CHEK
DIGITAL BUILDING PERMIT

Funded by
the European Union

CHEK - Change toolkit for digital building permit

Informative booklet about DBP – Transforming Europe's building permit process

Empowering municipalities, professionals, and citizens through digital automation, transparency, and open standards.

This project received funding from the EU Horizon Europe Programme (G.A. No. 101058559)

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1. INTRODUCTION

Purpose of this Booklet

This booklet introduces the achievements of the CHEK project—Change Toolkit for Digital Building Permit. It provides municipalities, urban planners, professionals, and policy stakeholders with a clear, engaging overview of how digital building permit systems can transform permitting practices across Europe.

Why Digitalization of Building Permits Matters

Permitting processes are often lengthy, opaque, and paper-heavy. The CHEK project tackles this challenge by introducing digital tools that make permit processes faster, more reliable, and citizen-friendly. Automation and rule-based checking enable cities to meet the growing demand for transparency, urban quality, and legal compliance.

The CHEK project:

‘Change toolkit for digital building permit’ (CHEK) is a European project, funded under the Horizon Europe call HORIZON- CL4-2021- TWIN- TRANSITION-01-10 G.A. 101058559. It lasted 3 years (October 2022- September 2025) and involved 19 European partners, including international standardisation organisations (OGC, buildingSMART) and is strongly related to the European network for Digital Building Permits (EUnet4DBP).

CHEK Vision

CHEK envisioned a future where automation, transparency, and standardization are the norm. The project promoted a modular and standards-based Digital Building Permit (DBP) ecosystem, interoperable across cities, scalable across the EU, and understandable by humans and machines alike.

The aim of CHEK

Take away barriers for municipalities looking to adopt digital building permit processes by developing, connecting and aligning scalable solutions for regulator y and policy contexts, for open standards and software and data interoperability (geospatial and BIM), for closing knowledge gaps through education and training, for renewed municipal processes and for technology deployment. CHEK provided an innovative kit of both methodological and technical tools to digitalize building permitting and automated compliance checks on building designs and renovations in European urban areas and regions. Modularity and standardization of solutions enabled replicability in any country and context.

In the European Landscape

CHEK works in synergy with other EU-funded projects, such as ACCORD and DigiChecks, all contributing to a shared vision for the digital transformation of construction permitting. Together, these initiatives support the broader EU goals of digital innovation, regulatory efficiency, and sustainable urban development.

2. DIGITAL BUILDING PERMIT (DBP)

What is a digital building permit?

Definition and scope (CHEK Wiki)

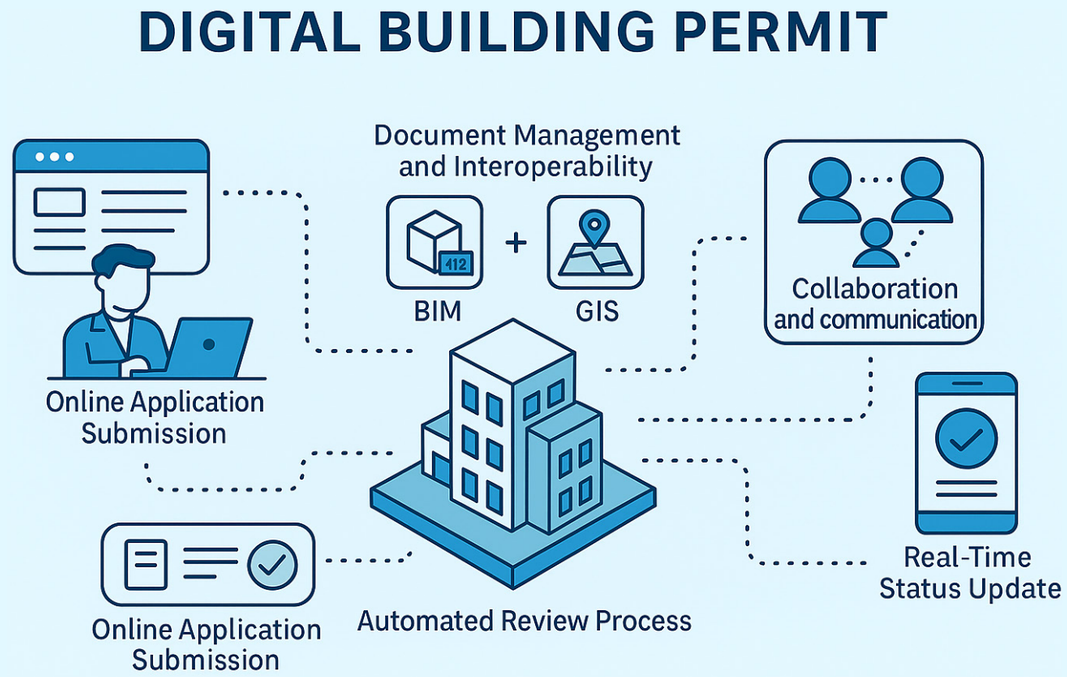
A digital building permit refers to the electronic version of a permit issued by a governing authority for the construction, renovation, or alteration of a building or structure. It replaces the traditional paper-based permit system with a digital platform or software that enables stakeholders to submit, process, review, and track the progress of permit applications.

Digital building permits aim to streamline the permit process, making it more efficient, transparent, and accessible. They typically involve the use of digital technologies, such as online portals or software applications, where stakeholders can submit and store all necessary data, including building and city models, specifications, and other relevant information. In addition, they facilitate interaction and collaborative work between the users.

The key features of a digital building permit system may include:

1. **Online application submission:** Applicants can complete and submit permit applications digitally through a web-based portal or software.
2. **Data management and interoperability:** All required data and information, such as Building Information Model (BIM) and Geographic Information System (GIS) files, regulations, and supporting materials, can be uploaded and stored digitally. This allows exchange and integration of data between different systems and applications.
3. **Automated review process:** The digital system may include automated checks and validations to ensure that submitted plans meet the required standards and regulations.
4. **Collaboration and communication:** Digital building permit systems often provide a platform for communication and collaboration between all participants such as applicants, reviewers, and inspectors. It allows for easy exchange of information and feedback throughout the permit process.
5. **Real-time status updates:** Stakeholders can track the progress of permit applications in real-time, receiving notifications and updates at each stage of the process according to their roles.

By digitizing the building permit process, governments and authorities aim to reduce paperwork, shorten approval times, enhance transparency, and improve overall efficiency. It also provides a more convenient and accessible experience for stakeholders, saving them time and effort in navigating the permit procedure.[1 (p.8)]



Key Concepts

- **Rules-based checking:** Automating validation of legal and design requirements.
- **BIM integration:** Using detailed 3D models for accurate, efficient review.
- **Automation:** Reducing manual steps for faster decision-making.

Stakeholders Involved

- **Public Authorities:** Municipalities and regional offices issuing permits.
- **Professionals:** Architects, engineers, planners and construction companies.
- **Other:** Community of practice, EUnet4DBP, advisory board of CHEK , citizens and building owners.

Key Terms at a Glance:

Digital Building Permit

A digital building permit refers to the electronic version of a permit issued by a governing authority for the construction, renovation, or alteration of a building or structure.[1]

Learn more

BIM (Building Information Modeling)

Use of a shared digital representation of a built asset to facilitate design, construction and operation processes to form a reliable basis for decisions.

Learn more

GIS (Geographic Information System)

Information system dealing with information concerning phenomena associated with location relative to the Earth.

Learn more

IFC (Industry Foundation Classes)

An open standard data format for BIM models, used to describe buildings and their components in a software-neutral way.

Learn more

CityGML / CityJSON

Standard formats for representing 3D geospatial data of cities, including buildings, terrain, and infrastructure.

Learn more

OpenBIM

An approach that promotes the use of open standards in BIM workflows to ensure interoperability and data exchange across platforms.

Learn more

RASE Model

A structure used to break down rules into four components: Requirement, Applicability, Selection, and Exception.

Learn more › Project Outcomes › D.2.1

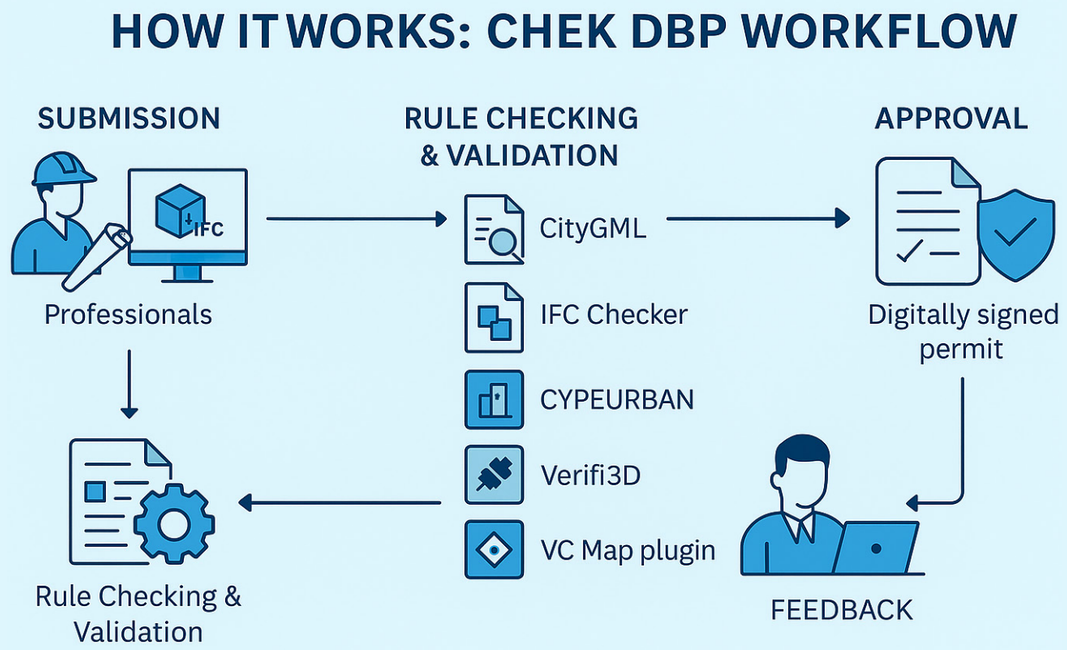
3. HOW IT WORKS: CHEK DBP WORKFLOW

Visual Workflow

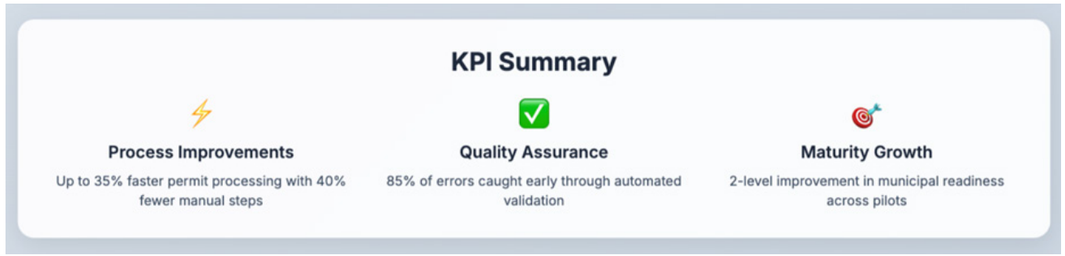
Step-by-step diagram of the DBP process:

- Submission: Professionals upload BIM/GIS models via CHEK platform.
- Rule Checking: Automated validation of zoning, accessibility, and safety.
- Feedback: Authorities receive digital reports and approve or request revisions.
- Approval: Digital permit issued with cryptographic signature.

This end-to-end process is secure, auditable, and fully digital—ensuring fast, reliable outcomes.



4. BENEFITS AND IMPACT



Key Benefits of Digital Building Permits

Faster Permitting

Pilot results show time reductions in processing building permits compared to traditional workflows, especially rule checking procedures. Automation replaces manual inspections with digital compliance checks. Pre-checking saves a lot of time too.

Increased Transparency and Quality

Stakeholders can trace validation logic, visualize rule conflicts, and justify decisions. The applicant can use the same tools to pre-check the IFC model. This builds trust in planning processes.

Better Coordination

Designers and municipalities use the same digital platform and data, eliminating version conflicts and unnecessary rework.

EU Harmonization Potential

CHEK aligns with the European Digital Building Logbook and BIM-based permitting roadmaps, supporting cross-border digital workflows and data reuse.

CHEK by the Numbers: KPI Highlights

To measure its impact, CHEK tracked a range of technical, process, legal, and user satisfaction KPIs across its four pilot cities: Ascoli Piceno (APC), Vila Nova de Gaia (GAI), Lisbon (LIS), and Prague (IPR). The results show significant progress toward digital transformation in permitting processes.

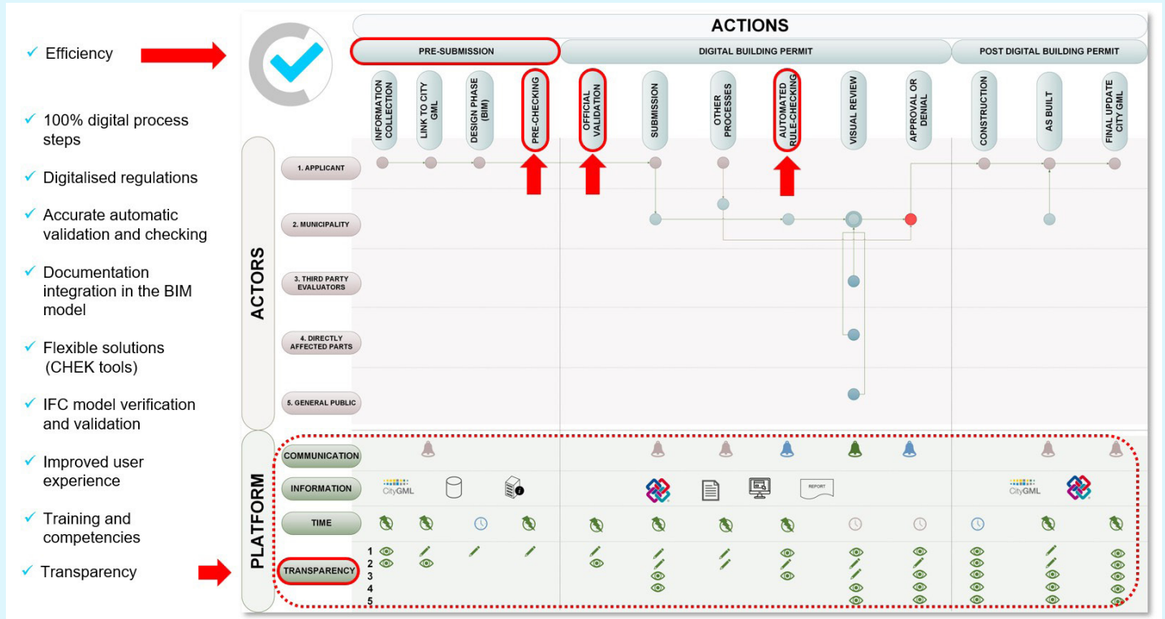
CHEK tools were applied in 100% of the redesigned DBP workflows in all pilot cities, with digitalisation rates ranging from **70% to 100%** depending on existing local maturity. Accuracy of rule validation exceeded expectations, reaching **95–100% in most cities**. Time savings of up to **30–40%** were reported in specific tasks, particularly for pre-checking and early-stage validations. Across pilots, the IFC model integration achieved up to **90–100% alignment** with information requirements (LOD/LOIN).

The project also demonstrated strong results in training and capacity-building, delivering multiple sessions per city with high engagement. Use of open standards (IFC, CityGML), coupled with flexible, municipality-controlled rule parameters, confirmed the system's adaptability. Overall, CHEK delivered not just technical tools, but measurable outcomes across innovation, process efficiency, legal automation, and user confidence.

Category	Result
DBP Steps Using CHEK	100% across all pilot cities
Digitalisation of Process	70%–100% (avg. >85%)
Rule Validation Accuracy	95%–100%
Time Savings (Internal)	23%–40% in specific tasks
IFC Data Compliance	Up to 100% LOD/LOIN alignment
User Satisfaction (CHEK)	30%–70%, depending on city
Trainings Delivered	2–4 per city with 55–70% satisfaction
Flexible Rule Parameters	100% changeable by municipalities

Key points in the CHEK Digital Building Permit Process

The end-to-end Digital Building Permit (DBP) process and highlights the key innovation points introduced by CHEK—notably, pre-checking, automated rule-checking, and a standards-based platform layer. These innovations enabled municipalities to transition toward 100% digital processes, significantly improve efficiency, and increase transparency and data traceability. By embedding automatic validation tools and integrating BIM/GIS models from the early stages, CHEK helped streamline decision-making, reduce errors, and achieve major performance KPIs across all pilot cities.



5. CHEK'S APPROACH TO THE DIGITAL BUILDING PERMIT (DBP)

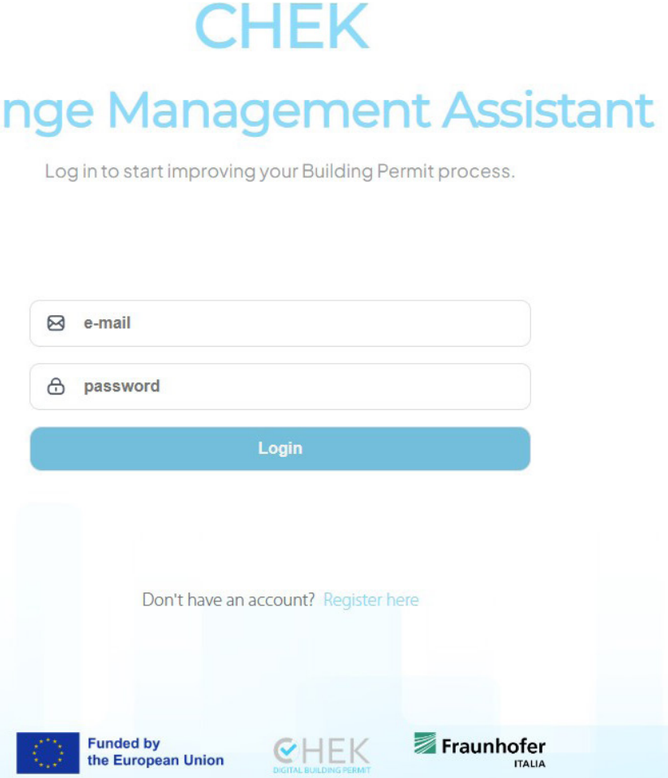
CHEK offers a fully integrated suite of digital tools that work together to support the Digital Building Permit process. These tools enable rule encoding, model submission, automated checking, data transformation, and final approval, based entirely on open standards and modular workflows. Below, we present the CHEK tools:

PRE- DBP tools

Process mapping and assessing

CHEK Virtual Assistant

The CHEK Virtual Assistant supports municipalities in assessing their current ("as-is") permitting processes and aligning them with CHEK's digital ("to-be") benchmarks. It helps identify inefficiencies, evaluate digital maturity, and plan the transition toward a fully integrated BIM-GIS digital building permit system, ensuring strategic readiness before implementation begins.



