

# MEASUREMENT, VISUALISATION AND PROCESSING IN **BIM** FOR DESIGN AND CONSTRUCTION MANAGEMENT **2019**

**Josef Žák**  
**9/2019**

## Digital transformation

### Transportation



### Media



### Hospitality



**Who is next ?**

# Challenges and opportunities



Construction works prices **+3,3%** annually – ČSÚ

Construction costs **3,7%** annually – ČSÚ

Increased nominal wages **+8,4%** annually – ČSÚ

Request for information of documentations **+12% annually**  
- Skanska Global BIM Knowledge Expert Group

GDP **+3%** annually – World Bank

ICT (Information and Communication Technologies) solutions  
**+70%** annually - EU commission

PC performance **100x** in last decade - CTT

Internet connection speed **+26%** annually - Reddit

## Challenges and opportunities

**Digitalization**

**Automatization**

**Manual labor cost  
decrease**

**Construction  
works  
systematization**

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**Increased  
efficiency, quality  
and safety**



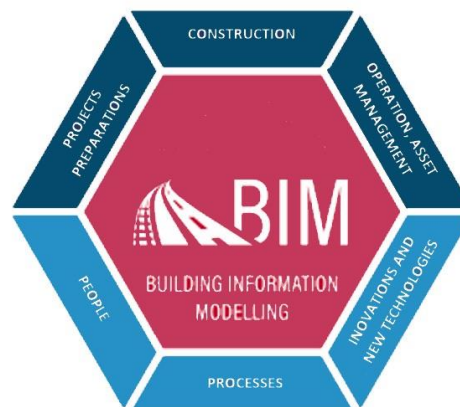
**Increased  
productivity**



Ministry of Transport



MINISTRY OF INDUSTRY  
AND TRADE OF THE  
CZECH REPUBLIC



**sfdi**

STÁTNÍ FOND DOPRAVNÍ  
INFRASTRUKTURY



CZECH  
STANDARDIZATION  
AGENCY

## BIM in Czech - Timeline

- Separated industry activities
- Plan for Expanding the Use of Digital Methods and Building Information Modeling (BIM) for Transport Infrastructure
- Framework for BIM integration in CZ
- Established national body for BIM standardization
- Methodologies releases
- National pilot projects
  - Civil – SFTI
  - Building - CAS

(before 2017)

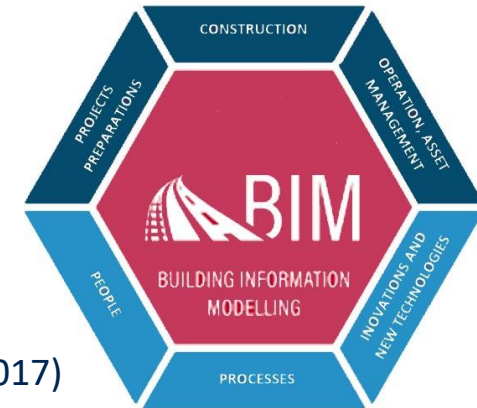
(SFTI, May 2017)

(MIT, September 2017)

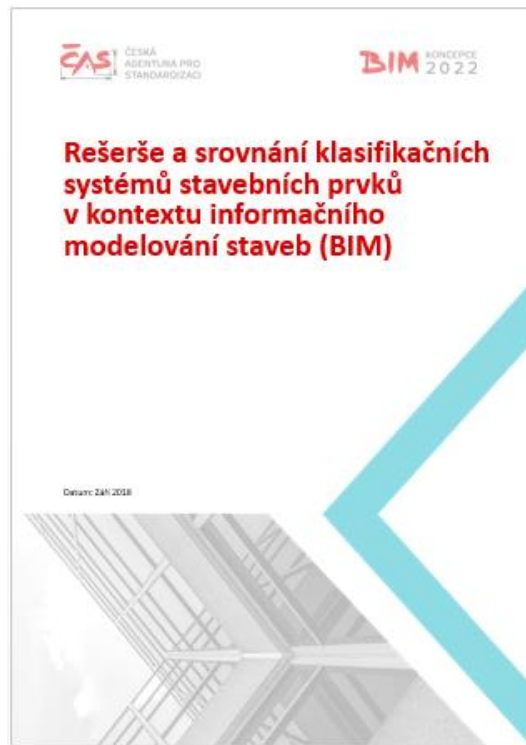
(CAS, January 2018)

(CAS and SFTI, 2019)

