

# CCI – part of the Czech BIM strategy

CCI workshop, Tallinn

Eva Kaiserová, 15. 12. 2022



# Topics of the presentation:

- National BIM strategy
- CCI – key part of the common digital language for the construction



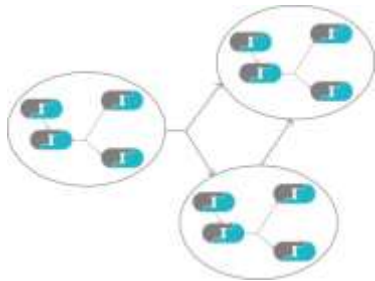


# Czech national BIM strategy

# BIM strategy overview

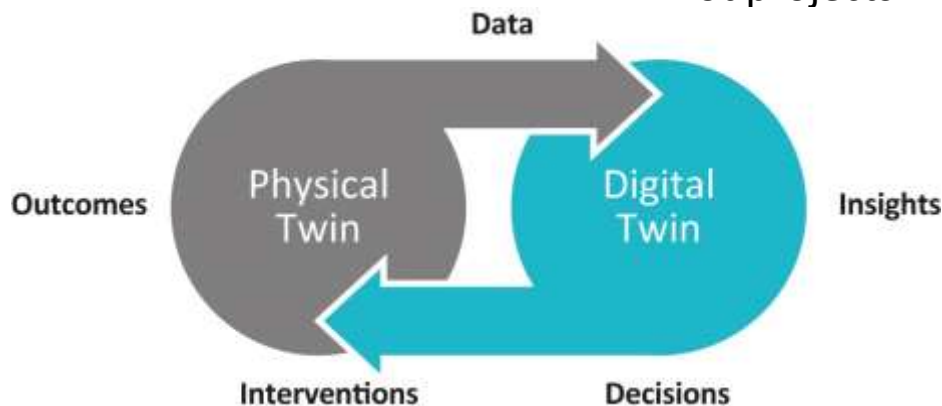
## Agency ČAS – BIM strategy department

- Authorized by the ministry to carry out most of the BIM strategy expert works
- A professional government platform bringing together experts from the areas: public administration, private companies and academic institutions
- Our main tasks: **standards, methodology (guidance), education**



## Key domains of the BIM strategy I.

- BIM implementation strategies on the organization level
- Procurement, project management, contracts
- Data standards and information requirements
- Pilot projects – support, monitoring, publicity



## Key domains of the BIM strategy II.

- Education for public sector and supply chain, promotion
- Terminology and international/national standards
- Estimating, bill of quantity
- Facility management
- BIM&Geo – collaboration BIM and GIS



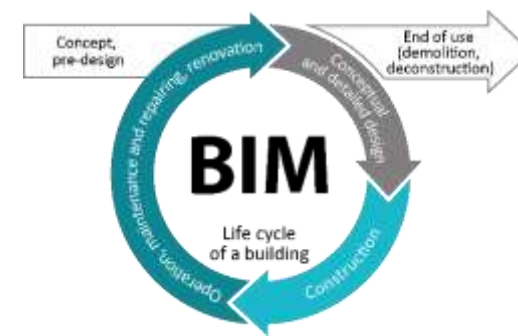
# Czech national BIM strategy

## Our vision

Standardization and methodological support for digitization to achieve more efficient construction.

## Our mission

Using standardization, education and communications to accelerate the innovative development of the BIM method and thus to make a significant contribution to the higher efficiency of construction projects through improved collaboration, information sharing and relationship cultivation.



# Czech national BIM strategy: Enabling Consistency through Standardisation

## Our main principles:

- „Not reinventing the wheel again“
- Active participating in ISO/CEN TC (e.g. CEN 442)
- All our outcomes are based on international standards and collaboration

## 3 mandatory pillars (based on standards):

- Information model (PIM & AIM)
- Common Data Environment (CDE)
- BIM protocol

## Main national applications of the standards:

- Construction Data Standard (DSS)  
EN 23386, 23387, 17412, ISO 19650, 16739
- Classification system CCI  
ISO/IEC 12006-2, 81346-2, 81354-12
- Guidances, support documents  
ISO 19650 serie



