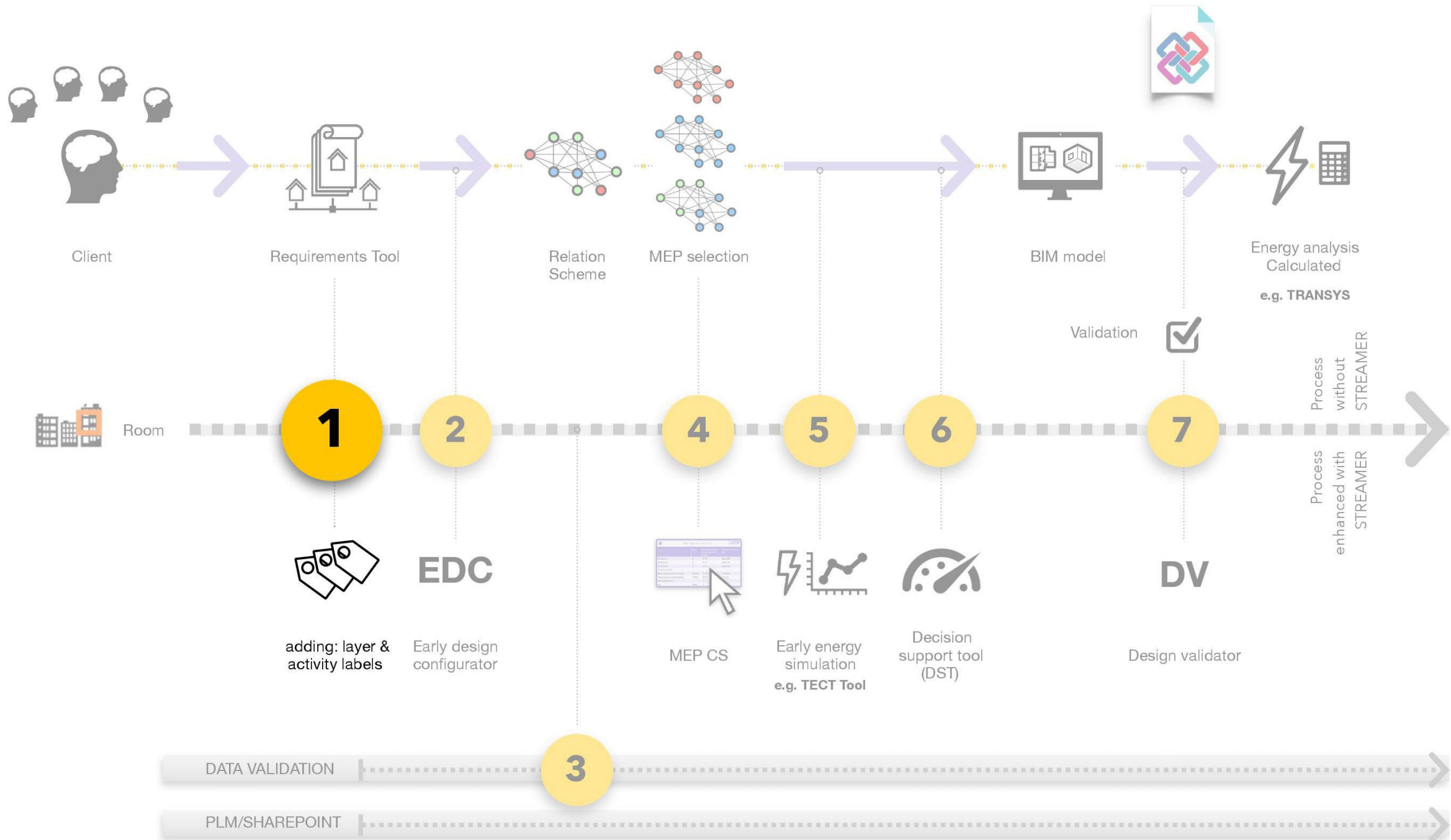


STREAMER

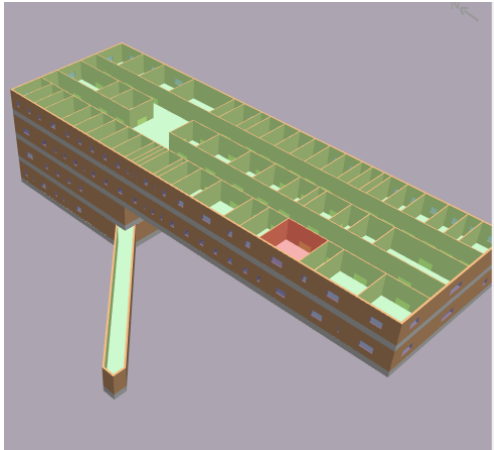
Ontwerpmethodiek label en validatie

DWA
Jan-Peter Pols





Streamer Label validation - 01



Functional Description	Detailed IFC Description
Name	Value
> Pset_SpaceCommon	1
▼ STREAMER_Labels_PoR	7
AccessSecurity	A2
BouwcollegeLayer	0
ComfortClass	CT3
Construction	C1
Equipment	EQ1
HygienicClass	H1
UserProfile	U1
▼ STREAMER_PoR	4
Amount	1
FunctionalAreaType	DiagnosticImaging
RequiredArea	37.1 [SQUARE_METRE]
RoomType	WaitingRoom
> STREAMER_Room	3
▼ Streamer Energy	7
Cold Demand	153.551
Energy Consumption cooling system	180.648
Energy Consumption heating system	287.607
Floor Area	37.1
Heat Demand	258.847
Max Power Cold Demand	0.946307
Max Power Heat Demand	3.13277

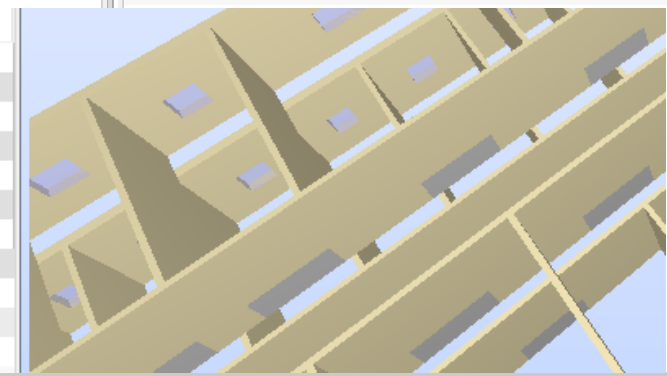
STREAMER Design Configurator

Wizard 170713 - ruimtelijst Rijnstate NO

RoomName	RoomType	Amount	Area	FunctionalAreaType	Bouwcoll...	Hygienic...	AccessSe...	UserProfile	Equipment	Construc...	ComfortClass
air lock	AirLock	1	3.80	OncologicalDayHospital	I	H3	A5	U4	EQ1	C1	CT4
basement	Basement	10	47.32	Admission	O	H1	A5	U4	EQ1	C4	CT2
