

ARE WE READY FOR BIM IN CONSTRUCTION SITES?

A reality check: Experiences from the ground



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BIMplement Webinar, Online
3rd December 2019

BIMPLEMENT

Webinar Agenda

Brief introduction to BIMplement project

Question 1

Do you think the BIM maturity level in your country has influenced the way the training was developed and evolved during the project?



Question 2

From your experience in this project: how can BIM improve the quality of work in a construction project in your country in general? and specifically on airtightness and ventilation?



Question 3

Could you talk about the tools developed in your country to address airtightness and ventilation using BIM?



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Brief introduction

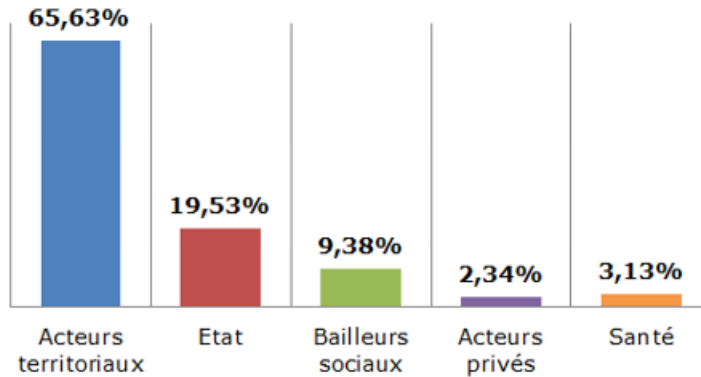
BIMPLEMENT INTRODUCTION VIDEO



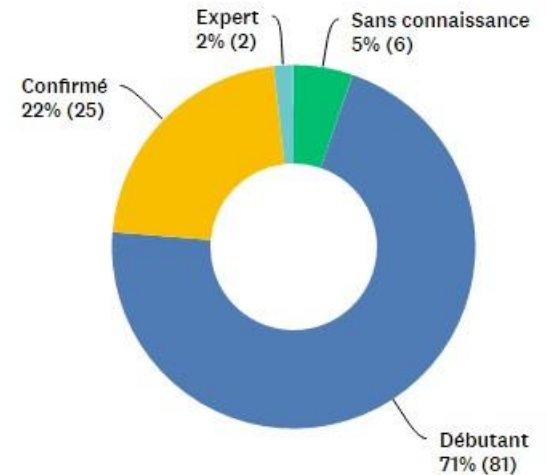
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DO YOU THINK THE BIM MATURITY LEVEL IN YOUR COUNTRY HAS INFLUENCED THE WAY THE TRAINING WAS DEVELOPED AND EVOLVED DURING THE PROJECT?

Répartition par catégories d'acheteurs



In 2018, 66 % of BIM projects are requested by local government (ref : <https://www.architectes.org/>)



Most design offices started working with BIM 3 years ago (2018).
71 % consider themselves as beginners (ref : ceibat.grdf.fr)

Only large building companies use BIM tools, but almost only in the design phase.

Small & medium size building companies and craftsmen are still very low skilled in terms of BIM

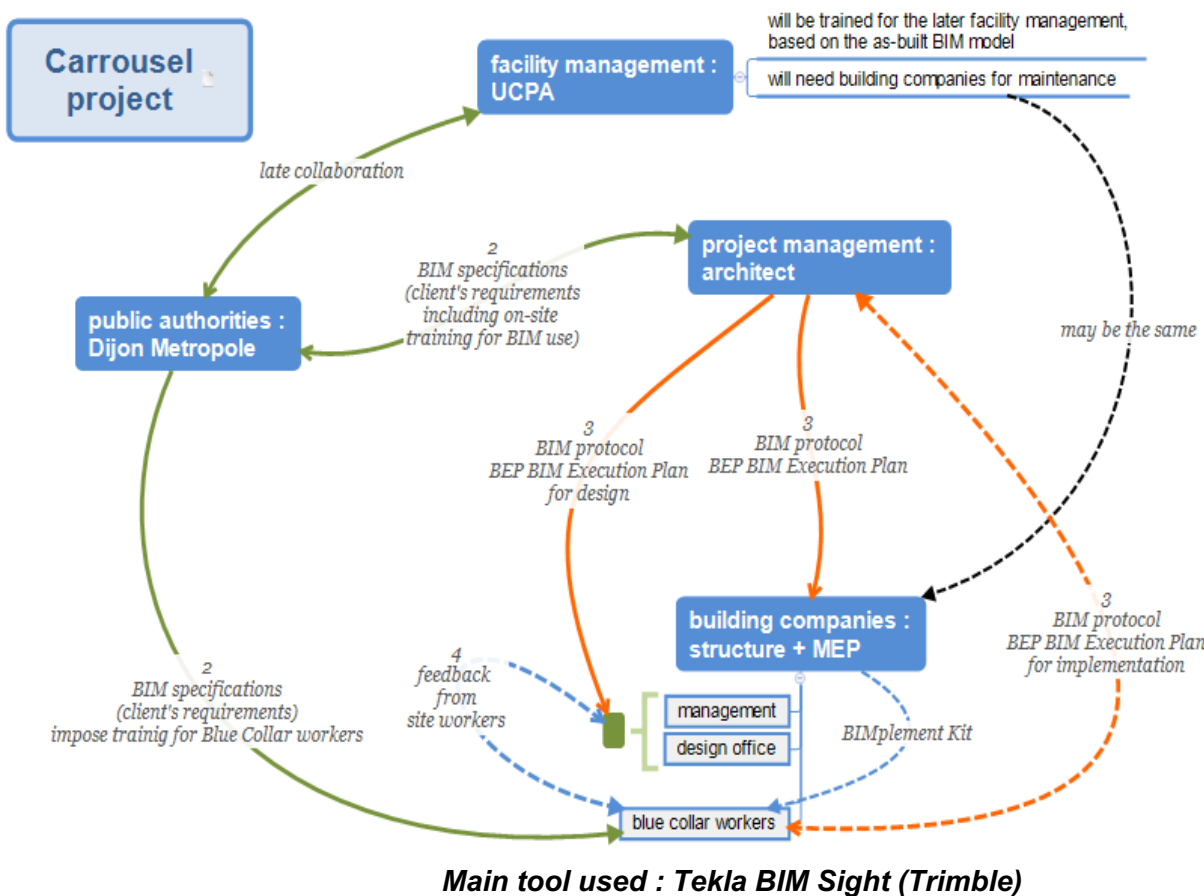
In **France**, the strategy has been focused on SME and craftsmen

- SME and craftsmen only use 2D plans (low BIM maturity)
- Architects and Design offices work with 3D or BIM model & deliver only 2D plans to building companies
- Clients do not impose precise BIM specifications for the design phase, and never ask for BIM model use on the construction site.



DO YOU THINK THE BIM MATURITY LEVEL IN YOUR COUNTRY HAS INFLUENCED THE WAY THE TRAINING WAS DEVELOPED AND EVOLVED DURING THE PROJECT?

→ Up-skill the whole stakeholders chain



- **Building companies management:**
understand the interest for on-site workers to use BIM models (instead of 2D plans)
- **Building companies on site workers:**
manipulate a BIM model, find data, open attached documents and exchange with other stakeholders
- **Architect and project manager:**
adapt BIM model & data to the needs of on-site workers
- **Clients:**
specify their needs (quality implementation, as-built model for facility manager, ...)
draft precise BIM specifications and make it compulsory to use BIM on site



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Narjisse Ben Moussa, Alliance Villes Emploi



DO YOU THINK THE BIM MATURITY LEVEL IN YOUR COUNTRY HAS INFLUENCED THE WAY THE TRAINING WAS DEVELOPED AND EVOLVED DURING THE PROJECT?

YES. H2020 BIMplement within more then 10 Years BIM (R)Evolution In Lithuania Activities

2006 – Start from „UAB Kausta“ today YIT Lithuania Request to create Lithuanian Construction Classification;

2006 -2008 – Initial investigation about National Construction Classification system development possibilities. Builders association organised first trip to Denmark learn about DBK classification development;

2008-2012 First request to Lithuanian Government to support Construction Sector digitalisation initiative and Pilot projects;

2012 – Builders association together with partners organised first International Digital Construction. Vilnius Conference (Annual 2012-2019). **NEXT at 2020.04.24 (Vilnius)**

2014 - 13 Lithuanian Construction Sector Associations and Professional Unions established „VšĮ Skaitmeninė statyba“ organisation www.skaitmeninestatyba.lt , www.digitalconstruction.lt

2014 – Within VšĮ „Skaitmeninės statyba“ with partners initiative created Lithuanian SMART priority „Digital Construction for Energy efficiency developments“ (one from 20 Lithuanian 2014-2020 ES structural program).

2015 – First „Skaitmeninė statyba“ (Digital Construction) Almanac (Annual till Now)

From 2015 – Lithuania is the part of BuildingSmart Nordic Chapter

2016 - Organised first „Best Lithuanian BIM projects Awards“ **(developed criteria system for evaluation of BIM projects quality).**

2016 – VšĮ Skaitmeninė statyba team (by request of Environment ministry) prepared Lithuanian Construction sector Digitalisation study (Learn from UK, DK and FI) and recommendations for implementation strategy.

Document: https://am.lrv.lt/uploads/am/documents/files/0_165081001480603487.pdf

2017 -2018 – Developed First version of VšĮ Skaitmeninė statyba BIM methodology version (EIR, BEP, LOD, BIM UseCases and other related templates, Classification system, started Initial BIM Trainings



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2017 – 2020

H2020 BIMplement project Started and Ongoing

- **BIM Implementation at National Level Challenges:**
 - More than 15.000 Engineers and professionals, more than 100.000 Blue collars are in Lithuanian construction market that need to reach and improve their skills in NZEB and BIM.
 - How to avoid BIM Wash ?
 - How to improve NZEB – BIM projects efficiency and QUALITY ?



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BIMplement Relation and Integration – with Existing DigitalConstruction.lt
BIM trainings and New BIM Certification programs

	BIM 1 (full BIM scope) bSI Basic +	BIM 2 (full BIM scope) bSI Basic +	BIM 3 (full BIM scope) bSI Basic +	bSI Basic (part Integrated)	H2020 BIMplement bSI Basic (part Integrated)
Theory	Introduction to BIM	BIM processes, LOD, LOI, Collaboration Other	Integrated Data Exchange Classification CDE	Only BIM and NZEB related trainings (White collars new BIM related roles and existing roles BIM competences)	Only BIM and NZEB (Ventilation and Airtightness) content related Trainings (White and Blue collars)
Case studies And Practice trainings	Content related practical Trainings. H2020 BIMplement	Content related practical Trainings H2020 BIMplement	Content related practical Trainings	Content related to practical Trainings Used H2020 BIMplement model	Content related practical Trainings H2020 NET-UBIEP
NEW from H2020 BIMPLEMENT Trainings Onsite	Could be onsite	Could be onsite	Could be onsite		Trainings onsite
www.STATREG.lt (Lithuanian Construction Professionals and Blue Colors Competences Register)					

Prepared: 2019.10 Vaidotas Šarka, Dalius Gedvilas, Donatas Aksomitas (Lithuania)



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Vaidotas Šarka, Lietuvos Statybininku Asociacija



DO YOU THINK THE BIM MATURITY LEVEL IN YOUR COUNTRY HAS INFLUENCED THE WAY THE TRAINING WAS DEVELOPED AND EVOLVED DURING THE PROJECT?

