KENNISINSTITUUT
BOUW- EN INSTALLATIETECHNIEK

BALANCE & RESULT
ORGANISATIE ADVISEURS

Kennissessie met BIM opleiders

Willem Pel, Jaap Kolk, Jan Cromwijk, Arjan Schrauwen

BIMplement

NET UBIEP

Agenda

- Opening
- Ontwikkelde BIM kwalificatiestructuur
- Ontwikkeld materiaal
- BUILD UP Skills
- Samenwerking
- Sluiting

Doel

- Delen van opgebouwde kennis – netUBIEP /BIMplement/BUS
- Mogelijkheden tot samen optrekken

OPENING

- Voorstelronde

OPENING

netUBIEP: **Net**work for **U**sing **B**IM to **I**ncrease the **E**nergy Buildings **P**erformance

BIMplement: Towards a learning building sector by setting up a large-scale and flexible qualification methodology integrating technical, cross-craft and BIM related skills and competence

OPENING

Onderzoeksvragen:

- Hoe kunnen met BIM meer en betere duurzame gebouwen worden gerealiseerd?
- Hoe kunnen we de verschillende BIM functies meer standaardiseren?

OPENING

Opzet structuur	Kwalificatie-structuur		
Ontwikkelen concept lesmateriaal	Lesmateriaal	Presentatiemateriaal	E-learning
Testen materiaal	Professionals	PA/Owners	Technicians
Feedback verwerken	Aanpassen lesmateriaal/ presentatiemateriaal/E-learning		
Verspreiden opgebouwde kennis	Verspreiden opgebouwde kennis door ??		

OPENING

- Projectpartners

BIMplement

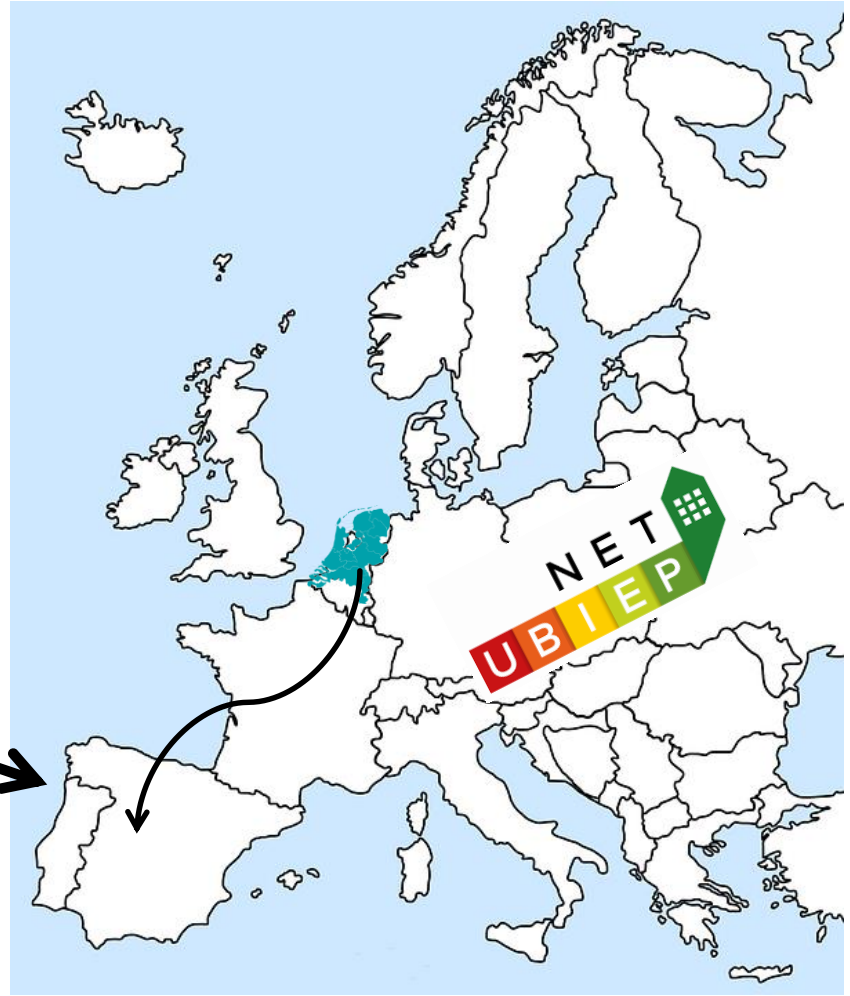
BIM Kwalificatiestructuur

- Wat hebben we geleerd in Net-UBIEP en BIMplement ?

BIM Manager	Aanbieder A	Aanbieder B
Kosten	Euro 1.250,-	Euro 10.000,-
Duur	2 dagdelen	20 weken

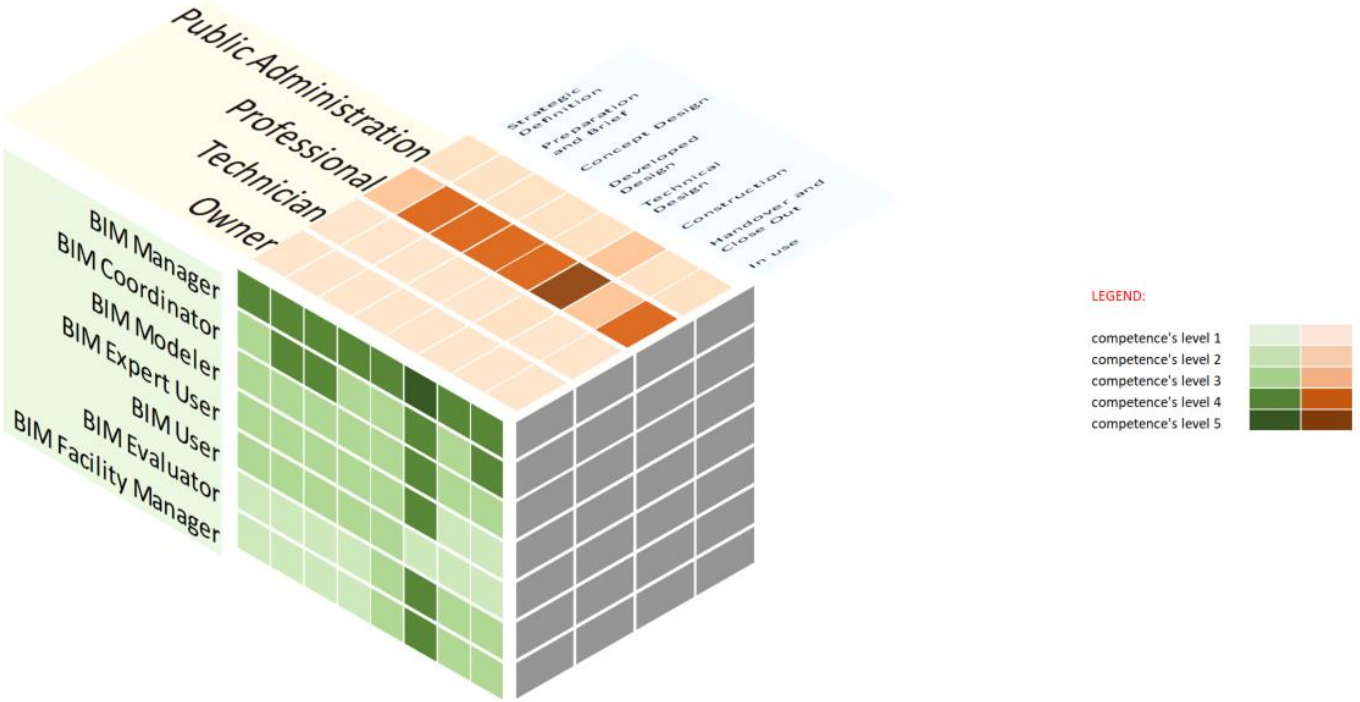
BIM Kwalificatiestructuur

- Wat hebben we geleerd in Net-UBIEP en BIMplement ?



BIM Kwalificatiestructuur

- Wat hebben we geleerd in Net-UBIEP en BIMplement ?



BIM Kwalificatiestructuur

3D matrix met:

- Verschillende BIM functies
  - BIM manager, coördinator, modeler, expert-user, user, evaluator, facility manager
- Verschillende rollen
  - Public Administration, professional, technician, owner
- Verschillende fasen (RIBA)
  - Strategic definition, preparation and brief, concept design, developed design, technical design, construction, handover, in use.

BIM Kwalificatiestructuur

Competenties voor BIM gerelateerde functies.

Net-UBIEP competences	BIM Profiles					
	BIM Manager	BIM Coordinator	BIM Model Evaluator	BIM Specialist / Expert	BIM User	BIM Facility Manager
C0. Have basic BIM knowledge and skills						
C0.K1. BIM basic concepts, terminology, principles, strategies and its value proposition	■	■	■	■	■	■
C0.K2. Benefits and uses of BIM compared to traditional methods for improving energy efficiency of new or existing buildings	■	■	■	■	■	■
C0.K3. Project information development cycle: information specification, development, exchange and maintenance throughout all the building life cycle	■	■	■	■	■	■
C0.K4. Reasons for open and interoperable solutions to ensure collaboration among professionals of different disciplines	■	■	■	■	■	■
C0.K5. Methodology to indentify, plan, develop and evalute organization's BIM implementation capabilities and BIM uses	■	■	■	■		
C0.K6. Relevance of maintenance for maintaing the foreseen energy performance	■	■	■	■	■	■
C0.S1. Read a BIM Execution Plan (BEP)	■	■	■	■		■
C0.S2. Read a Information Delivery Manual	■	■	■	■	■	■
C0.S3. Identify information requirements for his own role	■	■	■	■	■	■
C0.S4. Identify the format to read information and transfer information within the supply chain	■	■	■	■		
C0.S5. Identify the EIR (Employer Information Requirements)	■	■	■	■	■	■
C0.S6. Identify and/or verify the stages of PIM (Project Information Management)	■	■	■	■	■	■
C1. Understand BIM tools						
C1.K1. Principle of economic subjects for the cost estimation and evaluation of energy refurbishment	■		■			■
C1.S1. Specialised skills to incorporate information in a BIM Model, evaluating openBIM software	■	■		■		
C1.S2. Stay up to date on BIM trends, current developments and new directions of BIM technologies	■	■	■	■		
C1.S3. Decrease the life cycle cost of the building using methods described in ISO 15686-5	■					■
C1.S4. Evaluate and compare different plans and related ROI (Return of Investments) using methods described in ISO 15686-5	■		■			
C2. Apply information management						
C2.K1. Principle of data mining, data base and back up in the CDE (Common Data Environment)	■	■	■			■
C2.K2. Principle of data transferring among different software and/or data federating into an integrated design	■	■		■	■	■
C2.K3. Principle of data security and administrative law in the archiving of data in a CDE (Common Data Environment)	■	■	■	■		■
C2.K4. Principle of information management in building sustainability and lean design	■	■	■	■	■	■
C2.K5. Principle of reusing and recycling of materials and components of a building	■		■		■	■
C2.S1. Manage and coordinate information related to energy performance	■	■			■	■
C2.S2. Identify which graphic and/or non-graphic information are necessary for a better management of works and for define the completeness of the Information Delivery Plan in relation to energy perfomance		■	■	■		
C2.S3. Archive the model ensuring that the information provided is kept intact and not manipulated for any future use	■	■	■			■

BIM Kwalificatiestructuur

Heel specifiek:

NET UBIEP
Network for Using BIM to Increase the Energy Performance

List of Competences

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No.754016

BIM Coordinator	Developed Design

N	Competence	Level
C1	Understand BIM tools	
C1.S1	Specialised skills to incorporate information into BIM Model, evaluating openBIM software	
C1.S2	Stay up to date on BIM trends, current developments and new directions of BIM technologies	
C2	Apply information management	
C2.K1	Principle of data mining, data base and back up in the CDE (Common Data Environment)	
C2.K2	Principle of data transferring among different software and/or data federating into an integrated design	
C2.K4	Principle of information management in building sustainability and lean design	
C2.S1	Manage and coordinate information related to energy performance	
C2.S2	Identify which graphic and/or non-graphic information are necessary for a better management of works and for define the completeness of the Information Delivery Plan in relation to	
C2.S3	Archive the model ensuring that the information provided is kept intact and not manipulated for any future use	
C2.S4	Evaluate the completeness of the maintenance plan to be used in EPC (Energy Performance Contracting)	
C2.S7	Identify requirements for the management of data in the CDE (Common Data Environment) for any professionals involved in the process	
C2.S8	Transfer building information using BIM to facility managers and final users	
C3	Apply procurement management	
C3.K1	Processes, methods and principles of decision-making on procuring services and suppliers	
C3.K2	Processes, methods and principles of decision-making on materials and products	
C3.K3	Legal and technical aspects on green procurement, state and rules for using public funding and international good practices of energy performance contracting	
C3.K4	Strategies for training programs to increase energy efficiency with the support of BIM	
C3.S1	Select or evaluate selected companies with experience in the technologies defined	
C3.S2	Select products that fit specifications and demands on given quality aspects making financial calculation related to contracting phase	

COO4 MOD4 SPE4 USE4 MAN5 COO5 MOD5 SPE5 USE5 MAN6 COO6 MOD6 SPE6 USE6 MAN7 COO7 MOD7 SPE7 USE7 MAN8 COO8

BIMplement

NET UBIEP

Ontwikkeld materiaal (Willem & Jaap)

