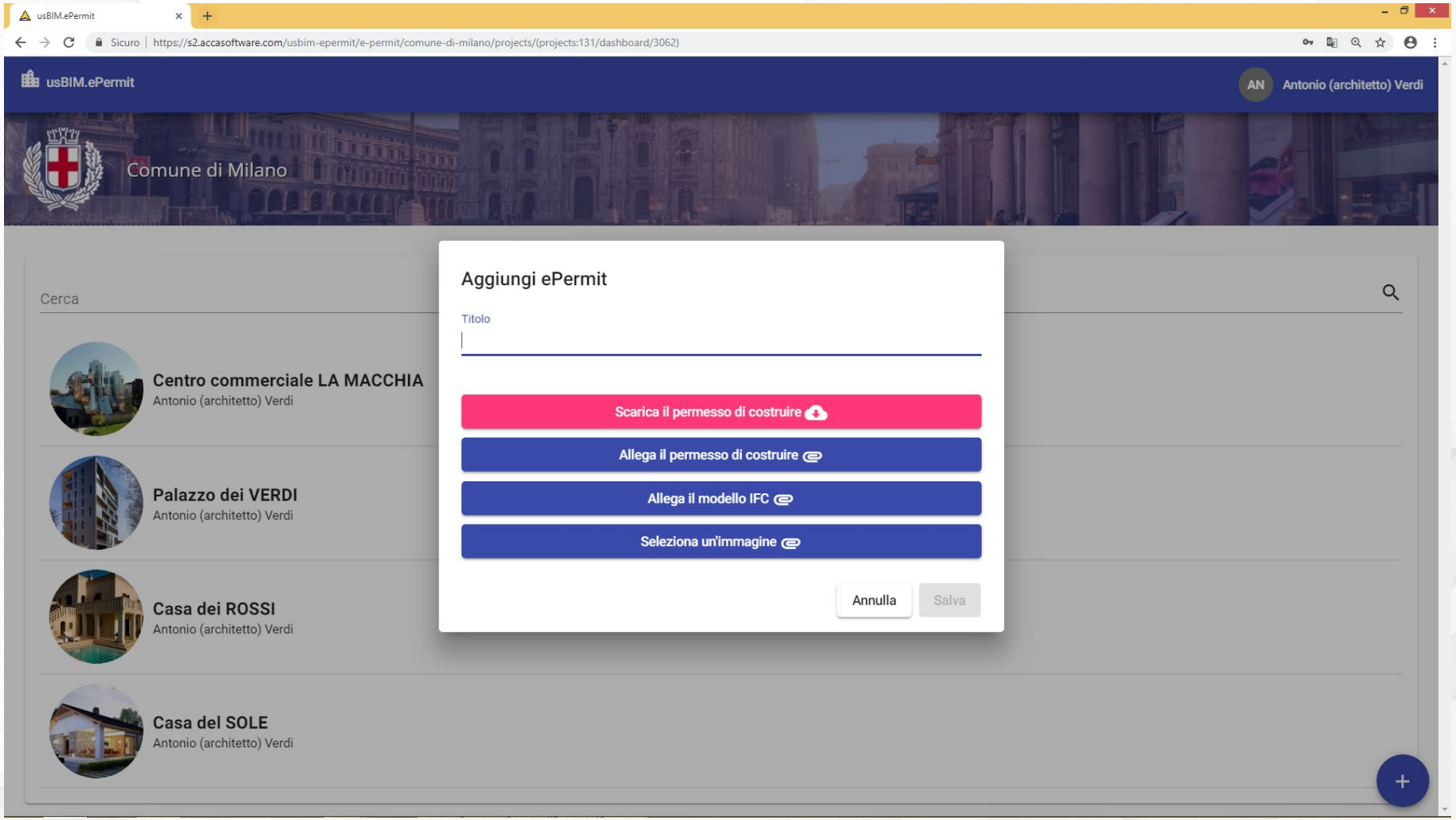
National standardized PDF model filling



National standardized PDF model data extraction



IFC model upload



User provides legal documents in a digital way → **User provides IFC model for Code Checking** → User enriches IFC model for Code Checking

IFC model upload

Code Checking in IFC (in theory)

MILAN Buidling Code

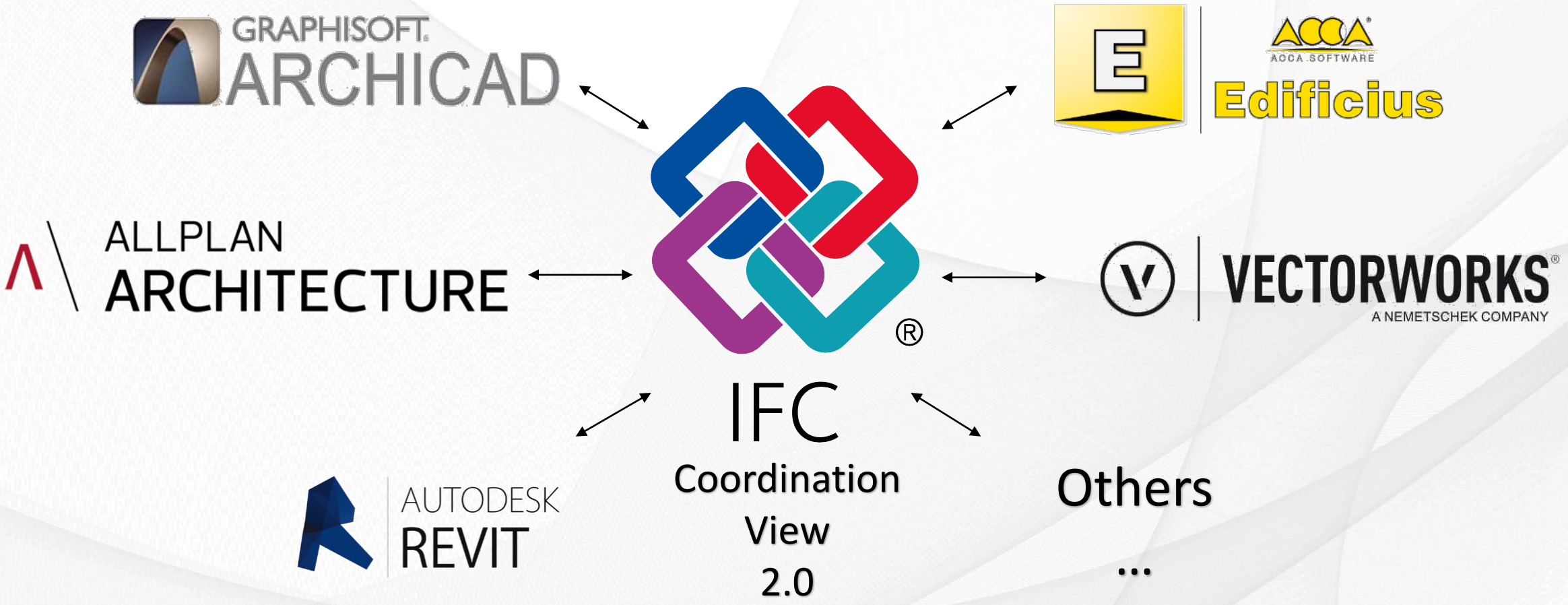
ARGOMENTO	ART.	DESCRIZIONE	PARAMETRO	U.M.	REGOLA	DEFINIZIONI
SCALE	Art.89.1	Le scale di uso comune sono disciplinate, quanto a larghezza, dimensioni e chiusure, dalla normativa nazionale e regionale vigente in materia di barriere architettoniche e di prevenzione incendi. Deve in ogni caso essere garantita la corretta fruibilità e la possibilità del trasporto di soccorso delle persone. Le rampe delle scale possono avere massimo 12 alzate consecutive negli interventi di nuova costruzione e 14 alzate consecutive negli interver edilizio esistente.	CAD	CAD	$N°_{alzate} \leq 12$	**$N°_{alzate}$**: Numero di alzate consecutive
	Art.89.2	All'interno delle singole unità imm realizzazione di scale a chiocciola che garantiscano comunque idoi sicurezza e fruibilità. Quando tali scale sono l'unico a dell'unità immobiliare con prese dovranno avere una larghezza dell 80.				
	Art.89.6	Tra la rampa della scala a scen locali che danno sul pianerottol dovrà esserci una distanza minii sulla linea di sviluppo della ramp scala a scendere e gli ingressi pros una distanza minima di m. 1,50.				
LOCALI SOTTOTETTO NON AGIBILI	Art. 90.2	Nei nuovi progetti l'altezza med sottotetto non agibili, calcolata della parte di sottotetto la cui per la superficie relativa, dovrà 2,35.				

LONDON Building Code

ARGOMENTO	ARTICOLO/ APPENDICE	DESCRIZIONE	PARAMETRO	U.M.	REGOLA	DEFINIZIONI
Purge ventilation	F1 Appendix B Windows	For a hinged or pivot window that opens 30º or more or for parallel sliding windows (e.g. vertical sliding sash windows), the height x width of the opening part should be at least 1/20th of the floor area of the room.	SUPERFICIE	mq	se $\alpha \geq 30°$: $Sw \geq 1/20\ S_{room}$ Sw= HxW	**α**: angolo di apertura **Sw**: Superficie apribile di una finestra H=height, L=width **S_{room}**: Superficie della stanza
		For a hinged or pivot window that opens between 15º and 30º, the height x width of the opening part should be at least 1/10 th of the floor area of the room.	SUPERFICIE	mq	se $15° \leq \alpha \leq 30°$: $Sw \geq 1/10\ S_{room}$ Sw= HxW	
		If the room contains more than one openable window, the areas of all the opening parts may be added to achieve the required proportion of the floor area. The required proportion of the floor area is determined by the opening angle of the largest window in the room.	SUPERFICIE	mq	Sw=ΣSwn	**Swn**: Superficie apribile di una singola finestra
	F1 Appendix B External doors	For an external door, the height x width of the opening part should be at least 1/20th of the floor area of the room. If the room contains more than one external door, the areas of all the opening parts may be added to achieve at least 1/20th of the floor area of the room.	SUPERFICIE	mq	oppure $Sd \geq 1/20\ S_{room}$ Sd=Σ Sdn	**Sd**: Superficie apribile porte esterne **Sdn**: Superficie apribile singola porta esterna

POLITECNICO MILANO 1863

The situation today



Code Checking in IFC (in practice)

PROBLEM

Do we really think that all the BIM Authorings will be compliant with all the MVDs produced by each regulatory body?