**Improvement of Existing Trainings models: BIM I; BIM II + H2020 BIMPLEMENT =
= DIGCON BIM methodology + NZEB&BIM Scope + BIM Quality + WEB CDE BIMSYNC.com + Training Onsite
Remark: Starting from connecting all training participants to Real CDE DEMO environment.**

The screenshot displays the BIMplement software interface. On the left, a list of training modules is shown, each with a 2D/3D toggle and a 'Created' timestamp. The main area shows a 3D model of a building complex with a 2D view overlay. On the right, a 'Properties' panel is visible, showing details for a selected wall element.

Training Modules List:

- S3_B_02.SA #3 (2D/3D) - Created 9 months ago by Vaidotas Šarka (BIM vadovas)
- S3_B_03.SK02_A ntz #1 (2D/3D) - Created 6 months ago by Vaidotas Šarka (BIM vadovas)
- S3_B_04.Vedini mas #1 (2D/3D) - Created 6 months ago by Vaidotas Šarka (BIM vadovas)
- S3_B_08.LVN #1 (2D/3D) - Created 5 days ago by Vaidotas Šarka (BIM vadovas)
- S3_B_09.VN01_Va ndentiekis #1 (2D/3D) - Created 5 days ago by Vaidotas Šarka (BIM vadovas)

Properties Panel (Selected Element: Basic Wall: trisluoksne 150/250/70:692182):

Identification	
Name:	Basic Wall: trisluoksne 150/250/70:692182
Type:	Basic Wall: trisluoksne 150/250/70
Entity:	Wall > STANDARD
Layer:	A-WALL-___-OTLN
Containment:	2 aukštas

Issues	
0 Open	1 Closed

Properties	
Constraints	
Location Line	Finish Face: Interior
Base Constraint	Level: 2 aukštas
Base Offset	-100 mm
Base Extension Dist...	0 mm
Top Extension Dista...	0 mm
Top Offset	-100 mm



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Vaidotas Šarka, Lietuvos Statybininkų Asociacija



DO YOU THINK THE BIM MATURITY LEVEL IN YOUR COUNTRY HAS INFLUENCED THE WAY THE TRAINING WAS DEVELOPED AND EVOLVED DURING THE PROJECT?

- BIM Maturity Level in Poland is LOW
- BIM requirements are very extreme, from very general to very demanding
- Investors are not aware of the benefits from using BIM technology
- Investors don't want to pay for BIM
- BIM is becoming fashionable
- Trainings focused on basic functionalities of BIM technology



BENEFITS?



BIMplement

Piotr Dymarski, Mostostal



DO YOU THINK THE BIM MATURITY LEVEL IN YOUR COUNTRY HAS INFLUENCED THE WAY THE TRAINING WAS DEVELOPED AND EVOLVED DURING THE PROJECT?

Definitely **YES**. In Spain, Although BIM maturity is gradually increasing and qualitative indicators are improving, the level of implementation is still low. In general, design teams (architectural and engineering firms) have a higher maturity level in BIM than clients and construction companies

FIG. 1: Quarterly evolution of the qualitative indicators established in public tenders with BIM requirements in buildings

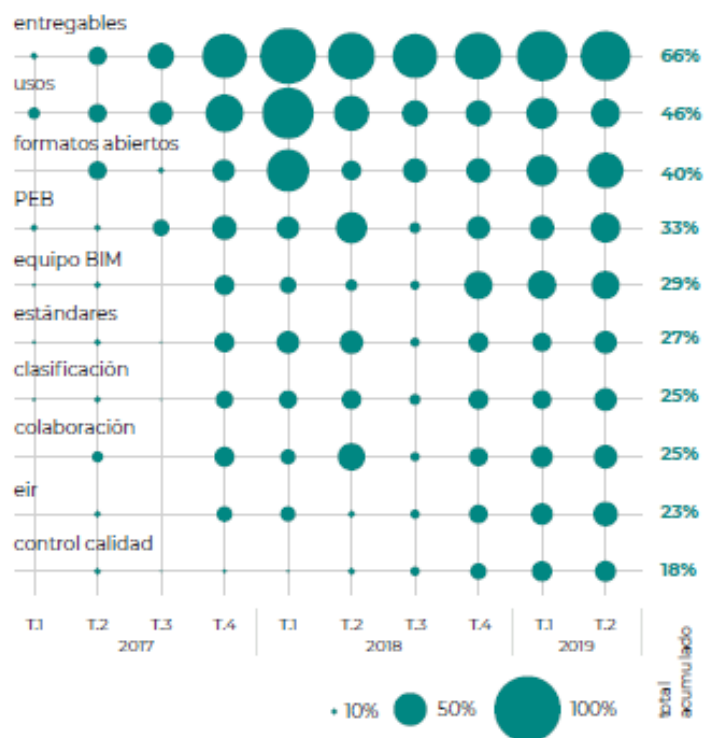
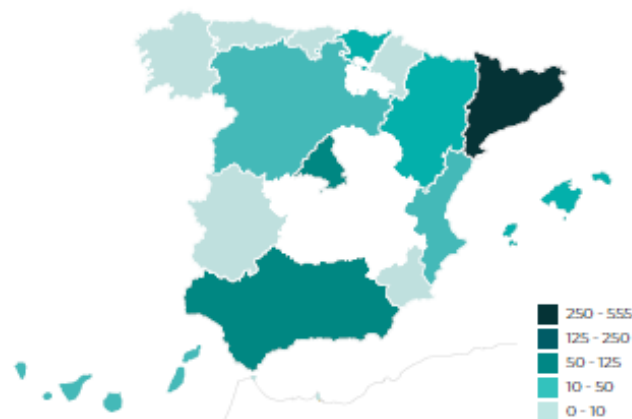


FIG. 2: Quarterly evolution of the BIM maturity of the public bidding documents with BIM requirements in buildings based on the established minimum qualitative indicators



FIG. 3: Map of the distribution of contracts (in millions of €) in buildings



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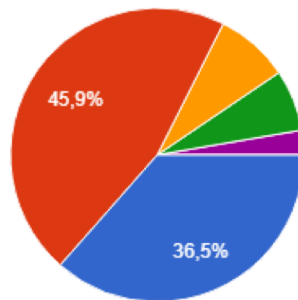


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PRELIMINARY APPROXIMATION ACTIONS: Awareness campaign, stakeholders meetings, pilot search

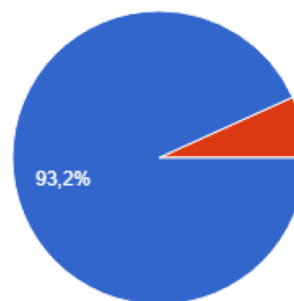


Knowledge and skills in BIM?



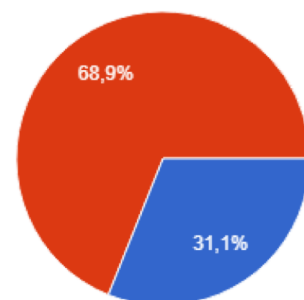
None Beginner

Do you plan to receive training in BIM soon?



Yes No

Are you already using BIM in your company?



Yes No



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DO YOU THINK THE BIM MATURITY LEVEL IN YOUR COUNTRY HAS INFLUENCED THE WAY THE TRAINING WAS DEVELOPED AND EVOLVED DURING THE PROJECT?

TRAINING CONTENTS

- Introduction to BIM and consultation of the BIM model in the construction site
- Construction work planning
- Measurements through the BIM model
- nZEB: ventilation and air-tightness

TOOLS USED

- Tekla BIMSight, BIM360, Revit, Navisworks freedom, Manage, Bimcollab zoom, Cost-it (PRESTO), Arquímedes



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DO YOU THINK THE BIM MATURITY LEVEL IN YOUR COUNTRY HAS INFLUENCED THE WAY THE TRAINING WAS DEVELOPED AND EVOLVED DURING THE PROJECT?

- Yes, especially the differences in BIM-maturity



- Based on the initial intake upskilling was needed to ensure a level playing field
- **Conclusion:** even on a low maturity level BIM has added value... but only if the players involved are on the same level.

ANY QUESTIONS?



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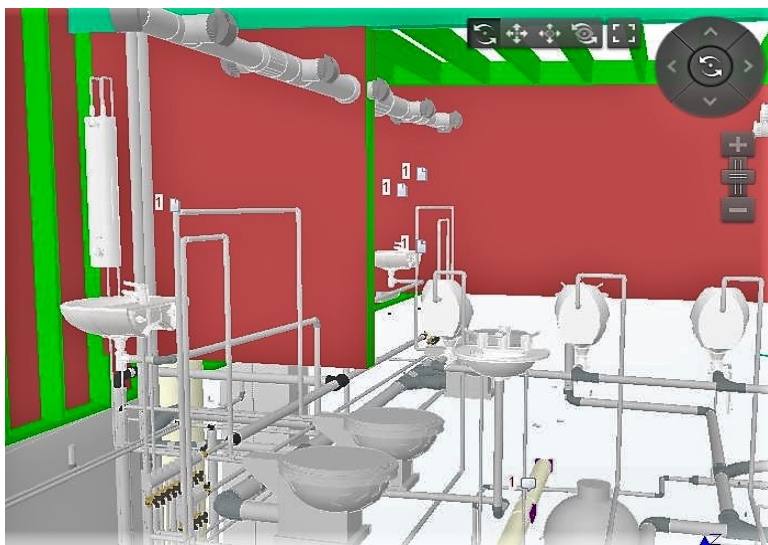
FACEBOOK: [H2020BIMplement](#)

FROM YOUR EXPERIENCE IN THIS PROJECT: HOW CAN BIM IMPROVE THE QUALITY OF WORK IN A CONSTRUCTION PROJECT IN YOUR COUNTRY IN GENERAL? AND SPECIFICALLY ON AIRTIGHTNESS AND VENTILATION?

NZEB buildings are much more complex than those designed 10 years ago. Yet :

- 2D plans cannot report on **nZEB building complexity** : different networks, complex walls, interconnected systems, superposition of pipes ...
- Only 3D models, and much better, BIM models with specific attached documents, can show off **what, where and how** materials and objects have to be implemented.

