

T2 Allianssi

Delivery of a Megaproject with 1-day Takt: Helsinki Airport Terminal 2

22.3.2023

Who am I?

- Jasmiina Hietala
- Project Manager at SRV in T2 Alliance project second phase from 2021
- Leading, visualizing and implementing takt production in T2 Alliance and SRV company's processes
- Trained in LEAN operating models and bringing them into SRV's operations, creating practices and support for projects
- Experience in cooperative construction projects for 10 years
- Graduated from Aalto in 2011



T2 Allianssi

Helsinki Airport Terminal 2 (T2)
expansion and renovation
alliance project

Site area:

app. 4,5 ha

T2 expansion area:

app. 43 000 m²

Renovation area old terminal T2:

app. 35 000 m²

New multimodal travel centre:

app. 35 000 m³



Project consist of two parts:

First phase The new expansion part and entrance was opened in 12/2021. At the same time, the new parking and public transportation arrangements and new arrivals hall were taken in use. There is also a multimodal travel centre with enhanced connections between different modes of transport.

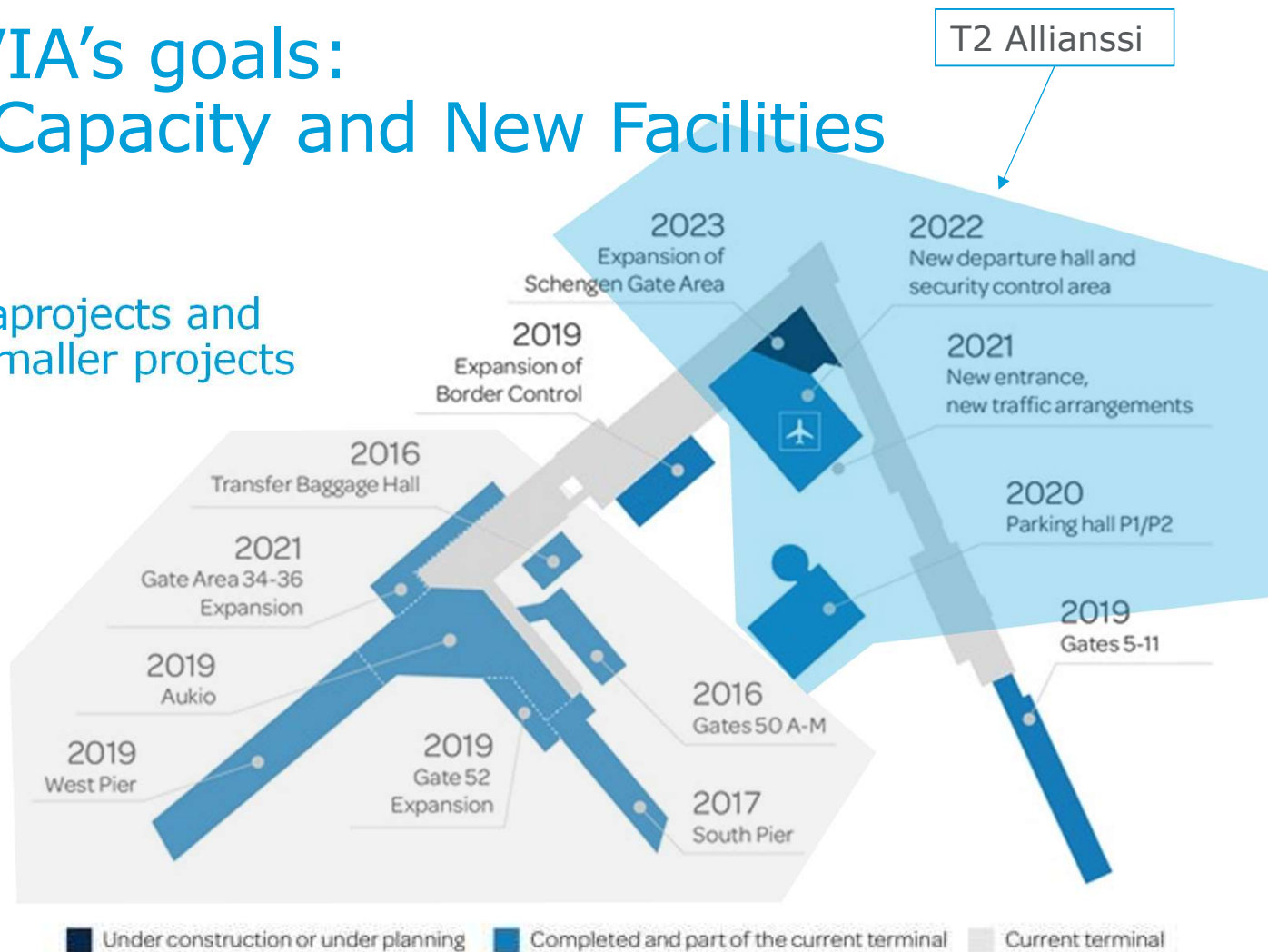
Second phase The old arrivals and departure halls of Terminal 2 will be made part of the gate area reserved for flights to and from Europe. ("Schengen")