Even if they do, there is no guarantee that all files produced by such BIM Authorings always contains all the required information for Code Checking (i.e. some information may still be missing)

Code Checking in IFC (in practice)

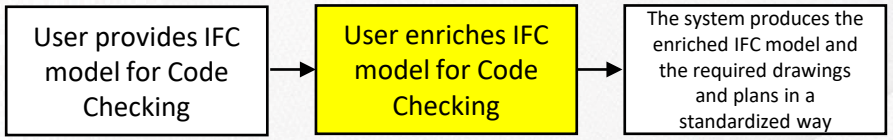
IDEA: from IFC to IFC

There should be specific BIM Tools that, starting with a common IFC model (e.g. Coordination View 2.0 files), may enrich it to be compliant with a set of bSDD and IDS specifications required from a specific regulatory body so it will be the regulatory body itself that will be interested and invest in the development of such BIM Tools, other than the interested software houses, and given the fact that we are using an open format, everyone who is interested in the development can contribute aswell

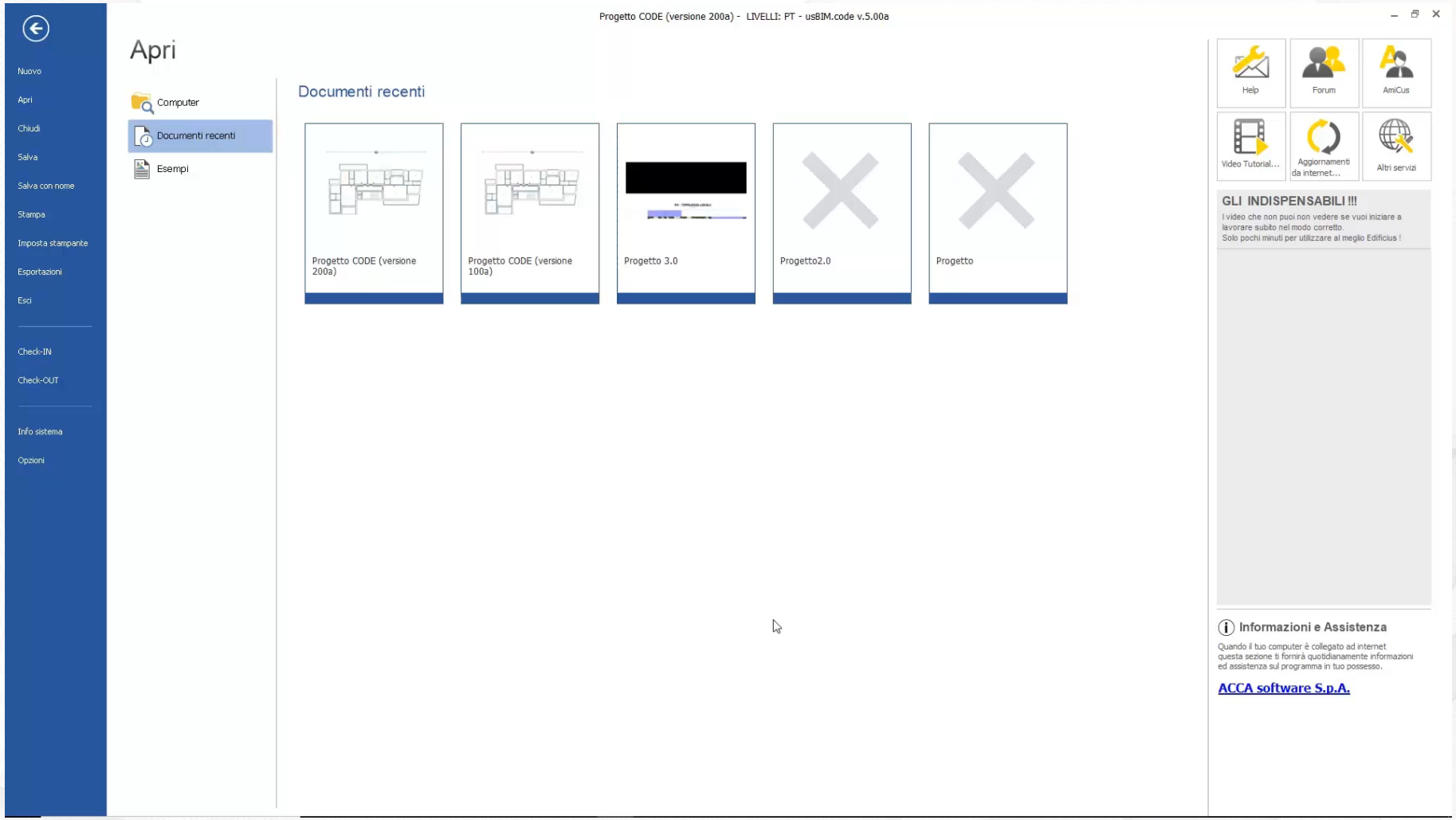
usBIM.code CODEmaker

CODEmaker is the BIM Tool that allows to digitalize, in IFC, the required/missing information and save an enriched IFC model

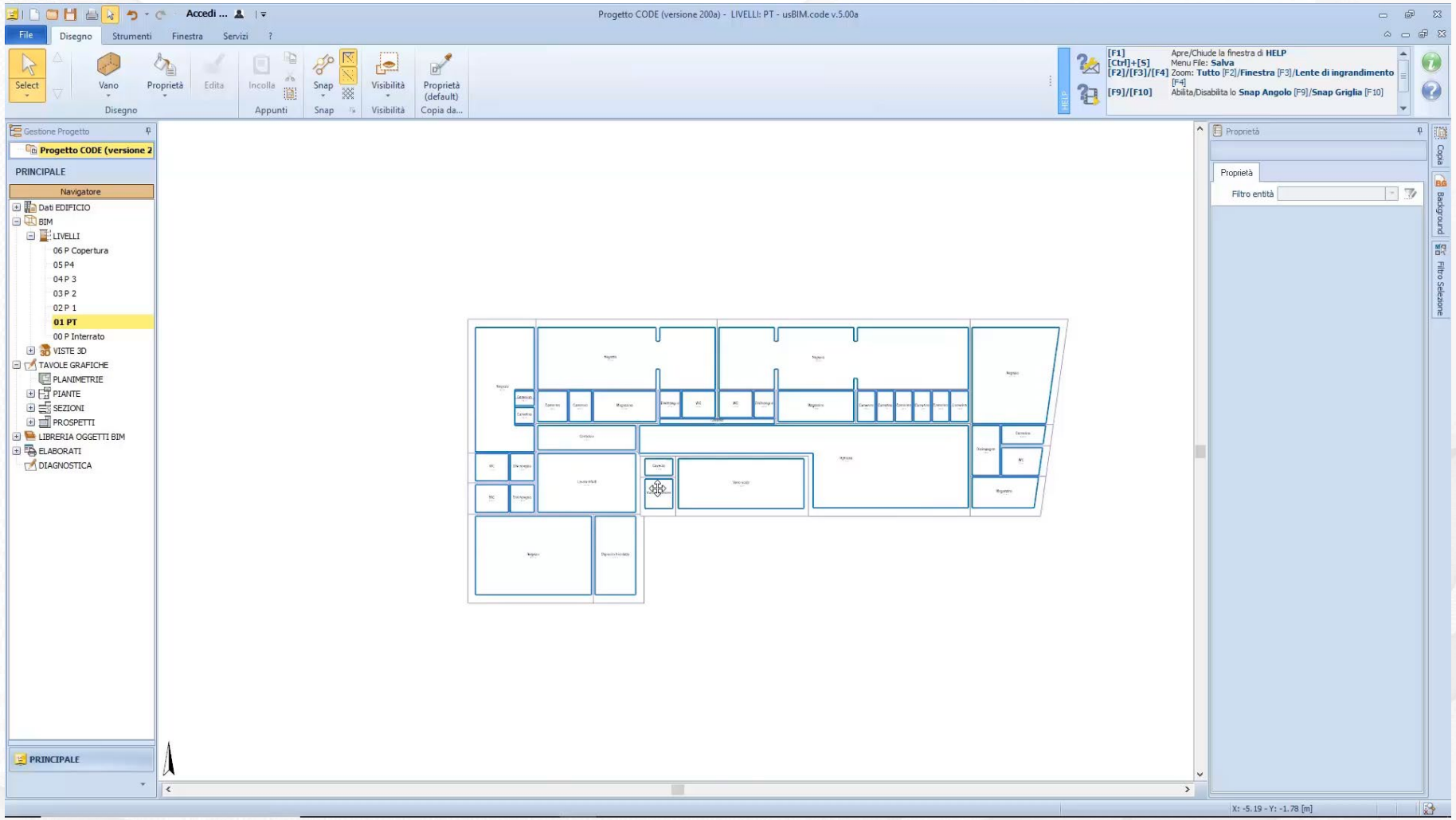
CODEcontroller is the BIM Tool that allows to apply the Code Checking itself using the newly added information