BIM helps at a better understanding of project complexity, networks in particular.



3D & 2D view of the same project

Narjisse Ben Moussa, Alliance Villes Emploi



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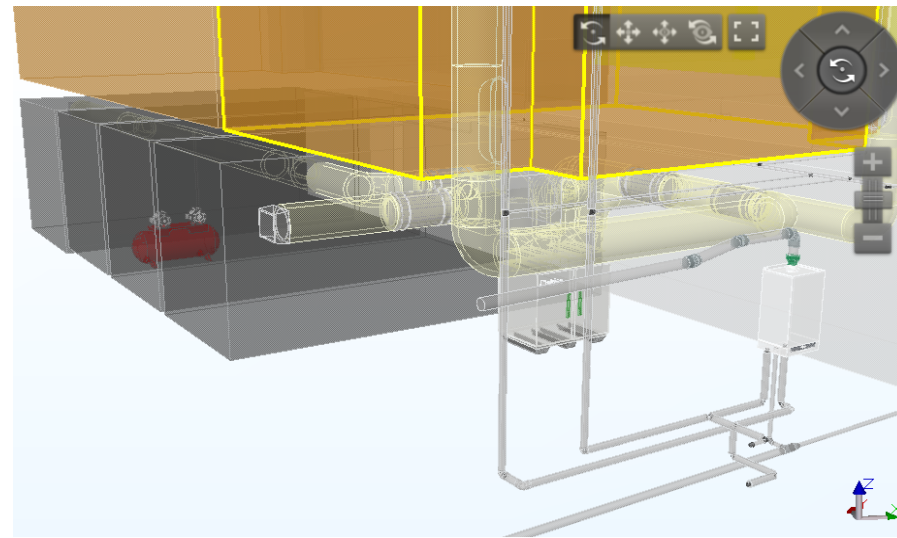
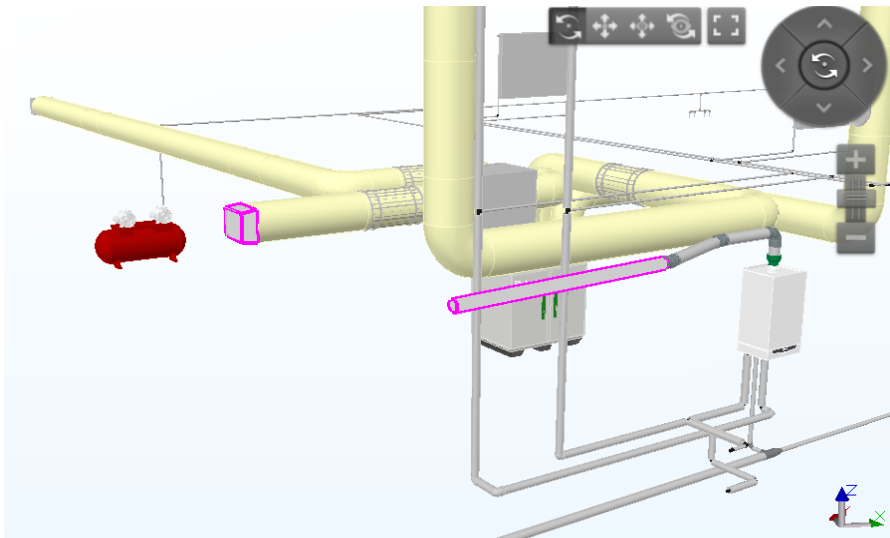
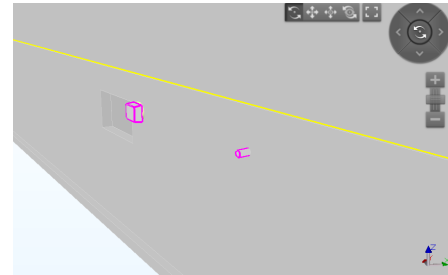
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There is almost no companies specialized in ventilation working on small buildings, and certainly no batches associated with airtightness.

BIM models only can show an entire HVAC system, And give data on each of its constitutive elements.

BIM models makes it possible to place these elements within the building, and inside each “space” ifc element.

BIM model synthesis shows where blockouts should be placed, and on site workers can check their position when building walls.



FROM YOUR EXPERIENCE IN THIS PROJECT: HOW CAN BIM IMPROVE THE QUALITY OF WORK IN A CONSTRUCTION PROJECT IN YOUR COUNTRY IN GENERAL? AND SPECIFICALLY ON AIRTIGHTNESS AND VENTILATION?

1. Everything should start from definition of **(SMART) goals** and setup Teams with **Highest Quality Professional Competences**.
2. Then continue with **Rational BIM Requirements** for selection of Design and Construction contractors services (Improvement of VŠĮ „Skaitmeninė statyba“ national level **BIM Employer (Exchange) information requirements (EIR)** templates for BIM projects Procurement processes).
- Goal:** BIMplement trainings should be accepted as BIM competences within Contractors **BIM competences evaluation process**;
3. Improvement of www.digitalconstruction.lt BIM methodology documentation using BIMplement practical experience (Including Trainings Onsite);
4. Implementation and testing of Construction Information Classification System within BIMplement experimental sites (Model Quality Assurance);
5. Organisation of BIM Methodology Trainings and Best Practice Dissemination

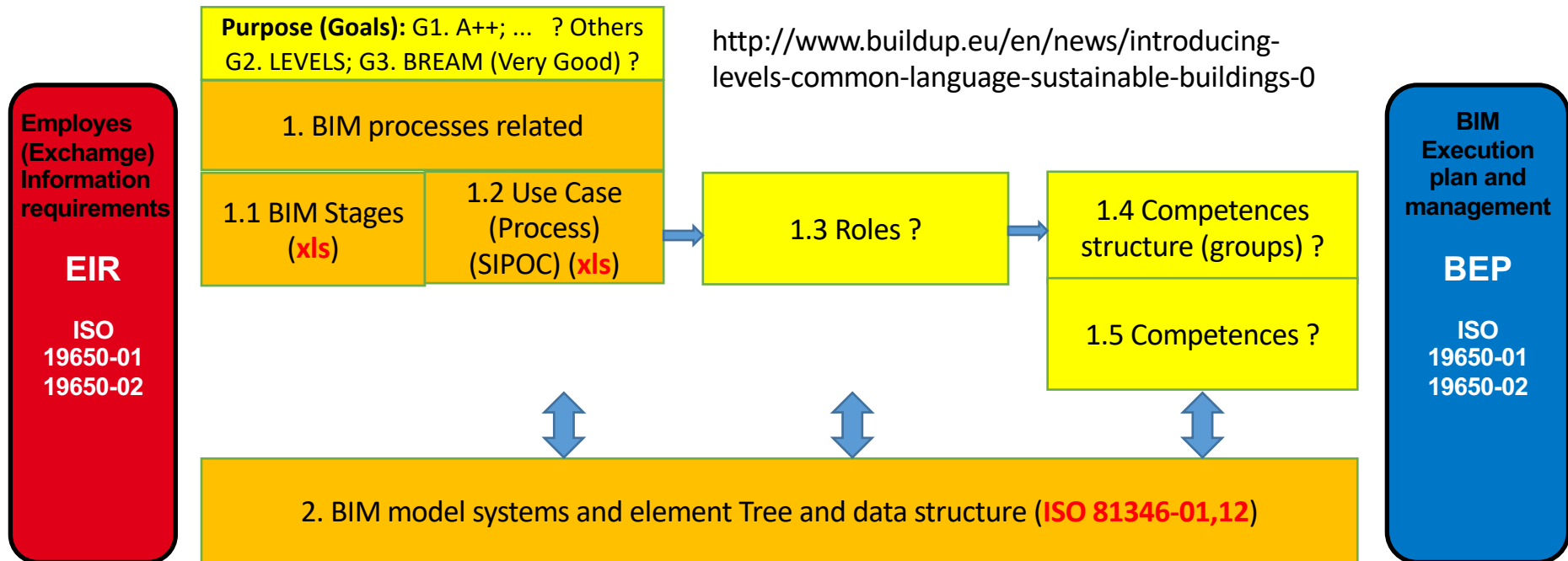
Remark: AIRTIGHTNESS AND VENTILATION IN THIS SCOPE IS ONLY RELATED WITH FEW BUILDING TECHNICAL SYSTEMS AND ELEMENTS AND SEVERAL BIM USECASES.



FROM YOUR EXPERIENCE IN THIS PROJECT: HOW CAN BIM IMPROVE THE QUALITY OF WORK IN A CONSTRUCTION PROJECT IN YOUR COUNTRY IN GENERAL? AND SPECIFICALLY ON AIRTIGHTNESS AND VENTILATION?

For Implementation: **Use Stable Core** - BIM methodology structure.

Overall BIMplement SCOPE: BIM (Processes) + Energy efficiency (Not versus) + Other KPI ?



Prepared: 2019.10 Vaidotas Šarka, Dalius Gedvilas, Donatas Aksomitas (Lithuania)



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Vaidotas Šarka, Lietuvos Statybininku Asociacija

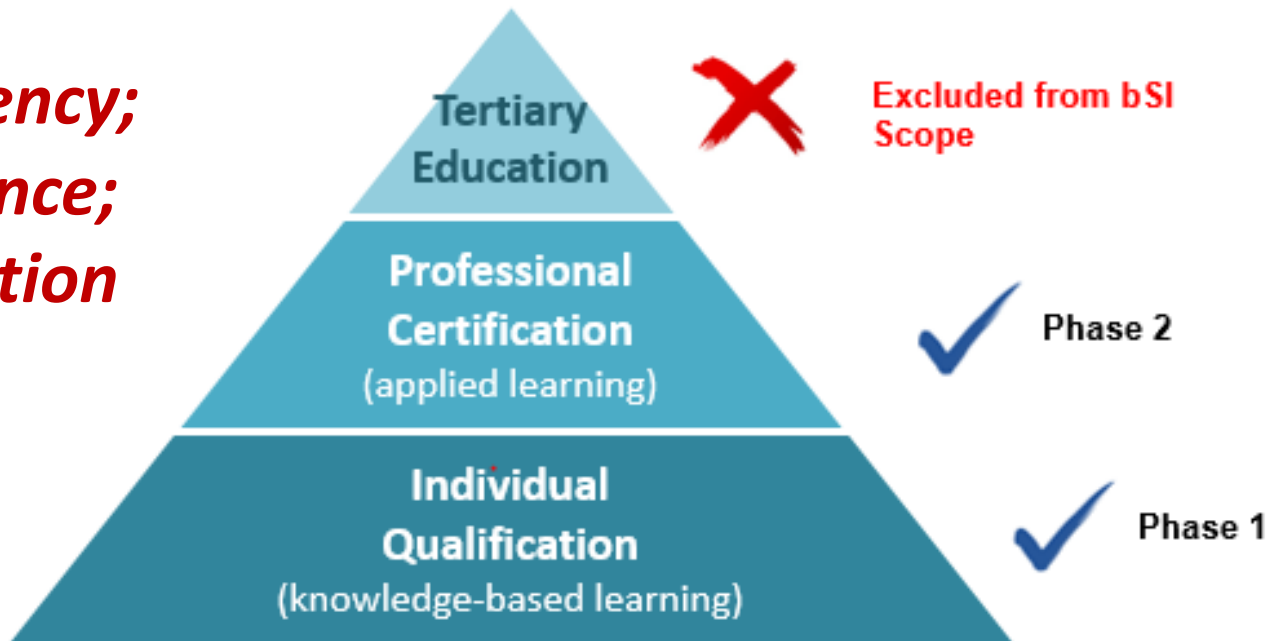


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BIM Competences Scope

(Building Smart International)

***Competency;
Compliance;
Certification
(3Cs)***



Professional Certification

 **buildingSMART**
International home of openBIM



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FROM YOUR EXPERIENCE IN THIS PROJECT: HOW CAN BIM IMPROVE THE QUALITY OF WORK IN A CONSTRUCTION PROJECT IN YOUR COUNTRY IN GENERAL? AND SPECIFICALLY ON AIRTIGHTNESS AND VENTILATION?