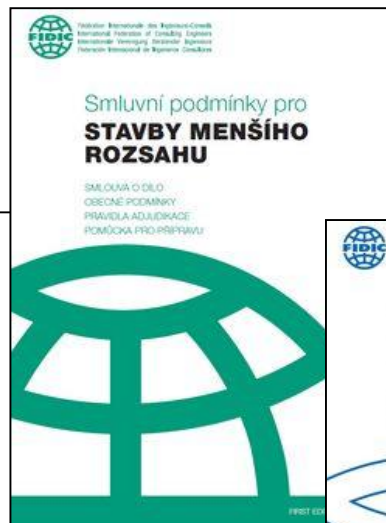
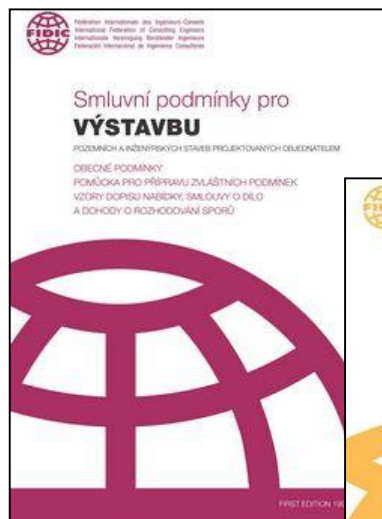
(2019-2022)



## Methodologies



## Czech industry standard



# Employer's information requirements (EIR)

- Based on use cases
- Reflects complexity of projects
- Reflects client's maturity
- Developed in cooperation with key market players



[illegible]

# Database for Construction Data Standard - DDSS

## Hlavní nabídka Databáze datového standardu stavebnictví Silniční stavby (PDPS)

- Datový standard**
- » Třídy
  - » Části staveb
  - » Skupiny elementů
  - » Elementy
  - » Použití výrobků
  - » Skupiny vlastností
  - » Vlastnosti
- 
- » Užití dat (BIM)
  - » Fáze projektu
  - » Index skupin vlastností
  - » Třídy přesnosti

- Číselníky IFC**
- » Jednotky a míry
- 
- » Datové typy
  - » Datové typy - základní
  - » Datové typy - výčtové

- XLS sestavy**
- » Výpis hierarchie
  - » Chybový protokol



[Odhlášení](#) [Výběr modulu](#) [Nastavení](#)

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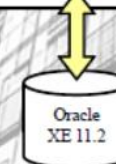
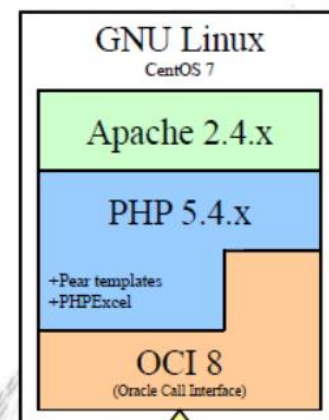
## Výběr modulu Databáze datového standardu stavebnictví Silniční stavby (PDPS)

Vyberte modul, se kterým chcete pracovat:

- IFC klasifikace
- Pozemní stavby
- Silniční stavby
- Železniční stavby
- TZUS - výrobky

[Hlavní nabídka](#) [Nápověda](#)

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**Enhanced construction sector**