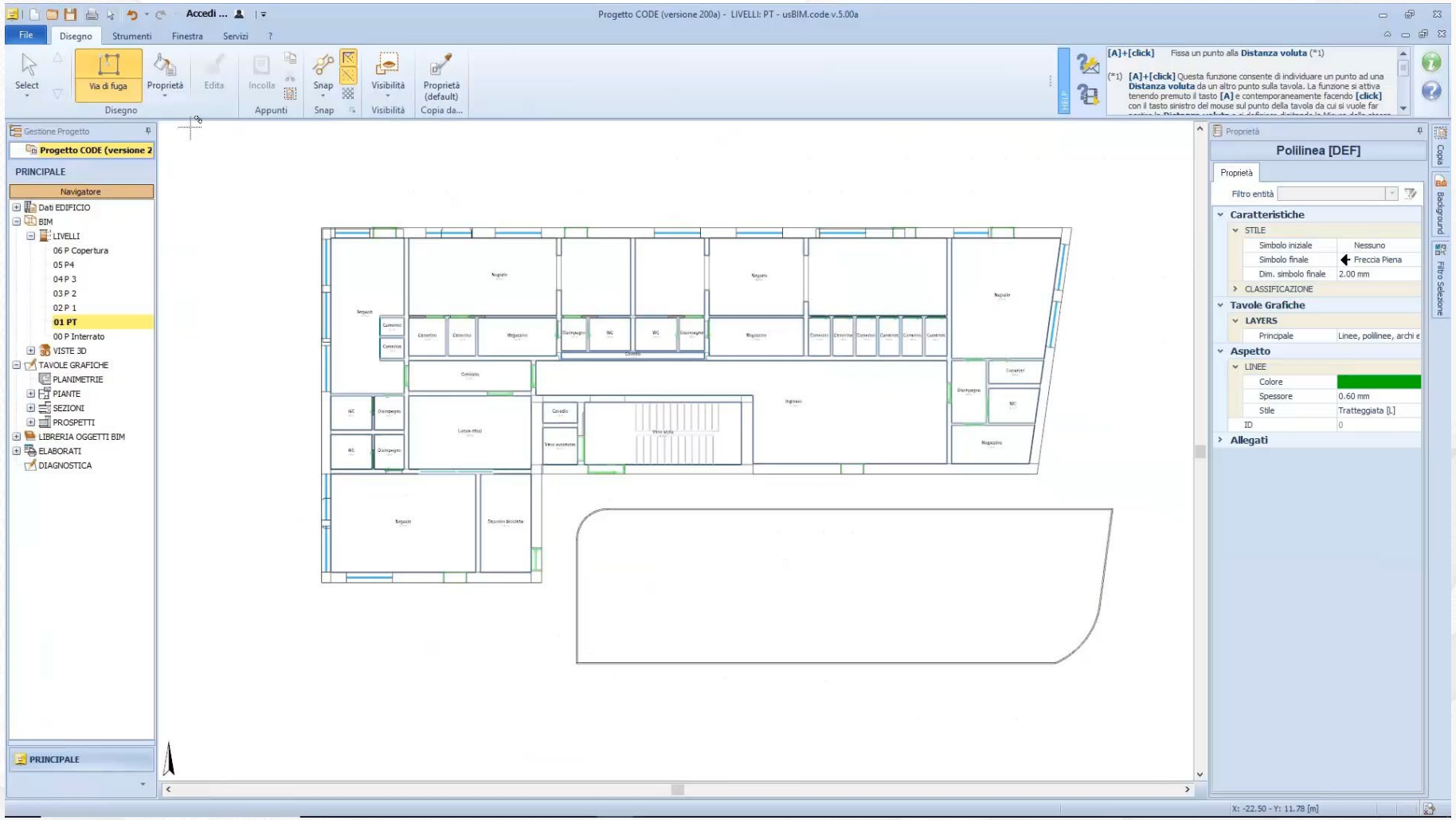
Focus: CODEmaker



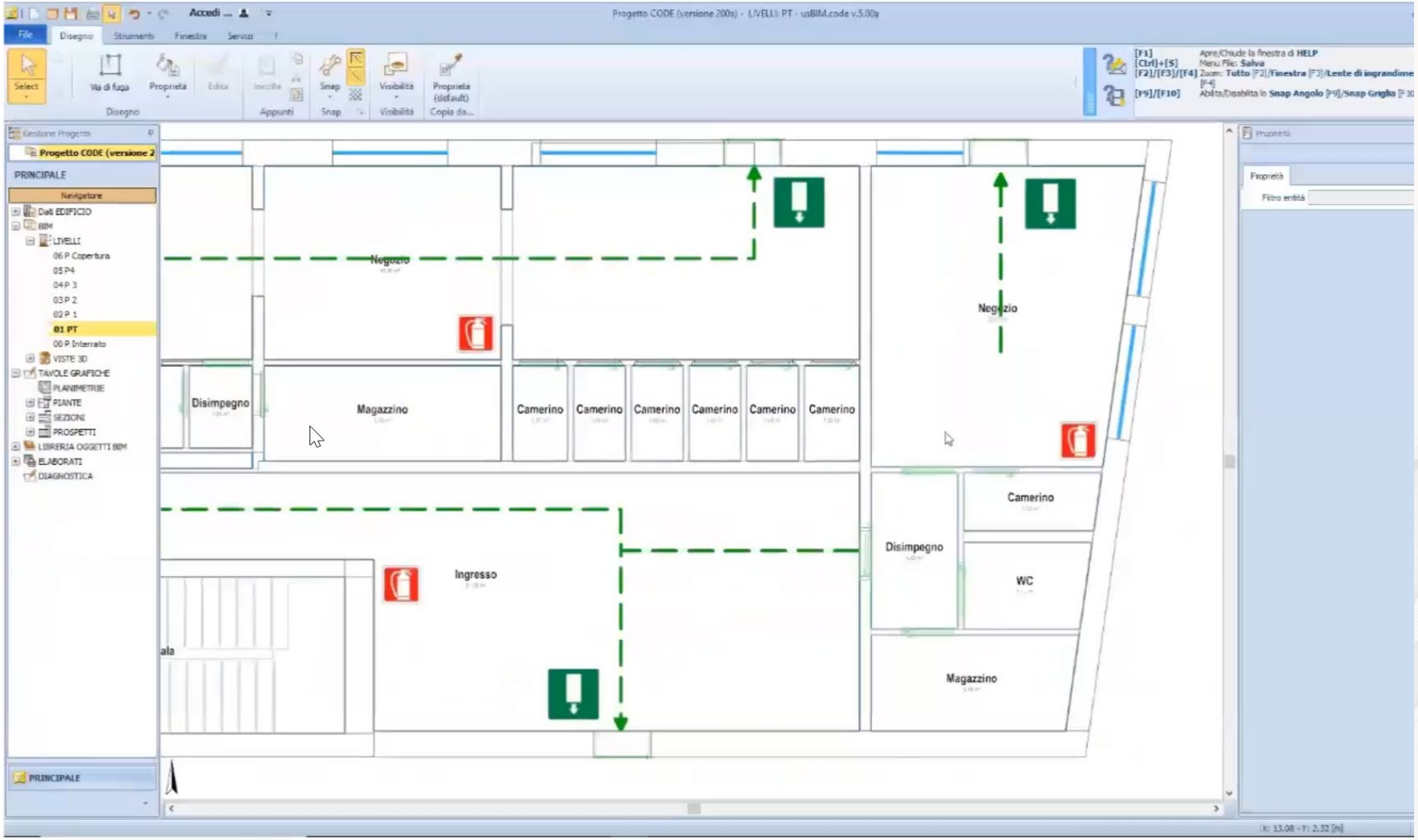
Focus: CODEmaker



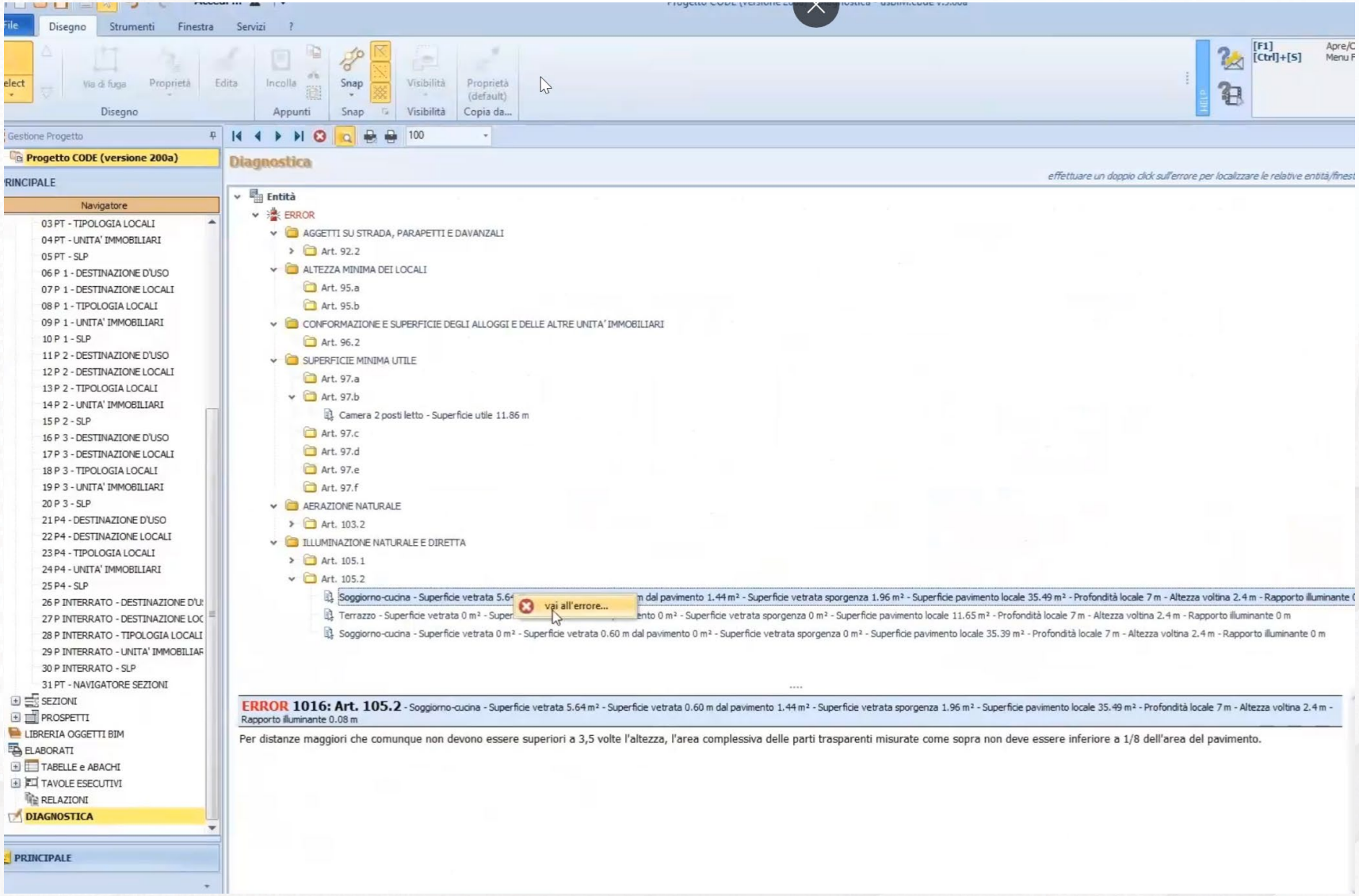
Focus: CODEmaker

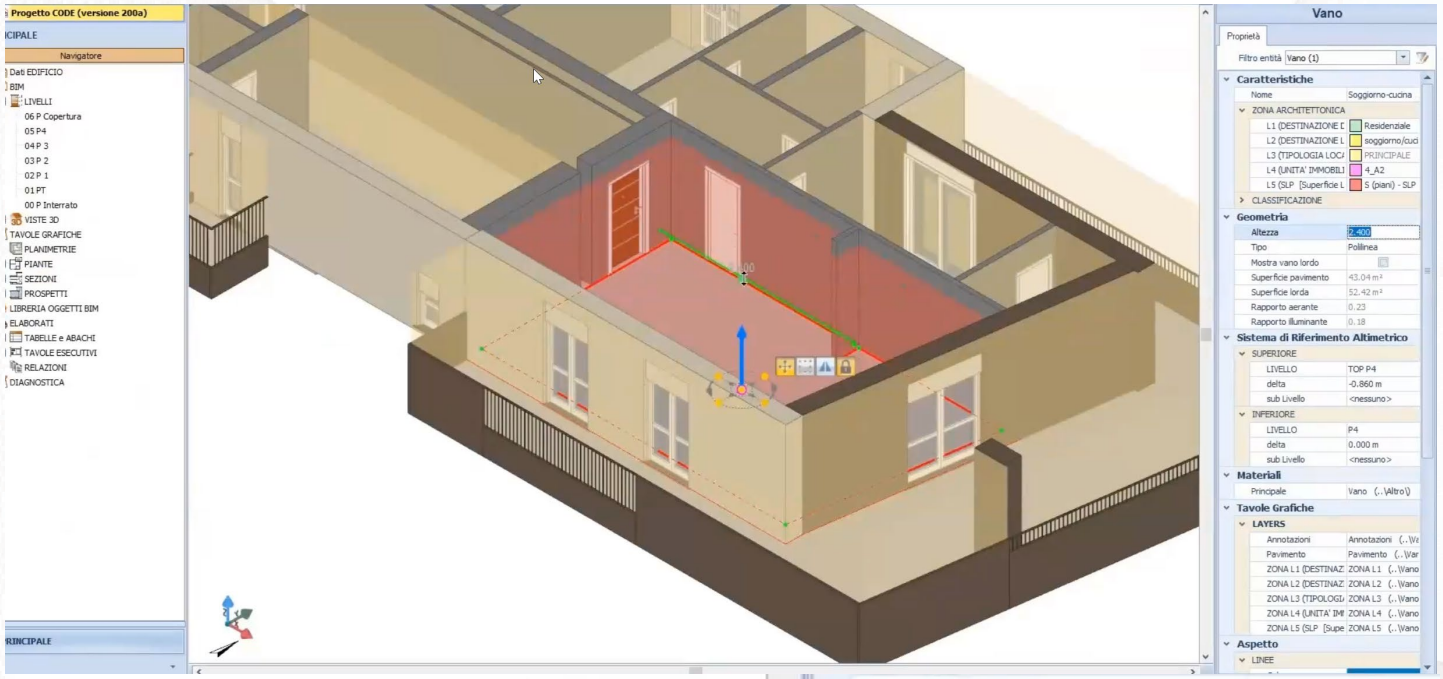


Focus: CODEmaker

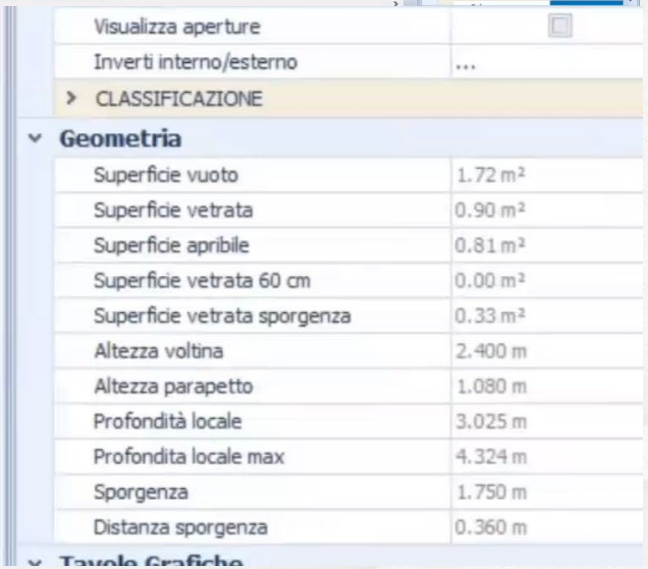


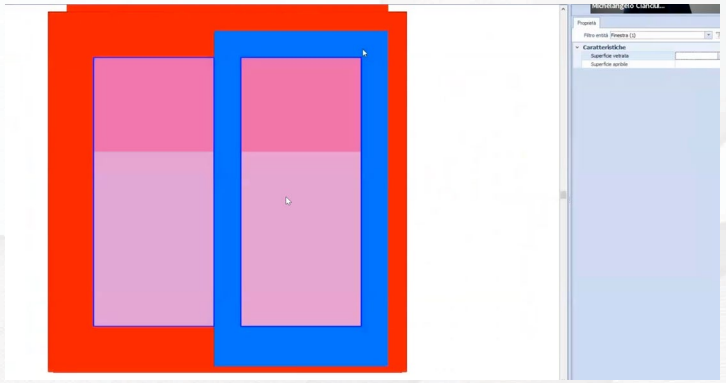
Focus: CODEmaker

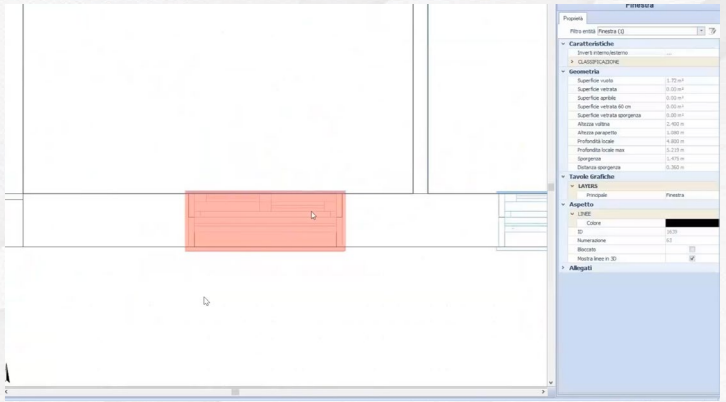



Progetto CODE (versione 200a)
Navigatore
Dati EDIFICIO
BIM
LIVELLI
06 P Copertura
05 P4
04 P 3
03 P 2
02 P 1
01 PT
00 P Interrato
VISTE 3D
TAVOLE GRAFICHE
PLANIMETRIE
PIANTE
SEZIONI
PROSPETTI
LIBRERIA OGGETTI BIM
ELABORATI
TABELLE e ABACHI
TAVOLE ESECUTIVI
RELAZIONI
DIAGNOSTICA
Vano
Proprietà
Filtro entità Vano (1)
Caratteristiche
Nome Soggiorno-cucina
ZONA ARCHITETTONICA
L1 (DESTINAZIONE D Residenziale
L2 (DESTINAZIONE L soggiorno/cuci
L3 (TIPOLOGIA LOCA PRINCIPALE
L4 (UNITA' IMMOBILI 4_A2
L5 (SLP [Superficie L S (piani) - SLP
CLASSIFICAZIONE
Geometria
Altezza 2.400
Tipo Polilinea
Mostra vano lordo