Central Hall	CentralHall	1	50.00	CentralHall	O	H1	A1	U4	EQ1	C4	CT3
dressing room	ChangingRoomPersonnel	1	18.60	DiagnosticImaging	I	H1	A5	U4	EQ1	C1	CT3
conference room	ConferenceRoom	1	22.80	HealthPhysics	O	H2	A2	U1	EQ1	C1	CT3
conference room #2	ConferenceRoom	1	50.40	HealthPhysics	O	H2	A2	U1	EQ1	C1	CT3
conference room #3	ConferenceRoom	1	20.40	OncologicalDayHospital	O	H2	A2	U1	EQ1	C1	CT3
conference room #4	ConferenceRoom	1	33.10	OncologicalDayHospital	O	H2	A2	U1	EQ1	C1	CT3
conference room #5	ConferenceRoom	2	7.10	OncologicalDayHospital	O	H2	A2	U1	EQ1	C1	CT3
consultation + examination room	ConsultationExaminationRoom	1	16.70	OncologicalDayHospital	O	H3	A2	U1	EQ2	C1	CT4
consultation + examination room #2	ConsultationExaminationRoom	2	13.30	OncologicalDayHospital	O	H3	A2	U1	EQ2	C1	CT4
consultation + examination room #3	ConsultationExaminationRoom	18	16.00	OncologicalDayHospital	O	H3	A2	U1	EQ2	C1	CT4
consultation + examination room #4	ConsultationExaminationRoom	1	16.00	OutpatientDepartment	O	H3	A2	U1	EQ2	C1	CT4
consultation + examination room #5	ConsultationExaminationRoom	1	5.00	OutpatientDepartment	O	H3	A2	U1	EQ2	C1	CT4