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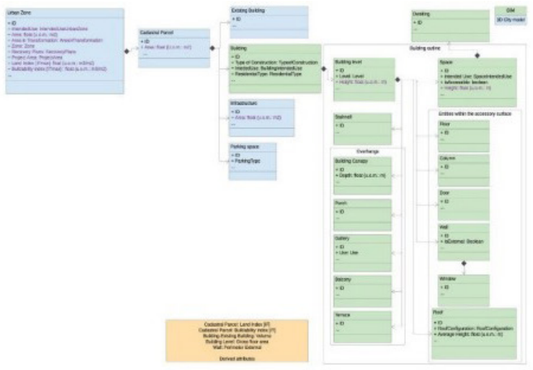
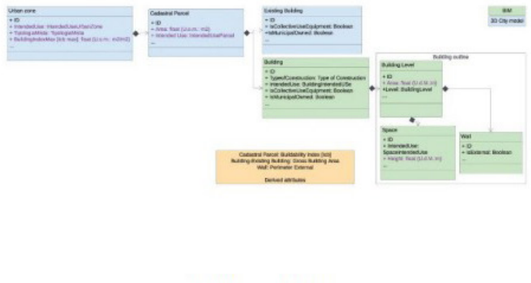
CHEK DIGITAL BUILDING PERMIT
Fraunhofer ITALIA

CHEK Rule interpretation

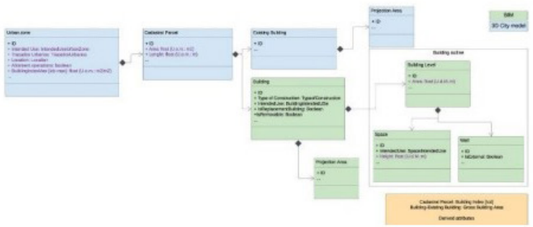
CHEK's rule interpretation methodology, described in Deliverable 2.1, defines a structured, step-by-step process to translate legal building regulations into formalized, digital rules that can be used in automated compliance checking. The approach is based on the RASE model (Requirement, Applicability, Selection, Exception) and emphasizes clarity, modularity, and alignment with open standards like IFC and CityGML. It includes a taxonomy of rule types, object mappings, and practical templates to guide both manual and assisted interpretation across disciplines and municipalities.



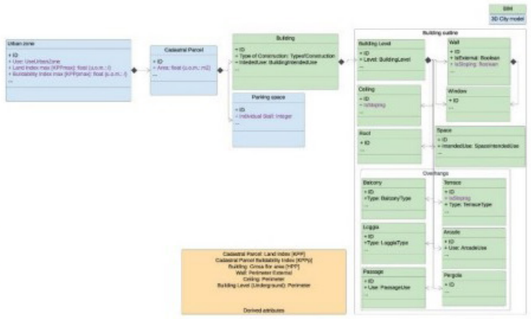
Ascoli Piceno



Vila Nova de Gaia



Lisbon



Prague

CHEK Contribution:

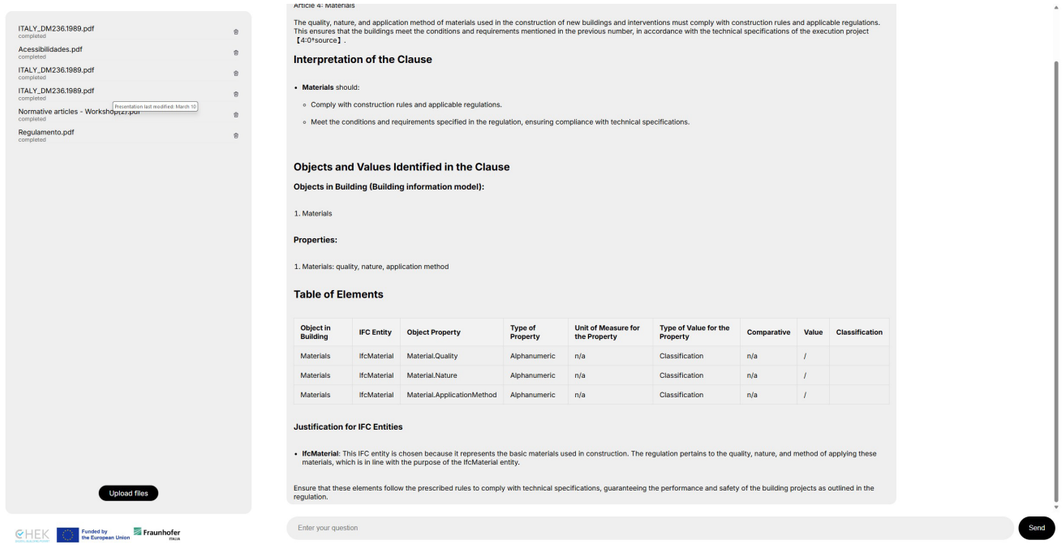
- Defined LoIN templates for DBP purposes (e.g., max height, distance to boundary).
- Applied IFC 4.3 + CityJSON for property data requirements and mapping regulation to relevant entities.

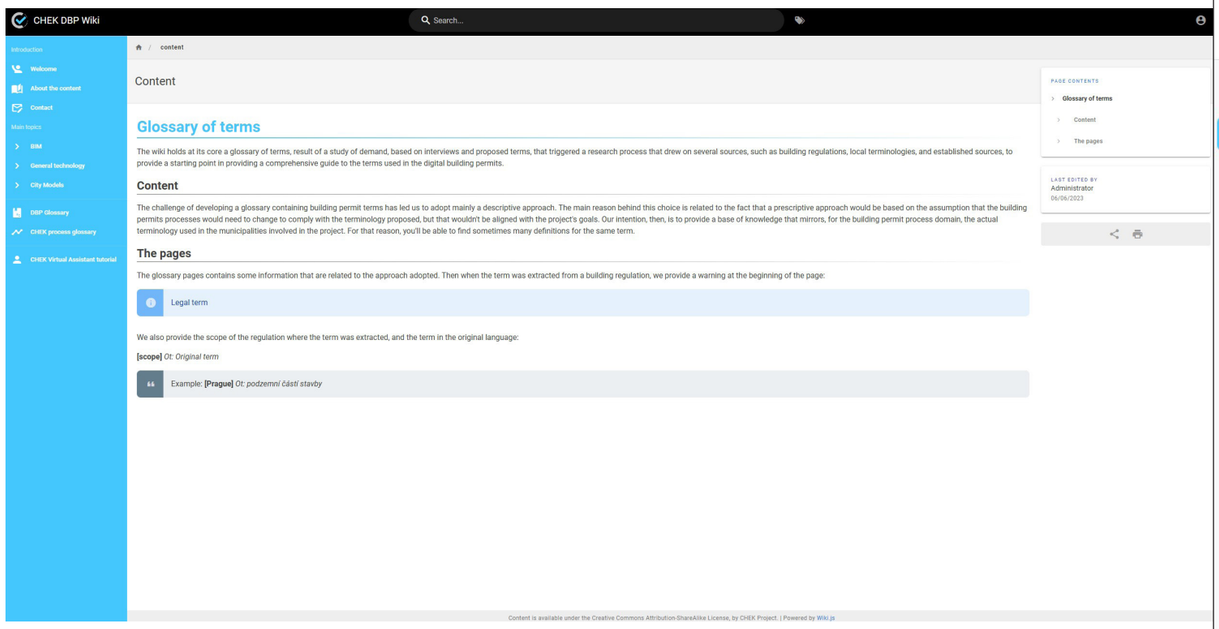
How to Use in Practice:

- Define DBP use case (e.g., maximum building height, Min distances, Buildability index).
- Apply CHEK LoIN template to specify required geometry, properties, and documents.
- Validate IFC model against LoIN + IDS packs. Example of IDS relating to the entities and properties that should be contained in the model

Check (DBP Use Case)	Required Entities & Properties	LOIN (what is needed & why)	Standards Reference	Validation / Tooling
Maximum building height	BIM (IFC): `IfcBuilding`, `IfcRoof`, `IfcWall`, `Pset_WallCommon.IsExternal`, `CHEK_common.Height` (if used). Geo (CityJSON): `Building` + attribute `+legalHeight` (CityJSON ext).	Geometry: Building outer shell, roof intersection line; LoD 2–3.2 (façade + roof edges). Alphanumeric: `IsExternal` on walls; legal height threshold. Docs: Legal article/reference.	LOIN: ISO 7817-1 (purpose, actors, milestone). Actors: ISO 19650-4. Properties: ISO 23386. Schemas: IFC 4.3, CityGML/CityJSON v3. Zoning: INSPIRE (Planned Land Use).	Pre-check: IDS pack (IFC). Geo check: CHEK City Validator (val3dity + SHACL). View/compare: VC Map / BIMserver.center.
Min. distance to parcel boundary	BIM (IFC): `IfcWall` (exterior), openings. Geo: `CadastralZoning` (INSPIRE), parcel boundary geometry.	Geometry: Building outer shell; parcel boundary; LoD 1–2 (BIM), LoD0 (parcel). Alphanumeric: distance threshold per zone/plot type. Docs: `Parcel ID`, zoning ref.	LOIN: ISO 7817-1. Actors: ISO 19650-4. Props: ISO 23386. Schemas: IFC 4.3, INSPIRE Cadastral/Planned Land Use.	Pre-check: IDS (`IsExternal` walls present). Measure: OGC API Processes workflow; Validator report (JSON).
Building–building distance (windows consideration)	BIM: `IfcWall` (external), `IfcWindow`. Geo: CityJSON `Building`, `WallSurface` with `+hasWindows`.	Geometry: Two façades with window surfaces; LoD 2–3 (façade planes). Alphanumeric: `+hasWindows` flag on façades; threshold values.	LOIN: ISO 7817-1. Props: ISO 23386. Schemas: IFC 4.3, CityJSON ext (façade/window flags).	Validation: SHACL profile for `+hasWindows`; val3dity for geometry; report in JSON/PDF.
GFA / Buildability index	BIM: `IfcBuildingStorey`, `IfcSpace` (gross areas). Geo: Zoning element buildability/plot ratio.	Geometry: Storey boundaries; LoD 1–2. Alphanumeric: area by storey; codelist for use; zoning index. Docs: Method note (gross/net).	LOIN: ISO 7817-1. Props: ISO 23386. Schemas: IFC 4.3; INSPIRE Planned Land Use (`specificLandUse`, indices).	Pre-check: IDS (area props); Calc: DBP calculator service (OpenAPI); Audit: trace to legal article.
Georeferencing & CRS consistency	BIM: `IfcSite` / `IfcMapConversion` (IFC 4.3), survey points. Geo: City model CRS (`EPSG`), vertical datum.	Geometry: Model origin, rotation, scale. Alphanumeric: `EPSG codes`, `vertical datum`. Docs: Georeferencing report.	LOIN: ISO 7817-1. Schemas: IFC 4.3 georef, CityGML/CityJSON CRS.	Tooling: IfcGref (geo-reference checker); Gate: pre-submission pass/fail.