Superficie pavimento 43.04 m²
Superficie lorda 52.42 m²
Rapporto aerante 0.23
Rapporto illuminante 0.18
Sistema di Riferimento Altimetrico
SUPERIORE
LIVELLO TOP P4
delta -0.860 m
sub Livello <nessuno>
INFERIORE
LIVELLO P4
delta 0.000 m
sub Livello <nessuno>
Materiali
Principale Vano (..\Altro\)
Tavole Grafiche
LAYERS
Annotazioni Annotazioni (..\
Pavimento Pavimento (..\Var
ZONA L1 (DESTINAZ ZONA L1 (..\Vano
ZONA L2 (DESTINAZ ZONA L2 (..\Vano
ZONA L3 (TIPOLOGI ZONA L3 (..\Vano
ZONA L4 (UNITA' IMI ZONA L4 (..\Vano
ZONA L5 (SLP [Supe ZONA L5 (..\Vano
Aspetto
LINEE

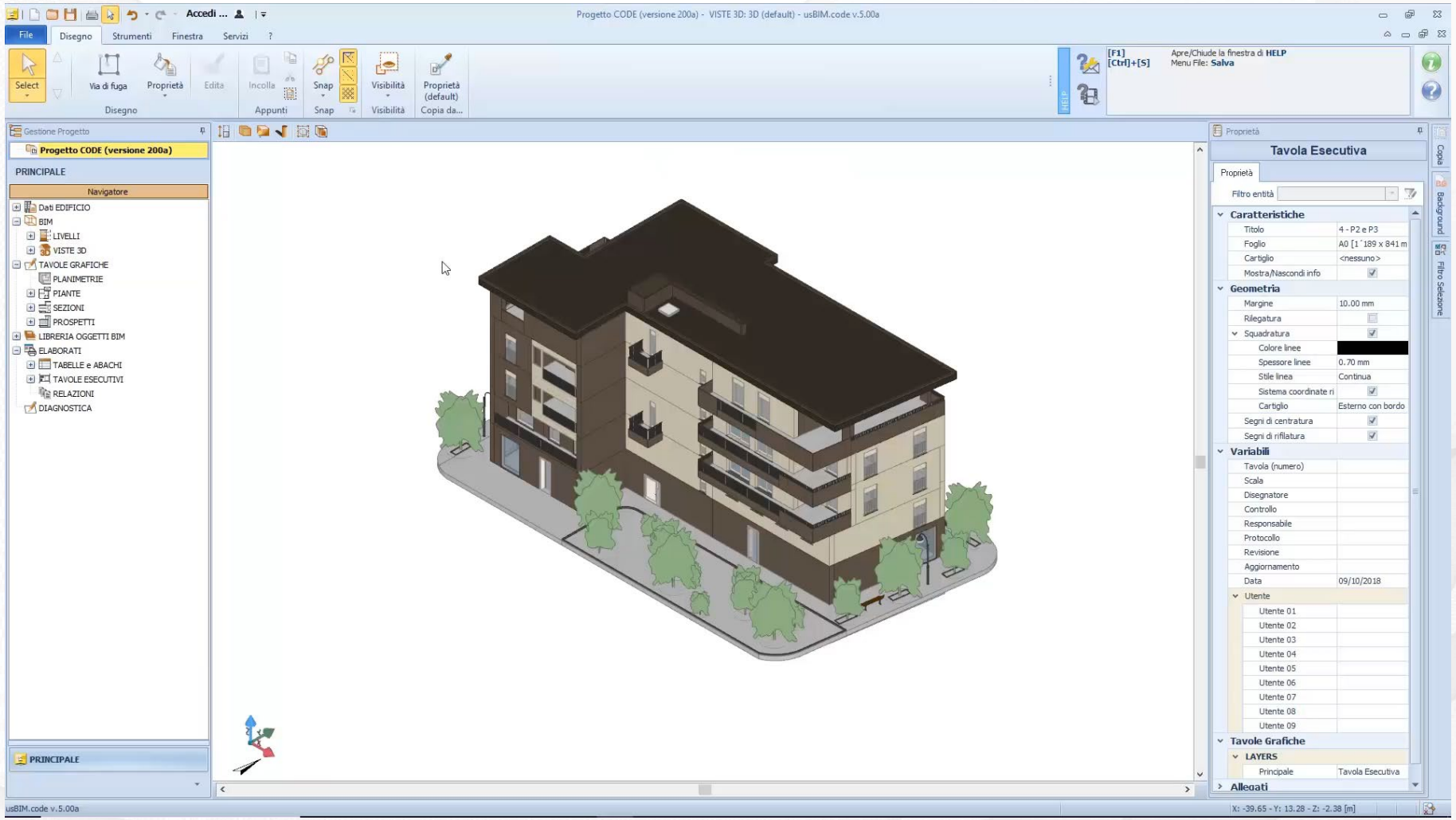

Terrazzo
Bagno
Sala riunioni
Disimpegno


Visualizza aperture
Inverti interno/esterno
CLASSIFICAZIONE
Geometria
Superficie vuoto 1.72 m²
Superficie vetrata 0.90 m²
Superficie apribile 0.81 m²
Superficie vetrata 60 cm 0.00 m²
Superficie vetrata sporgenza 0.33 m²
Altezza voltina 2.400 m
Altezza parapetto 1.080 m
Profondità locale 3.025 m
Profondita locale max 4.324 m
Sporgenza 1.750 m
Distanza sporgenza 0.360 m