Identification Location Quantities Relations
Pset_SpaceCommon STREAMER

Property	Value
AccessSecurity	A1
BouwcollegeLayer	H
ComfortClass	CT2
Construction	C1
Equipment	EQ1
HygienicClass	H1
UserProfile	U4



al_01-Labels-Zone-04-AC19_SB-v05-System-Spaces
ormations Extras Window ?

Element Toolbar

Elements Layers

IFC

- IfcBuilding
- IfcBuildingStorey

Colors Property Value (Accessibility)

Total Number of Elements: 139

Value	mcour
A1	47
A2	26
A3	10
A5	1
Undefined	55

KIT
Karlsruher Institute of Technology

Project

Project 0

- Requirement sets
- 170713 - ruimtelijst Rijnstate NO
- Rule sets
- ClusterAllFunctionalAreaTypes3
- Filter sets
- HVACFilter
- Buildings
- Buildings ?

HVACFilter

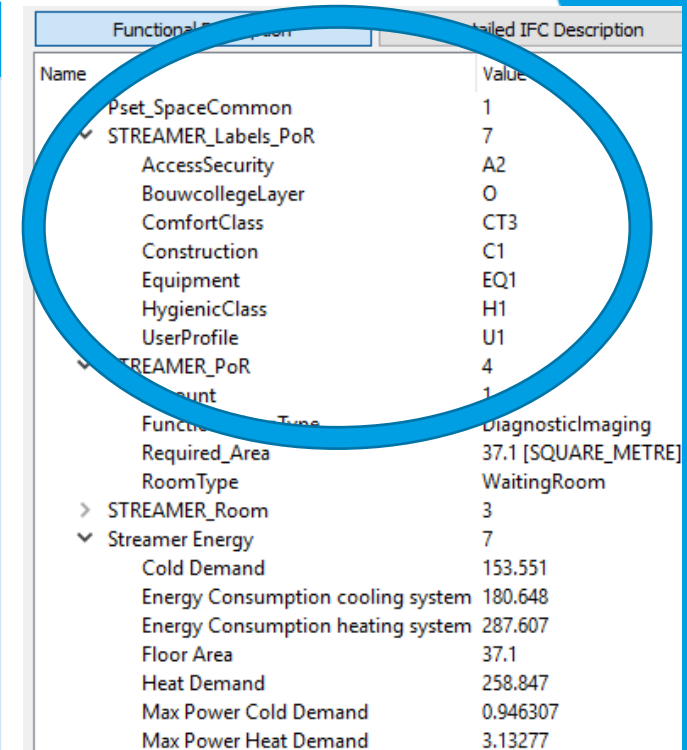
SystemLabel	RuleName	RuleName	RuleName	RuleName	RuleName	RuleName	RuleName	RuleName	RuleName
Ventilation	Ventilation type A	VA	Natur...lation	H1	EQ1	U1 U2 U3 U4	CT1 CT2	C1 C2 C3 C4 C5 C6	
Ventilation	Ventilation type B	VB	Mecha...haust	H2 H3 H4 H5	EQ1	U1 U2 U3 U4	CT1 CT2	C1 C2 C3 C4 C5 C6	
Ventilation	Ventilation type C	VC	Mech...upply	H2	EQ1 E... EQ6	U1 U2 U3 U4	CT3 CT4 CT5 CT6 CT7 CT8	C1 C2 C3 C4 C5 C6	
Ventilation	Ventilation type D	VD	Mecha...haust	H3 H4 H5	EQ2 E... EQ6	U1 U2 U3 U4	CT3 CT4 CT5 CT6 CT7 CT8	C1 C2 C3 C4 C5 C6	