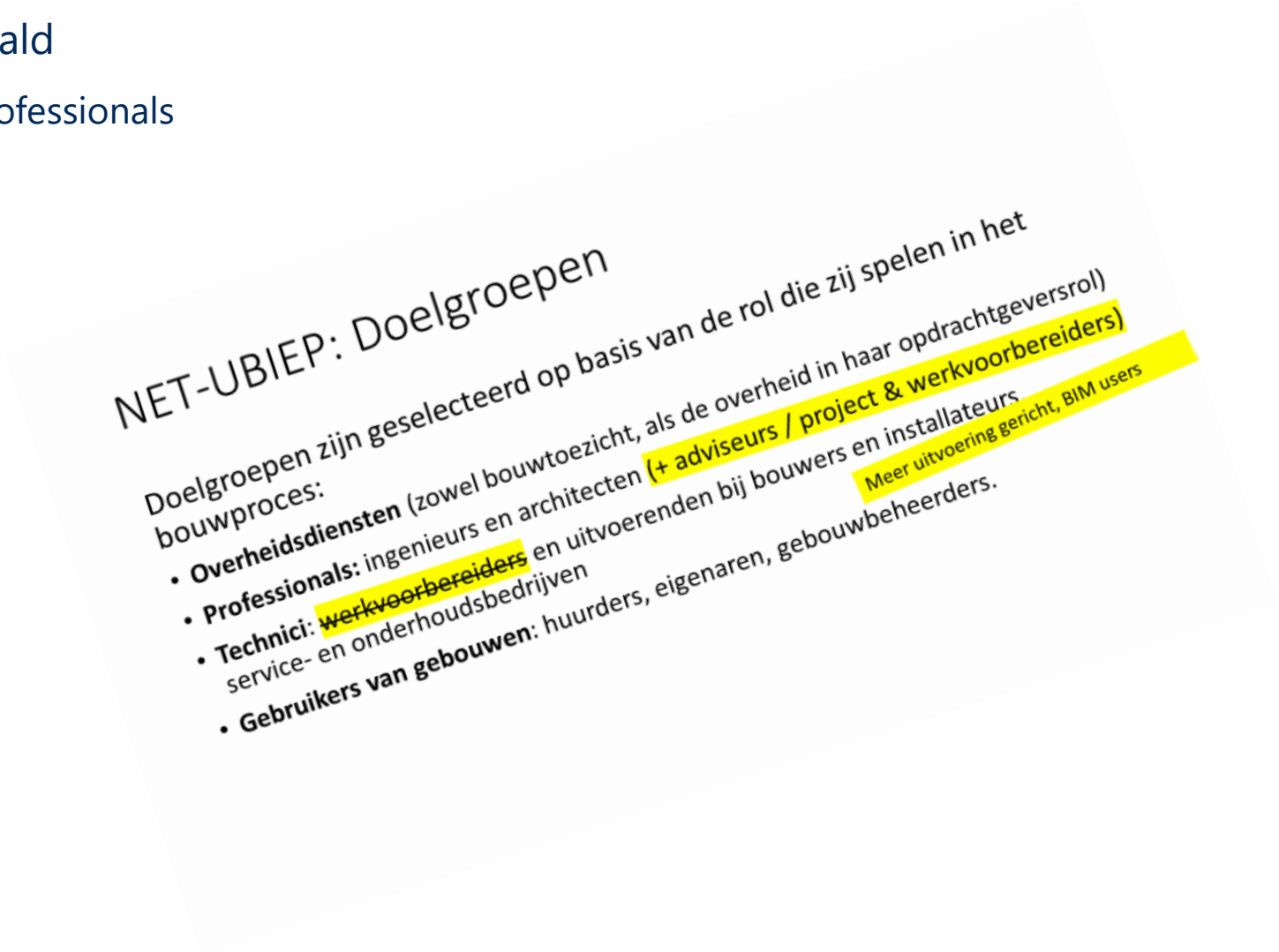
KENNISINSTITUUT
BOUW- EN INSTALLATIETECHNIEK

BIM 4 BENG

Willem Pel

Onderwerpen

- Doelen van het NET-UBIEP project vertaald
  - Training / proeverij voor BIM & BENG professionals
    - Actief in alle fasen
    - Actief in alle rollen
  - In de context van BENG voor 1-1-2020



BIM voor BENG: de proeverij

- Introductie BIM
- Introductie BENG
- Strategische keuze BIM voor BENG
- BIM voor BENG contracteren
- BIM voor BENG ontwerpen
- BIM voor BENG realiseren
- BIM voor BENG beheren en onderhouden
- BIM voor BENG renovatie / verduurzaming bestaande voorraad

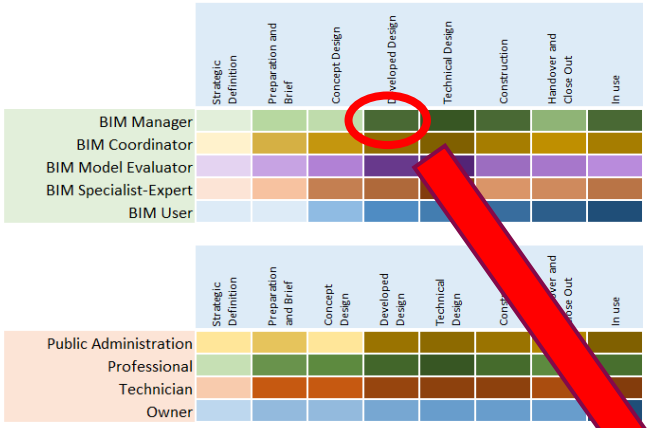
NET UBIEP
Network for Using BIM to Increase the Energy Performance

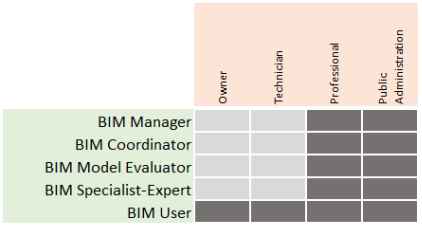
3D Matrix

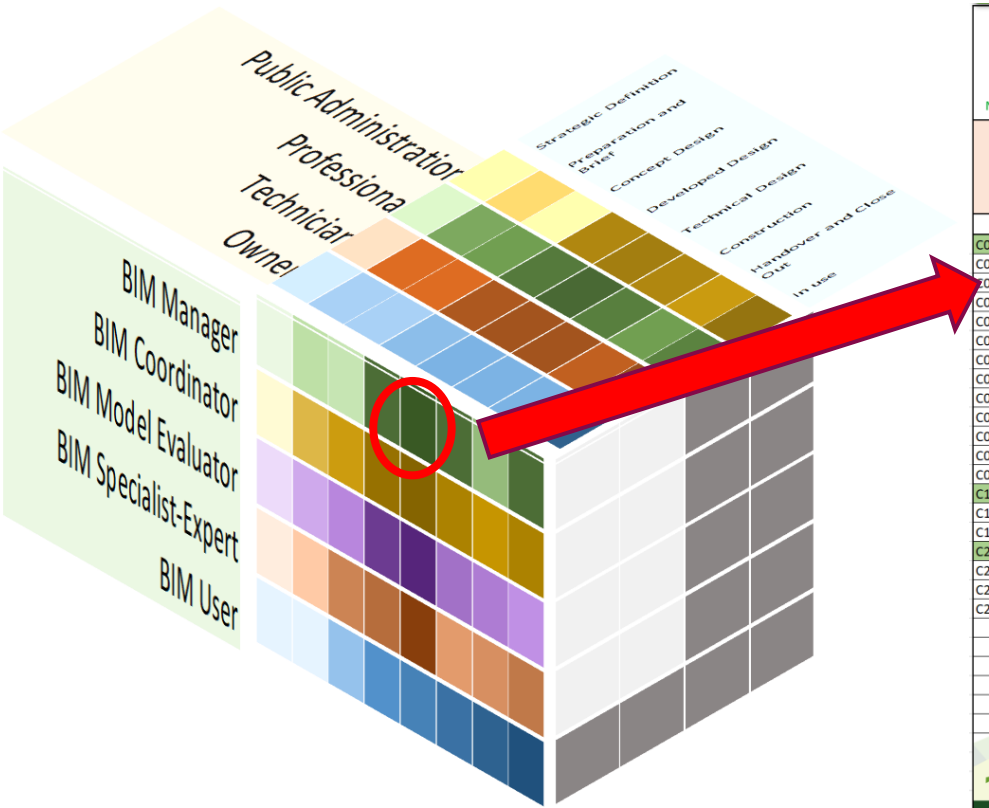
This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No.754016

BIM Profiles	Strategic Definition	Preparation and Brief	Concept Design	Developed Design	Technical Design	Construction	Handover and Close Out	In use
BIM Manager	☑	☑	☑	☑	☑	☑	☑	☑
BIM Coordinator	☑	☑	☑	☑	☑	☑	☑	☑
BIM Model Evaluator	☑	☑	☑	☑	☑	☑	☑	☑
BIM Specialist-Expert	☑	☑	☑	☑	☑	☑	☑	☑
BIM User	☑	☑	☑	☑	☑	☑	☑	☑

Target Group	Strategic Definition	Preparation and Brief	Concept Design	Developed Design	Technical Design	Construction	Handover and Close Out	In use
Public Administration	☑	☑	☑	☑	☑	☑	☑	☑
Professional	☑	☑	☑	☑	☑	☑	☑	☑
Technician	☑	☑	☑	☑	☑	☑	☑	☑
Owner	☑	☑	☑	☑	☑	☑	☑	☑







NET UBIEP
Network for Using BIM to Increase the Energy Performance

List of Competences

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No.754016

BIM Manager	Developed Design

N	Competence	Level
C0	Have basic BIM knowledge and skills	
C0.K1	BIM basic concepts, terminology, principles, strategies and its value proposition	
C0.K2	Benefits and uses of BIM compared to traditional methods for improving energy efficiency of new or existing buildings	
C0.K3	Project information development cycle: information specification, development, exchange and maintenance throughout all the building life cycle	
C0.K4	Reasons for open and interoperable solutions to ensure collaboration among professionals of different disciplines	
C0.K5	Methodology to identify, plan, develop and evaluate organization's BIM implementation capabilities and BIM uses	
C0.K6	Relevance of maintenance for maintaing the foreseen energy performance	
C0.S1	Read a BIM Execution Plan (BEP)	
C0.S2	Read a Information Delivery Manual	
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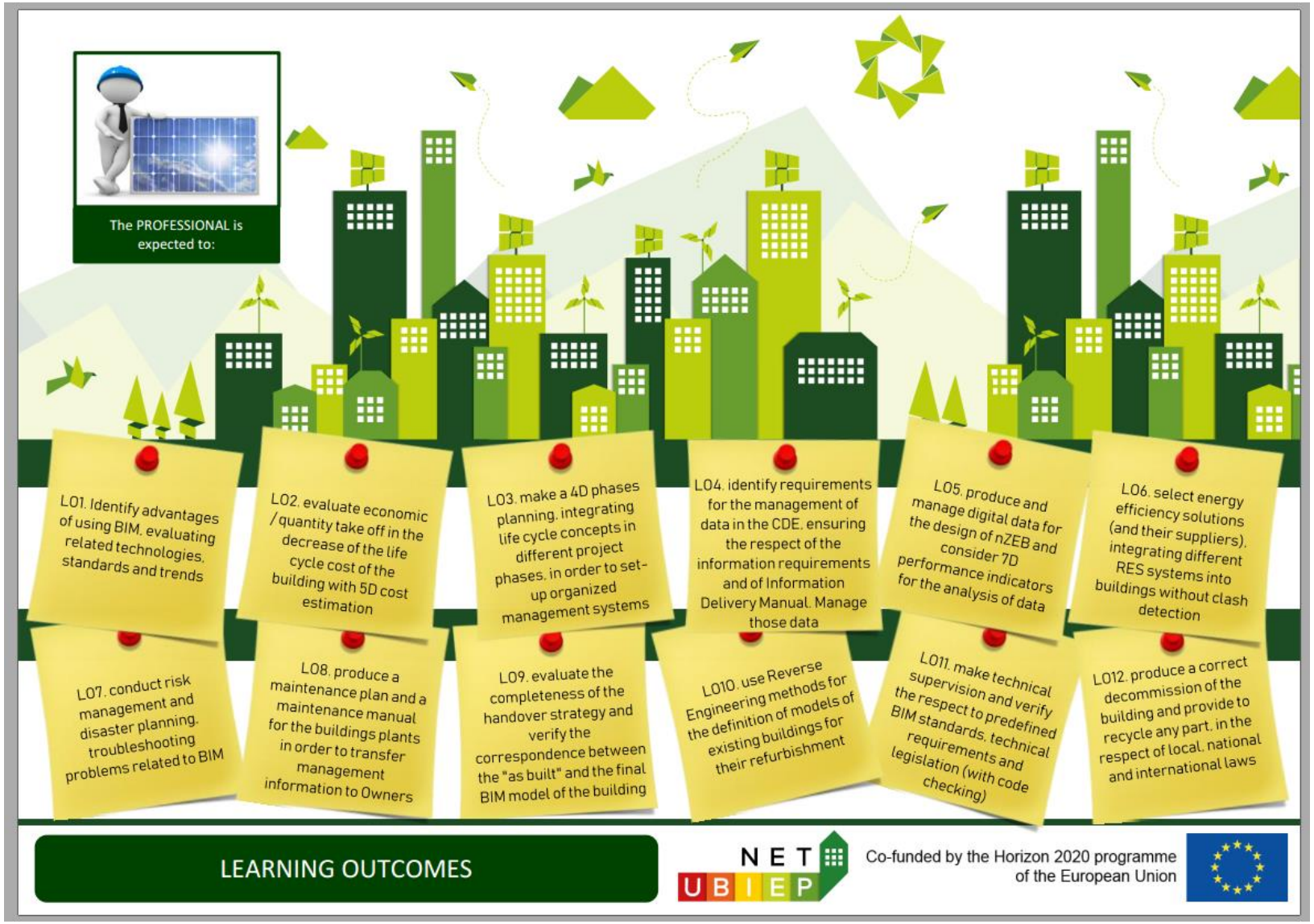
C0.S4	Identify the format to read information and transfer information within the supply chain	
C0.S5	Identify the EIR (Employer Information Requirements)	
C0.S6	Identify and/or verify the stages of PIM (Project Information Management)	
C1	Understand BIM tools	
C1.S1	Specialised skills to incorporate information into BIM Model, evaluating openBIM software	
C1.S2	Stay up to date on BIM trends, current developments and new directions of BIM technologies	
C2	Apply information management	
C2.K1	Principle of data mining, data base and back up in the CDE (Common Data Environment)	
C2.K2	Principle of data transferring among different software and/or data federating into an integrated design	
C2.K3	Principle of data security and administrative law in the archiving of data in a CDE (Common Data Environment)	

Professional: 12 leerdoelen



Professional: 12 leerdoelen (41 subdoelen)

Leerdoel		Het kunnen ….
PR.L01	1	identificeren van de voordelen van het gebruik van BIM tijdens de bouw, het beheer, het onderhoud en de renovatie van bestaande gebouwen en de impact van BENG op de verlaging van de levenscycluskosten van een object.
PR.L01	2	beoordelen en op waarde schatten van gerelateerde BIM-technologieën, huidige BIM-standaarden en nieuwe BIM-trends.
PR.L02	1	beoordelen van de economische / kwantitatieve onderbouwing van de afname van de levenscycluskosten van het gebouw,
PR.L02	2	vaststellen van 5D kostenraming van organisatie / projectbudgetten voor renovatiewerkzaamheden.
PR.L03	1	opzetten van 4D functionele en ruimte planning t.b.v. de opzet van de constructieplanning, als leidraad voor de effectieve verdeling van geschikte ruimtes en gerelateerde middelen,
PR.L03	2	integreren van de levenscyclusconcepten in verschillende projectfasen, met een vertaling naar de bewakingssystemen (planning)
PR.L04	1	vaststellen van de eisen voor het beheer van gegevens in de Common Data Environment (CDE) voor de professionals die betrokken zijn bij het ontwerpproces,
PR.L04	2	begrijpen van de rollen van de verschillende projectdeelnemers in het duurzame bouwproject
PR.L04	3	geven van ondersteuning aan medewerkers m.b.t. het gebruik van de BIM-tools.
PR.L04	4	Bewaken van de naleving van de informatie eisen en de informatie leveringsspecificatie (ILS) door de gehele toeleveringsketen,
PR.L04	5	beheren van de data binnen het informatiemodel,
PR.L04	6	registratie van de productiegegevens,
PR.L04	7	controleren van de resultaten, ervoor zorgen dat de verstrekte informatie intact blijft en niet wordt gemanipuleerd voor toekomstig gebruik en de overdracht van het BIM-informatiemodel voor het uiteindelijke gebruik;