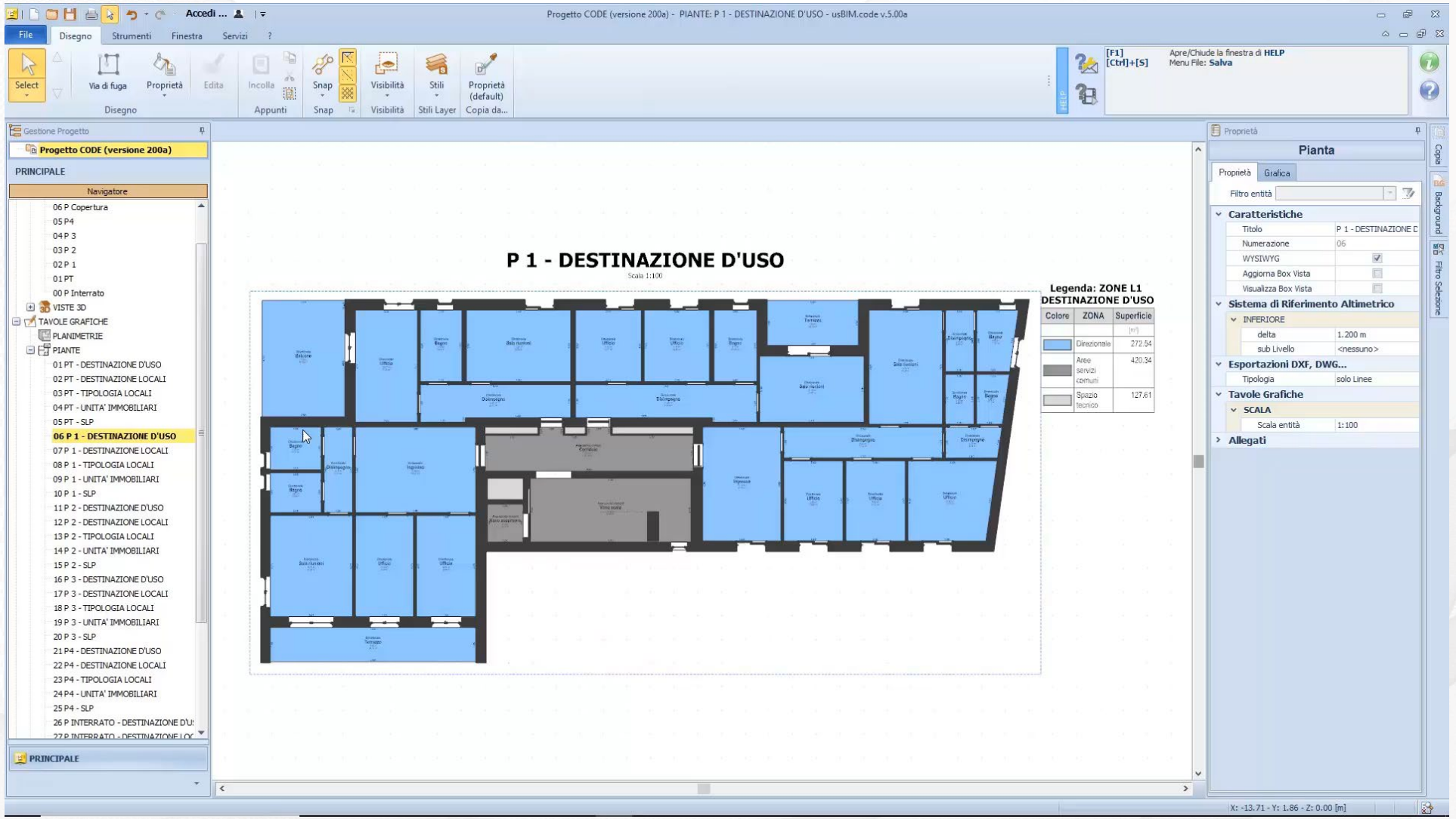




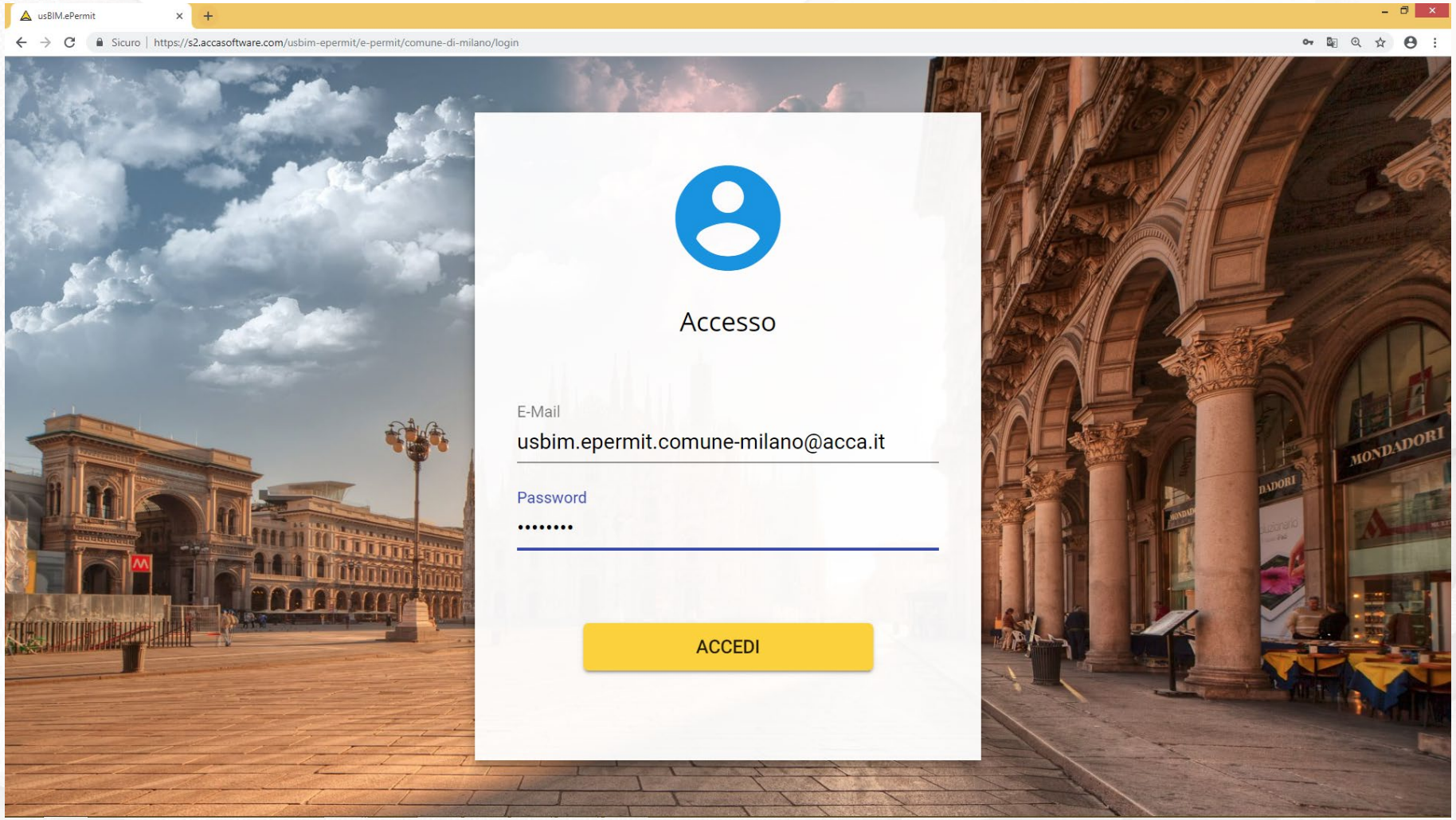
Focus: CODEmaker



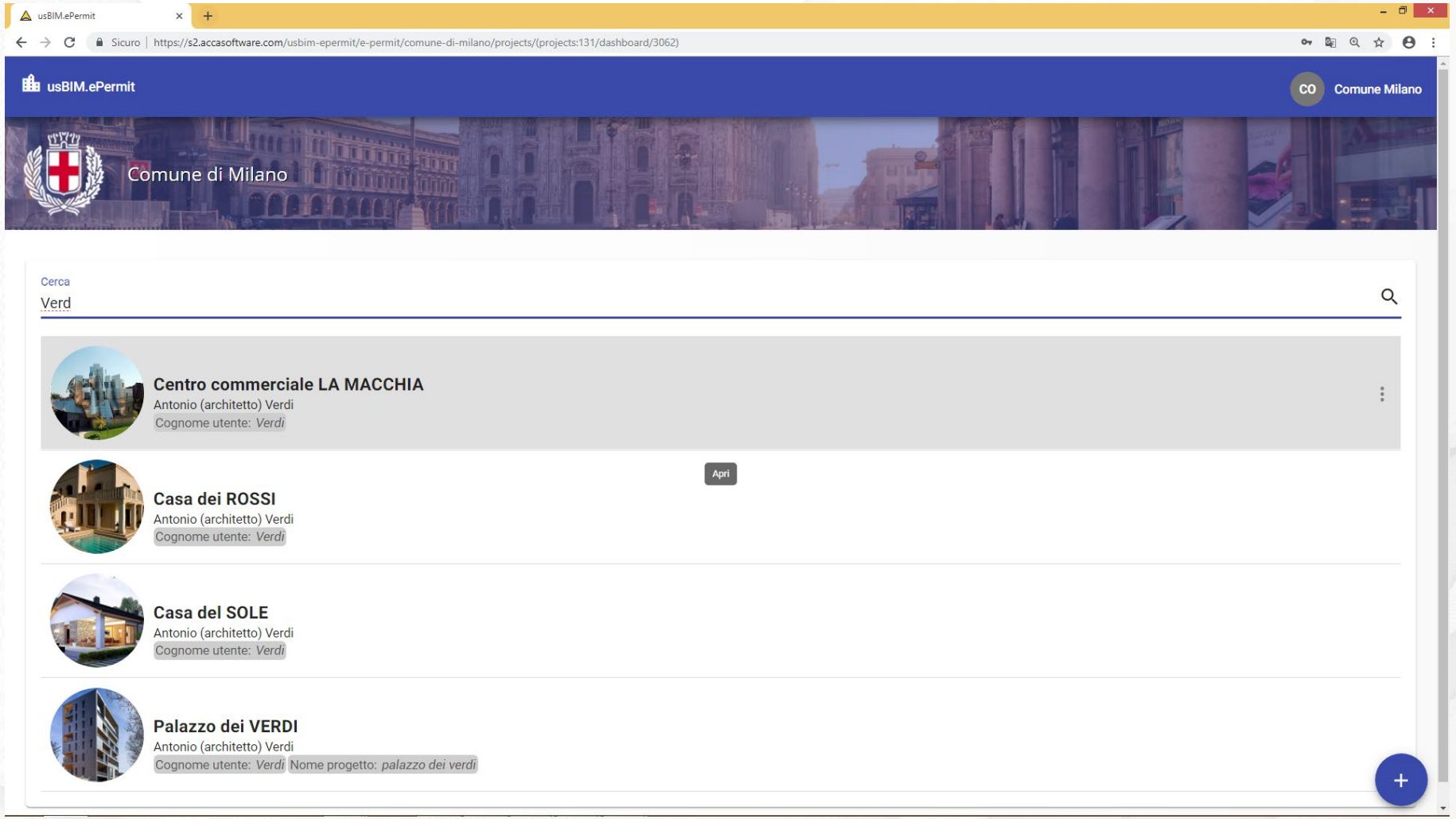
Focus: CODEmaker



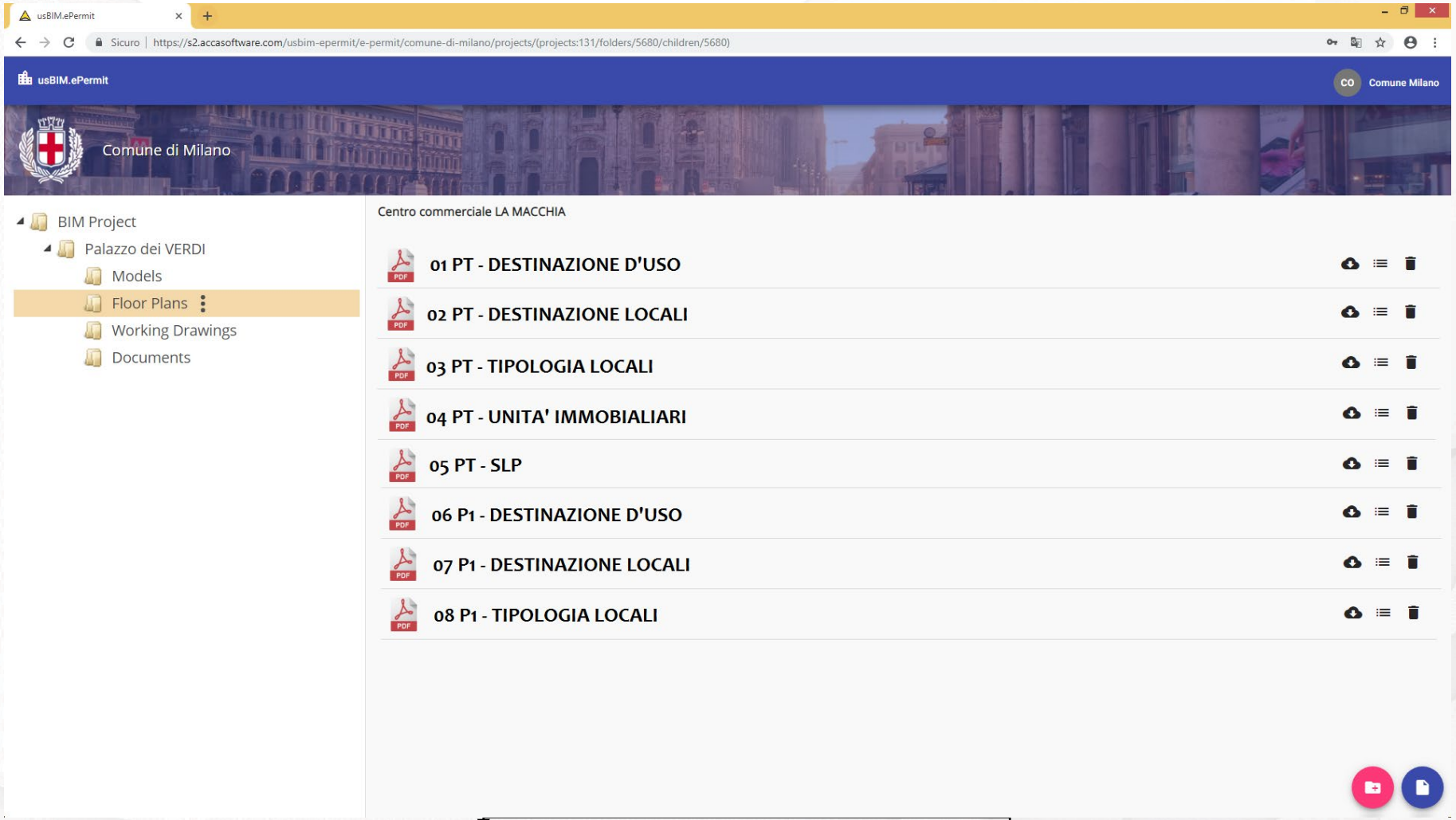
Regulatory body login

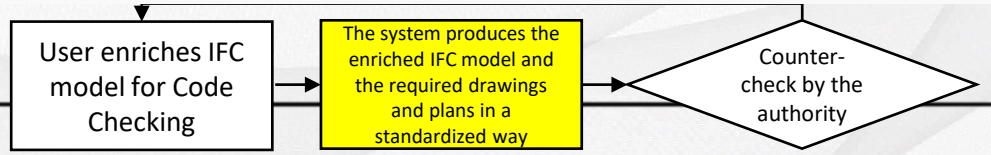


Regulatory body panel

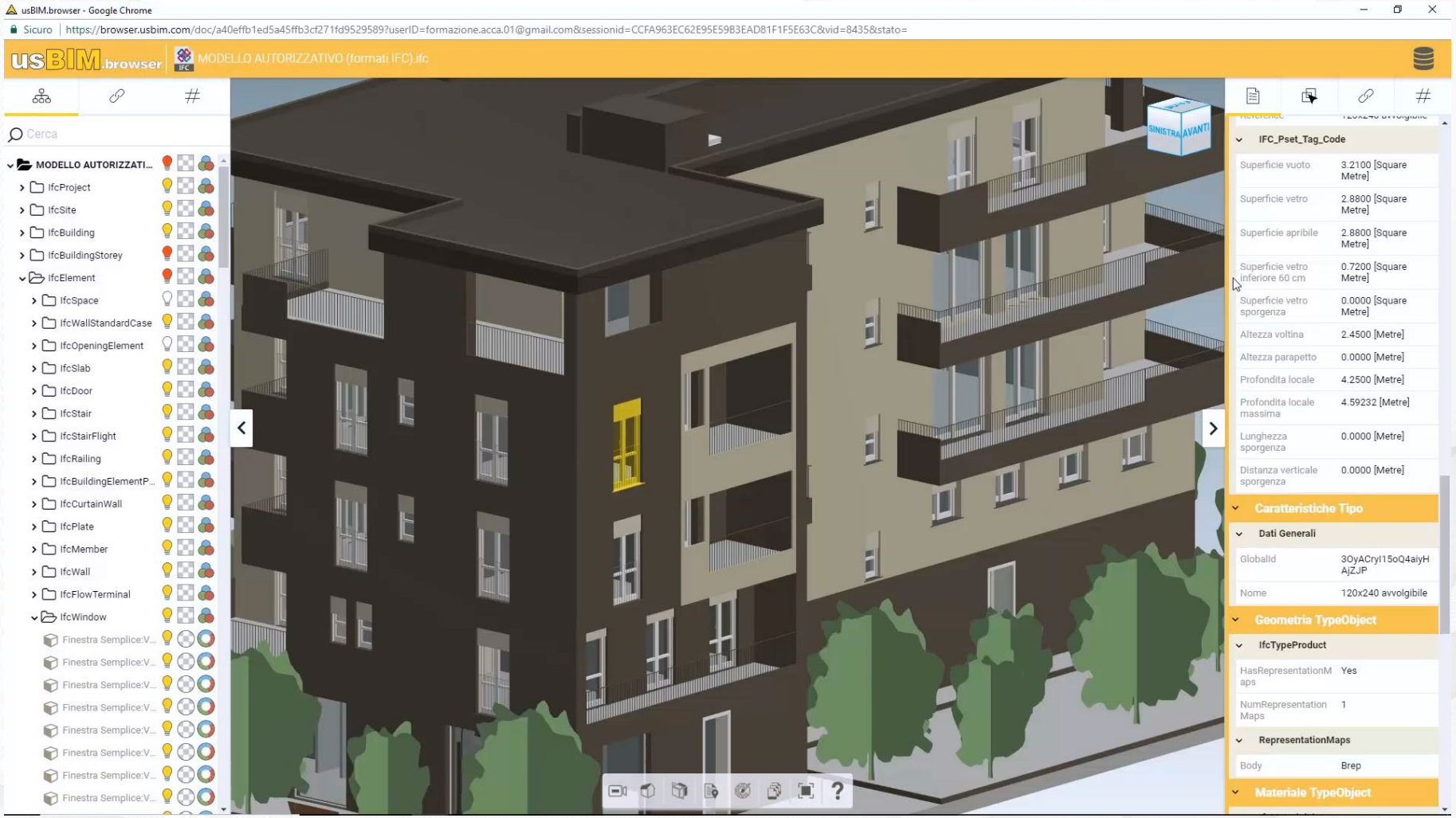