*SKST BIM SPECIALISTŲ KLASIFIKAVIMAS IR KOMPETENCIJŲ MODELIS

*DIGCON.LT BIM COMPETENCES CLASSIFICATION MODEL (www.digitalconstruction.lt)

EQF 6-8.

Statytojas (Užsakovas) (<i>Angl. Owner</i>)	+ BIM specialistas (<i>Angl. BIM Specialist</i>)	
Statinio projektuotojas (<i>Angl. Designer</i>)	+ BIM specialistas (<i>Angl. BIM Specialist</i>)	
Rangovas (<i>Angl. Contractor</i>)	+ BIM specialistas (<i>Angl. BIM Specialist</i>)	
Pastatų ūkio valdytojas (<i>Angl. Facility manager</i>)	+ BIM specialistas (<i>Angl. BIM Specialist</i>)	
Gamintojas (<i>Angl. Manufacturer</i>)	+ BIM specialistas (<i>Angl. BIM Specialist</i>)	
Konsultantas (<i>Angl. Consultant</i>)	+ BIM specialistas (<i>Angl. BIM Specialist</i>)	
Naujas (New role)	BIM koordinatorius (<i>Angl. BIM Coordinator</i>)	
Naujas (New role)	BIM vadovas (<i>Angl. BIM Manager</i>)	

*Atitinka „buildingSMART“ BIM specialistų sertifikavimo schemą. (Integrated with bSI basic professional certification schema)

EQF 4-5. Masters/Brigades lead:

What BIM competences needed (BIMPlément) ?

EQF 3. Blue collars:

What BIM competences needed (BIMPlément)?

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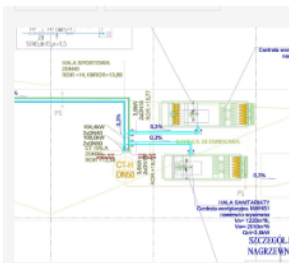

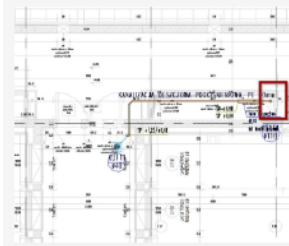
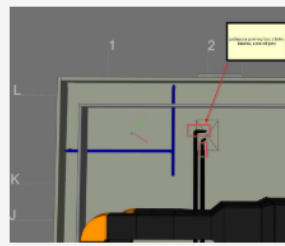

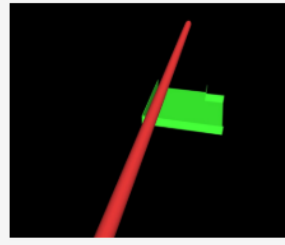


BIMplément

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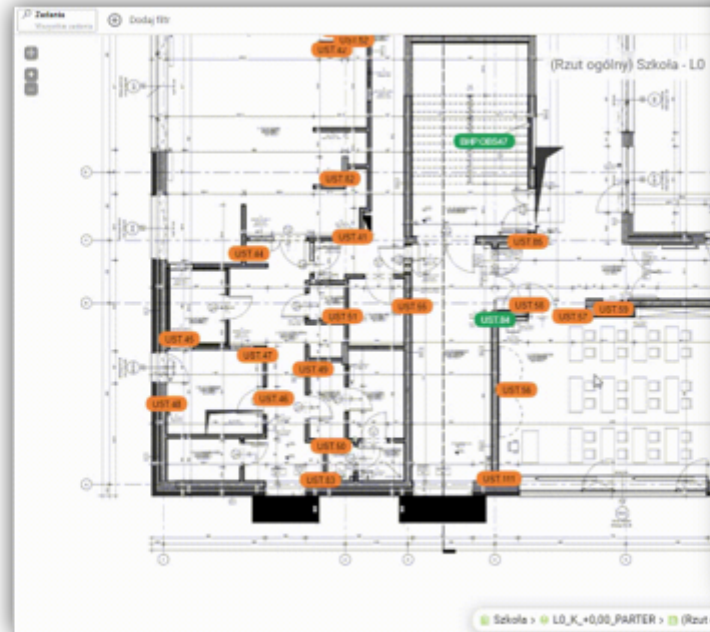
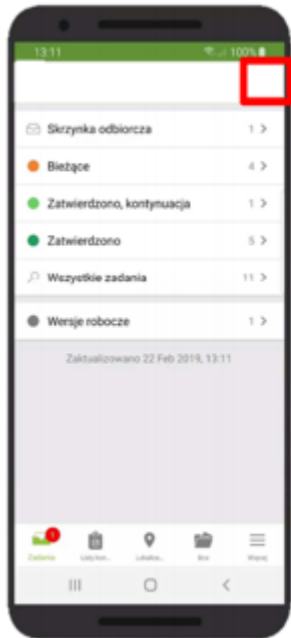
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	<p>421. JAKA POWINNA BYĆ RZĘDNA RUR CT DO PRZ...</p> <p>Created 10/2/2019 Type 02_Zapytanie o inf...</p> <p>Priority Niski 00_Otwarty</p> <p>Assigned to biuro@mprojekty.pl</p>		<p>420. ELEKTRYKA - BRAK RZĘDNYCH NA RYSUNKU</p> <p>Created 10/2/2019 Type 02_Zapytanie o inf...</p> <p>Priority Niski 00_Otwarty</p> <p>Assigned to robert.wrebiak@eltech-projekt.pl</p>
	<p>418. CZY WPUST KD111 POWINIEN WPINAĆ SIĘ D...</p> <p>Created 10/2/2019 Type 02_Zapytanie o inf...</p> <p>Priority Niski 00_Otwarty</p> <p>Assigned to biuro@mprojekty.pl</p>		<p>416. PODEJŚCIA W KOLIZJI Z DASZKIEM ŻELBETO...</p> <p>Created 9/24/2019 Type 01_Błąd w projekcie</p> <p>Priority Niski 01_W trakcie...</p> <p>Assigned to piotrek89kl@interia.eu</p>
	<p>410. HALA DACH - SERWIS</p> <p>Created 9/20/2019 Type 02_Zapytanie o inf...</p> <p>Priority Wysoki 01_W trakcie...</p> <p>Assigned to beata@mprojekty.pl</p>		<p>405. KOLIZJA RUR WOD-KAN Z TRASAMI KABLOW...</p> <p>Created 9/20/2019 Type 02_Zapytanie o inf...</p> <p>Priority Niski 01_W trakcie...</p> <p>Assigned to robert.wrebiak@eltech-projekt.pl</p>

- Collision-free design and its impact on the airtightness of the building



FROM YOUR EXPERIENCE IN THIS PROJECT: HOW CAN BIM IMPROVE THE QUALITY OF WORK IN A CONSTRUCTION PROJECT IN YOUR COUNTRY IN GENERAL? AND SPECIFICALLY ON AIRTIGHTNESS AND VENTILATION?



Mostostal

Usterka

Projekt	Szkoła Podstawowa w Wilanowie	Zamówienie	03 Branża elektryczna
Nr projektu	CW0459	Przebieg pracy	Usterki
Budynek	Szkoła	Data utworzenia	4 paź 2019, 09:31
Poziom	L0_K_+0,00_PARTER	Ostateczny termin	11 paź 2019
Rysunek	Rzut ogólny (poglądowy) (Wersja 1)	Utworzone przez	Sławomir Straziński, Mostostal Warszawa S.A.
Listy kontrolne	KJ.3b.5	Osoba odpowiedzialna	Apin
Pozycja na liście kontrolnej	Zakres odbioru*		

4 paź 2019, 09:31
Przypisane do Apin

Utworzone przez: Sławomir Straziński, Mostostal Warszawa S.A.
Osoba przypisana: Apin
Temat: Brak łączników podynkowych
Ostateczny termin: 11 paź 2019
Opis: brak łączników schodowych, 5x a,b,c,d,e, brak orurowania pod głośniki, brak orurowania pod SSWIN i KD

- Quality control and acceptance of works

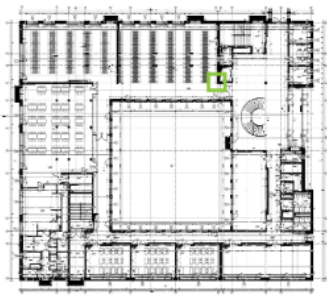
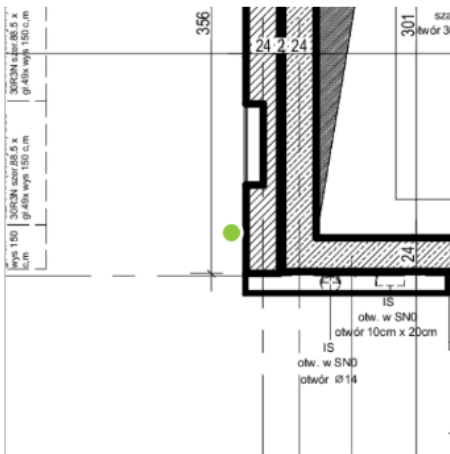


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Usterka

Mostostal
WARSZAWA

Projekt	Szkoła Podstawowa w Wilanowie	Zamówienie	03 Branża elektryczna
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Budynek	Szkoła	Data utworzenia	4 paź 2019, 09:31
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Pozycja na liście kontrolnej	Zakres odbioru*		