PR.L05	1	uitvoeren van haalbaarheidsstudies,
PR.L05	2	maken digitale productie in de vorm 3D-modellering van grafische en niet-grafische informatie ontwerpen,
PR.L05	3	opzetten van de bibliotheek met elementen van een gebouw ontwikkelen die nodig is voor Common Data Environment,
PR.L05	4	valideren van modellen,
PR.L05	5	maken van een projectvisualisatie voor gebruikers en reviewers.
PR.L05	6	coördineren van de werkzaamheden van verschillende disciplines coördineren om een geconsolideerd BIM-model te verkrijgen dat voldoet aan alle vereisten,
PR.L05	7	toepassen van kwaliteitsmanagement
PR.L05	8	coördineren van de en BIM activiteiten van de teamleden van de verschillende disciplines coördineert.
PR.L05	9	overwegen gebruik 7D prestatie-indicatoren tijdens het ontwerpen van nZEB of renovatiewerkzaamheden afhankelijk van verschillende toepassingen, met hun voordelen versus kosten, het gebruik van het gebouw, klimaatzone, enz .;
PR.L06	1	identificeren van de vereisten voor nZEB op het gebied van RES (Renewable Energy Sources), energiebesparende installaties, 6D duurzaamheid gebouwbeheer eisen,
PR.L06	2	communiceren van de BIM ontwerpdoelen.
PR.L06	3	Integreren van de verschillende RES (Renewable Energy Sources) -systemen in gebouwen zonder clash detection, met kennis van het samenspel tussen alle aspecten van het ontwerp van gebouwen, gebruik van het buitenklimaat, duurzame energiesystemen, energievraag en duurzame energieproductie.
PR.L06	4	definiëren van de gewenste duurzaamheid van materialen in aanbestedingsdocumenten
PR.L06	5	selecteren bedrijven met ervaring in deze technologieën
PR.L07	1	uitvoeren van risicobeheer, worst kaas scenario's (inclusief het anticiperen op toekomstige klimaatveranderingen),
PR.L07	2	oplossen van problemen gerelateerd aan BIM-systemen,
PR.L07	3	oplossen van de belangrijkste kritieke punten voor het verkrijgen van nZEB en de daaruit voortvloeiende wijziging van het BIM Execution Plan (BEP).
PR.L08	1	opstellen van een onderhoudsschema en een onderhoudshandleiding voor de gebouwen om daarmee de gebouwbeheer informatie aan de eigenaar over te dragen
PR.L09	1	evalueren van de volledigheid van de handover-strategie
PR.L09	2	verifiëren van de overeenkomst tussen het "as built" en het uiteindelijke BIM-model van het gebouw
PR.L10	1	toepassen van een laserscan voor het produceren van een puntenwolk of een fotogrammetrie van bestaande gebouwen voor het modelleren t.b.v. renovatie
PR.L10	2	vergelijken en evalueren van nieuwe faciliteiten en aanverwante systemen
PR.L10	3	opzetten van een 3D-model middels Reverse Engineering;
PR.L11	1	houden van technisch toezicht op de naleving van vooraf vastgestelde BIM-normen,
PR.L11	2	verifiëren technische vereisten en wetgeving (met code check),
PR.L11	3	gebruiken van de gerelateerde software,
PR.L11	4	opzetten van kwaliteitsbeheer van BIM-projecten.
PR.L12	1	zorgdragen voor een correcte ontmanteling van het gebouw en hergebruik van elk onderdeel, met inachtneming van de lokale, nationale en internationale wetgeving.

Leerstof professional

A	Training opzet
A1	Doel training, focus op comfort, kwaliteit, circulair bouwen, energie prestatie
A2	Doelgroepen voor de training
A3	Opdeling training
A4	Nul meting, maturity scan, BIM levels
B	Intro BIM
B1	Introductie BIM, wat verstaan we onder BIM (begrippen). Voordelen van BIM, welke uitdagingen ontstaan
B2	Welke BIM functies (functionaliteiten) bestaan er
B3	BIM als levenscyclus platform, faseringen en processen
B4	BIM gebruikers / BIM rollen / competenties
B5	BIM landschap, welke software oplossingen staan de sector ter beschikking
B6	BIM standaarden
C	Introductie BENG (nZEB / Bijna Energie Neutrale Gebouwen)
C1	Introductie BENG, wat verstaan we onder BENG (begrippen), urgentie en noodzaak
C2	BENG toegepast in de Nederlandse / Europese context, wet en regelgeving, gestelde eisen
C3	BENG toegepast in de Nederlandse context, bepalingsmethode energieprestatie (NTA 8800) BENG indicatoren
C4	BENG landschap, welke software oplossingen / reken methodieken staan de sector ter beschikking
C5	Impact BENG op de TCO van een gebouw
C6	Milieu prestatie voor gebouwen (MPG)

Leerstof professional

D	Strategische keuze BIM voor BENG, BENG bouwen m.b.v. BIM
D1	BIM voor BENG als onderdeel van het integrale BIM proces, welke BIM functies komen in deze training in relatie tot BENG aan de orde.
D2	Voordelen te behalen door toepassing BIM voor BENG voor de verschillende belanghebbende
D3	Business case BIM voor BENG
D4	BIM voor BENG als ketensamenwerking instrument, BIM coordinatie
D5	Implementatie BIM voor BENG, impact op de bestaande werkwijze
D6	BIM voor BENG competenties
D7	BIM bibliotheken, parametrisch modelleren
E	BIM voor BENG contracteren
E1	Verschillende contractvormen in relatie tot gebruik BIM
E2	Uitvraag t.b.v BIM voor BENG, de te leveren prestaties / bestek
E3	Uitvraag t.b.v BIM voor BENG, de informatie leveringsspecificatie (ILS), referentie naar standaarden
E4	BIM voor BENG de samenwerking en rolverdeling formaliseren op basis van BIM protocol / BIM uitvoeringsplan
E5	BIM voor BENG aspectmodellen per fase en discipline
E6	BIM voor BENG Risico analyse
E7	Van het gas los / aantonen kwaliteit, materiaal keuze, detaillering
F	BIM voor BENG ontwerpen Nieuwbouw tot LOD 300 (BIM voor engineers and architects)
F1	BIM voor BENG denken in systemen / gebouwbegrenzing
F2	Bepaling warmte en koude behoefte
F3	Transmissie
F4	Rekenen en simuleren gebouwinstallaties, verwarming, koeling, be-ontvochtiging, warm tapwater, verlichting en gebouwautomatisering
F5	5D BIM en raming, haalbaarheidsstudie
F6	Clash detection kasko en installatie
F7	Model check

Leerstof professional

G	BIM voor BENG realiseren Nieuwbouw LOD 350-400 (BIM voor aannemers / toeleveranciers)
G1	BIM voor BENG detailengineering / werken met referentiedetails
G2	Kwaliteitscontrole / kwaliteitsinspectie / kwaliteitsborging / gebouwdossier
G3	5D BIM Hoeveelhedenbepaling en calculatie
G4	Augmented reality voor instructie
G5	Clash detection kasko en installatie
G6	4D BIM / planning
G7	Continu verbeteren / terugkoppeling vanuit nieuwbouw realisatie naar ontwerp
G8	Handover dossier en validatie
H	BIM voor BENG onderhouden en beheren LOD 500 (BIM voor eigenaren / facility managers)
H1	Validatie handoverdossier as built en de werkelijkheid
H2	Duurzaam onderhoud asset management m.b.v. BIM voor BENG / conditiemeting
H3	Conditie meting / Meerjaren onderhoudsplanning / Resultaatgericht vastgoed onderhoud
H4	Traceability welke materialen waar toegepast (materialen paspoort / gebouwdossier)
H5	Sloop, hergebruik gebruikmakend van het materialen paspoort
H6	Continu verbeteren / terugkoppeling vanuit gebruik naar ontwerp
H7	Total cost of ownership
H8	Digital twin
I	BIM voor BENG voor verduurzaming bestaande voorraad (renovatie)
I1	Inventarisatie actuele situatie, digitaliseren bestaande situatie/ laserscanning / genereer mesh model
I2	Rekenen en simuleren gebouwinstallaties, verwarming, koeling, be-ontvochtiging, warm tapwater, verlichting en gebouwautomatisering
I3	5D BIM hoeveelhedenbepaling en calculatie voor renovatie
I4	4D BIM / planning
I5	Clash detection kasko, installatie en bestaande omgeving
I6	Model check
I7	Continu verbeteren / terugkoppeling vanuit renovatie naar ontwerp

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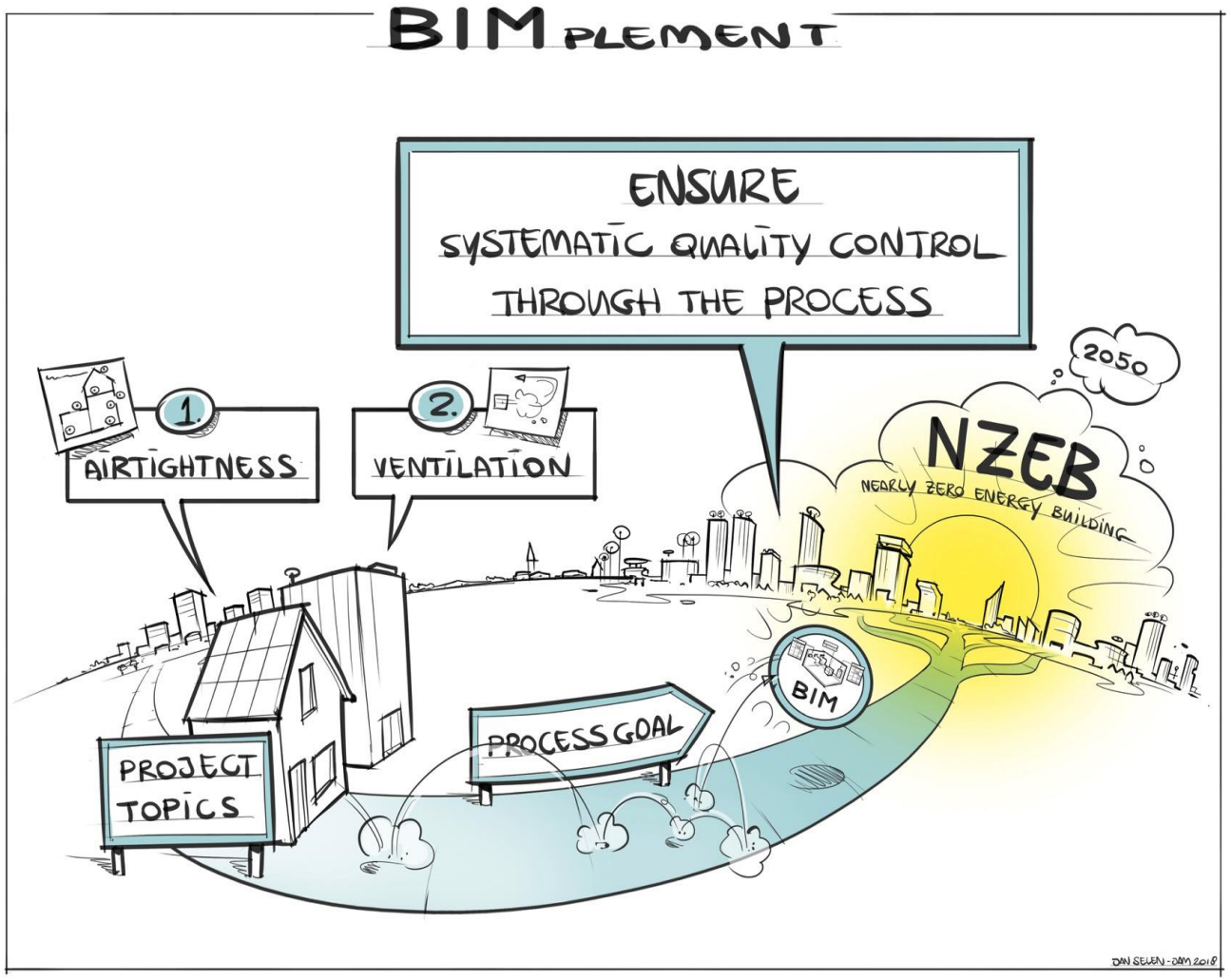

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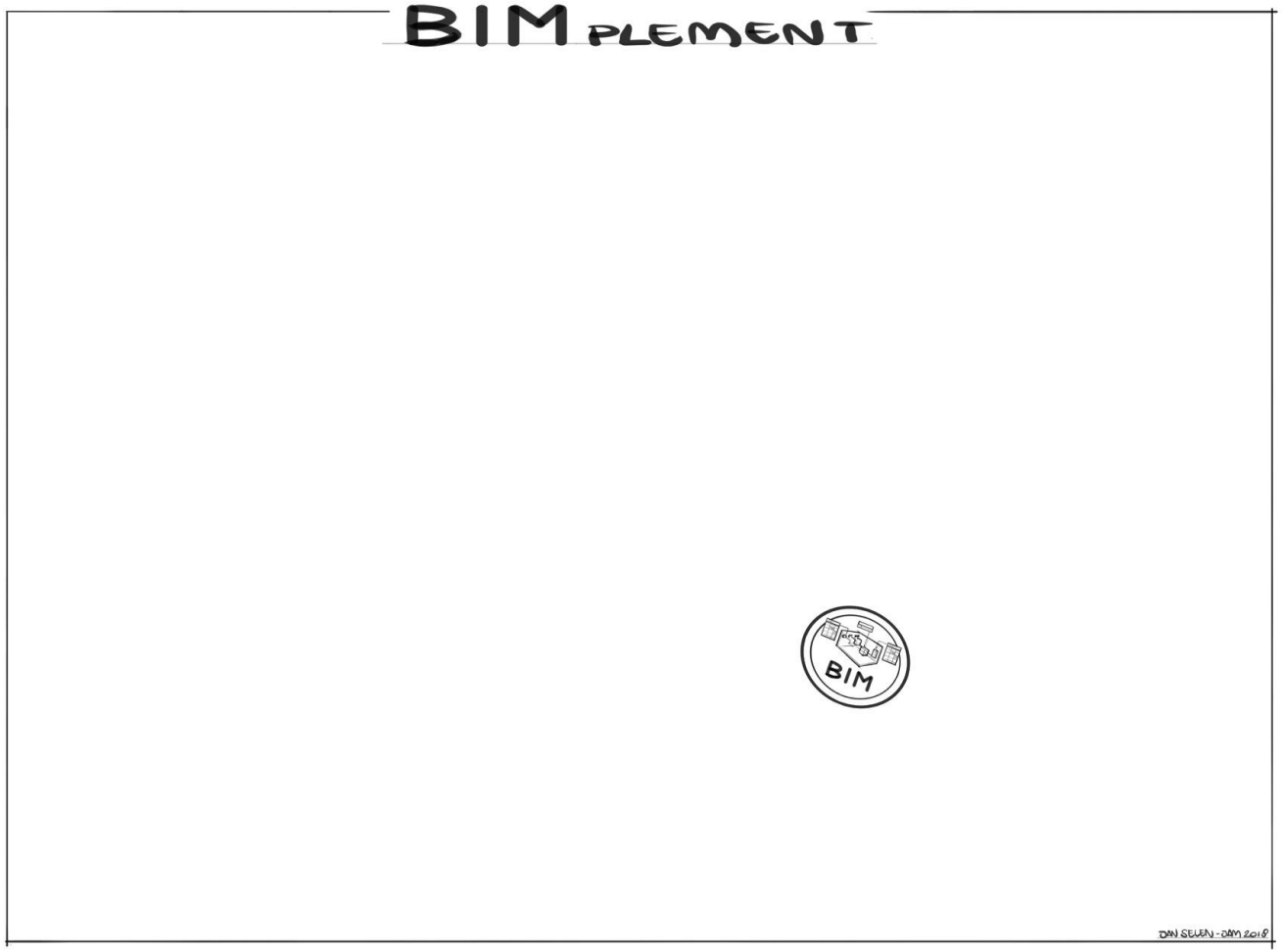