Streamer Label validation - 01

Label description	Requirements
Bouwcollege layer	Room type
Construction	Floor strength and height
Hygienic Class	Ventilation type
	Supply Air Quality
Equipment	Electric Power
User profile	Timeslot
Comfort Class	Daylight
	Air flow
	Temp range
	Lighting
	Relative Humidity
	Control of lighting
Acces security	Accessibility

Room labels and requirements

Bouwcollege layer	Construction	Hygienic class	Equipment	User Profile	Comfort class	Access security
<ul style="list-style-type: none"> • Hotel • Office • Hotfloor • Industry 	<ul style="list-style-type: none"> • Office level • Office level with extra floor strength • Office level with extra floor hight • Office level with floor strength and extra floor hight • Accessible from the outside with heavy load • Shielding against radiation (radiotherapy, 10 MeV) 	<ul style="list-style-type: none"> • Ventilation type • Supply Air Quality • Air Thightness • Air Flow • MEP context • Door type 	<ul style="list-style-type: none"> • Electric Power 	<ul style="list-style-type: none"> • Timeslot 	<ul style="list-style-type: none"> • Daylight • Air flow • Temp range • Lighting • Relative Humidity • Control of lighting 	<ul style="list-style-type: none"> • Public • Patients, visitors and staff • Patients and staff (patients are supervised by staff) • Only staff members • Specific staff members







Name	Value
Pset_SpaceCommon	1
✓ STREAMER_Labels_PoR	7
AccessSecurity	A2
BouwcollegeLayer	0
ComfortClass	CT3
Construction	C1
Equipment	EQ1
HygienicClass	H1
UserProfile	U1
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RoomType	WaitingRoom
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Floor Area	37.1
Heat Demand	258.847
Max Power Cold Demand	0.946307
Max Power Heat Demand	3.13277

Streamer Label validation - 01




STREAMER labels	Room 118	Room 119	Room 140	Room 141
Access Security	A2	A2	A2	A2
Bouwcollege Layer	O	O	O	O
Comfort Class	CT4	CT4	CT4	CT4
Construction	C1	C1	C1	C1
Equipment	EQ2	EQ2	EQ2	EQ2
Hygienic Class	H3	H3	H3	H3
Type Object	Room	Room	Room	Room
User profile	U1	U1	U1	U1

	Room 118	Room 119	Room 140	Room 141
Name	Consultation + examination room	Consultation + examination room	Vascular treatment rooms	Vascular treatment rooms
Picture				
Floor area [m ²]	20	20	16	16
Stage	First Floor	First Floor	Second Floor	Second Floor
Building	Room 118	Room 119	Room 140	Room 141
Walls				
Window	HR++ glazing, with internal sun and privacy screens	Yes, with internal sun and privacy screens	Yes, with internal sun and privacy screens	Yes, with internal sun and privacy screens
MEP	Room 118	Room 119	Room 140	Room 141
Heating	Preconditioned fresh air from central AHU, with room thermostat for temperature control	Preconditioned fresh air from central AHU, with room thermostat for temperature control	Radiation (858W) and conditioned fresh air with room thermostat	Radiation (858W) and conditioned fresh air with room thermostat
Cooling	Preconditioned fresh air from central AHU, with room thermostat for temperature control	Preconditioned fresh air from central AHU, with room thermostat for temperature control	conditioned fresh air from central AHU	conditioned fresh air from central AHU
Ventilation	Ventilation type D: Trox CAV 160 m ³ /h	Ventilation type D: Trox CAV 160 m ³ /h	Ventilation type D: Trox CAV 130 m ³ /h	Ventilation type D: Trox CAV 130 m ³ /h
Lighting	T5 with light motion sensor control	T5 with light motion sensor control	T5 with light motion sensor control	T5 with light motion sensor control