4 paź 2019, 09:31

Przypisane do Apin

Utworzone przez:	Sławomir Straziński, Mostostal Warszawa S.A.
Osoba przypisana:	Apin
Temat:	Brak łączników podynkowych
Ostateczny termin:	11 paź 2019
Opis:	brak łączników schodowych, 5x a,b,c,d,e, brak orurowania pod głośniki, brak orurowania pod SSWiN i KD



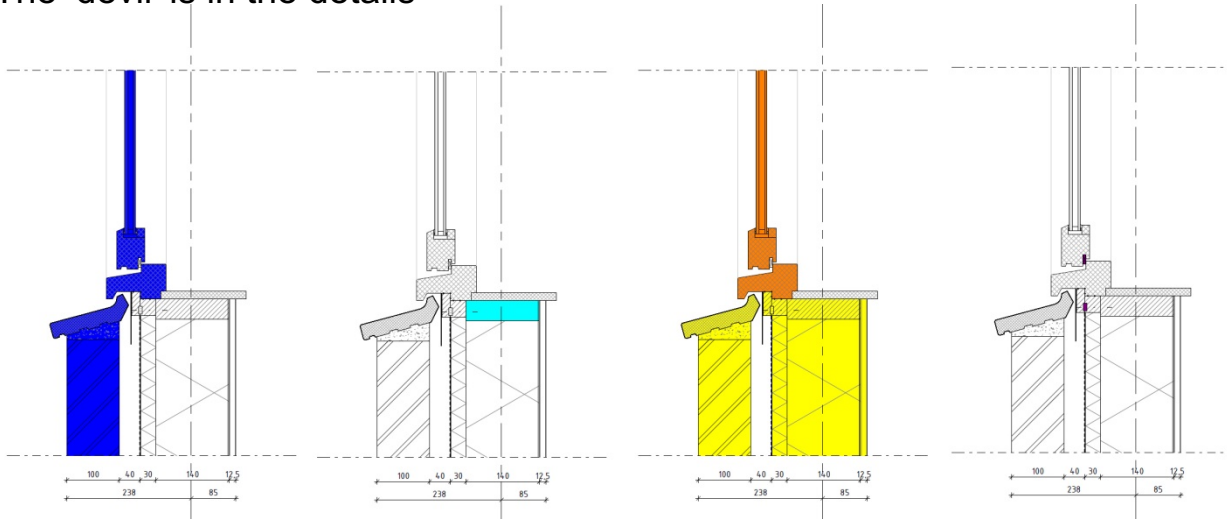
FROM YOUR EXPERIENCE IN THIS PROJECT: HOW CAN BIM IMPROVE THE QUALITY OF WORK IN A CONSTRUCTION PROJECT IN YOUR COUNTRY IN GENERAL? AND SPECIFICALLY ON AIRTIGHTNESS AND VENTILATION?

- Working at BIM means **having a single model** from which to generate and manage all the project information throughout its entire life cycle.
- Another added value of BIM technology is the possibility to **define the elements that make up the building**: define its properties and characteristics (thermal, acoustic, environmental footprint, ...), obtain product certifications or specify the technical conditions for proper execution or maintenance and to track maintenance tasks throughout their useful life.
- All this means having a powerful tool with which to **avoid contradictions and project errors, carry out realistic planning, shorten the execution deadlines and with all this, optimize investments.**

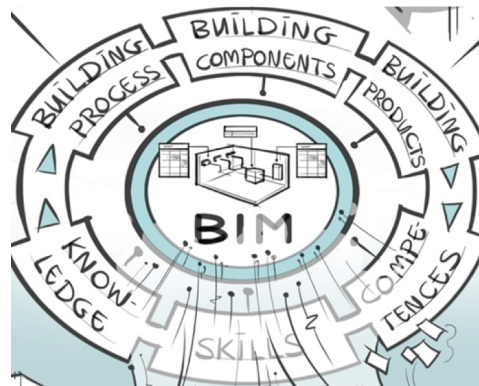


FROM YOUR EXPERIENCE IN THIS PROJECT: HOW CAN BIM IMPROVE THE QUALITY OF WORK IN A CONSTRUCTION PROJECT IN YOUR COUNTRY IN GENERAL? AND SPECIFICALLY ON AIRTIGHTNESS AND VENTILATION?

- The 'devil' is in the details



- Empowering Quality Assurance



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Jan Cromwijk, ISSO



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COULD YOU TALK ABOUT THE TOOLS DEVELOPED IN YOUR COUNTRY TO ADDRESS AIRTIGHTNESS AND VENTILATION USING BIM?

Two new tools to be developed and tested on real site

1. Mobile container to train on airtightness construction details

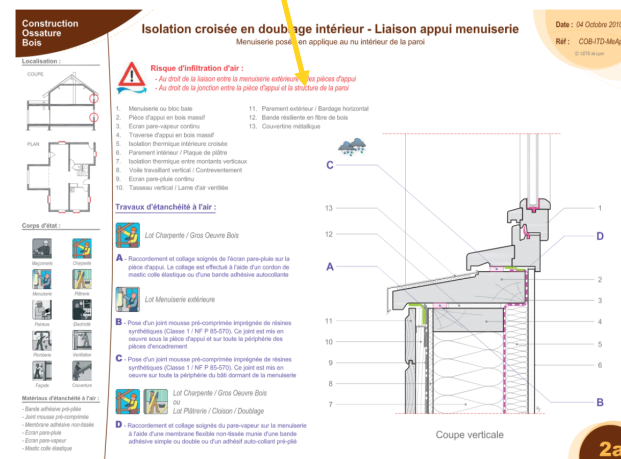
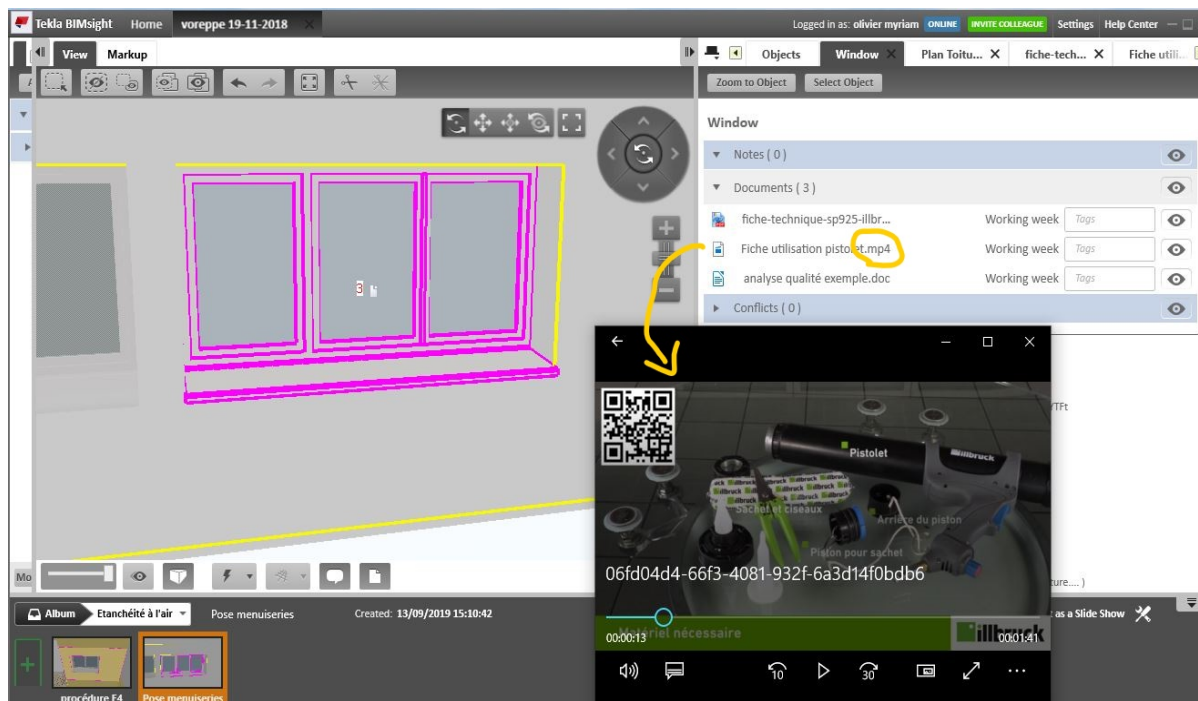
- full size airtightness solutions and ventilation systems mock-up
- on the construction site
- ½ day training
- a new version of this container will include a BIM model of the container



COULD YOU TALK ABOUT THE TOOLS DEVELOPED IN YOUR COUNTRY TO ADDRESS AIRTIGHTNESS AND VENTILATION USING BIM?

2. Airtightness BIM model built from a real site model

- **only** airtightness weak points
- with solution (material, instruction guide, details,)
- attached to the BIM model



BIMplement

Narjisse Ben Moussa, Alliance Villes Emploi



COULD YOU TALK ABOUT THE TOOLS DEVELOPED IN YOUR COUNTRY TO ADDRESS AIRTIGHTNESS AND VENTILATION USING BIM?

Short: Scope off Lithuanian Tools for BIMplement (National level)

- For **BIM methodology**: www.digitalconstruction.lt / SKST documents system: EIR, BEP, Stages and Usecases; LOD descriptions.

(relation with **ISO 19650-01;02 and ISO29481-01**)

EIR – LT.SKST.EIR Word Template; BEP - LT.DIGCON BEP XLS Template)

- For **Construction technologies**: www.statybostaisykles.lt (Construction technologies descriptions, quality check lists, competences requirements, certification test questionnaires) (**relation ISO 81346**)
- For **BIM classification**: <http://ics.bimaxon.com/> (part of BIMaxon system) (relationwith **ISO 19650-01;02, ISO 81346**)

Remark: Same BIMAXON USER as Methodology Core also using for H2020 NET_UBIEP projects scope

- Digital **Construction (LT) Competences register** (National level): www.STATREG.lt
- For **Construction Quality assurance**: e_construction journal www.statyboszurnalas.lt
- For BIM data management (asbuilt part): For LT part: Example within BIMAXON.

Prepared: 2019.10 Vaidotas Šarka, Dalius Gedvilas, Donatas Aksomitas (Lithuania)



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Vaidotas Šarka, Lietuvos Statybininkų Asociacija



COULD YOU TALK ABOUT THE TOOLS DEVELOPED IN YOUR COUNTRY TO ADDRESS AIRTIGHTNESS AND VENTILATION USING BIM?