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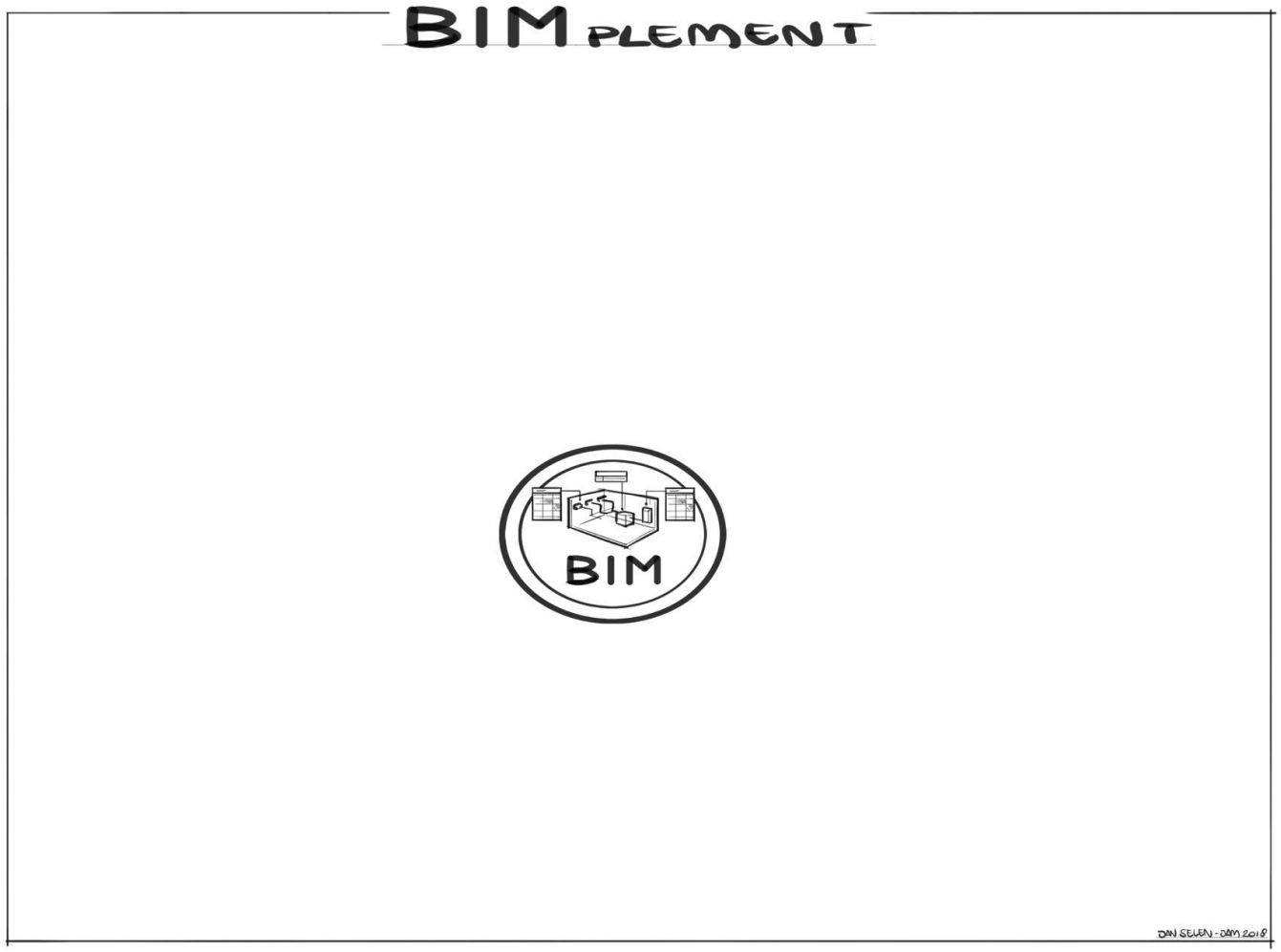

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NET UBIEP

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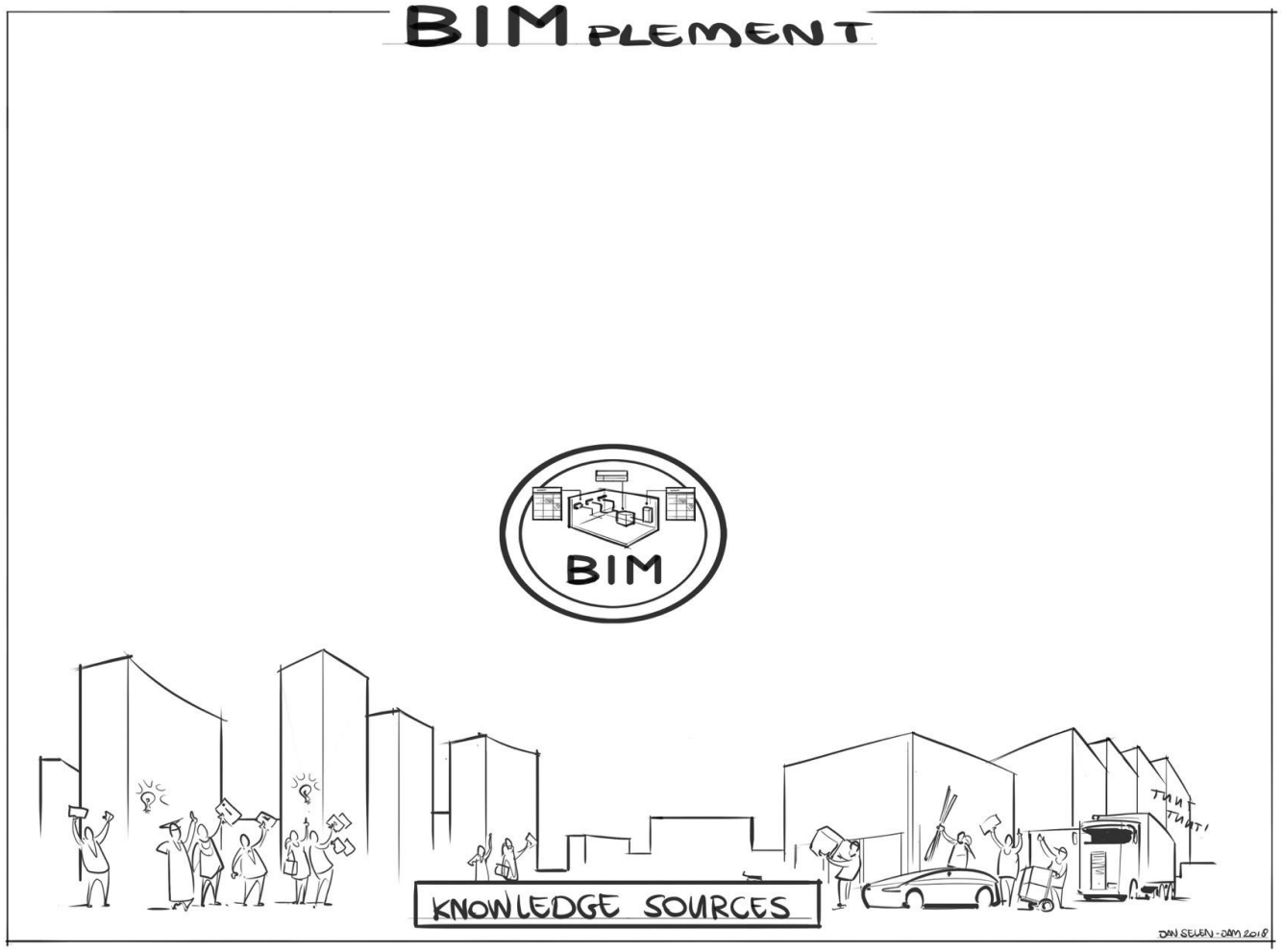

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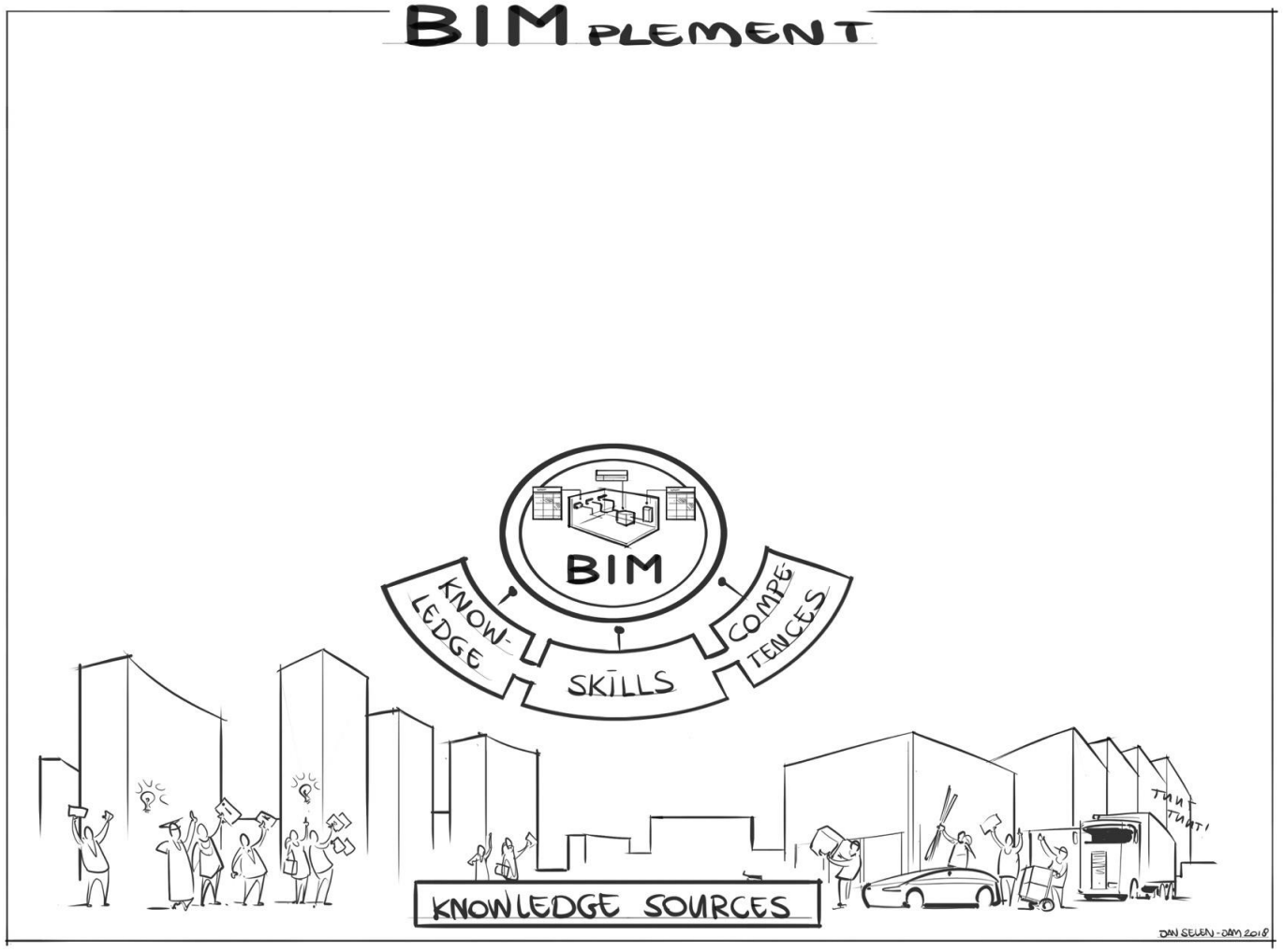