**cooperation**

**efficiency**

**development**

Digital



Campus 6



Port Karolína



Hradčův dvůr



Gema Chodovec



D1 modernizace



Nordic Light



Parkview



Mill Park



Hl. nádraží Píseň



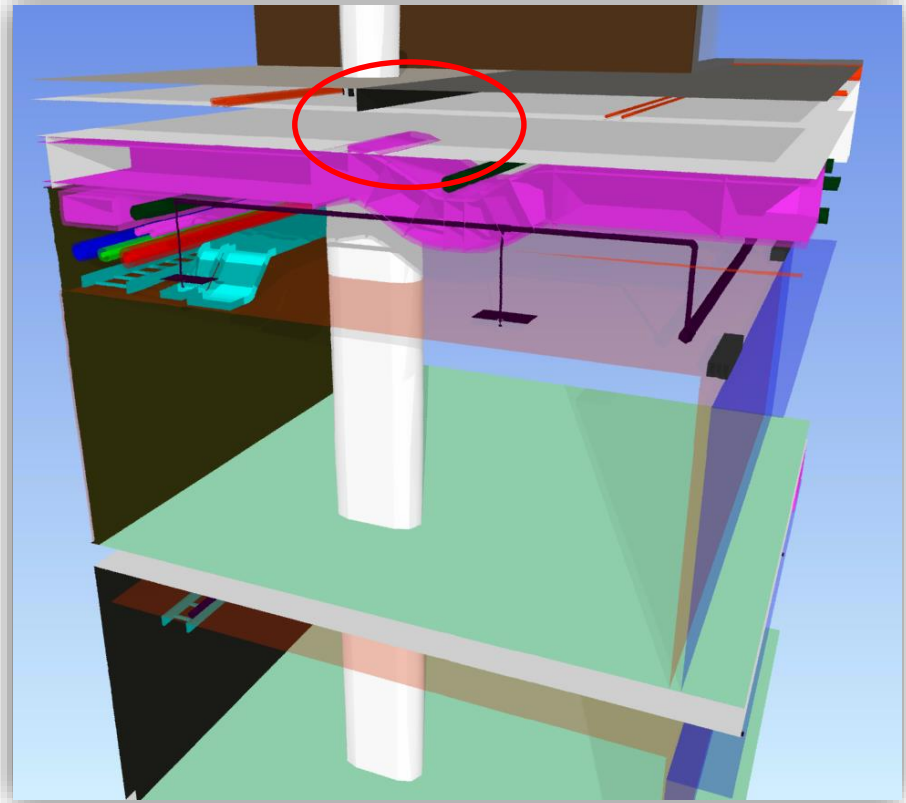
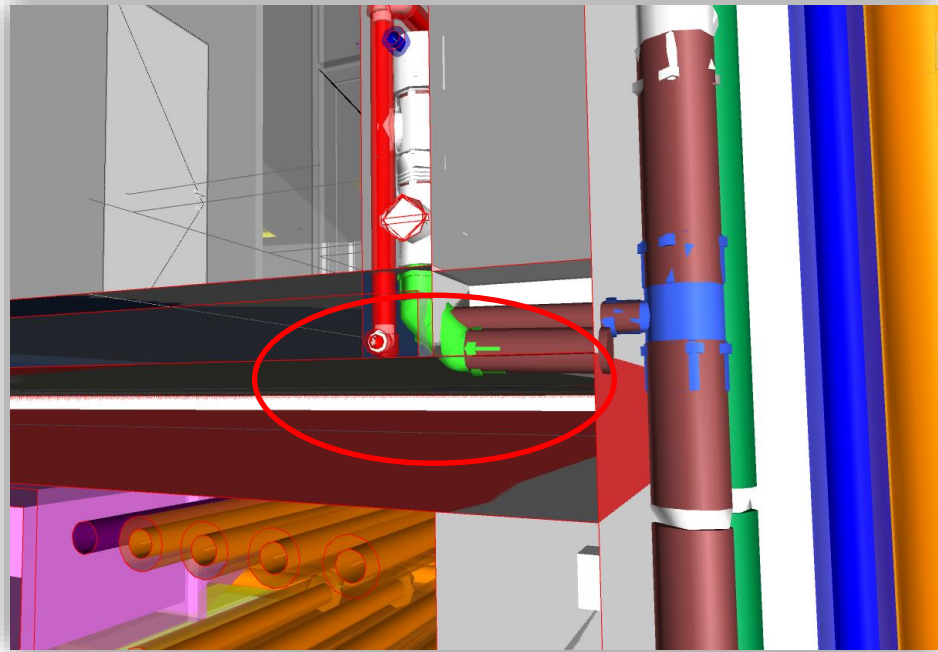
D1 Budín - Bidovce