BIMPLEMENT RESULTS WILL BE INTEGRATED WITH BIM VŠĮ SKAITMENINE STATYBA“ TRAININGS, DISSEMINATION AND COMPETENCES REGISTER INTEGRATION MODEL

[I. www.digitalconstruction.lt](http://www.digitalconstruction.lt)

Methodology and Trainings

[II. www.STATREG.lt](http://www.STATREG.lt)

Competences register

[III. www.digitalconstruction.lt](http://www.digitalconstruction.lt)

BEST BIM projects Awards (2016 -2020 (Annual))



IV. International Digital Construction Conferences. Vilnius 2012-2019 (Annual)



Welcome to NEXT: 2020-04-24 Vilnius



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BIMPLEMENT RESULTS WILL BE INTEGRATED WITH BIM VŠĮ SKAITMENINE STATYBA“ TRAININGS, DISSEMINATION AND COMPETENCES REGISTER INTEGRATION MODEL

Use of Information Classification System:

<http://ics.bimaxon.com/>

Example: Data from ISO81346

The screenshot shows the BIMAXON CLASSIFICATION SYSTEM interface. The left sidebar lists various classification systems, with ISO/IEC 81346 selected. The main content area displays the details for ISO/IEC 81346, including its code (ISO81346), version (01), and last updated date (2019-10-01 14:00:02). Below this, a table lists the functional systems (A.1, A.2, T1, T3, T4) and their corresponding names and actions.

Code	Name	Action
A.1	Functional systems	[Icon]
A.2	Technical systems	[Icon]
T1	Top node identifiers	[Icon]
T3	Objects	[Icon]
T4	Spaces	[Icon]

The screenshot shows the BIMAXON CLASSIFICATION SYSTEM interface, specifically the 'FUNCTIONAL SYSTEMS' section. It displays the classification system (ISO/IEC 81346), code (ISO81346), version (01), and last updated date (2019-10-01 14:00:02). Below this, a table lists the functional systems (A, B, C, D, E, F, G, H, J, K, L) and their corresponding names and actions.

Code	Name	Action
A	Ground system	[Icon]
B	Wall system	[Icon]
C	Slab system	[Icon]
D	Roof system	[Icon]
E	Gas and air system	[Icon]
F	Water and fluid system	[Icon]
G	Drainage and waste system	[Icon]
H	Cooling and heating system	[Icon]
J	Ventilation system	[Icon]
K	Electrical system	[Icon]
L	Automation system	[Icon]



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COULD YOU TALK ABOUT THE TOOLS DEVELOPED IN YOUR COUNTRY TO ADDRESS AIRTIGHTNESS AND VENTILATION USING BIM?

Integrated On site TRAININGS model: DIGCON + H2020 BIMplement approach (Lithuanian Implementation Schema)

BIMplement and Other Specific National Training and Communication activities and programs

1 Step.
Client Seminar Program or Individual communication

A. Meeting with managers of companies to agree on project selection.

2 Step. DIGCON and BIMPIEMENT Scope
Preparation: Training seminar for Onsite Trainers (Training Trainers)

B. Initial assessment and preparation of the BIM model and BIM processes with the selected On site Project Manager and BIM team; (SETUP CDE)

3 Step. DIGCON and BIMPIEMENT Scope
Onsite Trainings Program for Designers and Engineers

C1. Training of project parts managers and engineering personnel (+BIM specialists competences) (**level 6-7, EQF**);

4 Step. BIMplement Scope
Onsite Trainings Program for Blue Colors

C2. Crewmans (Brigade leaders) (**level 4-5, EQF**) and Blue Colors training (**level 2-4, EQF ?**);

Specific by Target groups and roles

Client (General Managers, Technical directors, Others)

Trainers (BIM coordinators, Design and Construction Managers)

Professionals/ Engineers

Blue Colors

Basic. Mandatory for All. Minimal Theory

BuildingSmartInternational BASIC LOF
+ Sertification Service

Minimum from bSI BASIC LOF

Prepared: 2019.10 Vaidotas Šarka, Dalius Gedvilas, Donatas Aksomitas (Lithuania)



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COULD YOU TALK ABOUT THE TOOLS DEVELOPED IN YOUR COUNTRY TO ADDRESS AIRTIGHTNESS AND VENTILATION USING BIM?

BIMplement: Construction Technologies Implementation SCOPE

White and Blue Collars Onsite trainings Scope.

Integration with ENERGOTRAIN developed 14 construction technologies processes descriptions :

- a. Ventilation systems implementation technology processes;
- b. Airtightness related construction technologies implementation processes
 - a. Facades (3) (Rendered, Ventilated and Glass Ali;
 - b. Windows (1);
 - c. Roof (3);
 - d. Ventilation with recuperation systems (1)
 - e. Heating systems (3);
 - f. Electricity and automation (1)
 - g. RES heating (1) and RES electricity (1)

www.statybostaisykles.lt

STATAI
STATYBOS TAISYKLĖS

Pirmas Statybos taisyklės Statybos technologijos **ENERGOTRAIN** Statybos teisė STATAI kainininkas/reklama Lietu

Katalogas

Pilnas katalogas

- ENERGOTRAIN: Mokymai
- Visų atestuotų darbininkų sąrašas
- Stogų įrengimo darbai
- Langu ir durų įrengimas
- Fasadų įrengimo darbai
- Vidaus inžinerinių sistemų darbai
- Elektrotechnikos ir ryšio sistemų darbai

Reginiai

Gruodis

P	A	T	K	P	Š	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22

Technologiniai aprašai, kompetencijų reikalavimai, testų ir užduočių aprašai (Informacija tik registruotiems vartotojams)

Vidaus inžinerinių sistemų darbai

- Mažatemperatūrinių spindulių (Šiluminės ir šiluminės) šildymo sistemų įrengimo darbai (A ir aukštesnės pastatams)
- Grindinio šildymo sistemų įrengimo darbai (A ir aukštesnės energinio naudingumo klasės pastatai)
- Mechaninio vėdinimo sistemų įrengimo darbai_V1_161215
- Radiatorinio ir konvektorinio šildymo sistemų įrengimo darbai (A ir aukštesnės energinio naudingumo klasės pastatai)

Visų atestuotų darbininkų sąrašas

ENERGOTRAIN: Atestuotų darbininkų sąrašas

ENERGOTRAIN: Mokymai

ENERGOTRAIN: Mokymai

Elektrotechnikos ir ryšio sistemų darbai

**EU IEE Program 2015-2017
ENERGOTRAIN PROJECT SCOPE
ISO81346 Scope**

Prepared: 2019.10 Vaidotas Šarka, Dalius Gedvilas, Donatas Aksomitas (Lithuania)

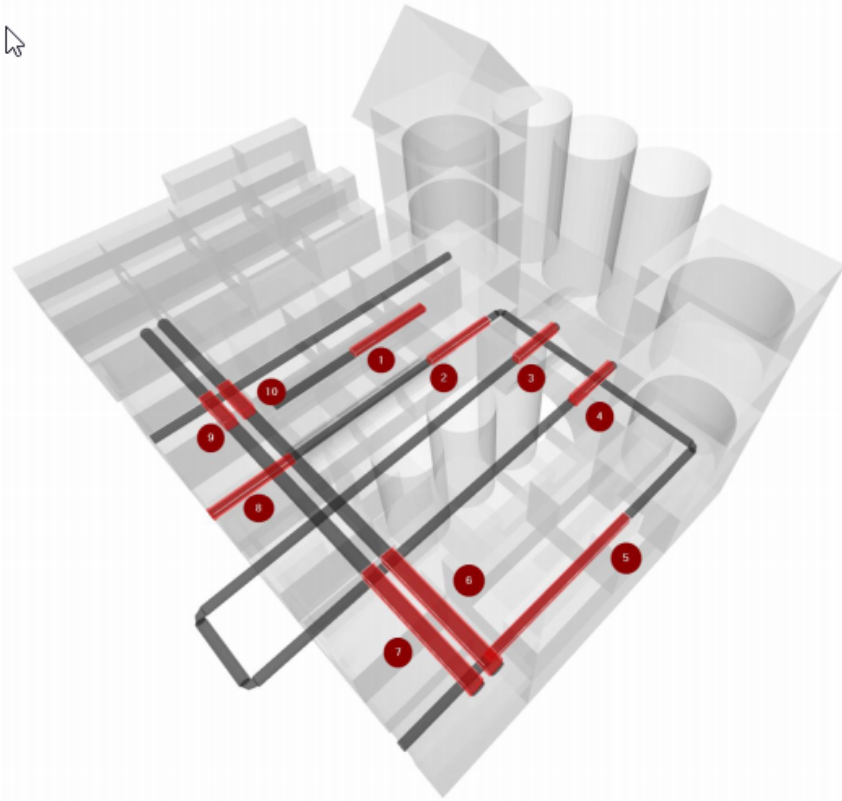


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COULD YOU TALK ABOUT THE TOOLS DEVELOPED IN YOUR COUNTRY TO ADDRESS AIRTIGHTNESS AND VENTILATION USING BIM?



- Training package showing the benefits of working on a BIM model



COULD YOU TALK ABOUT THE TOOLS DEVELOPED IN YOUR COUNTRY TO ADDRESS AIRTIGHTNESS AND VENTILATION USING BIM?

FC - Fachadas

Elemento FC Fachadas

Código	Sección	E mm	M kg/m²	Caso cámara aire	DB-SI R/E/I	DB-HS G.I.(h) G.I.(nh)	DB-HR R _A dBA R _{A,T} dBA	DB-HE U (W/m²K)	Condensaciones Superficiales	Condensaciones Intersticiales
FC01a02M32050	[Diagrama]	285	265		EI180	1	50 45	0.45	CUMPLE 0.89 > 0.52	CUMPLE
FC01a03M32050	[Diagrama]	285	265							
FC01a04M32050	[Diagrama]	285	265							
FC01b01M32050	[Diagrama]	185	165							

Solución : FC01a02M32050

LP11 5
ENF-H
M_0.032

LH9
ENL

Ext. Int.