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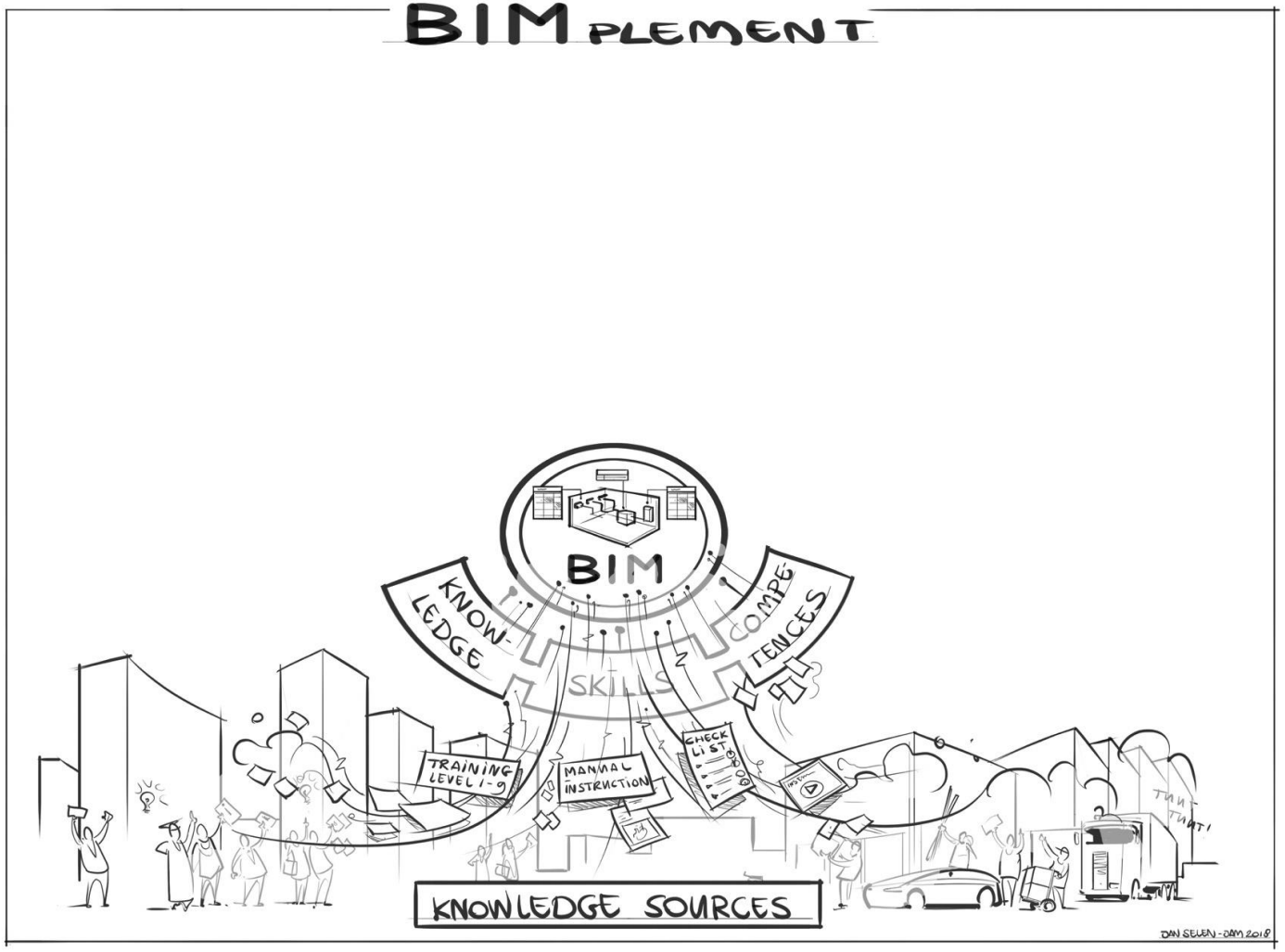
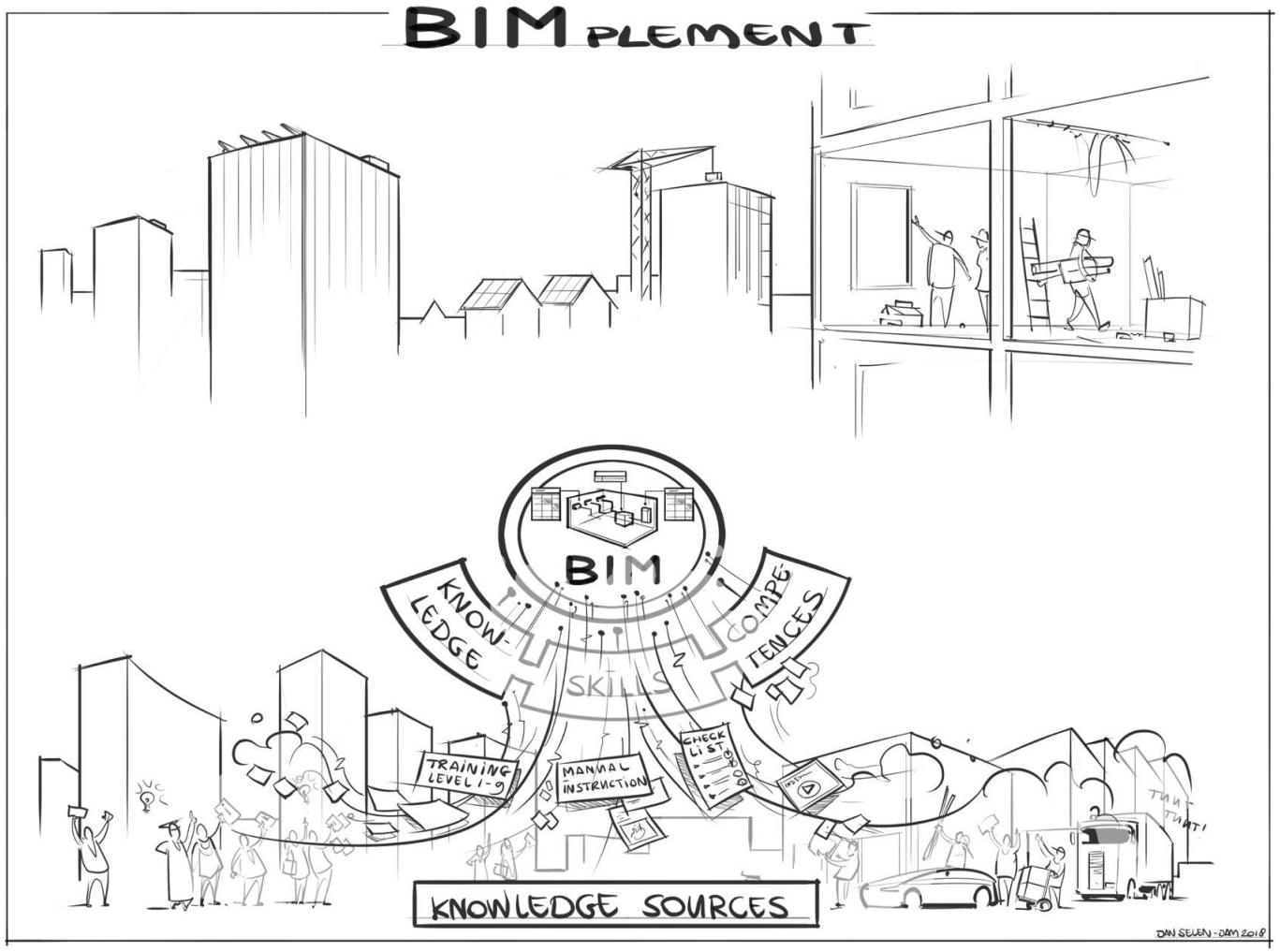

BIMPLEMENT
BIM
KNOW-LEDGE
COMPE-TENCES
SKILLS
TRAINING LEVEL 1-9
MANUAL INSTRUCTION
CHECK LIST
KNOWLEDGE SOURCES
DAN SEUEN - DAM 2018

BIMplement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BIM
KNOW-LEDGE
COMPE-TENCES
SKILLS
TRAINING LEVEL 1-9
MANUAL INSTRUCTION
CHECK LIST
KNOWLEDGE SOURCES
DAN SEUEN - DAM 2018

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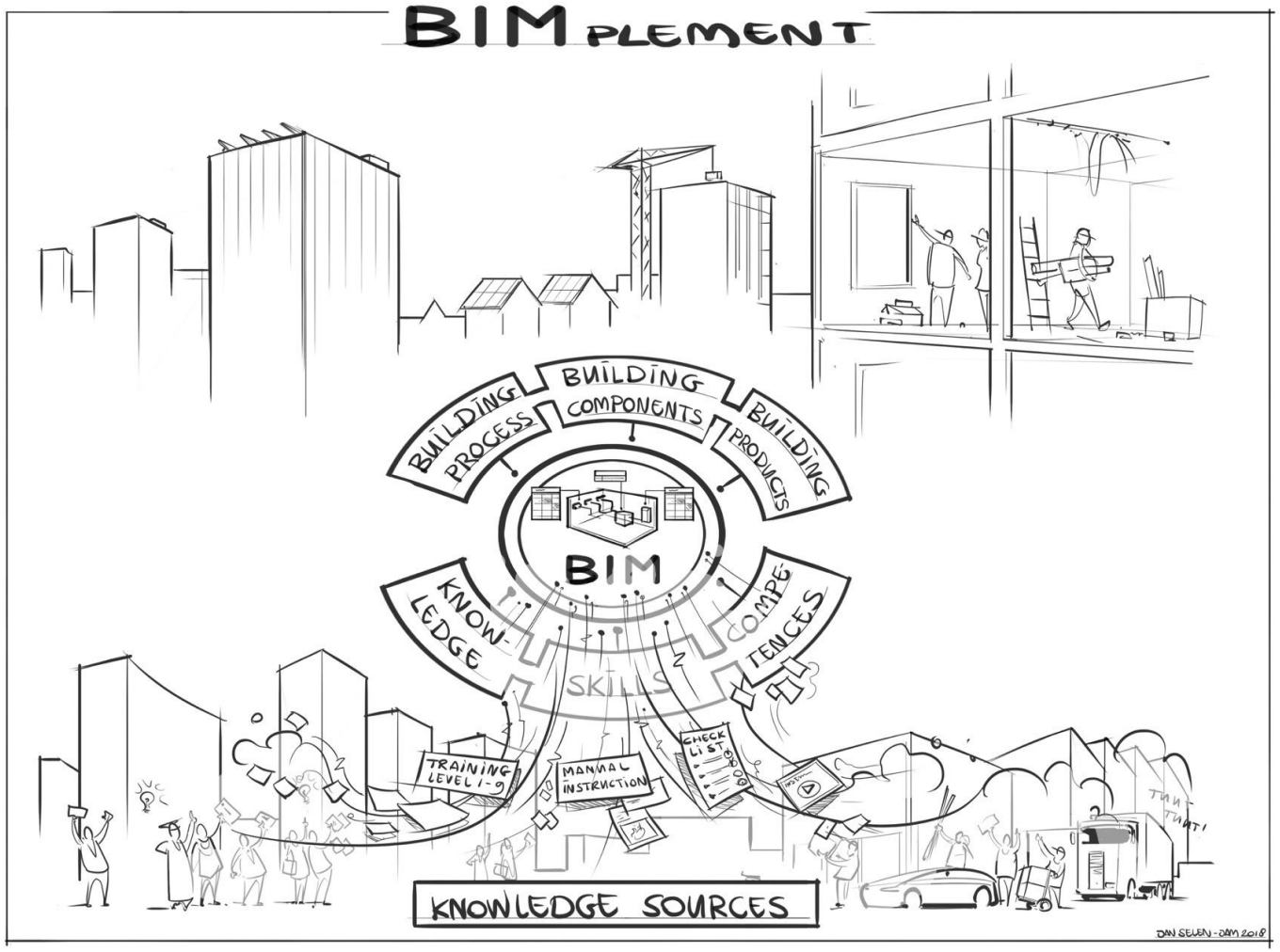

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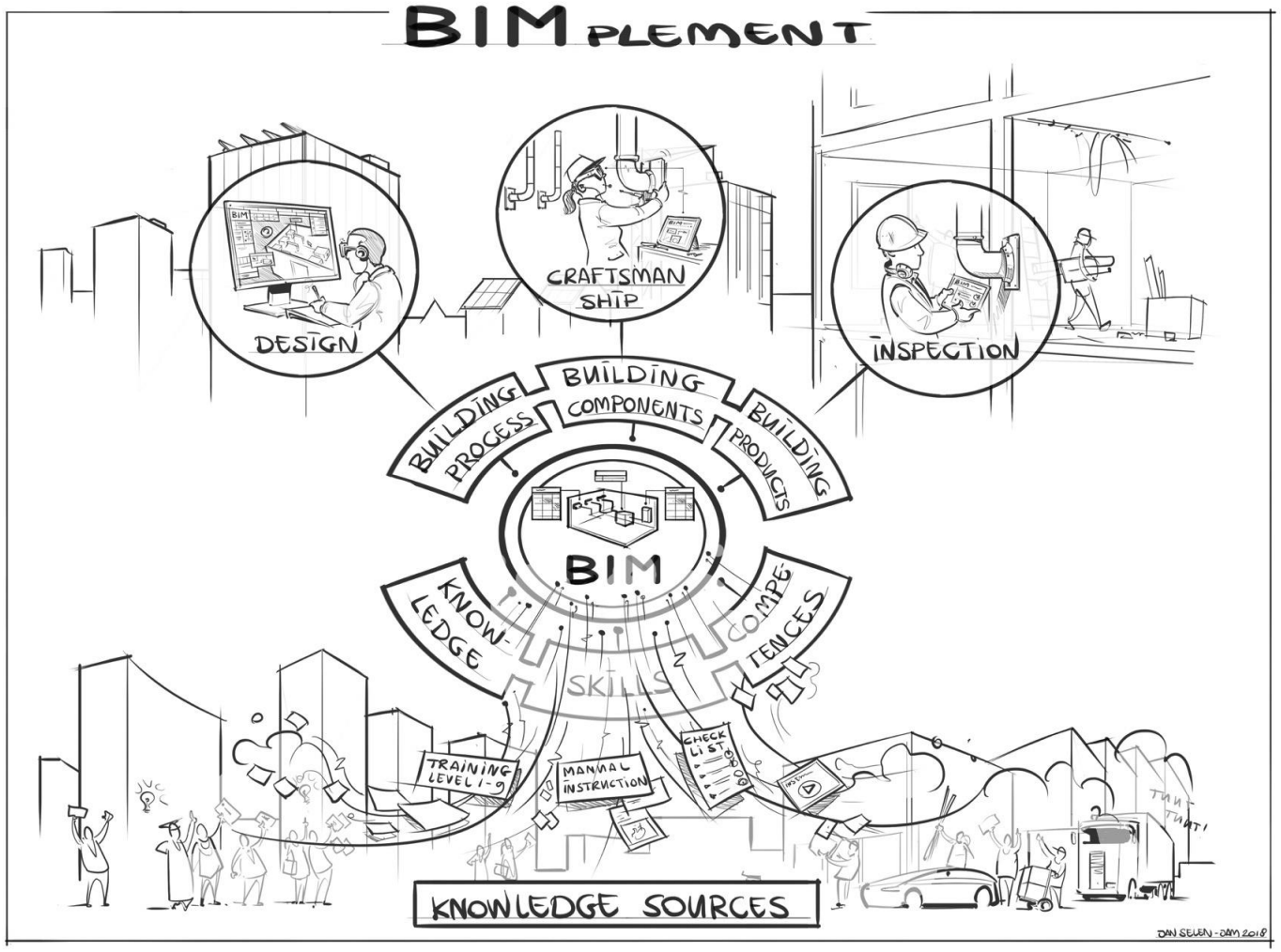
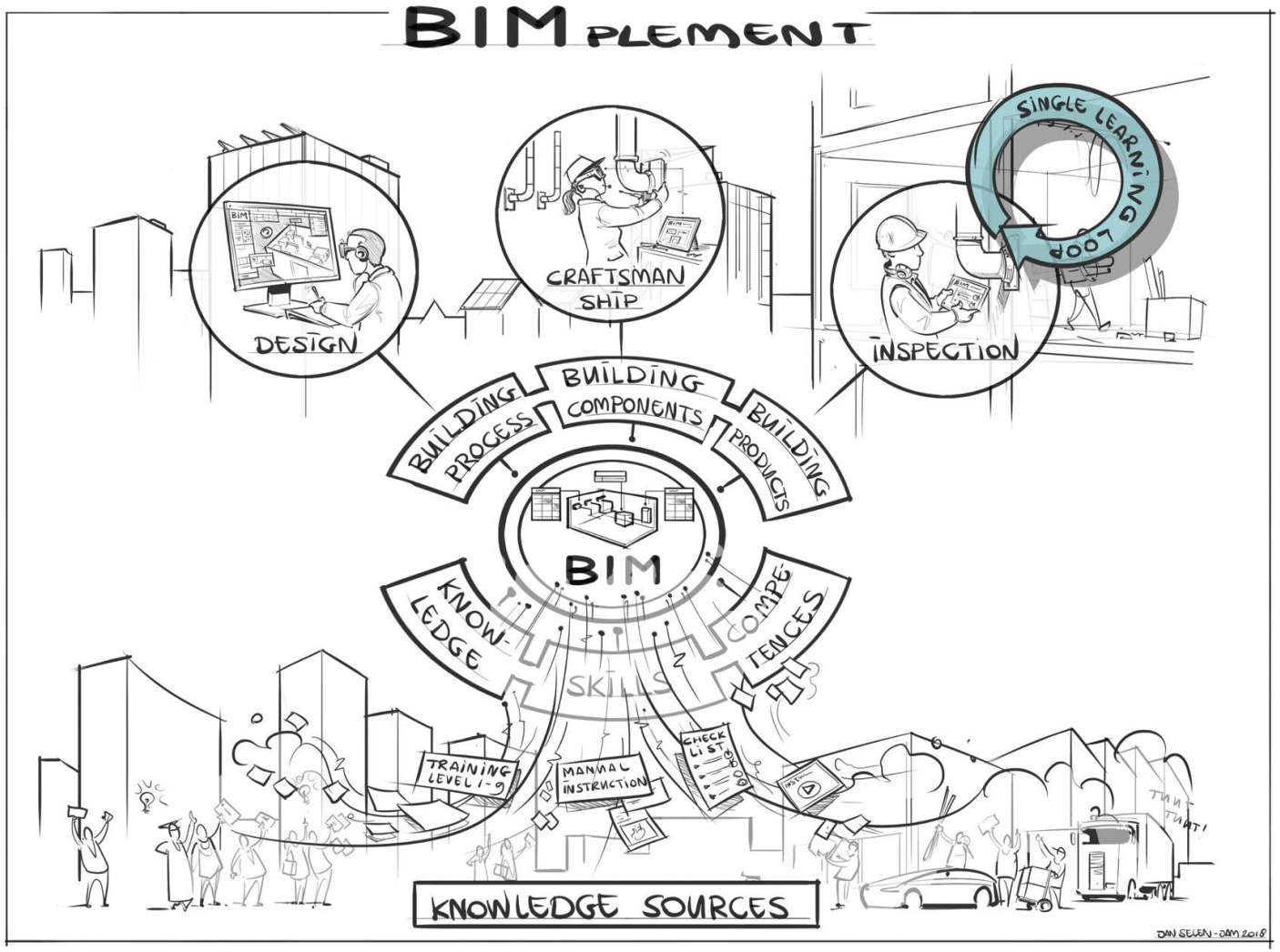
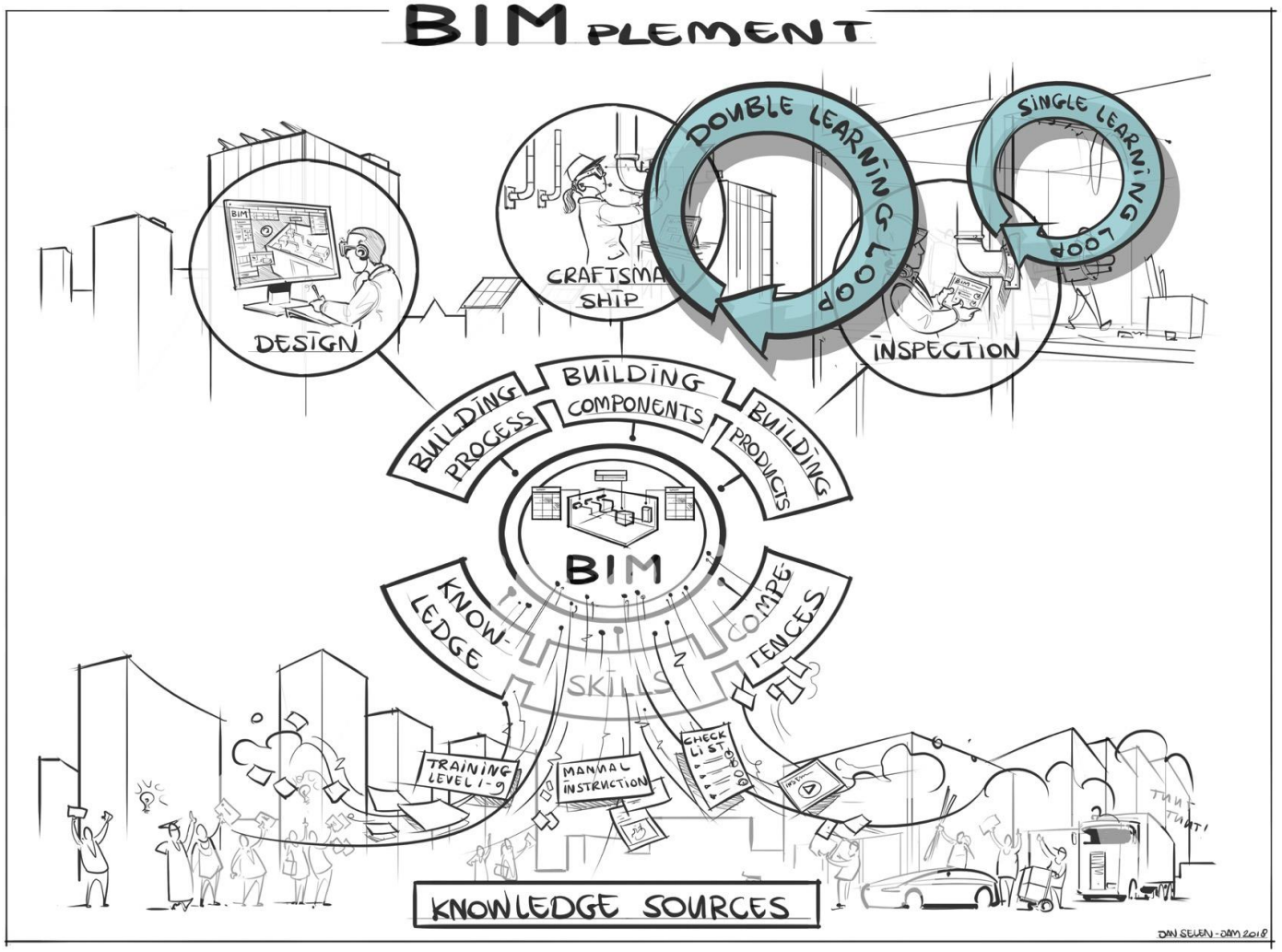