# Current action areas in Czech Republic

- **Digital transformation – change management**
  - e-government agenda (Digital Czech strategy)
  - Support organization strategy plans
  - Guidances, education
- **Digital common language – use cases**
  - Construction Data Standard (DSS)
  - Classification system CCI
- **Digital processes – information management (BIM)**
  - Common Data Environment for Public sector
  - Public procurement, contracts, project management
- **Pilot project programme – public sector**
  - Support, monitoring, public relations
  - Shared structured feedback
- **Education, public relations**
  - Events, workshops, training, online platforms



## Current and future challenges

- **Application of international standards into the national and social environment**
- **Use cases – appropriate priority order**
- **Improving the sharing knowledge base**
  - Standards, guidelines and other support documents
  - Benefits, use cases,
  - Best practice, lessons to learn
- **Stimulating public sector organization BIM strategies**
- **Digital building permits including information models**



## Czech BIM strategy website:

[www.koncepceBIM.cz](http://www.koncepceBIM.cz)

*Sorry, only in Czech but translators can help 😊*





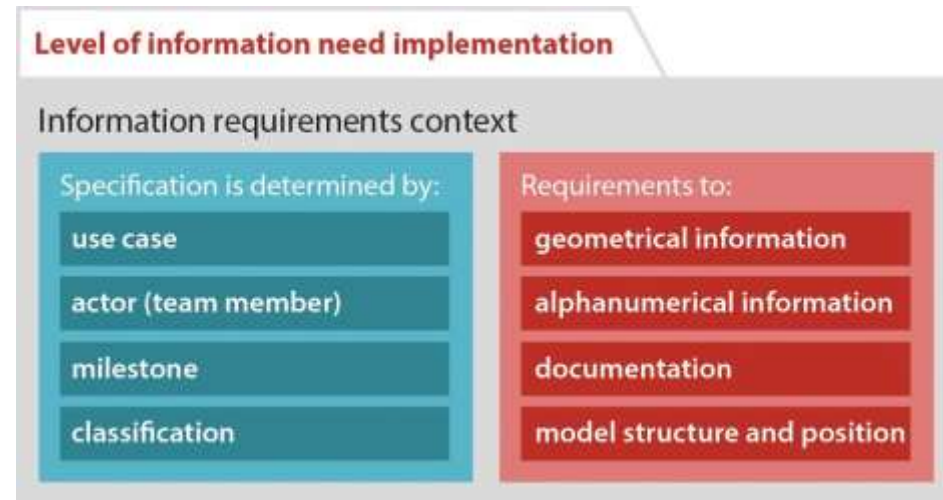


CCI national activities

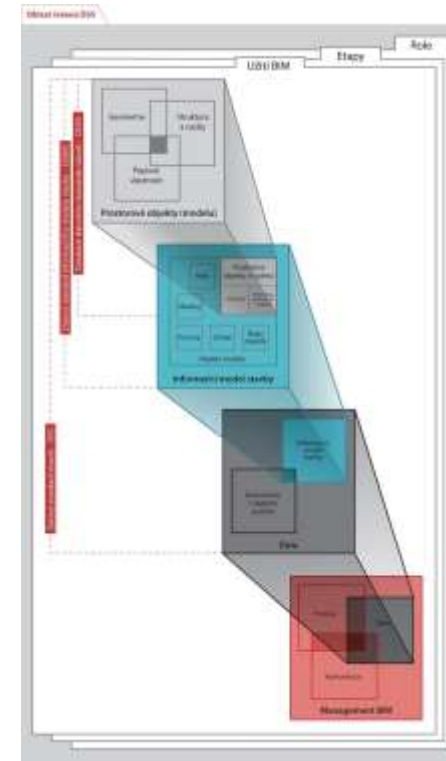
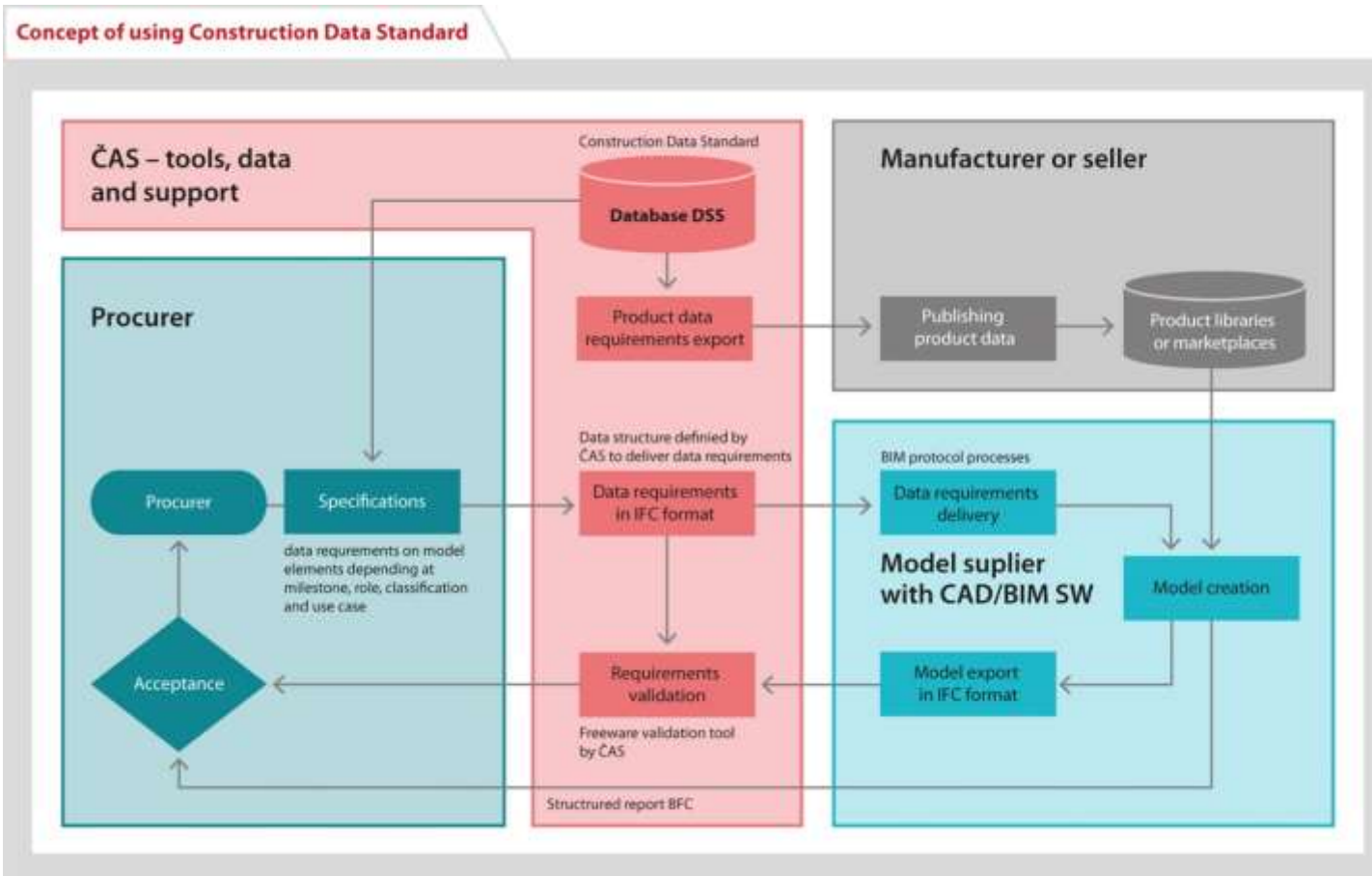
Common digital language  
for the construction

# DSS = data dictionary – principles

- **Based on international standards and cooperation:**
  - EN 23386, 23387, 17412, ISO 19650, 16739 and more...
  - ISO/IEC 12006-2, 81346-2, 81354-12
- **All defined by LOIN principle:**
  - LOIN – Level of information needed
  - **Why** – purposes; **Who** – actors; **When** – milestones; **What** – classification
- **One shared database containing:**
  - Construction objects
  - Data templates (**organized by classification = CCI**, IFC classes)
  - Properties (related to LOIN and IFC mapping)
- **Machine-readable project requirements with LOIN structure**
  - Avoid all XLS files for requirements!!!