Streamer Label validation - 01


Label description	Requirements	Validation method
Bouwcollege layer	Room type	Visual inspection
Construction	Floor strength and height	Visual inspection
Hygienic Class	Ventilation type	Visual inspection
	Supply Air Quality	Visual inspection
Equipment	Electric Power	Monitoring electricity
User profile	Timeslot	Monitoring CO ₂ -emission and timescale of ventilation and light controle
Comfort Class	Daylight	Visual inspection
	Air flow	CO ₂ -monitoring and calculation
	Temp range	Temperature monitoring
	Lighting	Lighting motion monitoring
	Relative Humidity	Relative humidity Monitoring
	Control of lighting	Visual inspection
Acces security	Accessibility	Visual inspection

Bouwcollege layer

STREAMER labels	Roomlabel	Value Requirements	Monitoring	Validation
Bouwcollege layer	Office	Office	Visual inspection	

The functions for diagnostics and simple examinations and treatments are accommodated in the office.

Construction

STREAMER labels	Roomlabel	Value Requirements	Monitoring	Validation
Construction	C1	minimum distance between floor levels (mm)	Visual inspection And Measurement	

Hygienic class


STREAMER labels	Roomlabel	Value Requirements	Monitoring	Validation
Hygienic Class	H3	Mechanical ventilation	Visual inspection	✓
		EN 13779 IDA 1 (F9)	Visual inspection	✓

The ventilation system is a ventilation type D: mechanical supply and mechanical extract. With air supply 160 m³/h per room (118 and 119)

The ventilation system is a ventilation type D: mechanical supply and mechanical extract. With air supply 130 m³/h per room (140 and 141)

The central AHU does have an F9 filter on the supply air flow

Equipment class

STREAMER labels	Roomlabel	Value Requirements	Monitoring	Validation
Equipment	EQ2 (office)	0.001 kW/m ² (0.08 kW for each workstation)	Monitoring electrical equipment	

	Value Requirements	Room 118	Room 119	Room 140	Room 141	Average
Average Power Usage during 'in-use phase' [kW/m ²]	0,001	0,002	0,010	0,001	0,001	0,003

The average power usage during 'in-use phase' is for 2 rooms more than the value of the requirements, with in room 119 is the biggest deviation.