115 15 50 90 15

Legenda

Material	Espesor (mm)
Fábrica LP cerámico perforado de 11'5 cm (11'5-15 cm)	115
Enfoscado de mortero mixto con aditivos hidrofugantes	15
M Lana mineral 0'032 W/mK	50
Fábrica LH cerámico hueco doble de 9 cm (9-11'4 cm)	90
Enlucido de yeso d < 1000 kg/m3	15

“CATALOGUE OF CONSTRUCTION ELEMENTS”

Construction solutions in IFC

Information on acoustic, thermal, condensation, waterproof, price, testing, quality control, execution, maintenance
to be downloaded and imported from any BIM modeling program

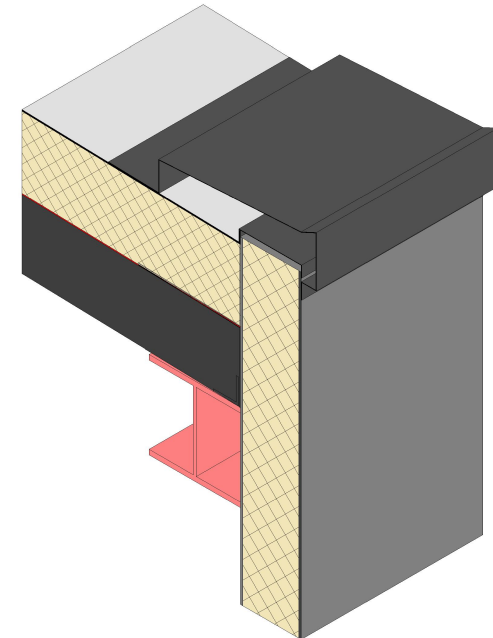
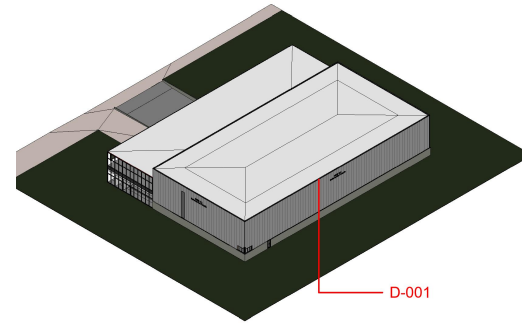
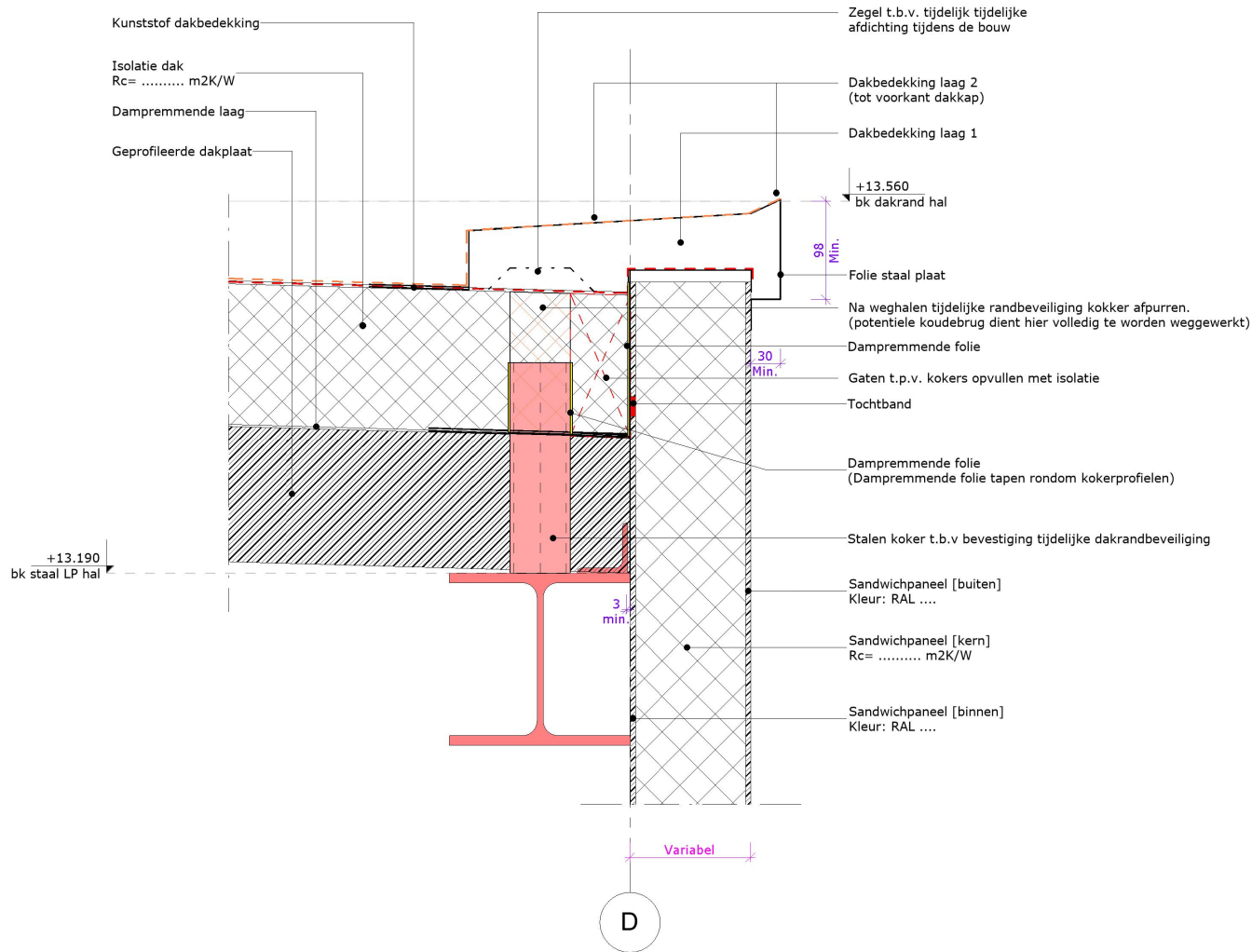


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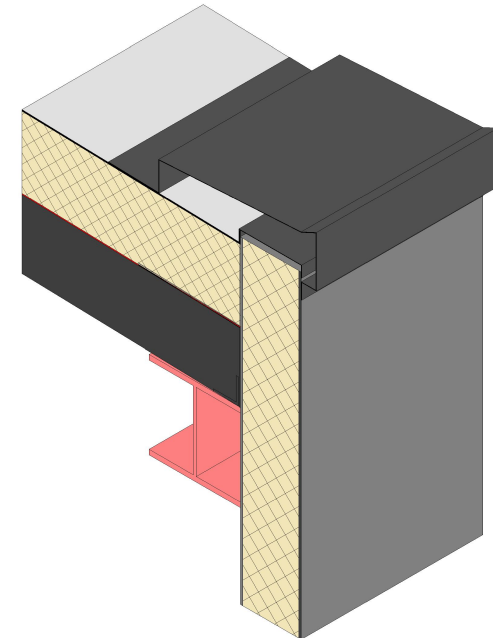
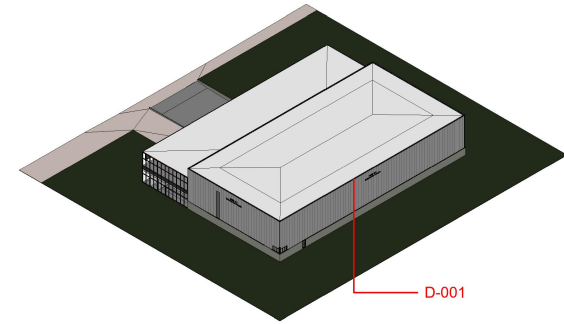
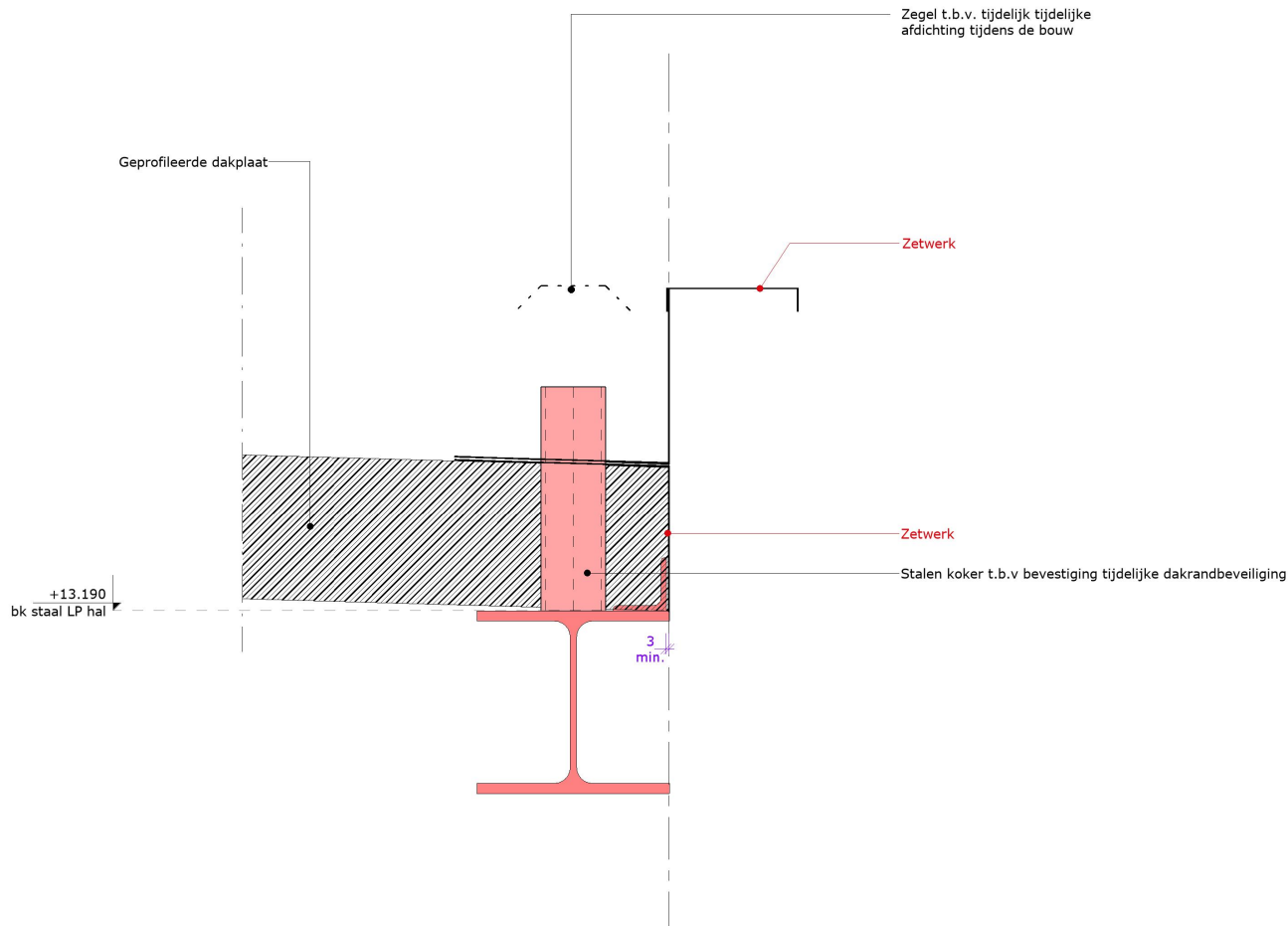
Maria Jose Esparza Arbona, Institut Valencia de l'Edificacio



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COULD YOU TALK ABOUT THE TOOLS DEVELOPED IN YOUR COUNTRY TO ADDRESS AIRTIGHTNESS AND VENTILATION USING BIM?