As a practical outcome of this methodology, the CHEK Rule Interpreter was developed to support users in identifying rule logic and linking it to BIM entities. The tool reduces time and complexity by applying AI to assist in extracting structured parameters from regulatory texts, while still supporting expert review and human oversight. Together, the methodology and tool form the foundation for scalable, standards-based rule formalisation within the digital building permit process.

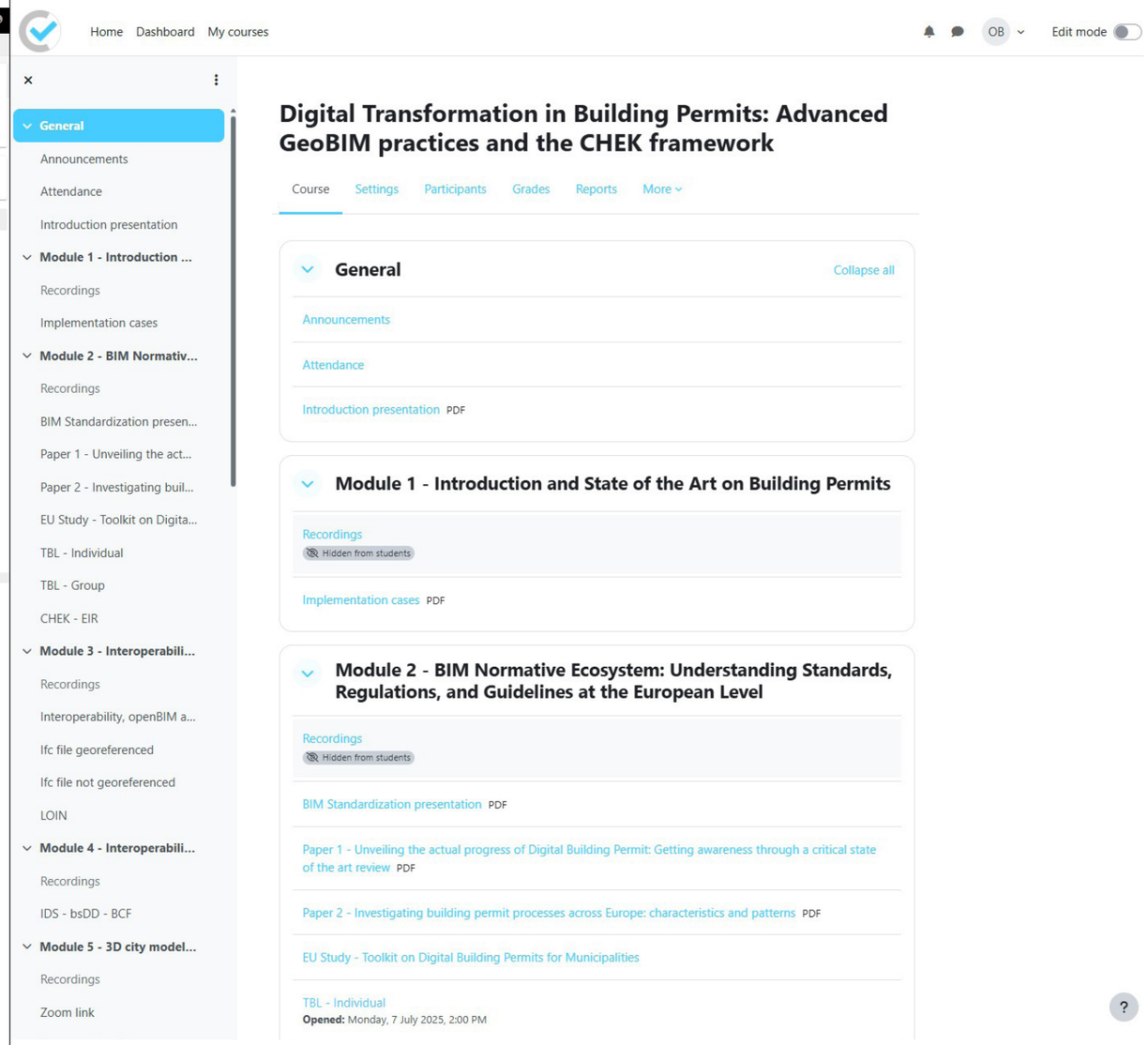




Knowledge tools

CHEK Wiki – University of Minho

The **CHEK Wiki** is a collaborative knowledge platform designed to support the **upskilling and reskilling** of professionals across the construction value chain. Developed by the CHEK consortium, it centralizes multidisciplinary knowledge on building permits, digital technologies, and regulatory logic to ensure consistent understanding among project partners. Beyond training, the Wiki also improves internal communication by establishing **shared definitions** for both municipal permitting terms and digital concepts relevant to the CHEK toolkit and its implementation.



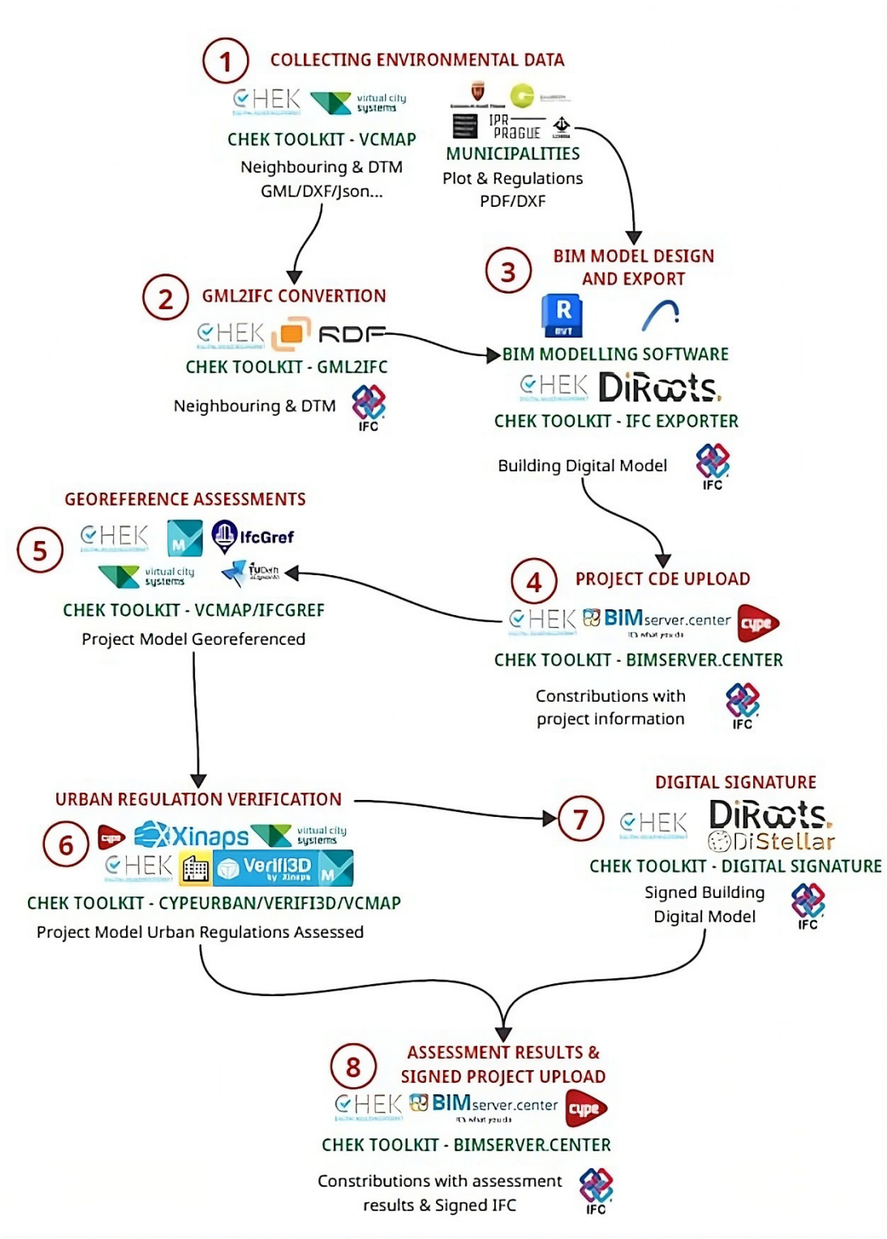
CHEK E-learning Hub – University of Minho

The CHEK eLearning Hub (elearning.chekdbp.eu) is an open-access digital platform designed to upskill and reskill professionals across the construction value chain. It offers self-paced learning modules, technical content, and practical examples drawn from the CHEK project's real-world pilots. Covering topics like BIM/GIS integration, rule interpretation, legal frameworks, and DBP tools, the platform supports lifelong learning and capacity building for municipalities, designers, and regulators.