System generated folders

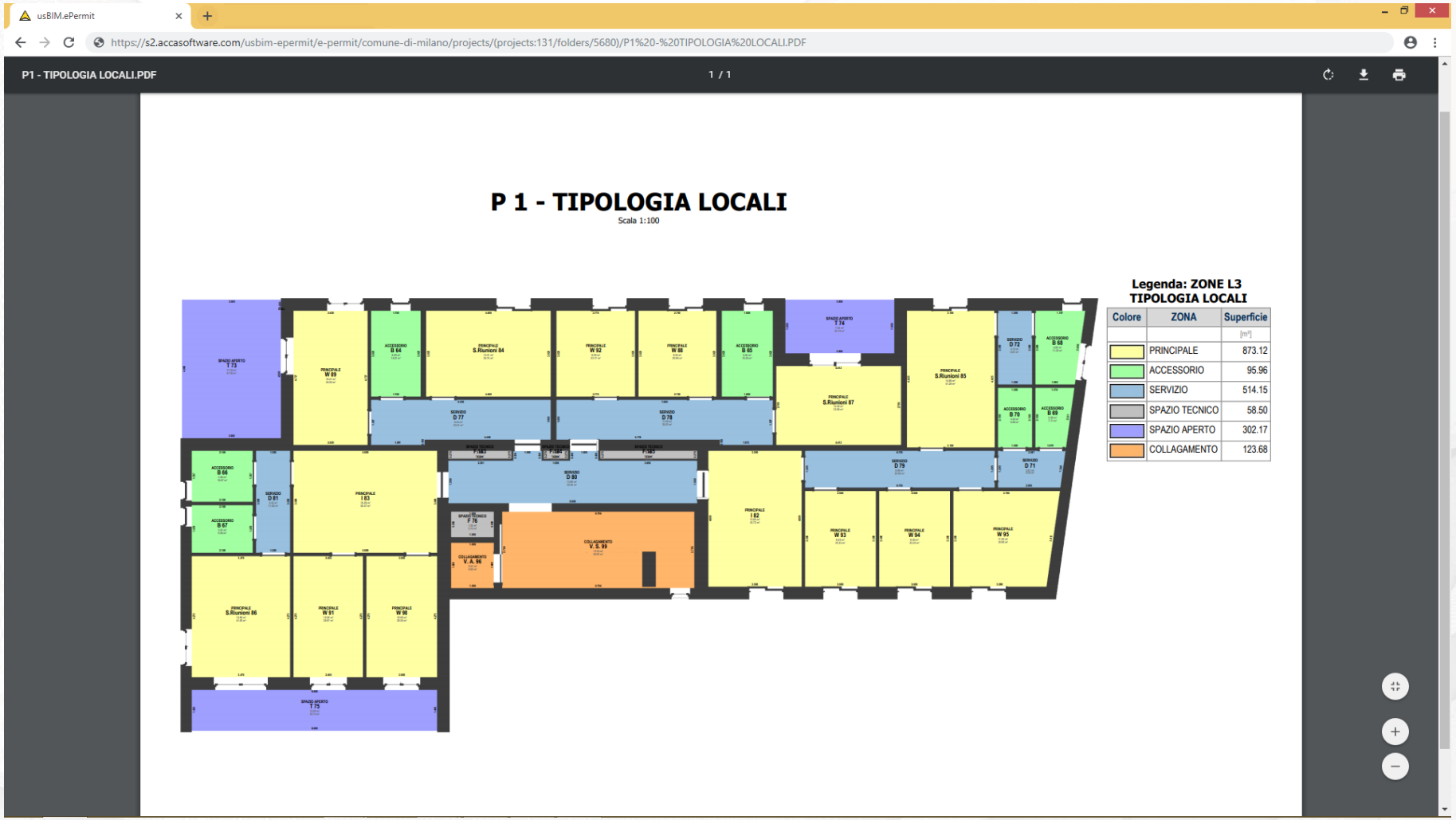




System generated enriched IFC model



System generated plans and drawings



usBIM.code CODE controller

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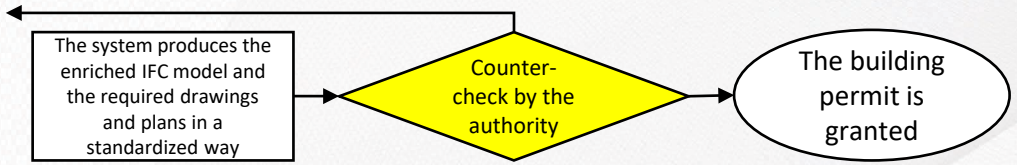
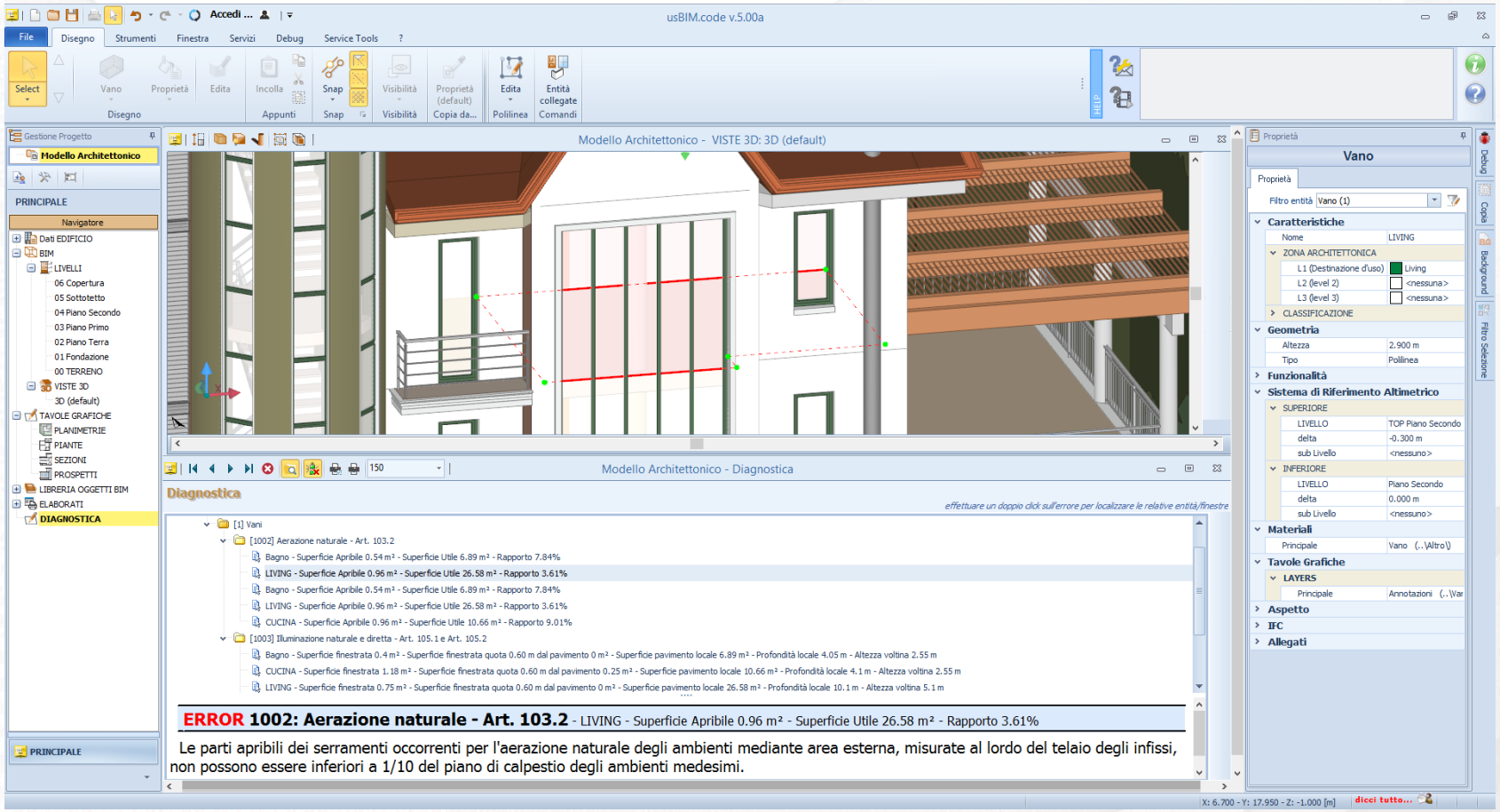
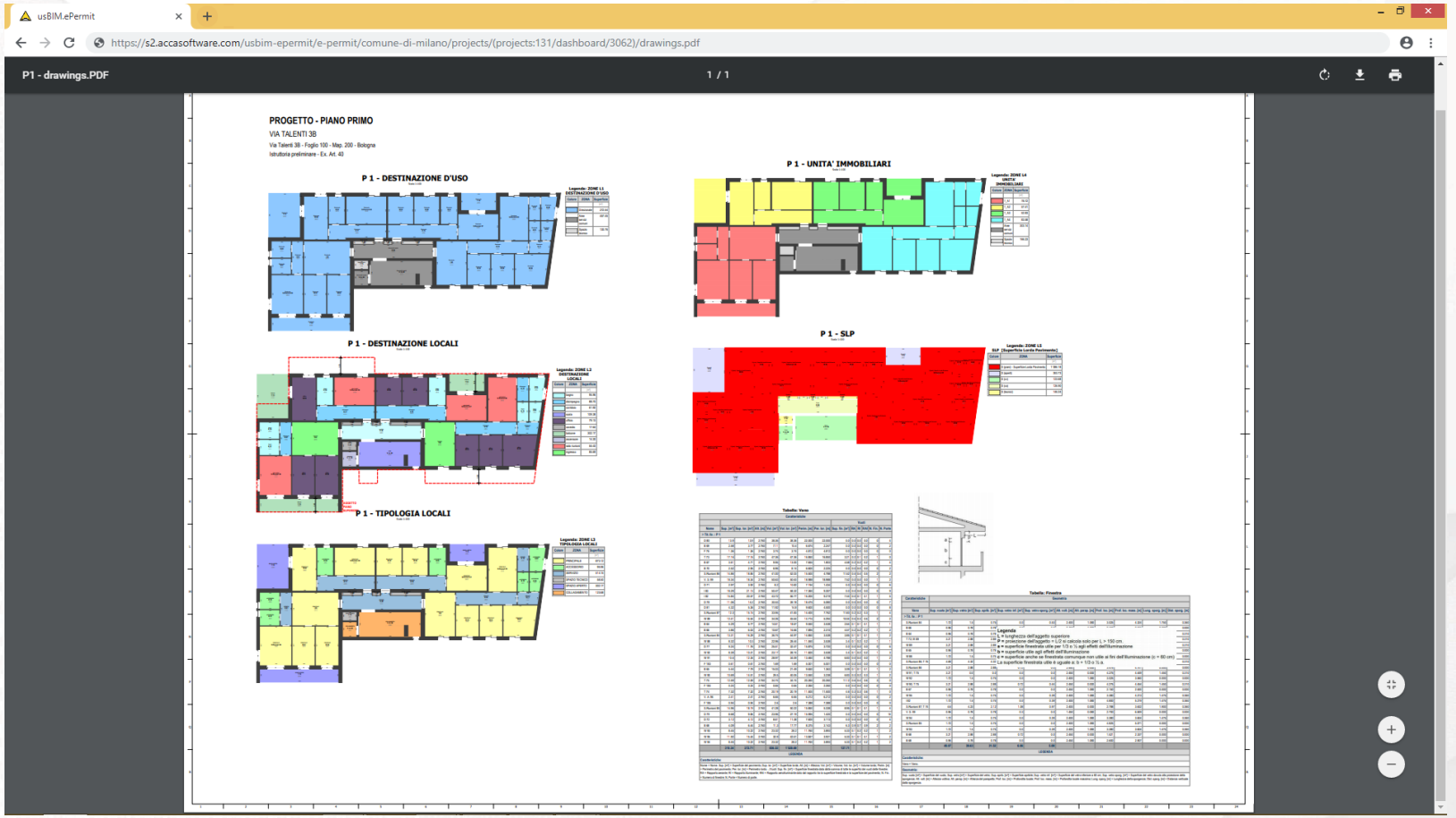