BIMPLEMENT
DESIGN
CRAFTSMANSHIP
INSPECTION
BUILDING PROCESS
BUILDING COMPONENTS
BUILDING PRODUCTS
BIM
KNOW-LEDGE
COMPE-TENCES
SKILLS
TRAINING LEVEL 1-9
MANUAL INSTRUCTION
CHECK LIST
KNOWLEDGE SOURCES
DAN SEUEN - DAM 2018

BIMplement


BIMplement
DESIGN
CRAFTSMANSHIP
INSPECTION
SINGLE LEARNING LOOP
BUILDING PROCESS
BUILDING COMPONENTS
BUILDING PRODUCTS
BIM
KNOW-LEDGE
COMPE-TENCES
SKILLS
TRAINING LEVEL 1-9
MANUAL INSTRUCTION
CHECK LIST
KNOWLEDGE SOURCES
DAN STEEN - DAM 2018

BIMplement


BIMPLEMENT
DESIGN
CRAFTSMANSHIP
INSPECTION
DOUBLE LEARNING LOOP
SINGLE LEARNING LOOP
BUILDING PROCESS
BUILDING COMPONENTS
BUILDING PRODUCTS
BIM
KNOWLEDGE
COMPETENCES
SKILLS
TRAINING LEVEL 1-9
MANUAL INSTRUCTION
CHECK LIST
KNOWLEDGE SOURCES
DAN STEVEN - DAM 2018

BIMplement

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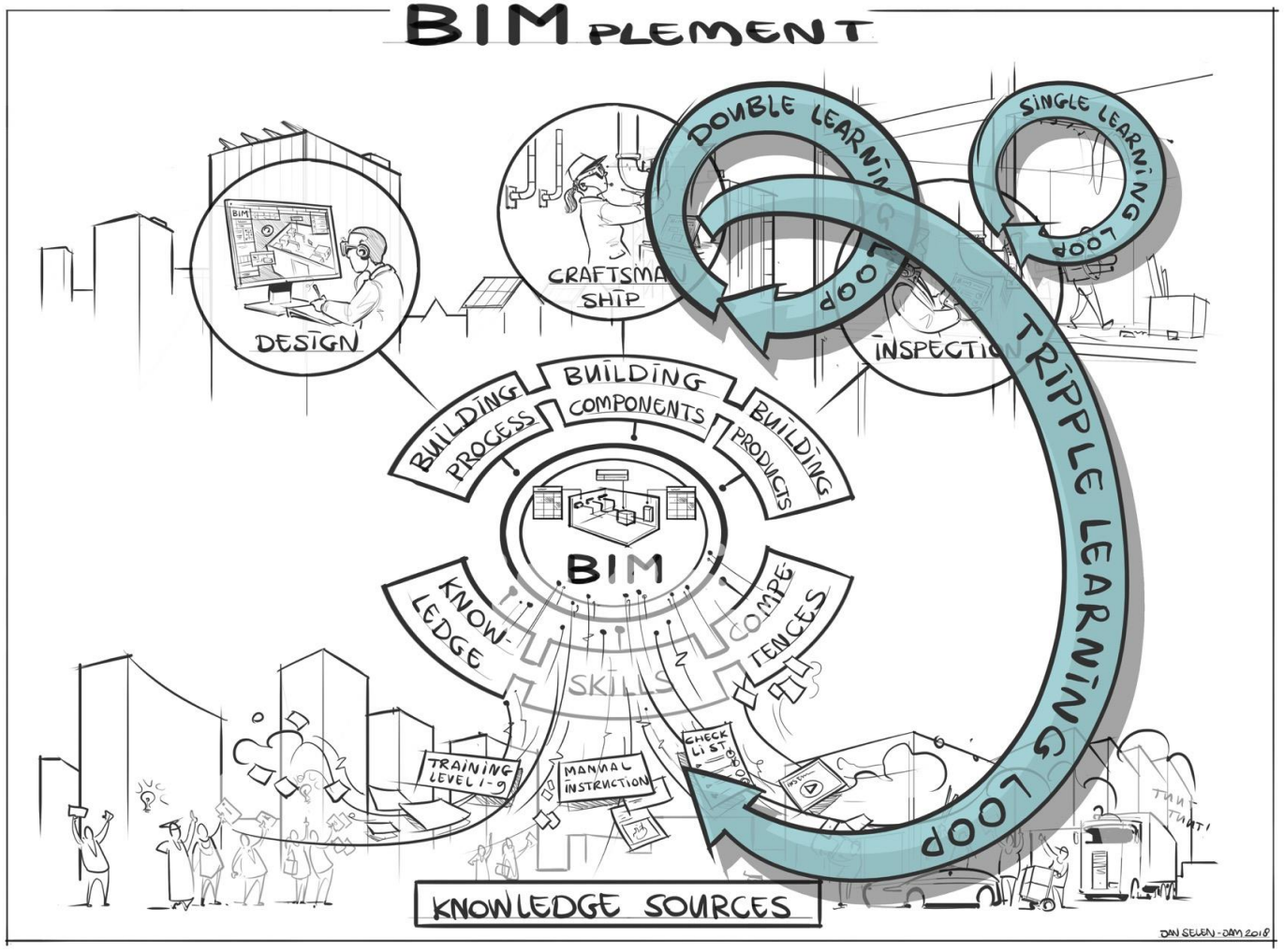
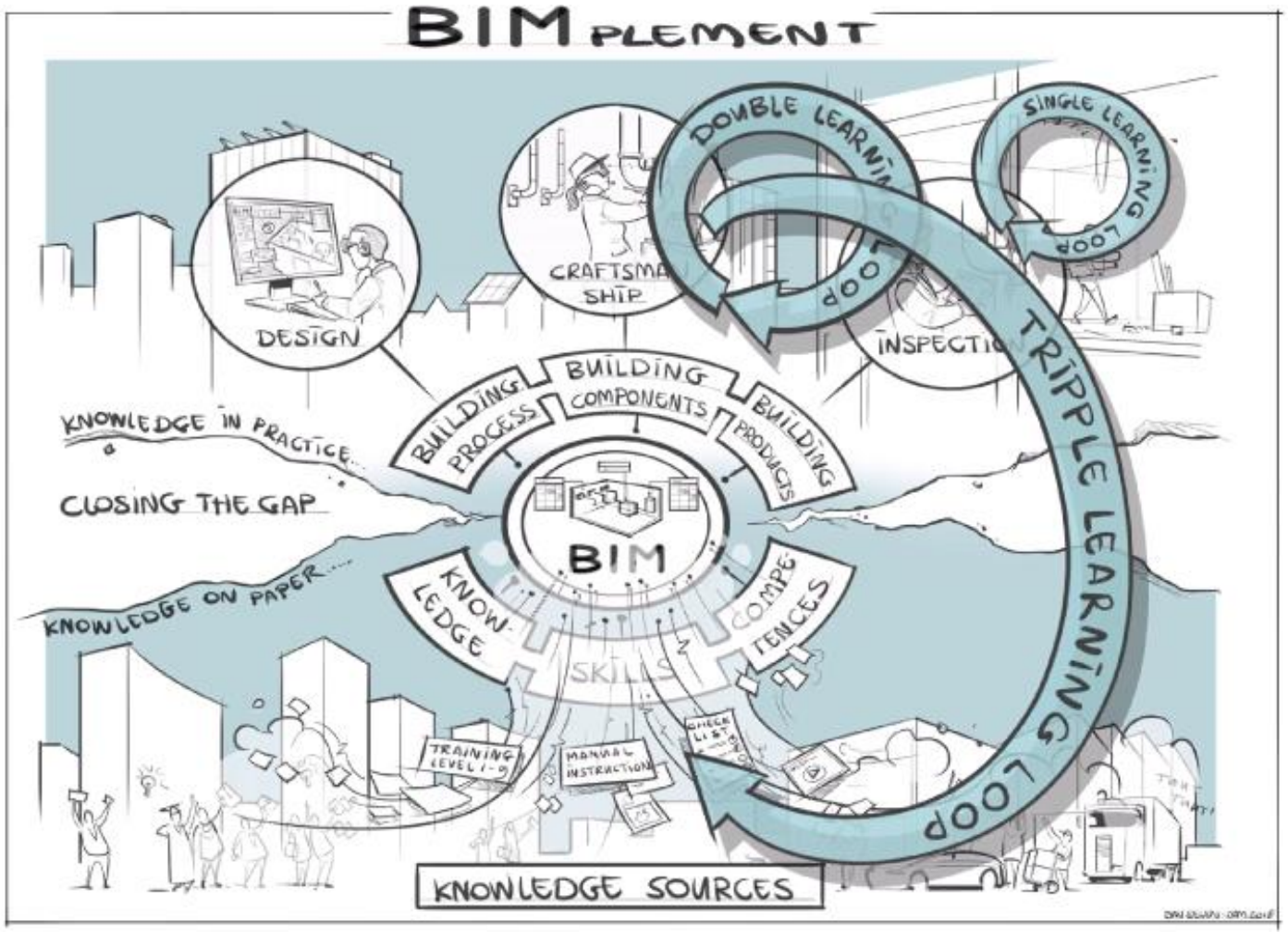