DBP toolkit

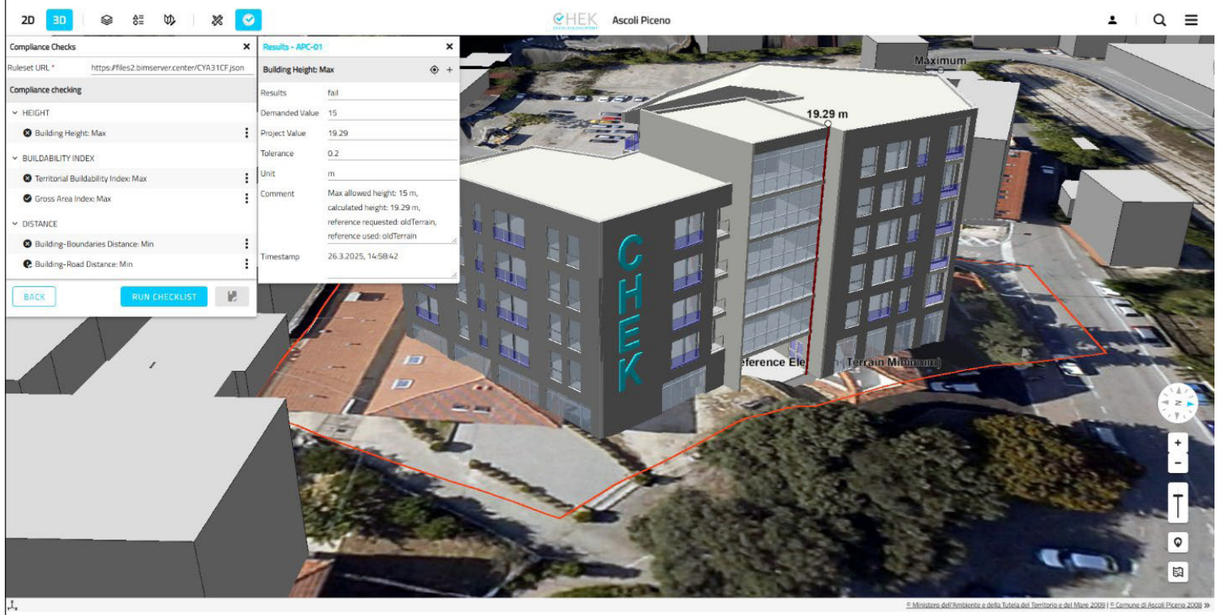
A modular architecture built on open standards and connected tools

To enable a fully digital building permit process, CHEK developed an open, modular, and standards-based architecture that brings together a set of interoperable tools. This architecture connects multiple key components: a central coordination platform, validation and rule-checking engines, BIM-GIS converters, and a digital signature module. These tools can work together independently, depending on the needs of a municipality or region. The system is designed to interface with existing local platforms and allows municipalities to manage permitting workflows transparently and efficiently.
The diagram illustrates the end-to-end DBP process using the CHEK toolkit, from data collection and model creation, through validation and signature, to final permit delivery. Each tool in the ecosystem plays a specific role while remaining interoperable, allowing cities to scale their digital permitting capabilities based on local readiness and needs.



A Modular, Interoperable Toolkit

All these tools are designed to be modular, standards-based, and open. Cities can choose to adopt the entire suite or integrate individual components with their existing systems. Whether automating zoning checks, converting between BIM and GIS, or signing files digitally, CHEK provides practical, scalable tools for a digital permit process fit for the future.



Integration of Open Standards

The digital transformation of permitting processes relies on open standards to ensure seamless data exchange, transparency, and long-term interoperability. By using formats like IFC for Building Information Models and CityGML/CityJSON for geospatial data, municipalities and professionals can work across platforms and avoid vendor lock-in. OpenBIM and Open Geospatial frameworks support modular, scalable solutions that adapt to diverse local contexts.

Standardization and Interoperability

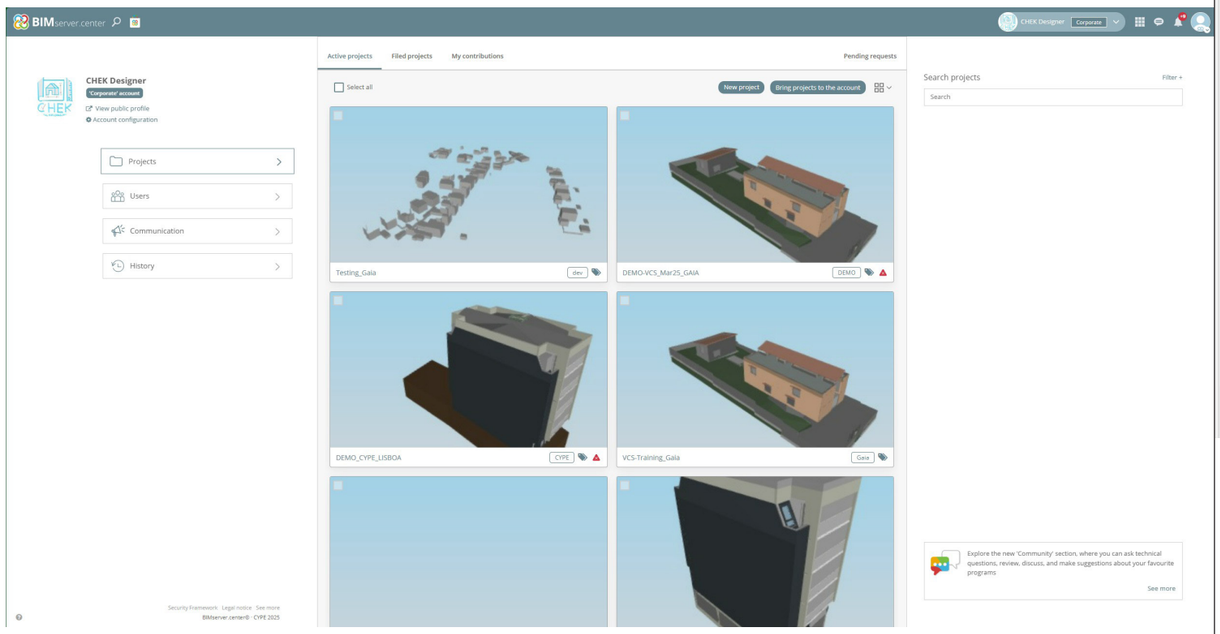
There is a growing need across Europe for harmonized, interoperable permitting workflows. Initiatives like CHEK contribute to this effort by providing tools and methodologies aligned with EU-level standardization agendas. By demonstrating how open standards can support automation, rule-based validation, and cross-system communication, CHEK offers a replicable model that helps cities modernize permitting while maintaining compliance with evolving digital policy frameworks.

1. Central Platform & Project Environment

At the heart of the toolkit is the **CHEK DBP Platform**, where professionals can upload BIM and GIS models, apply automated checks, and track the permit process. It supports file versioning, access roles, and integration with downstream tools. Municipalities can also connect local systems through APIs to manage workflows and feedback loops. This is the central coordination hub of the DBP ecosystem.

Key tool:

- **BIMserver.center:** Cloud-based Common Data Environment (CDE) for model exchange and validation coordination.



2. Rule checking Engines

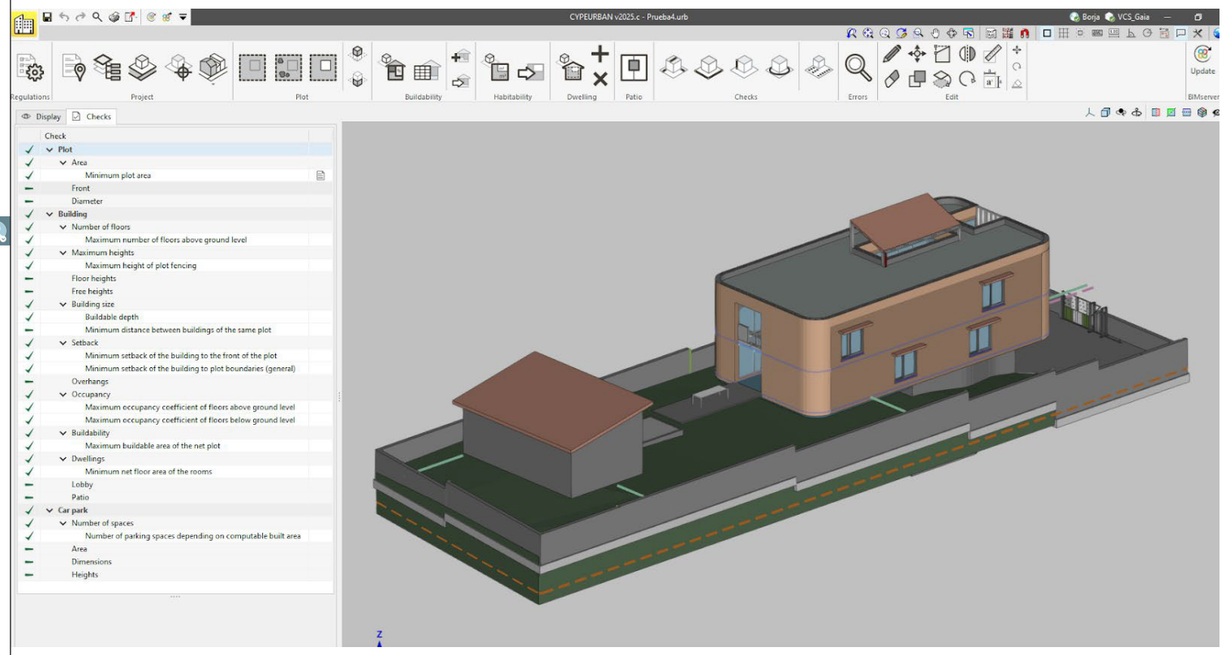
To automate compliance checks, building and planning rules must first be structured in a way that digital tools can interpret. CHEK supports this through a suite of tools that verify submitted models against zoning, accessibility, and regulatory criteria. Both BIM-based and GIS-based checks are integrated, enabling municipalities to assess a wide range of conditions, such as plot occupancy, height restrictions, terrain compliance, and spatial relationships, quickly and accurately.

Key tool:

- **CYPEURBAN:** Urban rule validation
- **Verifi3D:** BIM compliance checking
- **VCMap Plugin:** GIS validation and spatial queries

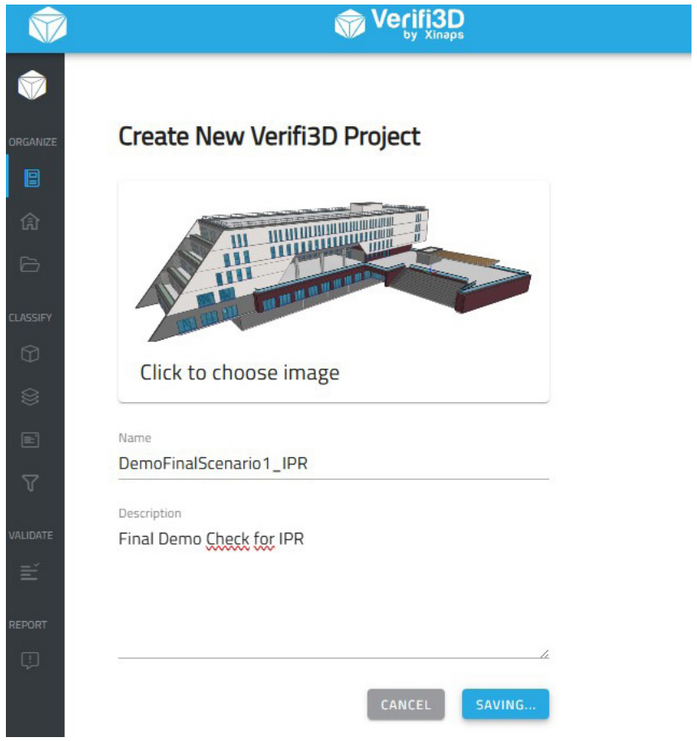
CYPEURBAN

A desktop application for zoning and urban planning checks. It allows designers to verify that a building respects local regulations such as plot occupation, height, distances, and urban constraints. Integrated into the platform to support pre-submission validation.