Equilibrium

twins

## Project Risk Mitigations



## Mobile Technologies On-site

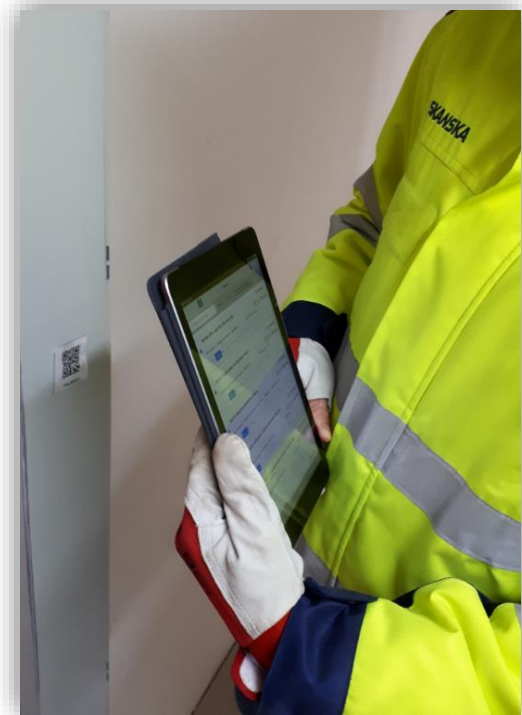
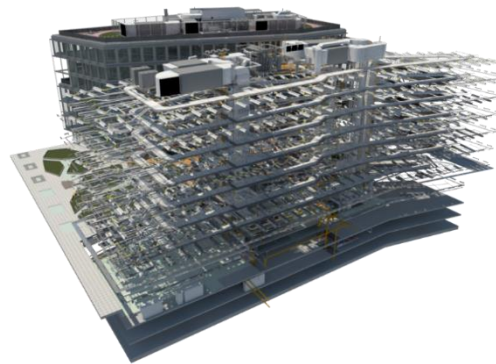
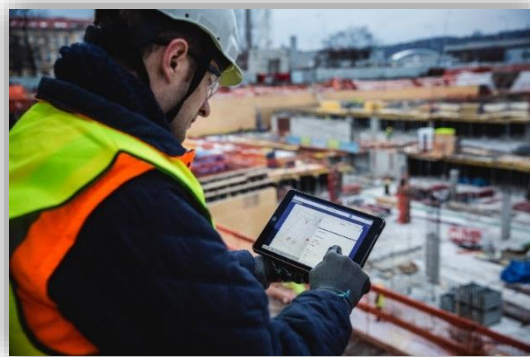
Health and safety

Issues and checklist

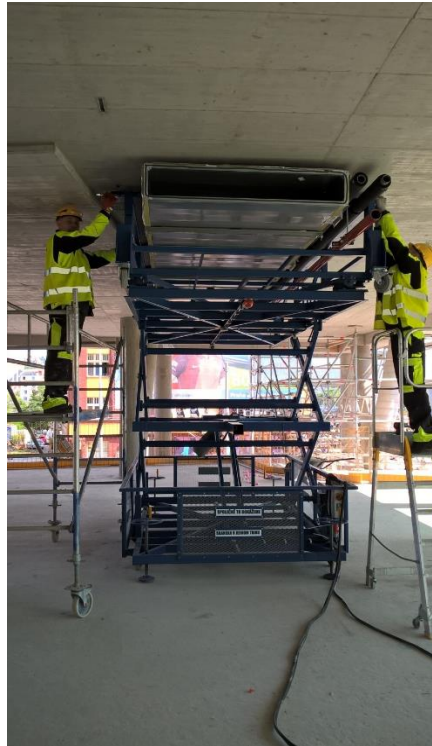
RFIs

Documents database

Gallery



# MEP Prefabrication



# Machine control systems



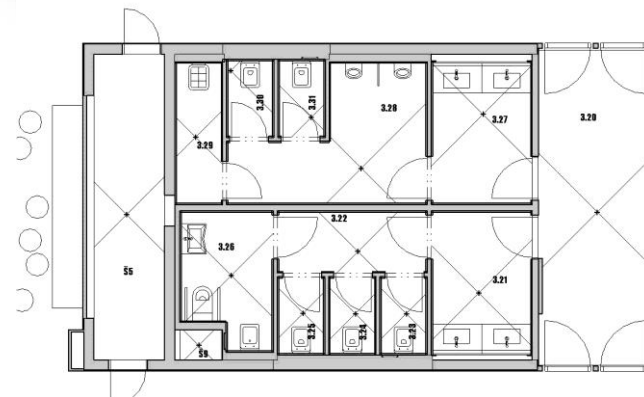
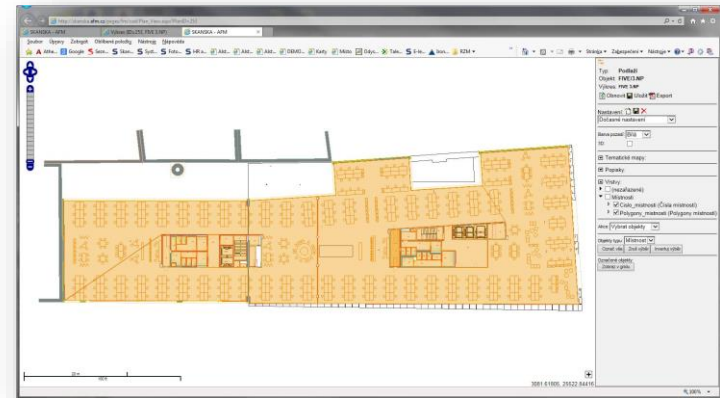
**SKANSKA**