BIMplement

NET UBIEP

BIMplement



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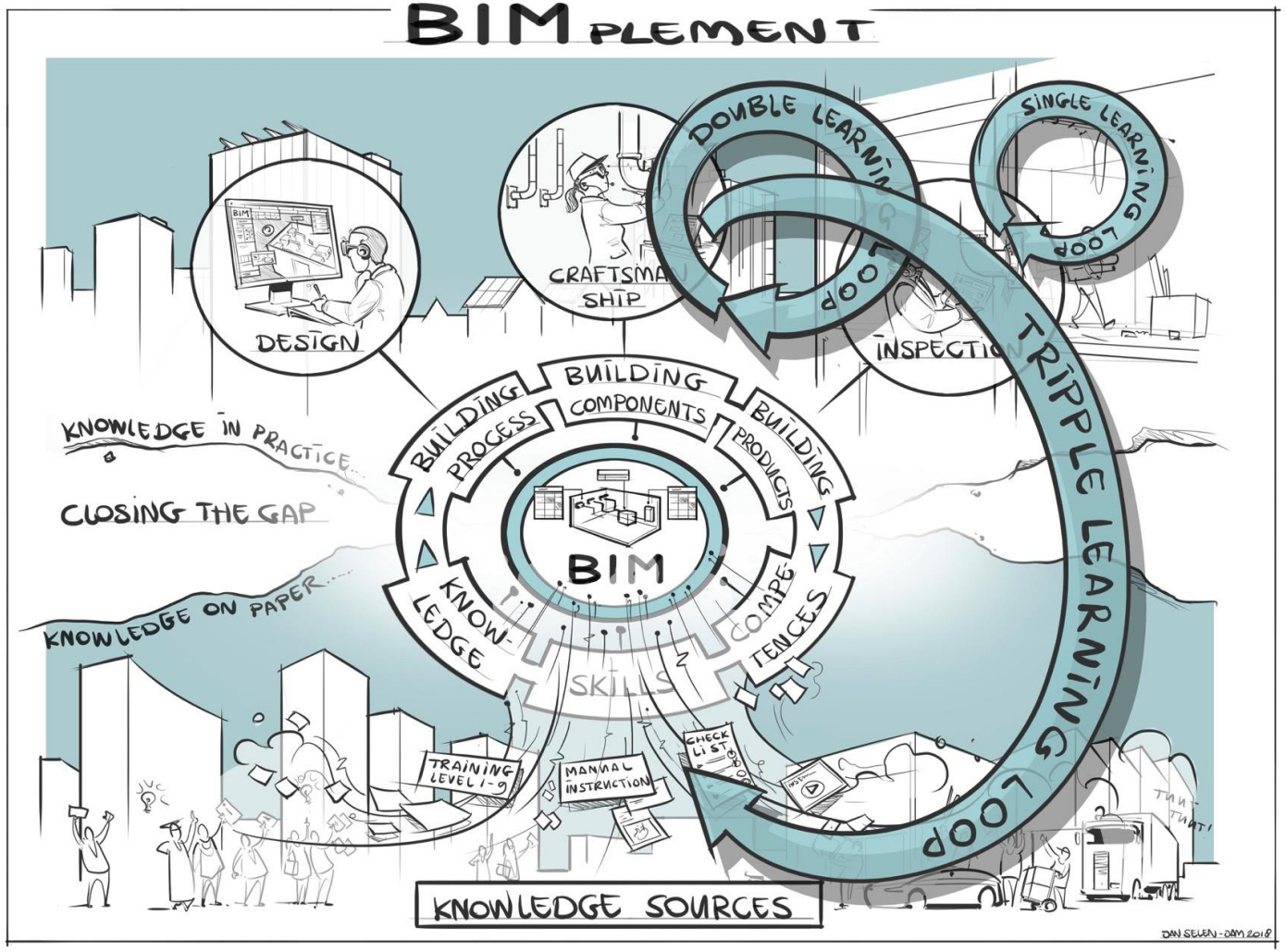

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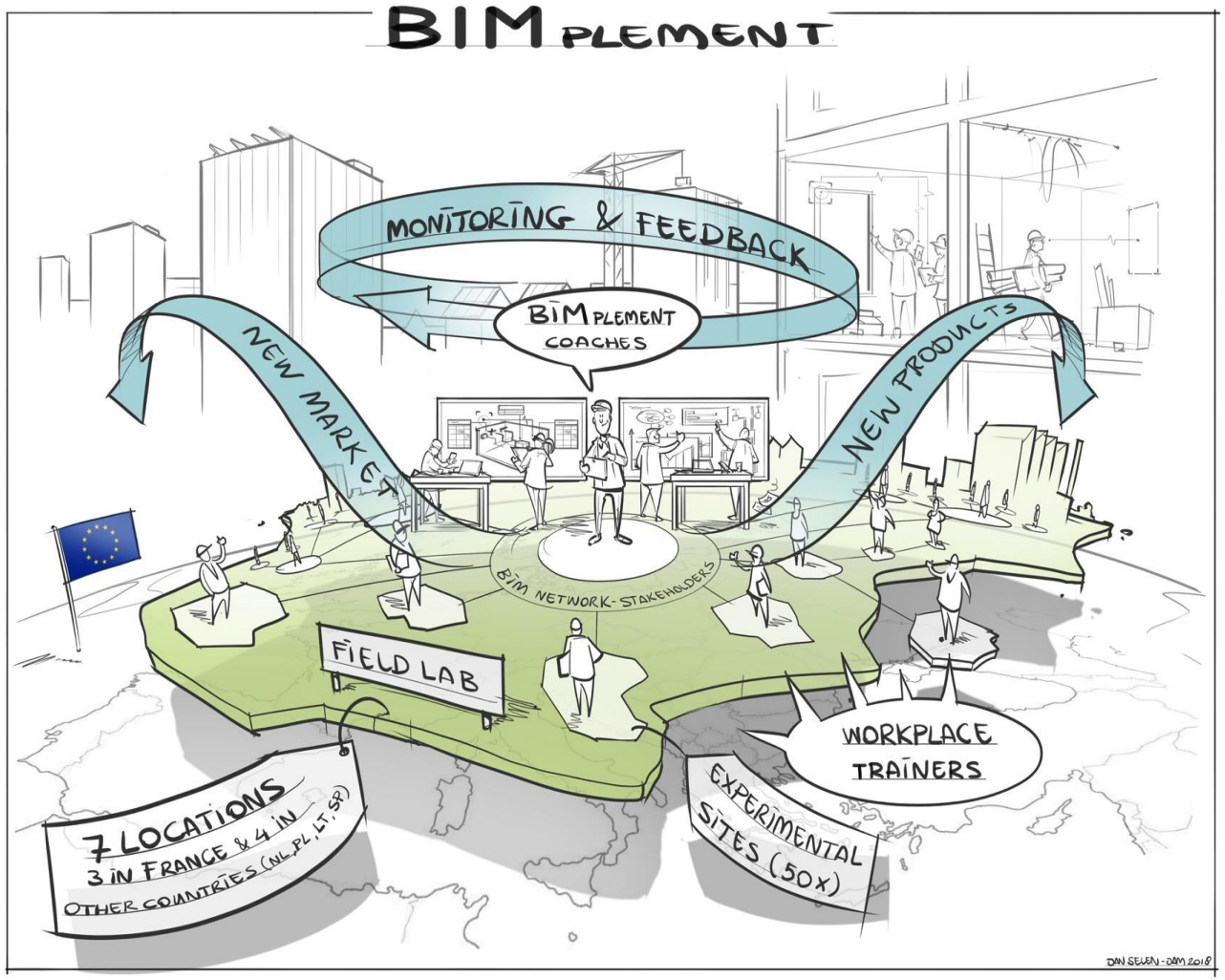
BIMplement
MONITORING & FEEDBACK
BIMplement COACHES
NEW MARKET
NEW PRODUCTS
BIM NETWORK- STAKEHOLDERS
FIELD LAB
WORKPLACE TRAINERS
7 LOCATIONS
3 IN FRANCE & 4 IN OTHER COUNTRIES (NL, PL, LT, SP)
EXPERIMENTAL SITES (50x)
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Heembouw

GEVEL CONCEPT

ulc
Installatietechniek

GevelBeheer
NEDERLAND

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NET
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Getting information TO the building site

ISSUE

How to get ensure subcontractors get the right information, so the right people do the right job, QbTIM

TEAM

Company manager, BIM manager, modeller, site manager (t)

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Getting information TO the building site

METHODOLOGY

1) Analyse of current BIM maturity and information level on weak points in air tightness
2) Choose 1 or 2 weak points and build a step-by-step instruction guide with model information
3) Identify quality check points and add to instruction guide
4) Identify qualifications needed for weak points and link to instruction guide and to model

BIMplement NET UBIEP

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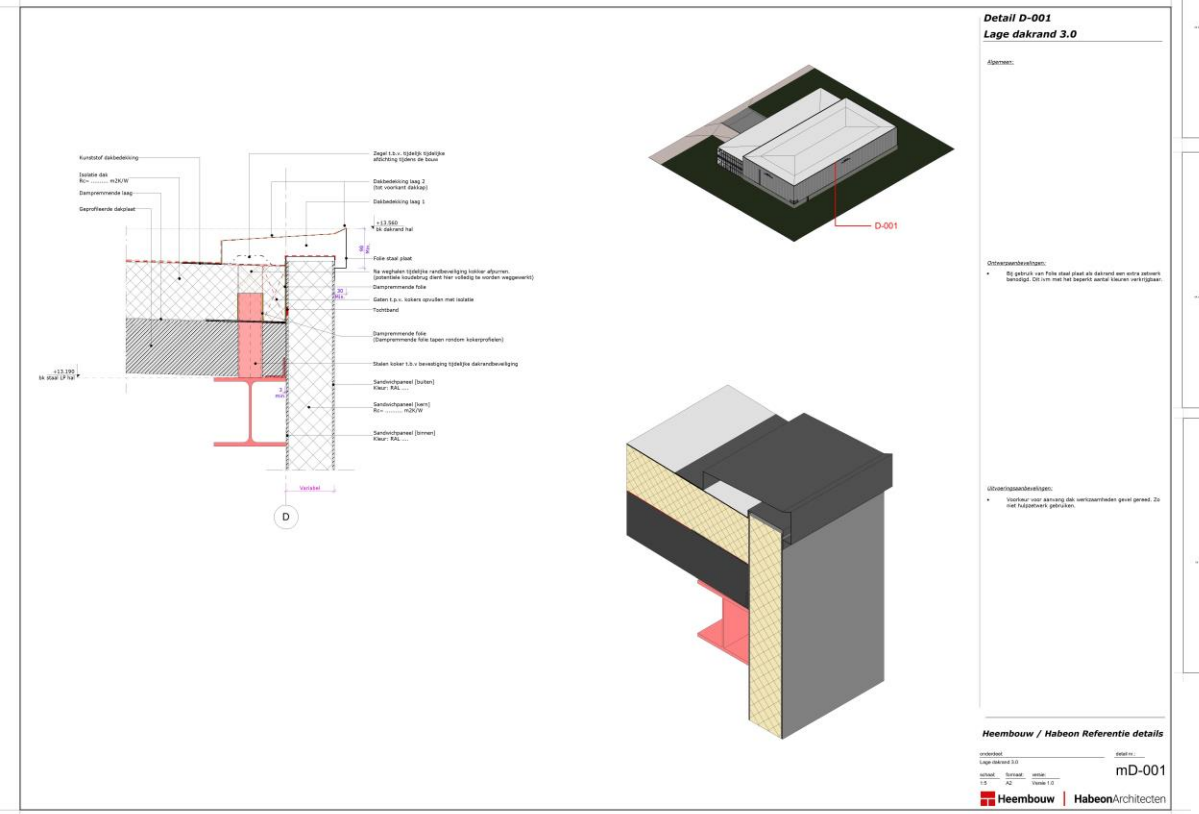
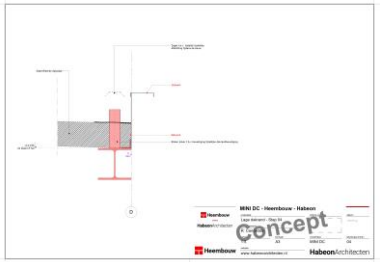
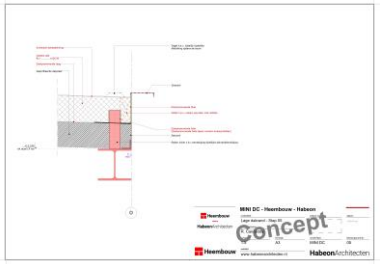
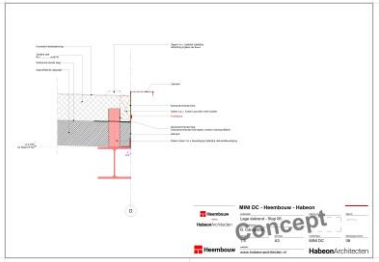
Getting information TO the building site

FIRST RESULTS









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NET UBIEP

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Getting information FROM the building site

ISSUE

How to gather the knowledge and experience of blue collar workers and distribute it among collegues (blue and white)

TEAM

Company manager, Quality manager, BIM manager, 2 site managers (t), 4 foremen

BIMplement

Getting information FROM the building site

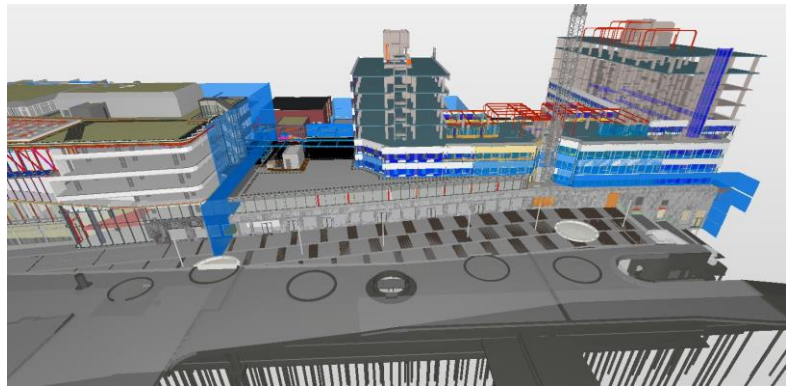
METHODOLOGY

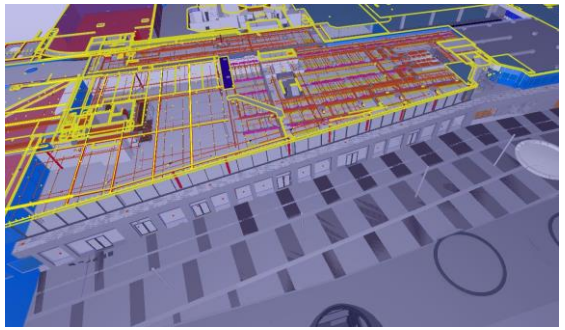
1) Analyse current BIM maturity and information issues (with ventilation a/o air tightness)
2) Choose 1 or 2 information issues and devise a strategy for sending feedback
3) Process feedback into (updated) models and communicate results
4) Asses needed qualifications and improvement of qualifications