# Czech Construction Data Standard (DSS) concept of usage



# Czech Construction Data Standard (DSS)

Verze: aktuální

Datové šablony

Aktéři

Stupeň projektové dokumentace

Účely užítí

ZOBRAZIT

EXPORT IFC

EXPORT XLS

**ZOBRAZIT**

EXPORT IFC    EXPORT XLS

Stručný popis ovládání

☰

DSS

IFC

IFC

<https://dss.koncepcebim.cz/>

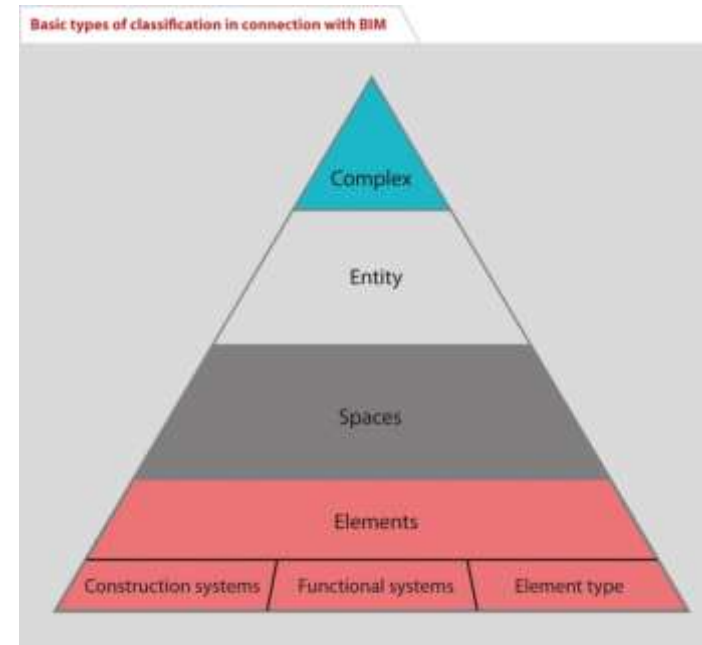
Výpis požadavků: ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

- ▼ Pozemní stavby ☐ ☐
- > 01 Pozemek
- > 02 Budova
- ▼ 03 Architektonicko stavební část ☐ ☐
- ▼ D.1.1 - ARS ☐ ☐
- ▼ D.1.1.A - svislé konstrukce ☐ ☐
- ▼ komíny ☐

název vlastnosti	měrná jednotka	datový typ	Popis	Poznámka	kód (GUID)	IFC Pset	IFC property	IFC data type	IFC type
→ obecné (společné vlastnosti pro všechny díly modely DIMS)									
▼ materiál									
materiál		Textová hodnota	děkladní specifikace materiálu příklad: specifikace materiálu shodná s legendou na výkresové dokumentaci		010f88d00e3c_shZed1v1f	CZ_Material	MaterialDescription	IfcText	P_SINGLEVALUE
▼ rozměry									
otška	mm	Fyzikální velična (s jednotkou)	číselná hodnota udávající šířku v mm – přibližný rozměr příklad: 100		1bd310291a44649191f	CZ_QuantityBaseQuantities	Length	IfcLengthMeasure	Q_LENGTH
průměr	mm	Fyzikální velična (s jednotkou)	číselná hodnota udávající průměr králověho slováckého prvku v mm		2af8m1jvd348f08b196af	CZ_QuantityBaseQuantities	Diameter	IfcLengthMeasure	Q_LENGTH