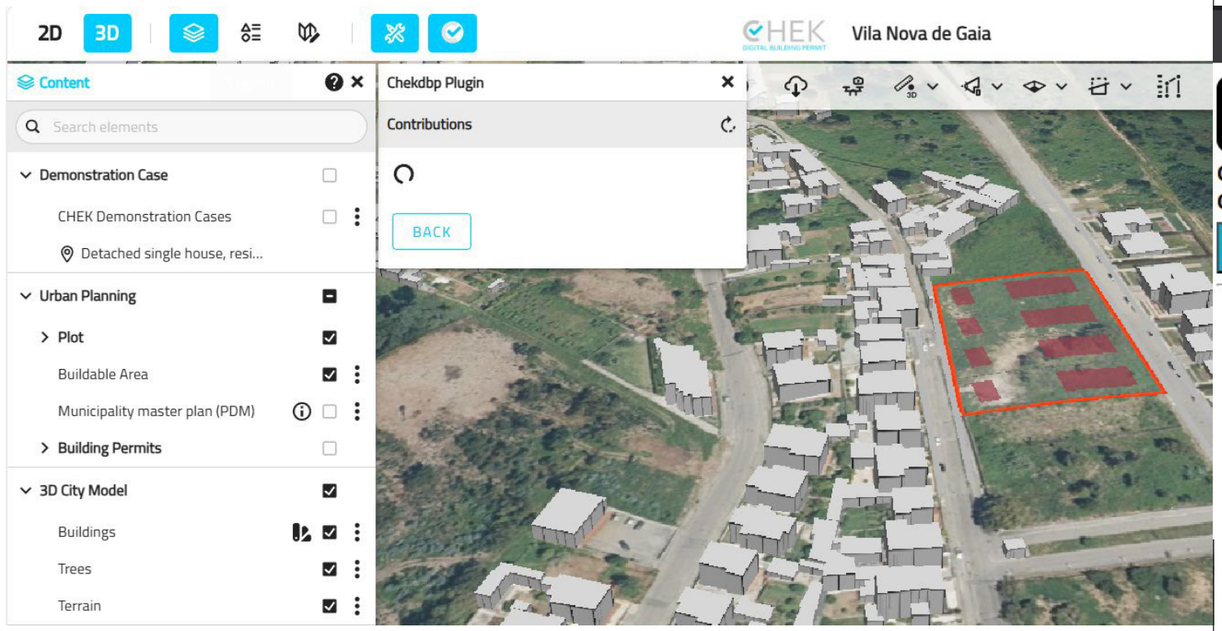
Verifi3D

A cloud-based BIM model checker that supports detailed rule-based validation of architectural and structural elements (e.g. accessibility, ceiling height, window clearances). Users can load IFC files, apply rule sets, and visually inspect validation results.



VC Map Plugin

This plugin connects the DBP platform to VC Map, a municipality's geospatial database. It enables local planning departments to provide zoning, land use, and spatial constraints directly into the CHEK workflow, keeping regulations and geodata up to date.



3. GeoBIM Integration & Conversion

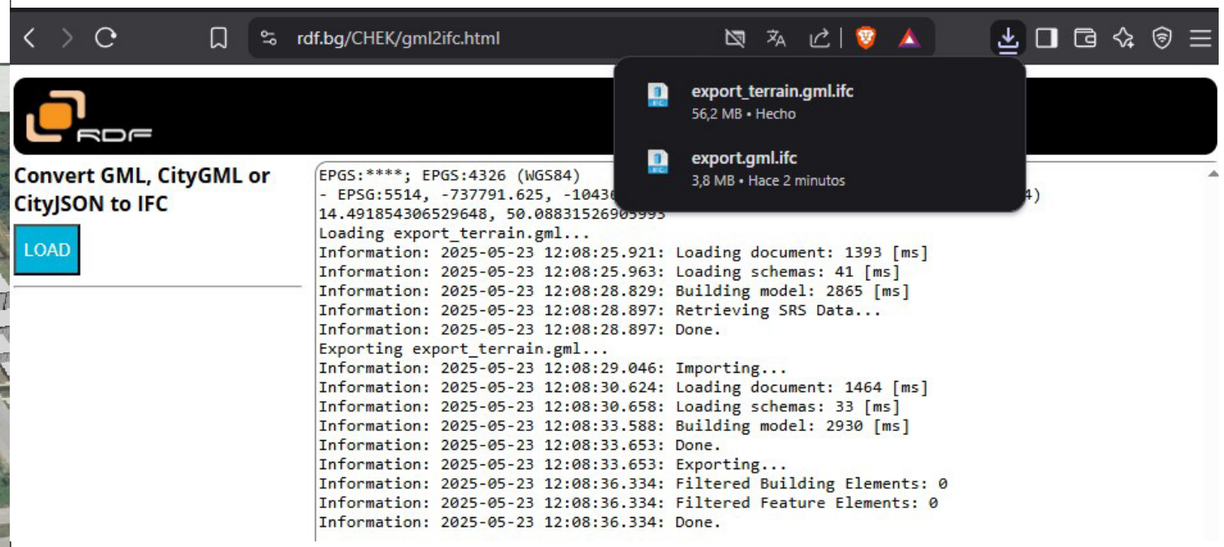
CHEK enables seamless interaction between BIM and GIS data by providing tools to convert and georeference models. This supports advanced spatial analyses, such as terrain slope, solar access, and neighboring structures.

Key tool:

- **GML2IFC Converter:** GIS to BIM conversion
- **IfcGref:** Aligns BIM models to georeferenced coordinates
- **BIM to GIS / GIS to BIM:** Enables 2-way data translation

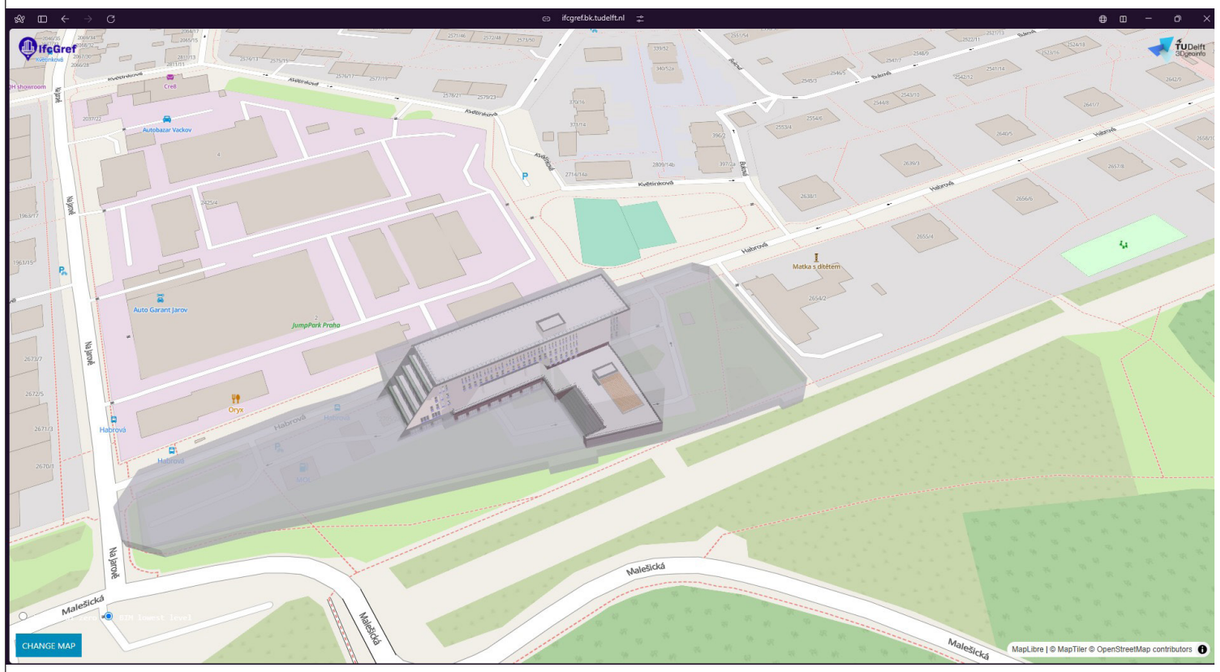
GML2IFC Converter

Performs the reverse: geospatial data is brought into BIM authoring tools to provide designers with contextual layers (e.g. parcel boundaries, height maps).