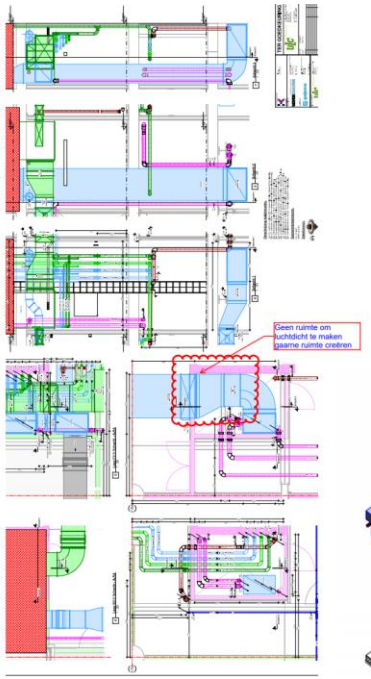
BIMplement

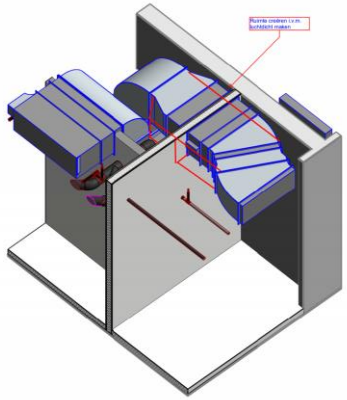
Getting information FROM the building site

FIRST RESULTS









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Experimental sites

name of the project	Wydział Architektury Politechniki Poznańskiej	
place :	Poznań	Poland

BIMplement

The tables are completed on their own, data come from the other sheets

Project presentation

type of project	pilot project		go to "project"
type of building	public buildings		
Date beginning of constr		date end of project (handover)	
project implementation :	site implementation		
required nZEB level	local nZEB regulation		
airtightness or ventilatio	both		

Project BIM synthesis

			Client team		BIM manager		Construction management/design/supervision team					
			Project officer	building operator	depends on Client's team	depends on Building	Structure	MEP	Other			
Niv 0	0	BIM skills	BIM 3	BIM 3	BIM 3	BIM 3	BIM 5	BIM 5	BIM 3	6	6	13
Niv 1	1	BIM documents	Text 2	Text 2			Text 2	Text 2	Text 2	4		6
Niv 2	2	Average BIM : #/5	2,5		3,0		3,2					
Niv 3	3	nZEB awareness	nZEB 2	nZEB 2	nZEB 2	nZEB 2	nZEB 4	nZEB 4	nZEB 0	4	4	8
Niv 4	4	Ventilation skills	vent 0	vent 0	vent 2	vent 2	vent 0	vent 5	vent 0	0	4	5
Niv 5	5	airtightness skills	air 0	air 0	air 0	air 0	air 2	air 0	air 0	0	0	2
		Average nZEB : #/5	0,7		1,3		1,7					

			Project manager Design team			On-site workers					
			Architect	Structural	MEP	Building	MEP	Other			
Niv 0	0	BIM skills	BIM 5	BIM 4	BIM 0	BIM 5	BIM 5	BIM 3	9		13
Niv 1	1	BIM documents	Text 5	Text 0	Text 0	Text 1	Text 3	Text 0	5		4
Niv 2	2	Average BIM : #/5	1,5			2,8					
Niv 3	3	nZEB awareness	nZEB 1	nZEB 1	nZEB 3	nZEB 0	nZEB 1	nZEB 0	5		1
Niv 4	4	Ventilation skills	vent 0	vent 0	vent 5	vent 0	vent 2	vent 2	5		4
Niv 5	5	airtightness skills	air 2	air 0	air 0	air 2	air 0	air 0	2		2
		Average nZEB : #/5	2			0,8					

Text 0	Cannot design a BIM model (2D drawings only)			
Text 1	The BIM model is enriched with BCF or eq. comments	**Construction management/design/supervision team**		
Text 2	*Designs his own basic BIM model where IFC Export are mastered (native models only)* + Received and implements a simple BEP for construction	Building	MEP	Other
Text 3	*Designs his own detailed BIM model where IFC Export are mastered (native models only)* + Received and implements a detailed BEP for construction	Text 2	Text 2	Text 2
Text 4	*Designs his own detailed BIM model where IFC Export are mastered (native models only)* + implements a detailed BEP for collaboration during design & construction			
Text 5	the execution BIM model is created by the company			

Text 0	No use of digital technology of the working site			
Text 1	Use, on the construction site, a tablet for visualization	**On-site workers**		
Text 2	Use, on the construction site, a tablet for communication	Building	MEP	Others
Text 3	Use, on the construction site, a tablet connected with a collaborative platform + visualisation of work to be implemented (possible use of 2D plans linked with the BIM model)	Text 1	Text 3	Text 0
Text 4	Use, on the construction site, a tablet connected with a collaborative platform for quality control			
Text 5	All on site workers use digital technologies on the working site for implementation and commissioning			

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Training pack

- **Field lab results (step by step instruction, worker feedback)**
- **BIM viewer use**
- **nZEB (air tightness a/o ventilation) instruction**
- **Net-UBIEP e-learning (+ videos)**
- **BUS app**
- **(…)**

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BUILD UP Skills advisor

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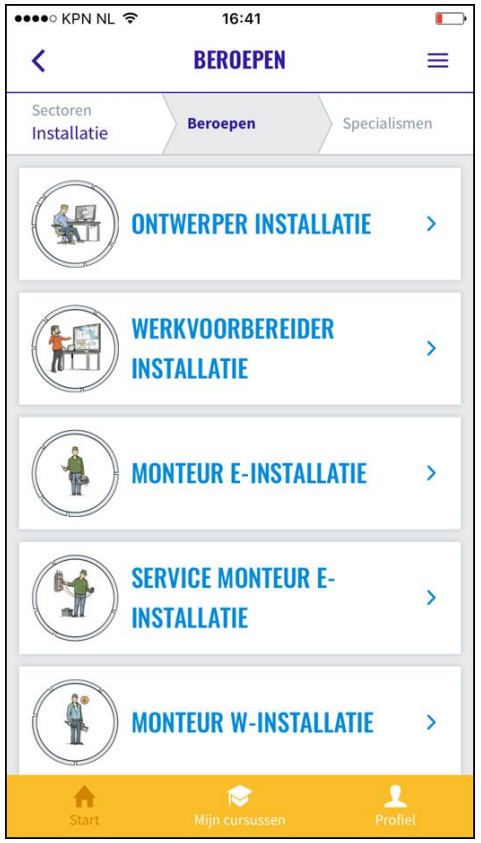

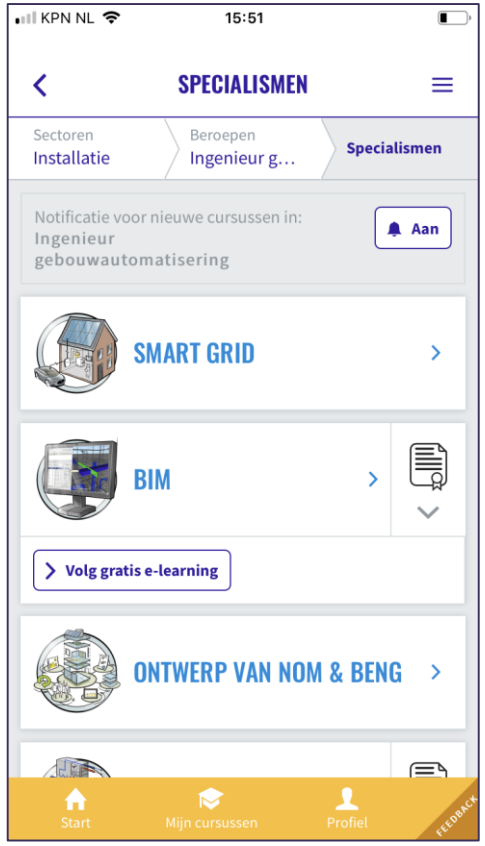

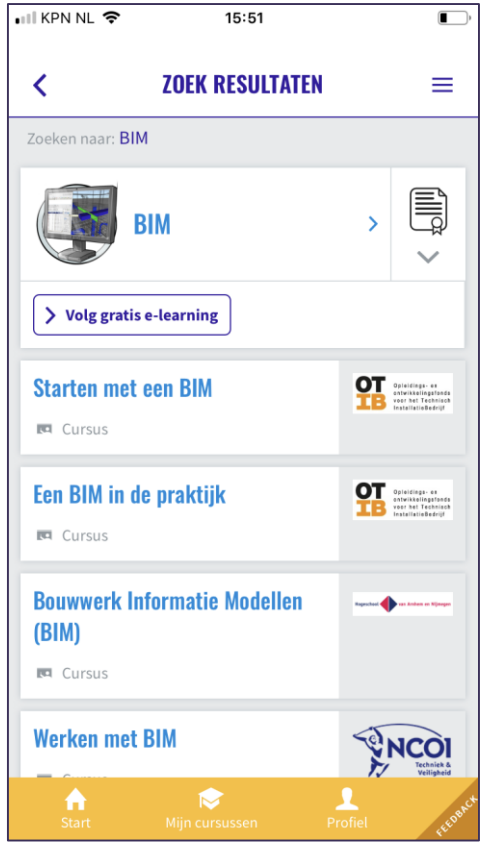

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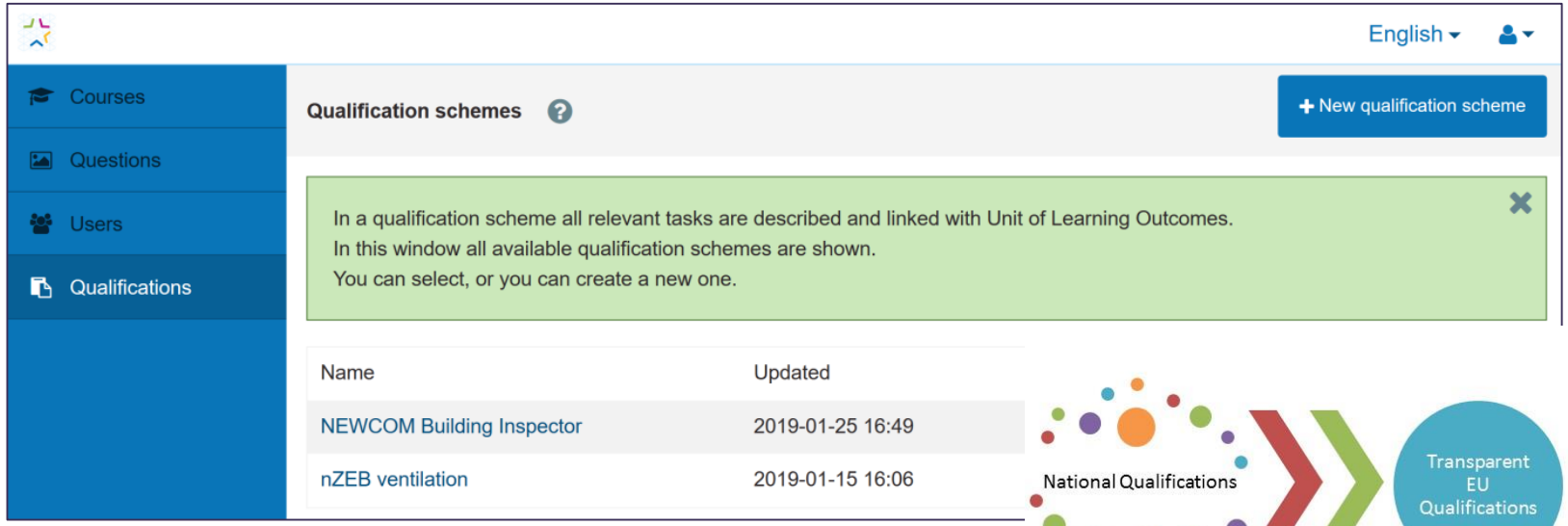
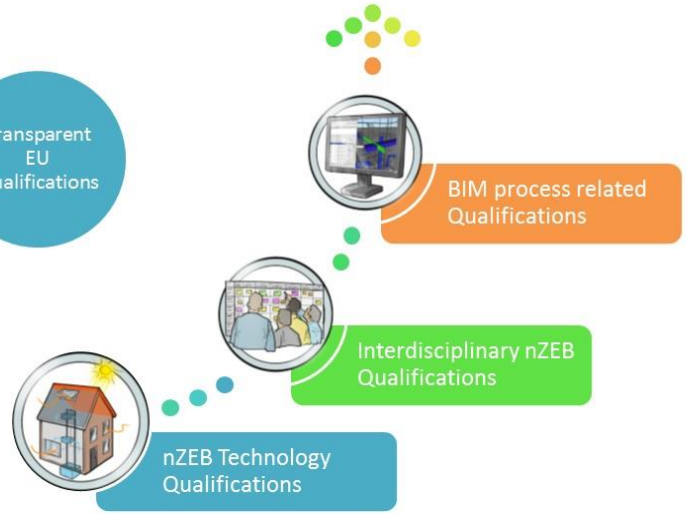
BUILD UP Skills ULO's 1/3





BUILD UP Skills ULO's 2/3

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Qualification scheme

en nl es de sk hu fr lt

Title: Demonstration Qualification

Description: A Qualification Scheme for demonstration purposes

Tasks

Type here to search for a task or create a new one

Delete | Save scheme

ULO

en nl es de sk hu fr lt

Competence to be able to: Creating a task

Assessment
- [ ] Theoretical test
- [x] Practical test
- [x] Silhouetted by colleague

Skills to understand

Type here to search for Skills or create a new one.

Knowledge to know

Type here to search for Knowledge or create a new one.

BIMplement

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BUILD UP Skills ULO's 3/3

Tasks	Sub-tasks	ULO Nr.
Check schedule of requirements		
	Check type of ventilation system	9
	Explain demands for energy efficiëncy	6
	Determine supply airflow rate	2
	Determine minimum discharge flow	
	Check requirements regarding airtightness of	
	Check the type(s) of ventilation regulation sy	
	Verify location of the control unit	
	Check necessary safety device depending on	
	Provide assistance with selection of recirculat	
In case of renovation: check the list of additional requirem		
	Judge the existing situation / technical state o	
Check location of ventilation unit(s)		
	Determine optimal location of the ventilation u	
	Prevent noise pollution	

ULO Nr.	Competence	Skills	Knowledge
1	Ensure effective air circulation through the room	Explain what is needed for an effective air circulation in different room types and layouts	Effective air circulation;Room uses and effects of those uses on air circulation;Room layouts and effects on air circulation
2	Determine supply airflow rate	Describe air quality;Classify air quality parameters	Airflow requirements concerning health;Air quality parameters (CO2, VOC, PM2.5, odour) and their relationships
3	Prevent draft complaints	Explain when draft occurs	Draft in relation with pre-heating;When draft occurs;Draft in relation with air velocity
4	Determine acceptable noise levels and measures to establish low noise rates	Explain which noise levels are acceptable in each room type;Estimate acceptable noise levels in relation with user satisfaction	How complaints occur with regard to sound;Decibel (dBA);Acceptable noise levels;Room types;Impact of noise levels on user satisfaction;Effect of pressure drop;Effect of insulated ductwork;Proper use of silencers;Proper fixing and placement of the unit;Proper dimensioning of the inlets and outlets
5	Apply requirements concerning health or prevention of damage due to moisture	Describe how to prevent moist or odour complaints	Exhaust;Discharge flow;Moist problems regarding ventilation;Need for continious ventilation to prevent moist complaints

Samen optrekken

Wie wil meehelpen om:

- Het cursusmateriaal verder te brengen ?
- BIM coaching verder te ontwikkelen.
- Kwalificatiestructuur transparant maken in aanbod.
- Aanbod opnemen in de BUILD UP Skills-app

Sluiting

Vragen?