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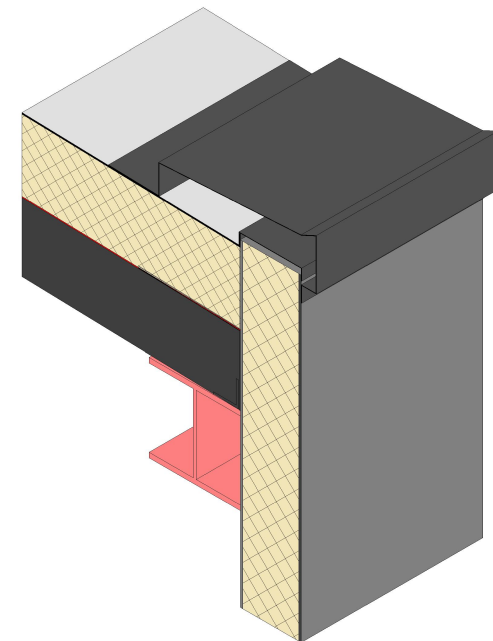
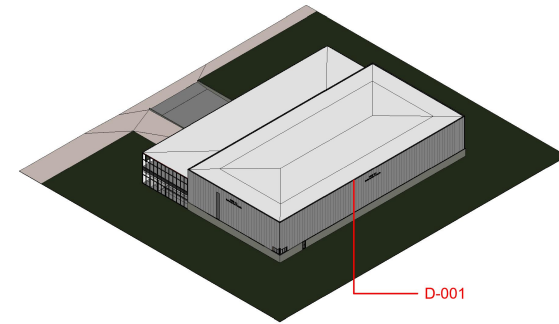
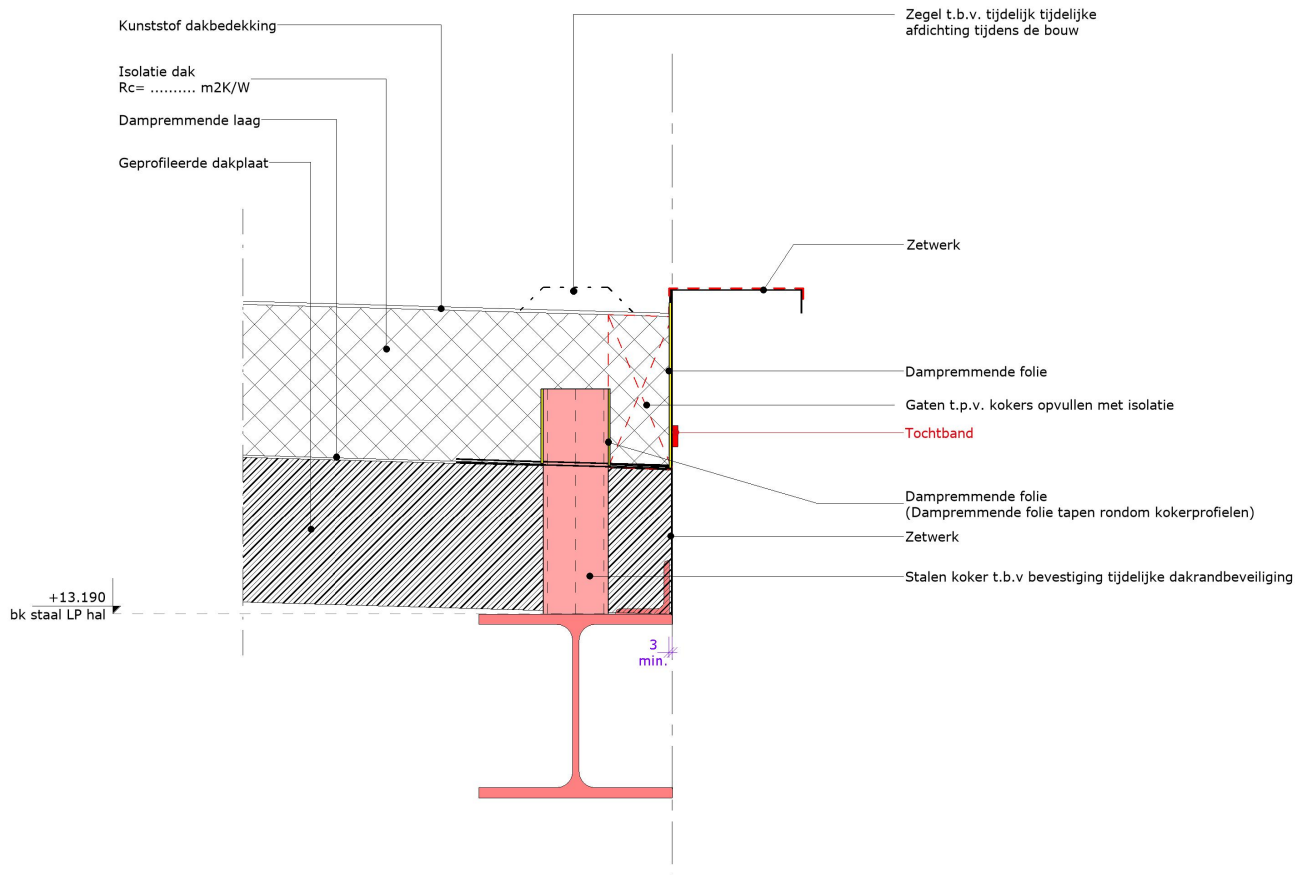
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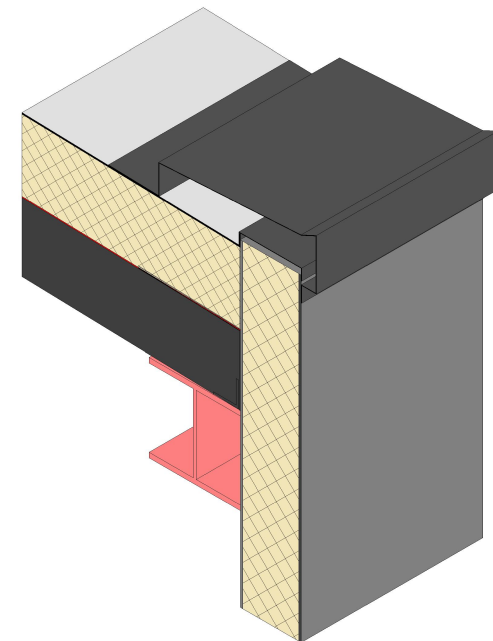
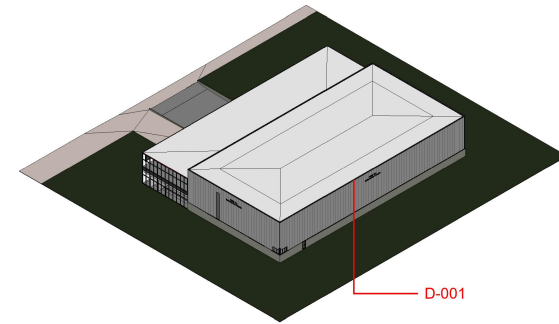
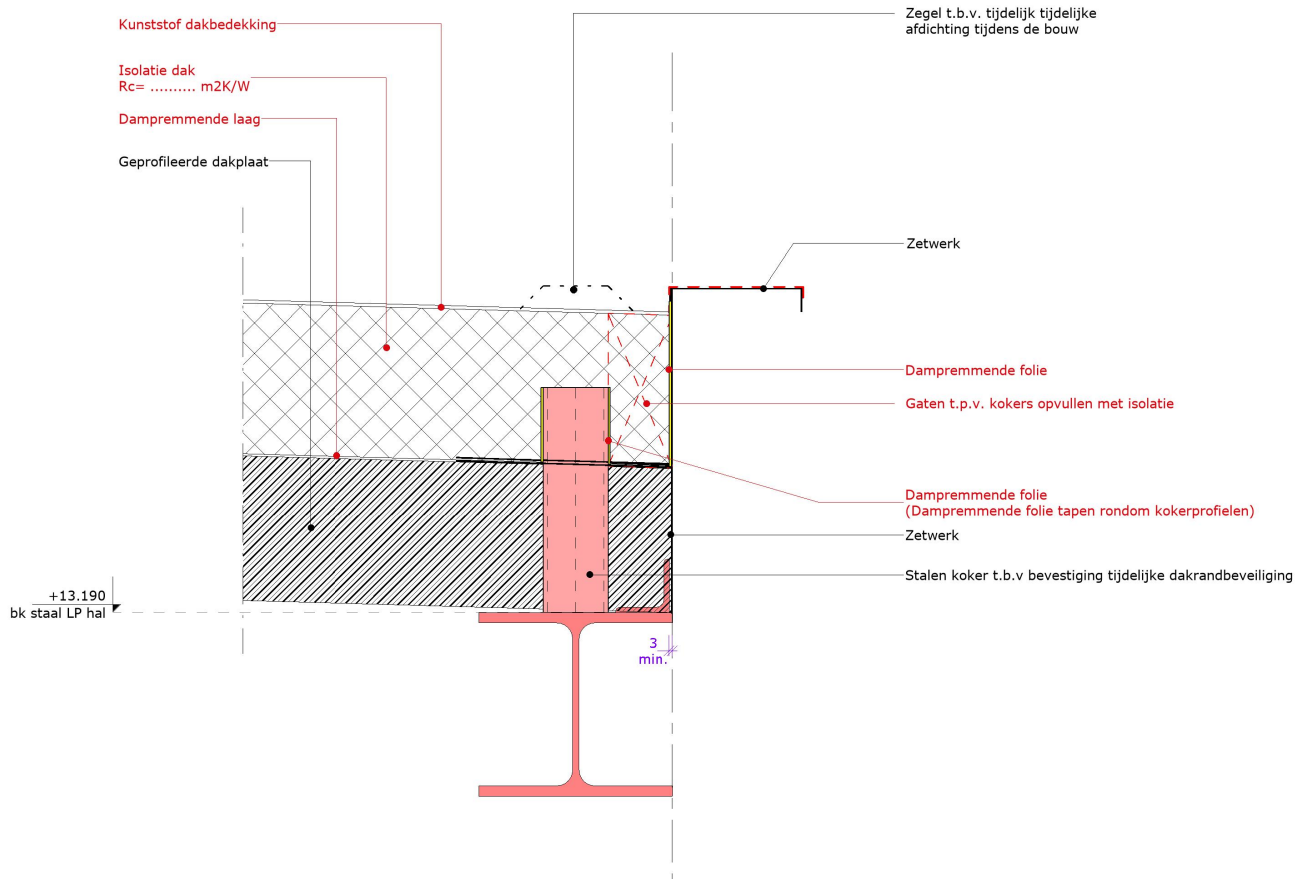
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