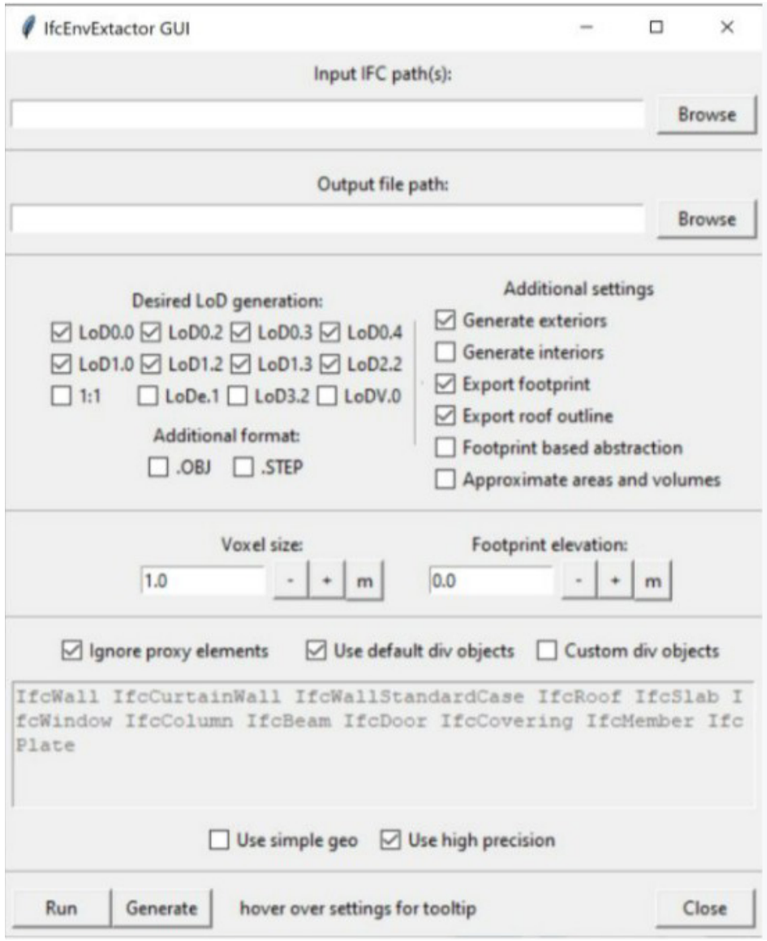
IfcGref

A plugin that aligns IFC models to georeferenced coordinates. This is essential for integrating BIM and GIS in real urban environments.



BIM to GIS Converter

The BIM to GIS Converter enables the transformation of IFC-based building models into GIS-compatible formats such as CityJSON. This allows buildings to be accurately integrated into geospatial contexts, including terrain models, zoning layers, and city-wide datasets. The conversion process maintains geometry, semantic data, and object hierarchy, while also offering control over the level of detail and export precision.