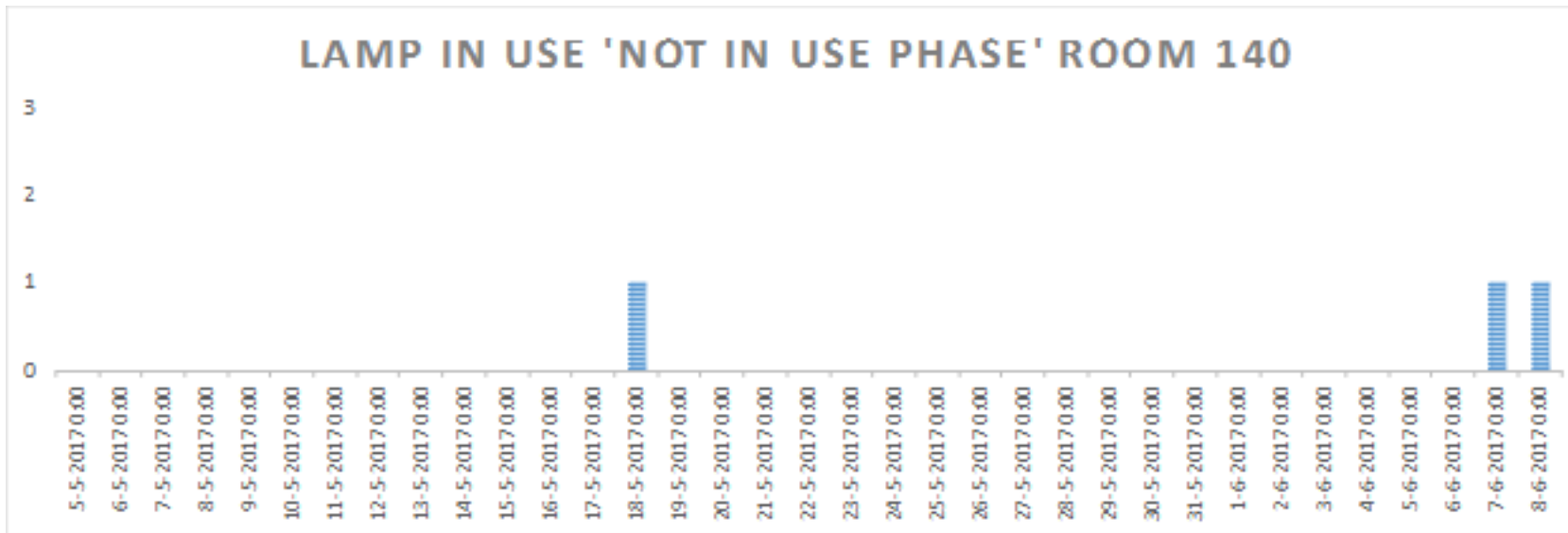
That's explainable because of many electric equipment in that room.

The streamer label EQ2 is designed for offices and speaking rooms, like Room 140 and 141. And Room 118 and room 119 do have other functions.

These rooms should have another Equipment label.

User profile

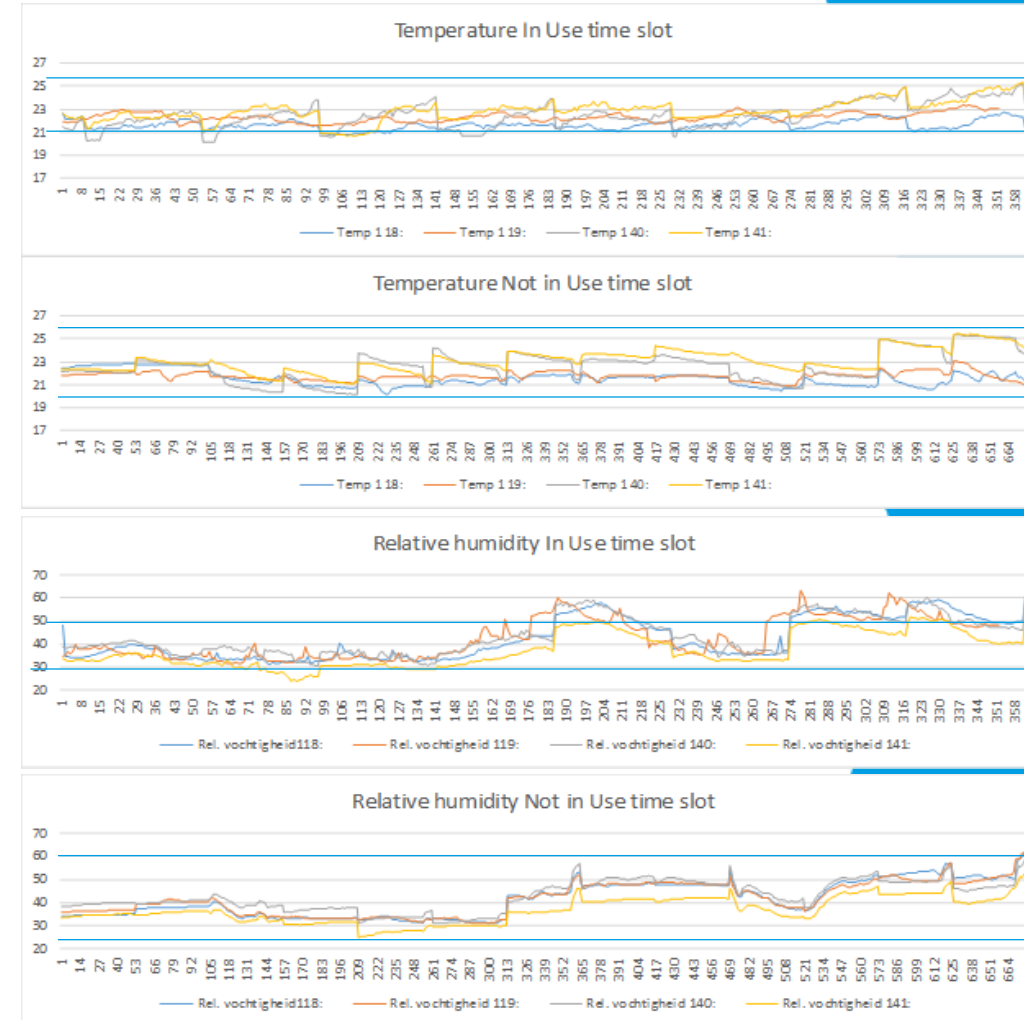
STREAMER labels	Roomlabel	Value Requirements	Monitoring	Validation
User profile	U1	Office timeslot Mo-Fr 8:00 – 18:00 (30%)	Monitoring CO ₂ -concentration And lightcontrol	✓