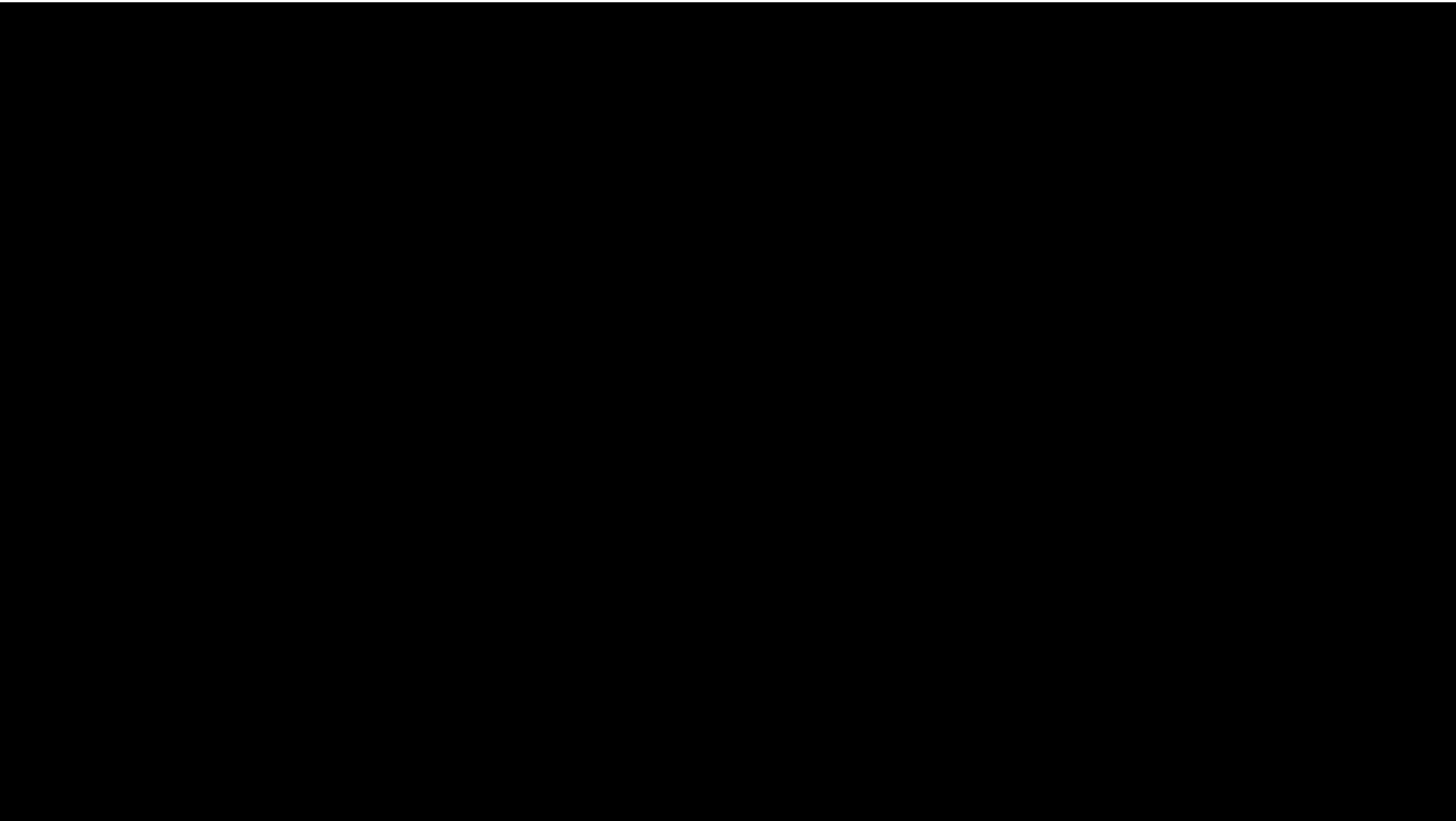


## Data Rich Cost Management



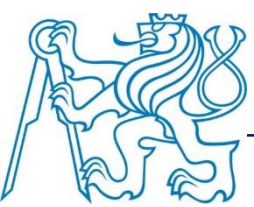
# Operation and Asset Management





## Current Skanska Joint Developments





## Education

BIM Lab since 2014

4 voluntary courses since 2015

First mandatory course since 2019



CTU in Prague  
K126  
Department of  
management  
and economics

Thank you for your attention.

Josef Žák