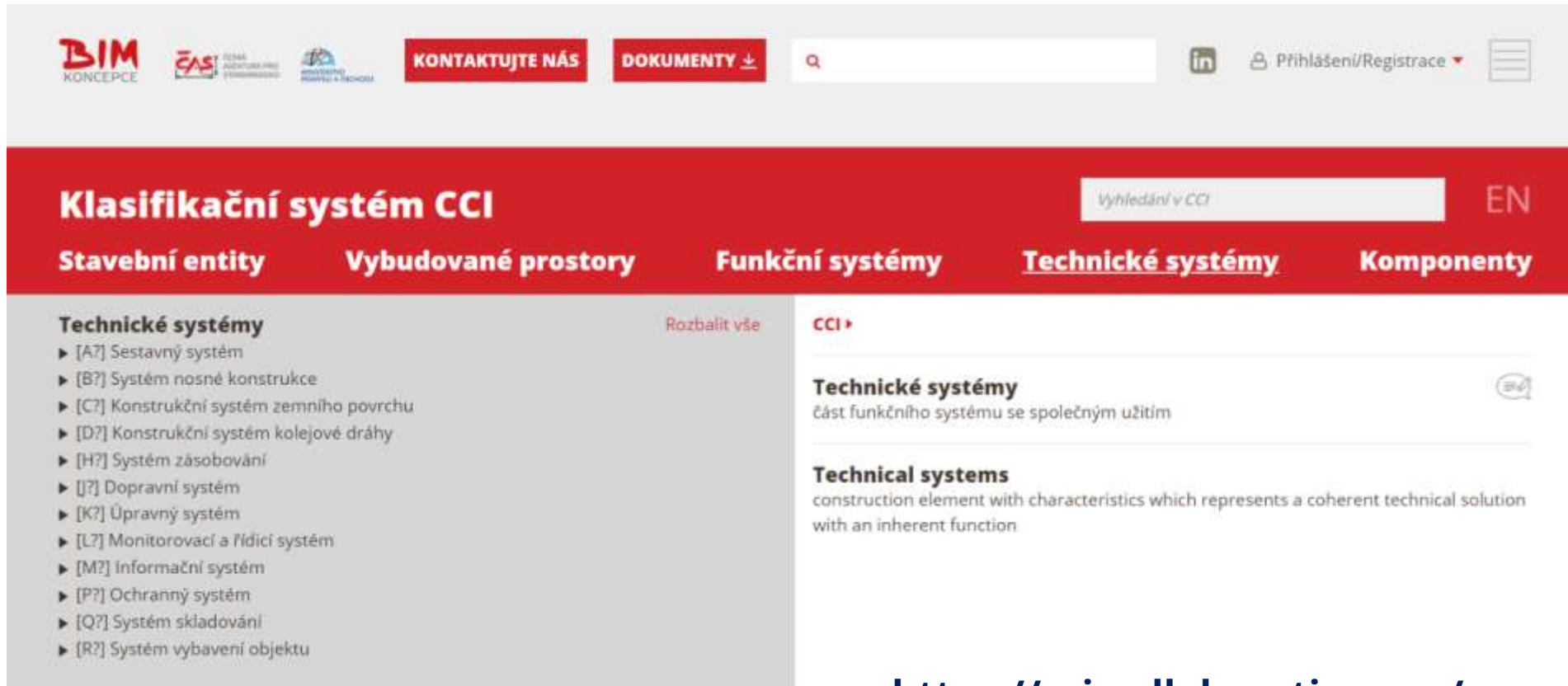
# Classification system CCI

- **What is classification system?**
  - Classification is a process related to categorization, the process in which ideas and objects are recognized, differentiated and understood the same way.
- **Based on relevant international standards**
- **Cover the whole built environment and life cycle of construction**
- **Support digital processes**
- **Allow domain specific or national add-ons**
- **CCI can be used free without any license fees**



<https://cci-collaboration.org/>

# Classification system CCI



The screenshot shows the website for the Construction Classification International Collaboration (CCI). The header includes logos for BIM KONCEPCE, ČAS, and the Ministry of Education, Youth and Sports. Navigation buttons for 'KONTAKTUJTE NÁS' and 'DOKUMENTY' are present, along with a search bar and a 'Přihlášení/Registrace' dropdown. The main content area is titled 'Klasifikační systém CCI' and features a search bar with 'Vyhledání v CCI' and a language selector 'EN'. Below this is a navigation menu with categories: 'Stavební entity', 'Vybudované prostory', 'Funkční systémy', 'Technické systémy', and 'Komponenty'. The 'Technické systémy' category is selected, showing a list of technical systems with codes like [A?], [B?], [C?], etc. A 'Rozbalit vše' button is visible. The main content area displays the definition of 'Technické systémy' in both Czech and English.


**Klasifikační systém CCI**  EN

**Stavební entity** **Vybudované prostory** **Funkční systémy** **Technické systémy** **Komponenty**

**Technické systémy** Rozbalit vše

- ▶ [A?] Sestavný systém
- ▶ [B?] Systém nosné konstrukce
- ▶ [C?] Konstrukční systém zemního povrchu
- ▶ [D?] Konstrukční systém kolejové dráhy
- ▶ [H?] Systém zásobování
- ▶ [I?] Dopravní systém
- ▶ [K?] Úpravný systém
- ▶ [L?] Monitorovací a řídicí systém
- ▶ [M?] Informační systém
- ▶ [P?] Ochranný systém
- ▶ [Q?] Systém skladování
- ▶ [R?] Systém vybavení objektu

**CCI**

**Technické systémy**   
část funkčního systému se společným užitím

**Technical systems**  
construction element with characteristics which represents a coherent technical solution with an inherent function

<https://cci-collaboration.org/>

# CCI – governmental activities

- **Mapping CCI to another e-governmental agenda**
  - Digital technical maps – utility maps of the regions
  - Czech statistical bureau – reporting
  - National registers of address and geodatabase
  - Ministry of finance - taxes
- **Digital building permits**
  - Made proof of concept to new building registry
  - Project in the preparation phase
- **CCI ontology – system TermIT**
  - CCI classes and definitions in relation to Czech legal system