Comfort class

STREAMER labels	Roomlabel	Value Requirements	Monitoring	Validation	comments
Comfort Class	CT4	direct daylight and view outside obligatory	Visual inspection	Present	
		Airflow: 2 / 1.4 dm ³ /s/m ² ("in use" according to prEN 167981-1;2015. Non low-poluting buildings, category I)	Measuring ventilation flow, Monitoring CO ₂ -emission and timeslot AHU	Supply Airflow is conform label During the night the central AHU is switched off.	The in-user period of the central AHU fans is: We-Fr 6:00 – 18:00 Su 18:00 – Tu 18:00 The central AHU does not have the same timeslot as the user profile of the room.
		Temp range: 21 - 25.5 / 20 - 26 °C ("in use" according to prEN 167981-1;2015. Bedroom, category I)	Monitoring temperature	Temperature range is conform the label	
		Lighting: 500 lux	Measuring	Average light intensity 525 lux	
		Relative humidity: 30 - 50 / 25 - 60 °C ("in use" according to prEN 167981-1;2015. Category I)	Measuring	Relative humidity range is mainly conform the label, but the requirements are a little bit too stringent	
		Control of lighting: screens an adaptive control	Visual inspection	Screens present, Automatic lighting control is present	

Air flow		Room 118	Room 119	Room 140	Room 141
Measured airflow	[m3/h]	152	147	102	111
STREAMER label	[m3/h]	144	144	115	115
Ventilation outlet capacity	[m3/h]	160	160	130	130



Conclusion

Label description	Requirements	Validation method	
Bouwcollege layer	Room type	Visual inspection	✓
Construction	Floor strength and height	Visual inspection	✓
Hygienic Class	Ventilation type	Visual inspection	✓
	Supply Air Quality	Visual inspection	✓
Equipment	Electric Power	Monitoring electricity	⚠
User profile	Timeslot	Monitoring CO ₂ -emission and timescale of ventilation and light controle	✓
Comfort Class	Daylight	Visual inspection	✓
	Air flow	CO ₂ -monitoring and calculation	✓ ⚠
	Temp range	Temperature monitoring	✓
	Lighting	Lighting motion monitoring	✓
	Relative Humidity	Relative humidity Monitoring	⚠
	Control of lighting	Visual inspection	✓
Acces security	Accessibility	Visual inspection	✓

Bedankt voor uw aandacht

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