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        "Ignore voids" : 0,
        "Simplify geometry" : true,
        "Ignore simplification" : [],
        "Correct placement" : true
    },
    "JSON" : {
        "Footprint elevation": 1,
        "Footprint based" : 0,
        "Horizontal section offset": 0,
        "Generate footprint": 1,
        "Generate roof outline": 1,
        "Generate interior": 0,
        "Generate exterior": 1,
        "Generate site": 0,
        "Georeference" : 1,
        "Merge semantic objects": 1,
    },
    "Output format" : {
        "STEP file" : 1,
        "OBJ file" : 1
    },
    "Tolerances" : {
      "Spatial tolerance" : 1e-6,
      "Angular tolerance" : 1e-4,
      "Area tolerance" : 1e-4
    },
    "Generate report": 1,
    "Threads": 12
}
```


4. Model Validation & Data Checking

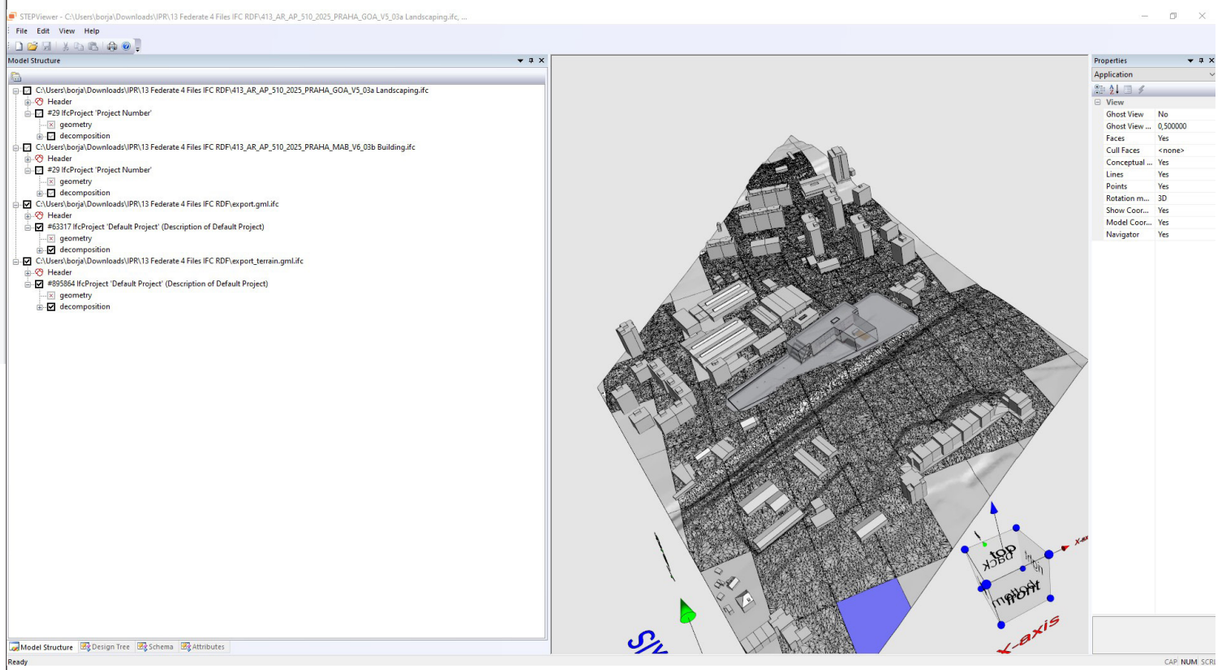
To ensure data quality and compliance, models are validated against schema requirements. This step confirms that submitted IFC and CityGML files are complete, structured, and ready for automated rule checking.

Key tool:

- **IFC Validator:** Ensures model conformance to IFC schemas
- **CityGML/CityJSON Validator:** Validates geospatial model formats
- **IFC exporter:** Prepares and structures models for submission, ensuring clean, standardised output for validation and signature steps

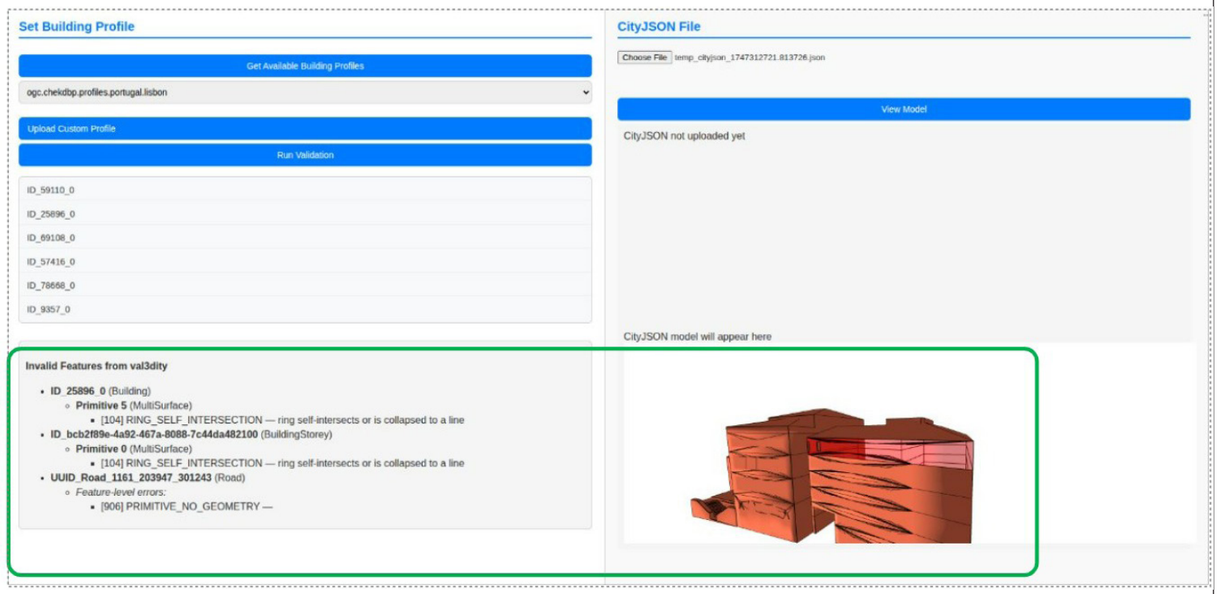
IFC Validator

This tool ensures that submitted IFC files conform to schema standards and include all required attributes and spatial hierarchies, crucial for reliable rule checking.



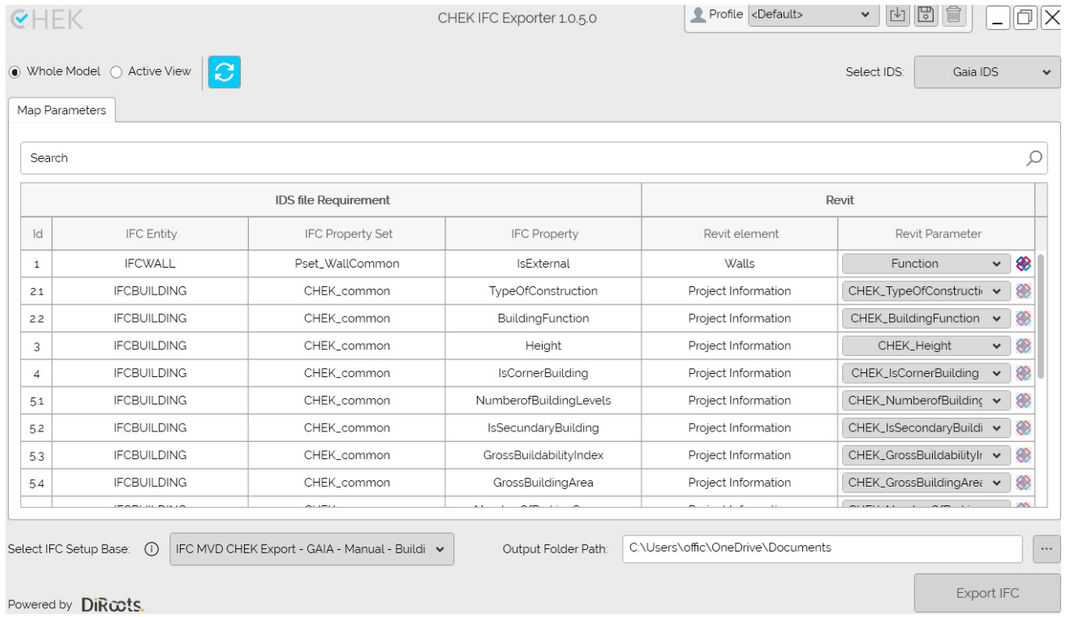
CityGML/CityJSON Validator

Validates geospatial models used in urban context rules (e.g. terrain slope, surrounding buildings).
Ensures conformance with CityGML and CityJSON standards for interoperability.



IFC Exporter

Supports the export of Building Information Models from authoring software into the data requirements-compliant format (i.e. the specific Information Delivery Specification).
The tool provided in CHEK (developed by DiRoots) allows exporting the BIM information from Autodesk Revit into the defined CHEK IFC IDS.



5. Digital Signature & Archiving

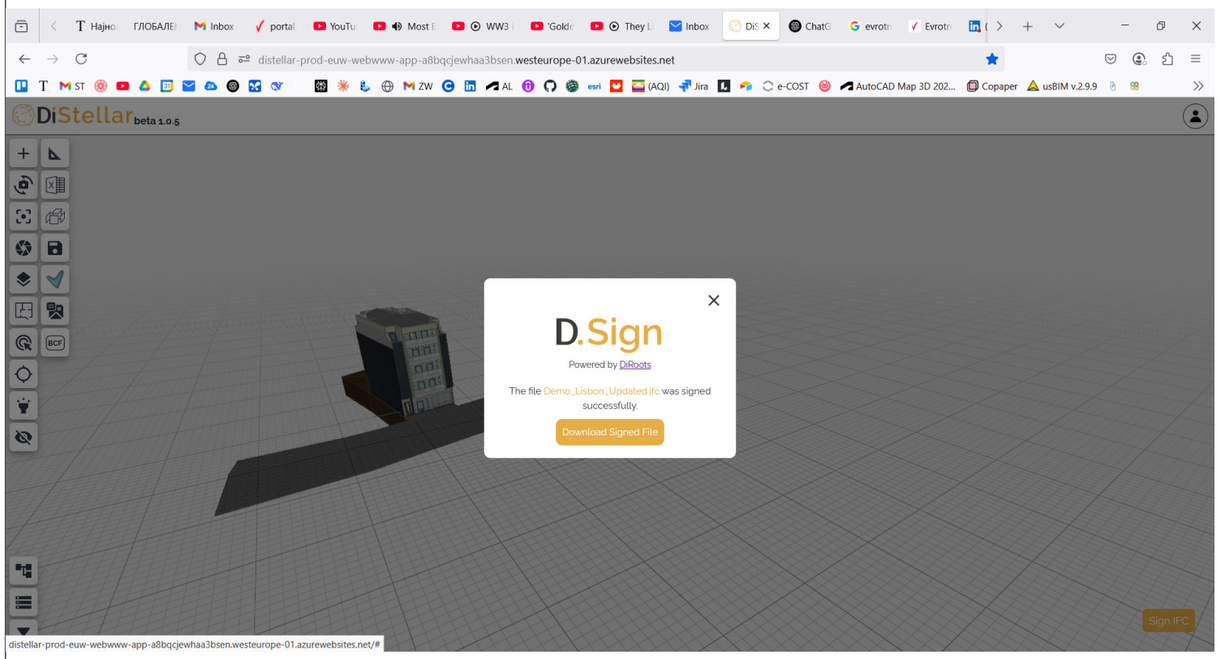
Once validated and approved, the final model is signed digitally using the DSign tool. This ensures legal traceability, data integrity, and alignment with eIDAS standards.

Key tool:

- **IFC Digital** Signature **(DSign): Signs IFC models before permit issuance**

IFC Digital Signature (DSign)

This tool digitally signs the final IFC file, enabling traceability, version control, and legal validity. It complies with eIDAS standards and can be used by municipalities to confirm official approval.



6. PILOTS AND IMPACT

Real-World Implementation

CHEK tools were successfully piloted in several European cities:

- Ascoli Piceno (Italy)
- Lisbon (Portugal)
- Prague (Czech Republic)
- Vila Nova de Gaia (Portugal)

Testimonials:

"It's the beginning of something that can be very useful in the future" – BP official, Vila Nova de Gaia

"It's the future, I guess. It's a big change in AEC industry" – Municipal official, Lisbon

"The CHEK project offered a valuable and enriching experience, particularly in highlighting the importance of understanding what urban rules are and how they are applied in practice. These rules are not static parameters, they are interpreted, negotiated, and applied contextually by municipal experts, based on real-world conditions." – Lisbon

"The IFC export tool was a game changer, very easy to use and extremely helpful for designers." – BP official, Prague

"For us, this was more than a pilot. It was an opportunity to explore a new mindset in how permits could be issued in the future." – Planning Department Representative, Ascoli Piceno

"The project showed us that a digital building permit is possible. Now that we've tested it, it feels much closer than before." – Municipality Official, Ascoli Piceno

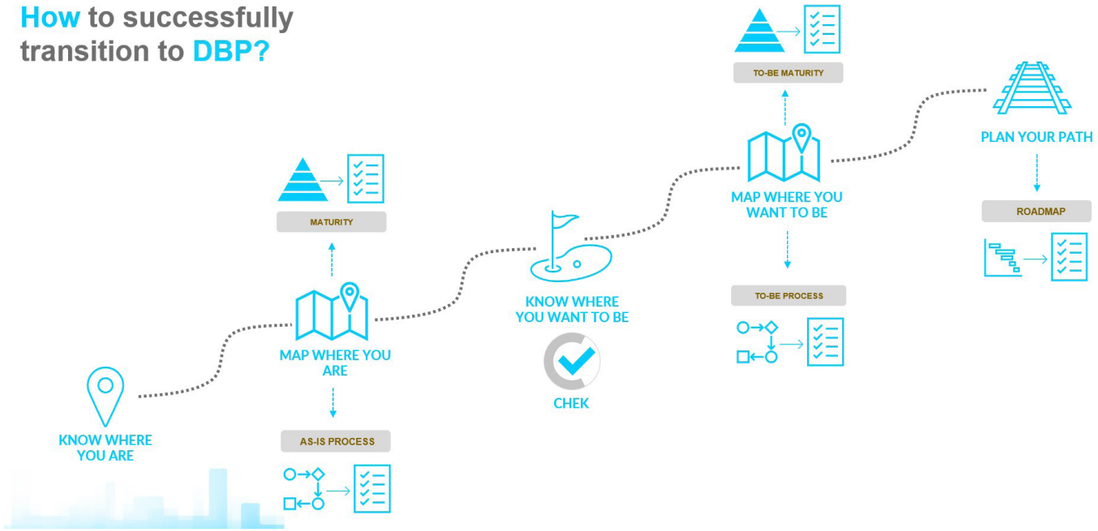
"It's very helpful for people in the building authority to see how it could work digitally. It's important and interesting, even if there were some technical and workflow issues. The experience showed how rules could be implemented and how the process could become more intuitive." – Municipal official, Prague

7. SCALABILITY AND ADOPTION

How to Adopt DBP in Your City

Adopting a Digital Building Permit system is not a one-size-fits-all process. CHEK supports municipalities through a modular, step-by-step pathway that can be adapted to local needs, legal contexts, and digital readiness levels.

How to successfully transition to DBP?



Where to Begin: Assess Your Readiness

The first step is understanding where your city stands today. The CHEK Maturity Model and Roadmap help assess the current permitting process and define a structured transformation path. With the support of the CHEK Virtual Assistant, municipalities can map their existing ("as-is") processes and compare them with CHEK's digital benchmark ("to-be" process). This ensures that each city begins from a clear baseline, with a realistic, tailored strategy for implementation.

How to adopt

CHEK provides open-source tools, documentation, and guidance to support each phase of adoption:

- **Assessment:** Use the CHEK Maturity Model and Virtual Assistant to evaluate digital maturity and process gaps.
- **Integration:** Connect the CHEK API to your existing permit system.
- **Training:** Use CHEK's pilot experiences, rule sets, and visual tutorials.
- **Customization:** Adjust rule-checking logic to local legislation using templates

Available Resources

- **Open API documentation** for IT teams and integrators
- **Verifi3D** and **CYPEURBAN tools** for planners and rule evaluators
- **DSign** for digital model approval and legal archiving
- **Public deliverables,** the **CHEK Wiki,** and the **eLearning Hub** for ongoing support

CHEK is designed to scale, from small municipalities to large metropolitan regions, by providing modular, standards-based tools that can integrate with existing platforms or operate independently.

JOIN THE MOVEMENT

Cities and designers can access CHEK via:

https://chekdbp.eu/

8. FURTHER REFERENCES AND CONTACTS

Public Resources

- **CHEK Website:** www.chek-dbp.eu
- **CHEK GitHub:** github.com/chek-dbp
- **Key Deliverables:** list of deliverables (accessible online)
- **DOI:** https://doi.org/10.5281/zenodo.17226671

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RESEARCH

TU Delft 3Dgeoinfo

Fraunhofer ITALIA

UNIVERSITY OF BRESCIA

Universidade do Minho

SOFTWARE

cype

virtual city systems
digital views. real perspectives.

Xinaps

RDF

DiRoots.
connecting the dots

DESIGN

SIA architects

zwei
Architektur.Design

CONSTRUCTION

Mostostal
WARSZAWA

FASADA

MUNICIPALITIES

LISBOA
CÂMARA MUNICIPAL

GAIURB,EM
URBANISMO E HABITAÇÃO

IPR PRAGUE

Comune
di Ascoli Piceno
MEDAGLIA D'ORO AL VALOR MILITARE
PER ATTIVITÀ PARTIGIANA

STANDARDIZATION

Open
Geospatial
Consortium

buildingSMART
International