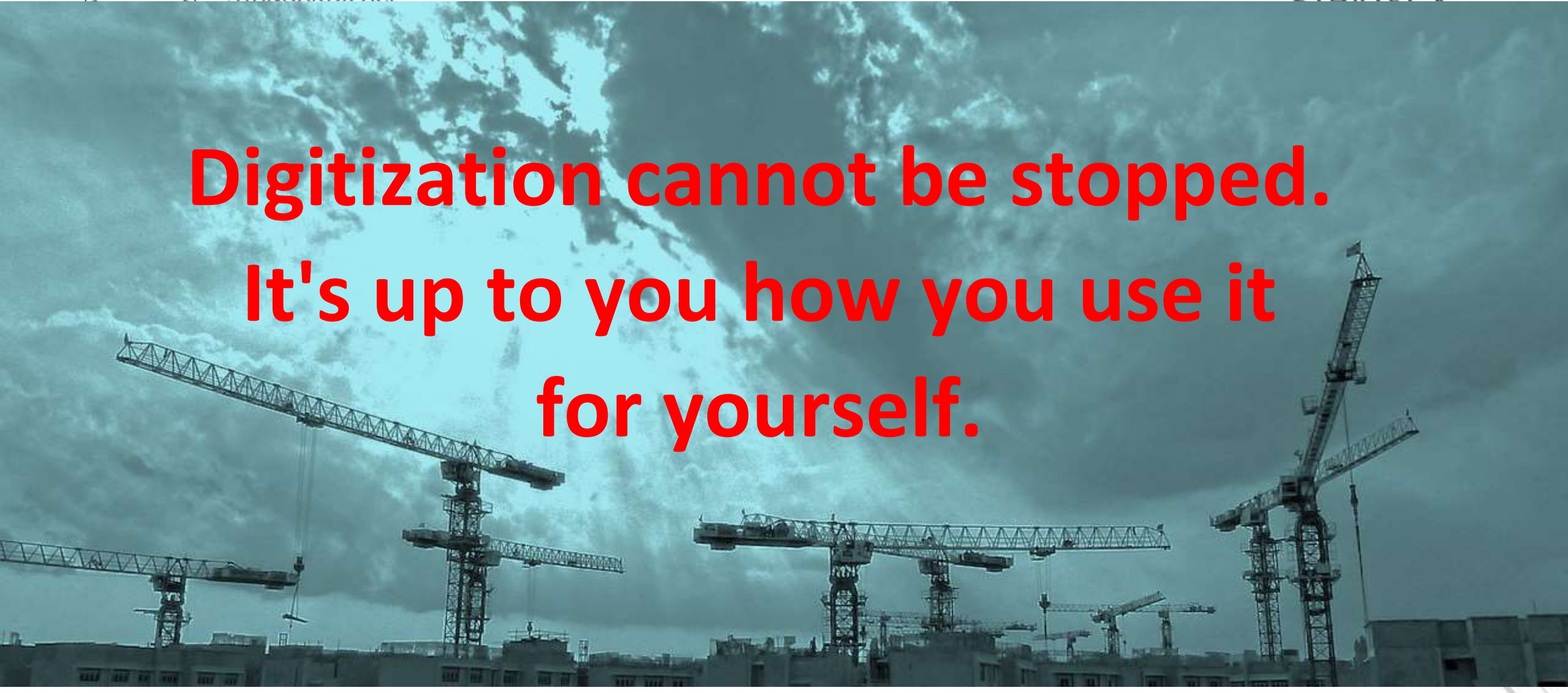
# CCI – supporting activities

- **Collaboration with software vendors**
  - Support for creating add-ons (Revit, ArchiCAD, Tekla, Allplan and more)
- **Pilot projects support**
- **Education – EDUBIM platform**
  - Construction secondary schools
  - Universities
  - Professionals training (start 2023)





**Digitization cannot be stopped.  
It's up to you how you use it  
for yourself.**



A group of business professionals in a meeting, looking at a large document on a table. The image is overlaid with a teal color filter.

# Thank you for your attention.

Web: [www.koncepceBIM.cz](http://www.koncepceBIM.cz)

Email: [BIM@agentura-cas.cz](mailto:BIM@agentura-cas.cz)

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we efficiently build and operate.