Focus: CODEcontroller (1/2)



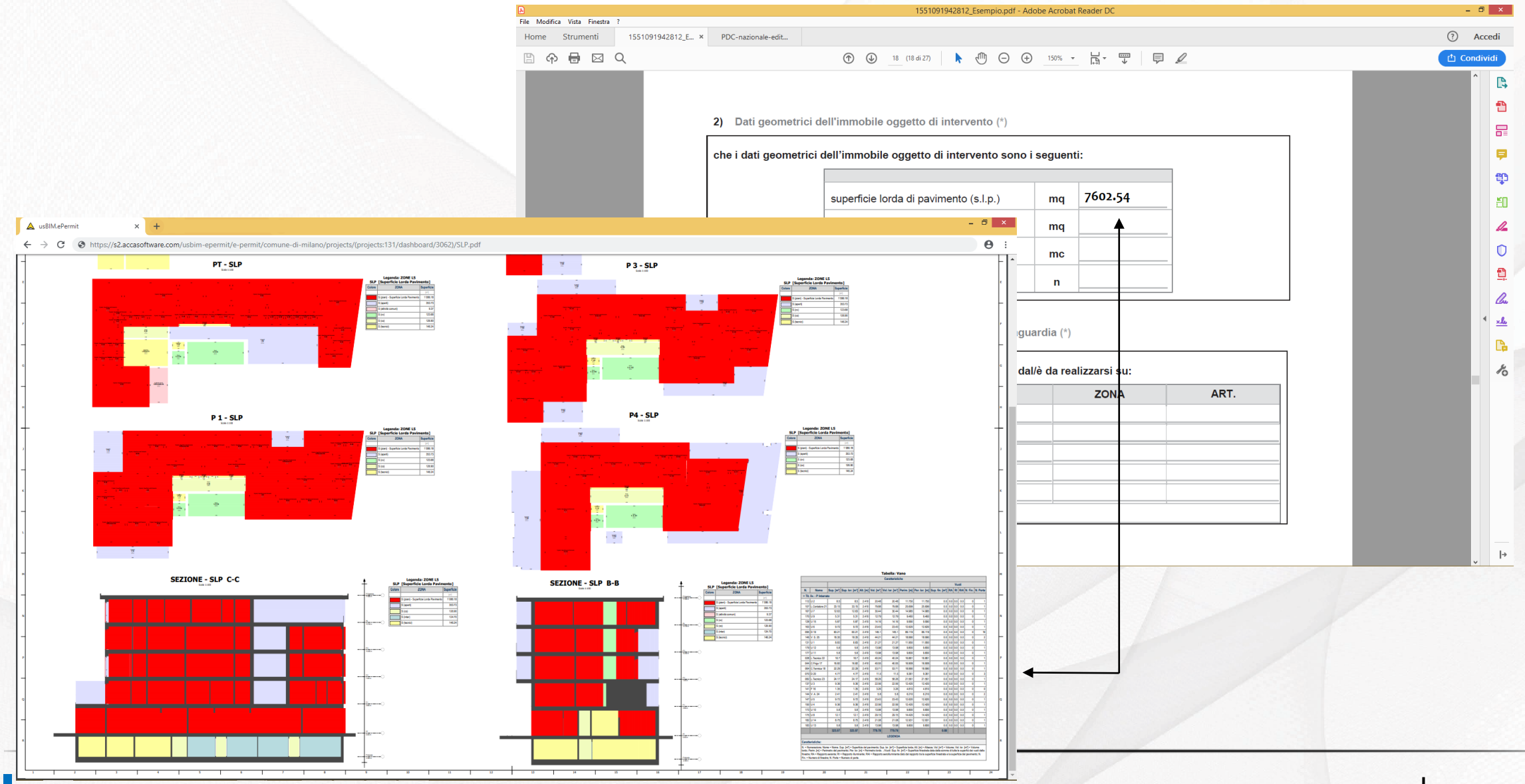
The regulatory body has access to the same diagnosis tool with errors/warnings allowing to trace back the entities that do not respect the required regulations

Focus: CODEcontroller (2/2)

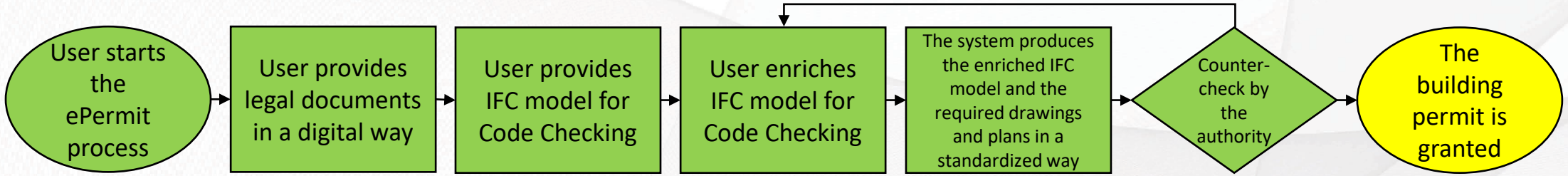


The technician have at his disposal all the standardized drawings and plans for manual inspection

Connected Data



Regulatory body approval / refusal

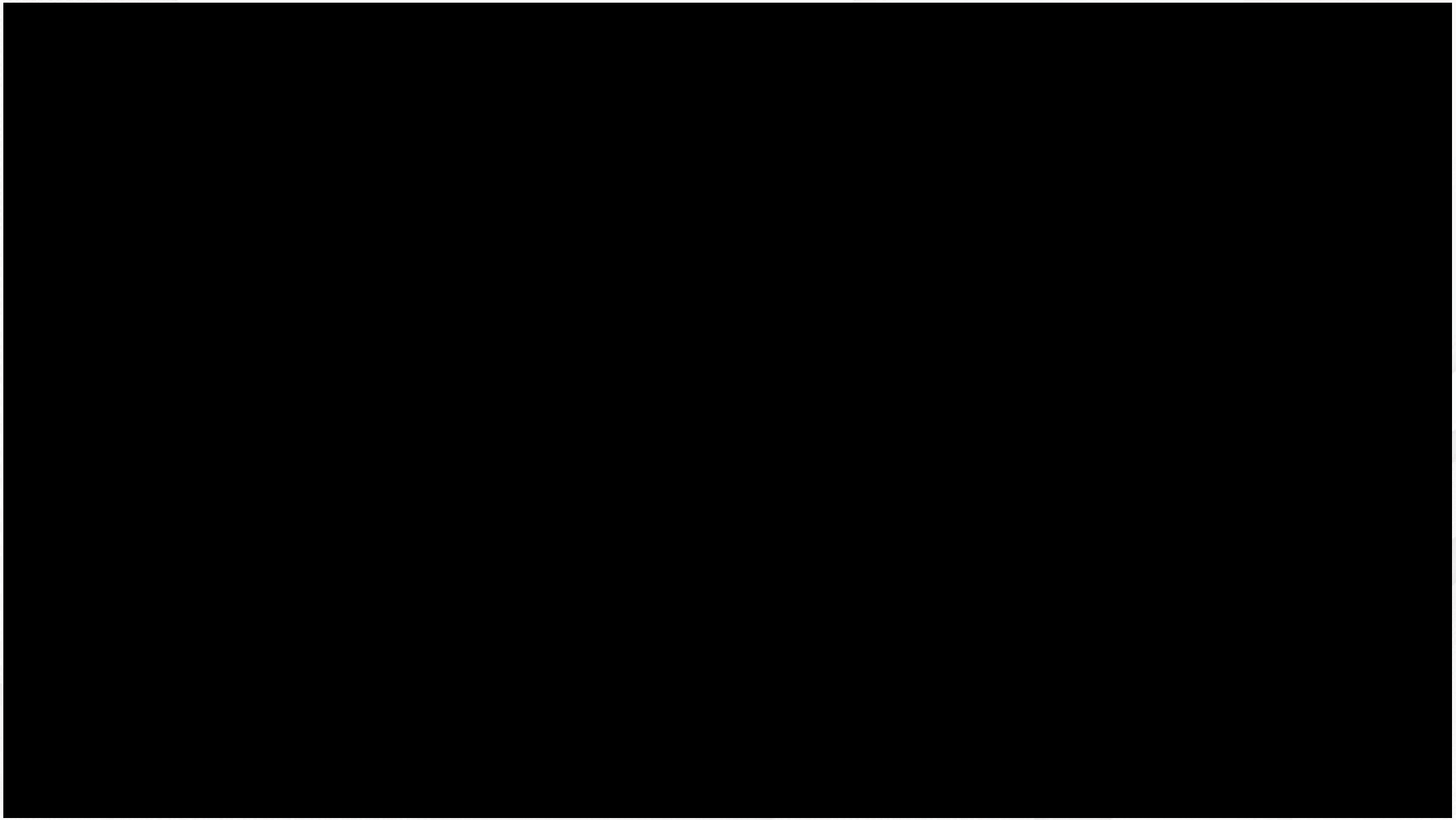


CONCLUSIONS

- We have seen how we conducted all the ePermit procedure using open formats exclusively (PDF, IFC, etc.) so no proprietary file formats are necessary at all
- All of the data and documents are acquired on the platform as open format and have being used for automatic checks, manual checks and for the automatic, standardized production of other technical drawings
- Again, all the data have been acquired in open format and are available on the platform as open format and hence usable for any other purpose
- **Here demonstrated how it is possible to work on an IFC model directly to enrich it in order to start from a common, standard MVD such as the Coordination View 2.0, produced by most BIM Authorings, and be compliant with the MVD required from the municipalities that are specific for Code Checking purposes**

Italy Railway Project

No specific BIM System for Railway Project before.



openBIM Case 4 Railway Design BIM Tool

Source: buildingSmart International

Knowledge-informed semantic alignment and rule interpretation for automated compliance checking

Jia-Rui Lin ,Zhe Zheng, Ke-Yin Chen, Shao-Jie Zhou

Department of Civil Engineering

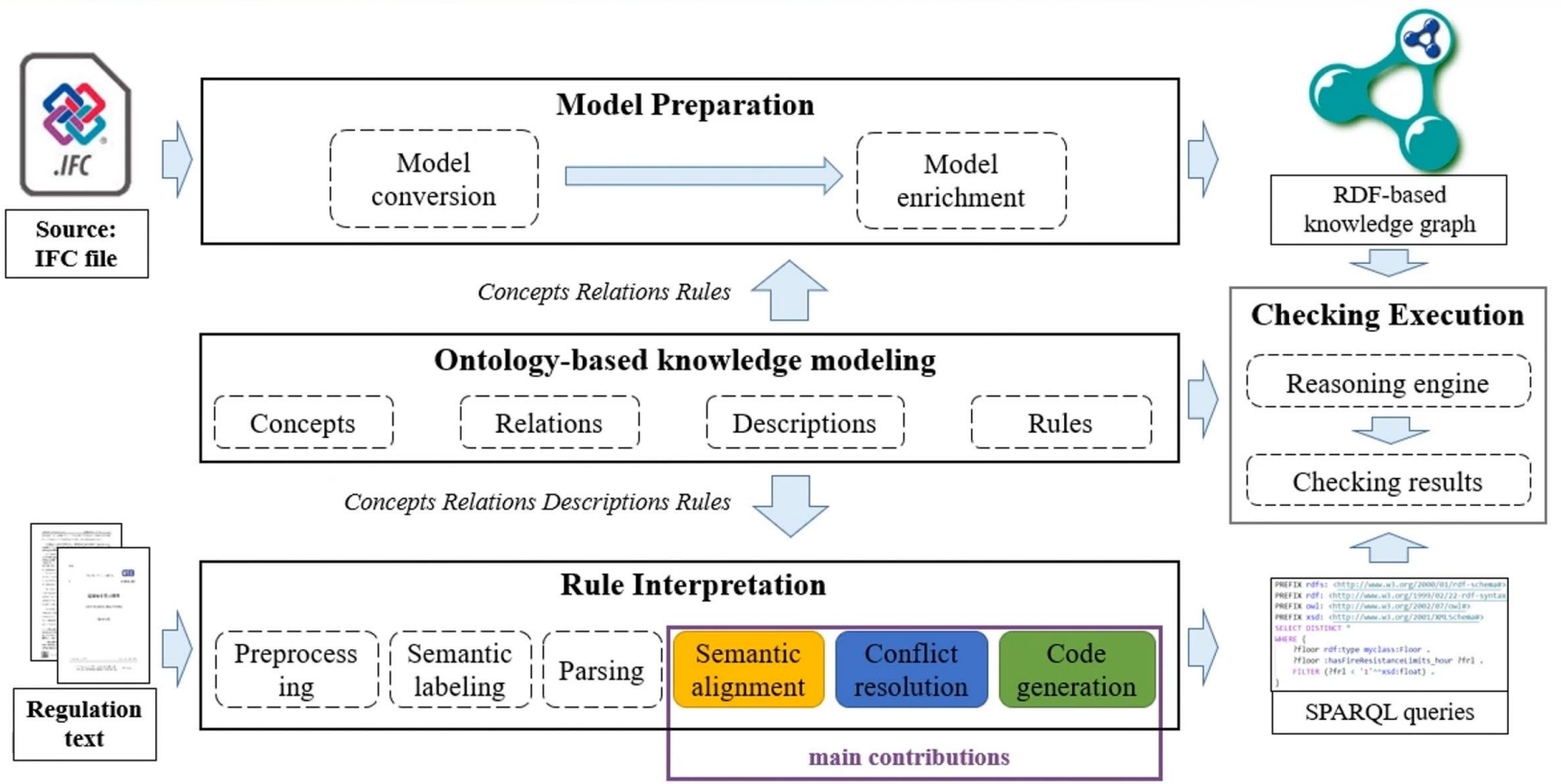
Tsinghua University

Professional Research

Knowledge-informed rule interpretation and automated design checking based on openBIM

By Tsinghua University, China

Methodology



▲The proposed NLP-based and knowledge-informed automated rule checking framework

1.Function Introduction

Award bSI 2023

清華大學 Tsinghua University

Model Quality Checking

Support the creation of personalized quality cheking specifications to meet data requirements in multiple scenarios.

- Provide model quality checking tools for a rapid checking and present complete results;
- Locate problem components to ensure model quality, and provide reliable support for subsequent applications.

Model quality checking reports

Model quality checking results

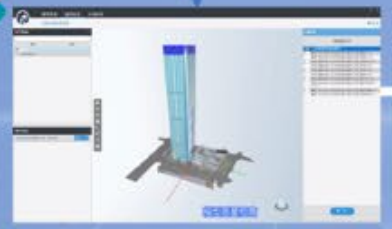
nical Process Framework

odel records a large amount of 3D geometry and semantic information of design results. By applying the "OpenBIM+" solution in hen, this project has practiced model merging, exporting, model quality checking, building code checking, collaboration and zation, lightweight display in CIM.

International openBIM Award 2023

View Standards, Download Rules

Export and merging



Model quality checking

Building code checking

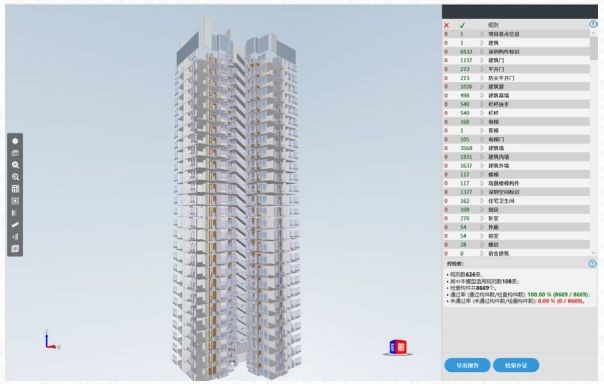
Lightweight display in CIM platform

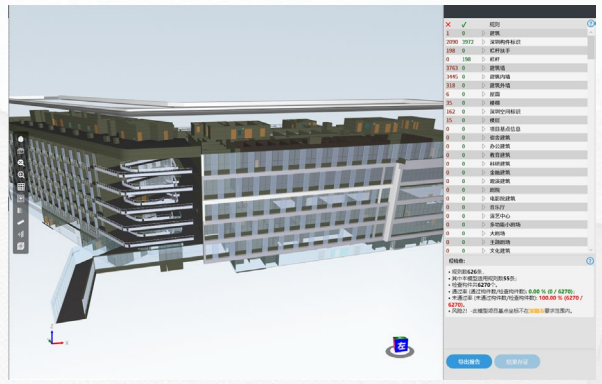
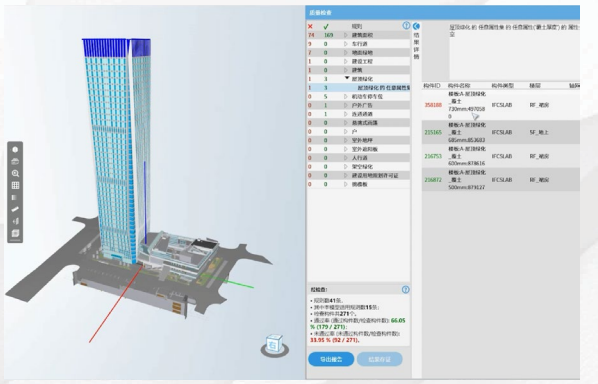
Collaboration and optimization

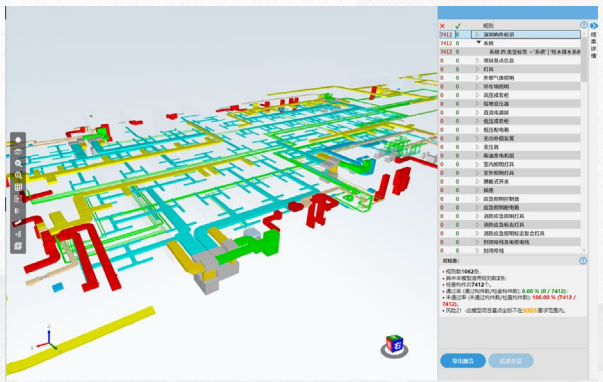
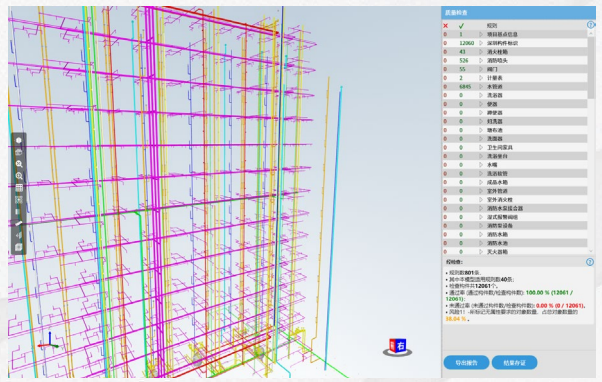
Real-world Project & IFC Files

Award bSI 2023

Our tools and techniques are currently utilized by **172** real-world projects to check the quality of the models, including commercial centers, hospitals, schools, art galleries and residences, etc. and the number of IFC files involved is **4121.**




Register Now!
HKABAEIMA Training Centre
Training Class 58
Customizable BIM Checking based on openBIM and Knowledge-informed Rule Interpretation
buildingSMART International
Hong Kong Alliance of Built Asset & Environment Information Management Associations
香港建設資產及環境信息管理聯盟
17:45 - 18:00 HKT
Reception
18:00 – 18:02 HKT
Moderator:
Mr. David Fung
BSI Committee Chairman
HKABAEIMA
18:02 – 18:10 HKT
Welcome Address:
Ar. Ada Fung
President
HKABAEIMA
18:10 – 19:00 HKT
Speaker:
Dr. Gao Ge
Research Assistant Professor
Beijing National Research Center for Tsinghua University
AI based BIM Model Checking and Reconstruction. He published multiple academic papers in the field of AI and BIM. As the main technical leader, He developed two national BIM standards Series in China, including the GB/T 36456 "Shared Information Model for Engineering for engineering" and the "BIM Software National Standards (WIP)".
He led the development of the CBIMS BIM checking software.
On 24 January 2024 (Wednesday)
Live 18:00 HKT
via Zoom Online
This talk is on how openBIM has been applied in the e-permit application of Shenzhen by adopting openBIM technologies and Knowledge-informed rule interpretation technologies. The project won the buildingSMART 2023 Technology Solution Award.
CBIMS is a BIM checking framework that unifies China national standards, Building Dictionary, IFC, MVD (Model View Definition), SNL(Structural Natural Language) and enables a scalable checking solution.
Note:
• If you haven't registered yet, please use this link or QR Code to register your interest class(es); confirmation will be sent to you before each class.
• Participation in this training class is free of charge, but registration is required. The registration will close at 3 pm on the day.
• Upon completing this class, a 1-hour CPD will be offered at the cost of HK$ 50 (as a handling charge).
• The class will be conducted in English.

Thank you !