This expansion consists of a completely new entrance with arrivals and departure halls, arrangements for public transport, and an extended area serving traffic to and from Europe, or the Schengen area traffic.



FINAVIA's goals: More Capacity and New Facilities

Two megaprojects and
app. 40 smaller projects



Investment
1 Bn €

BH
Capacity
+ 50 %

Terminal
sqm2
+ 45 %

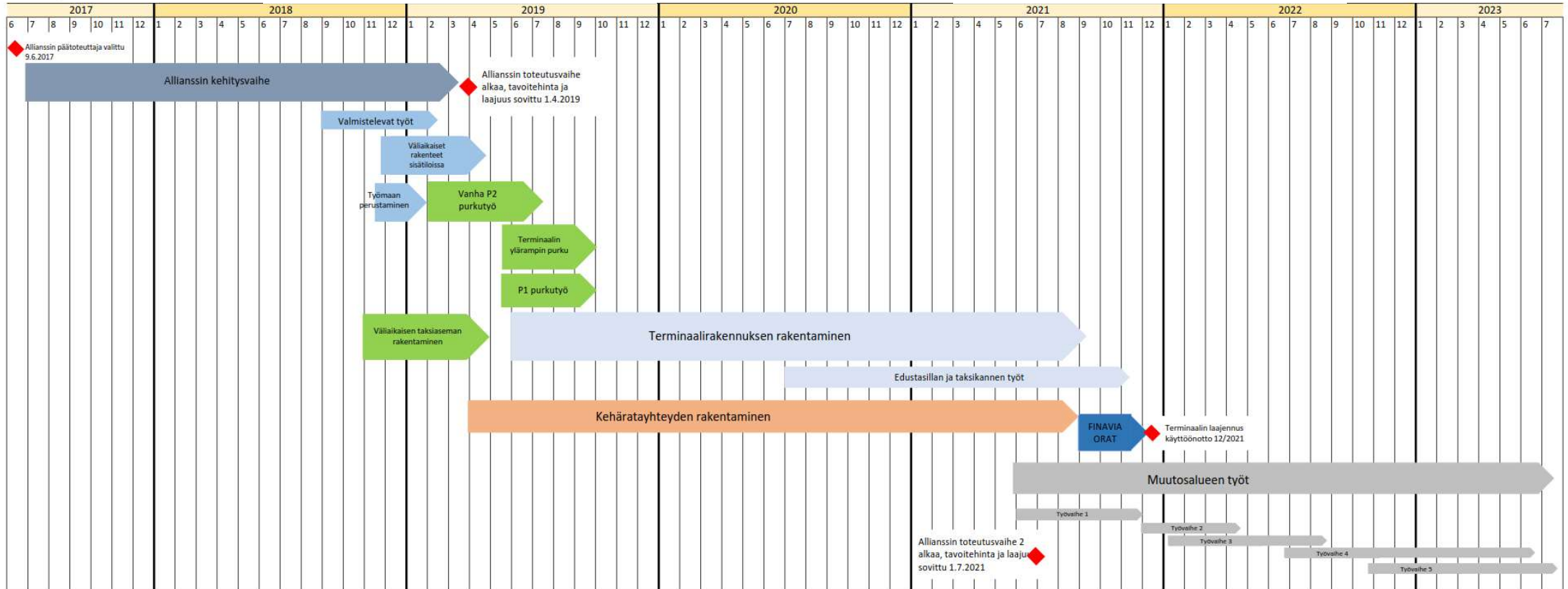
Renewed
apron
**450,000
m2**



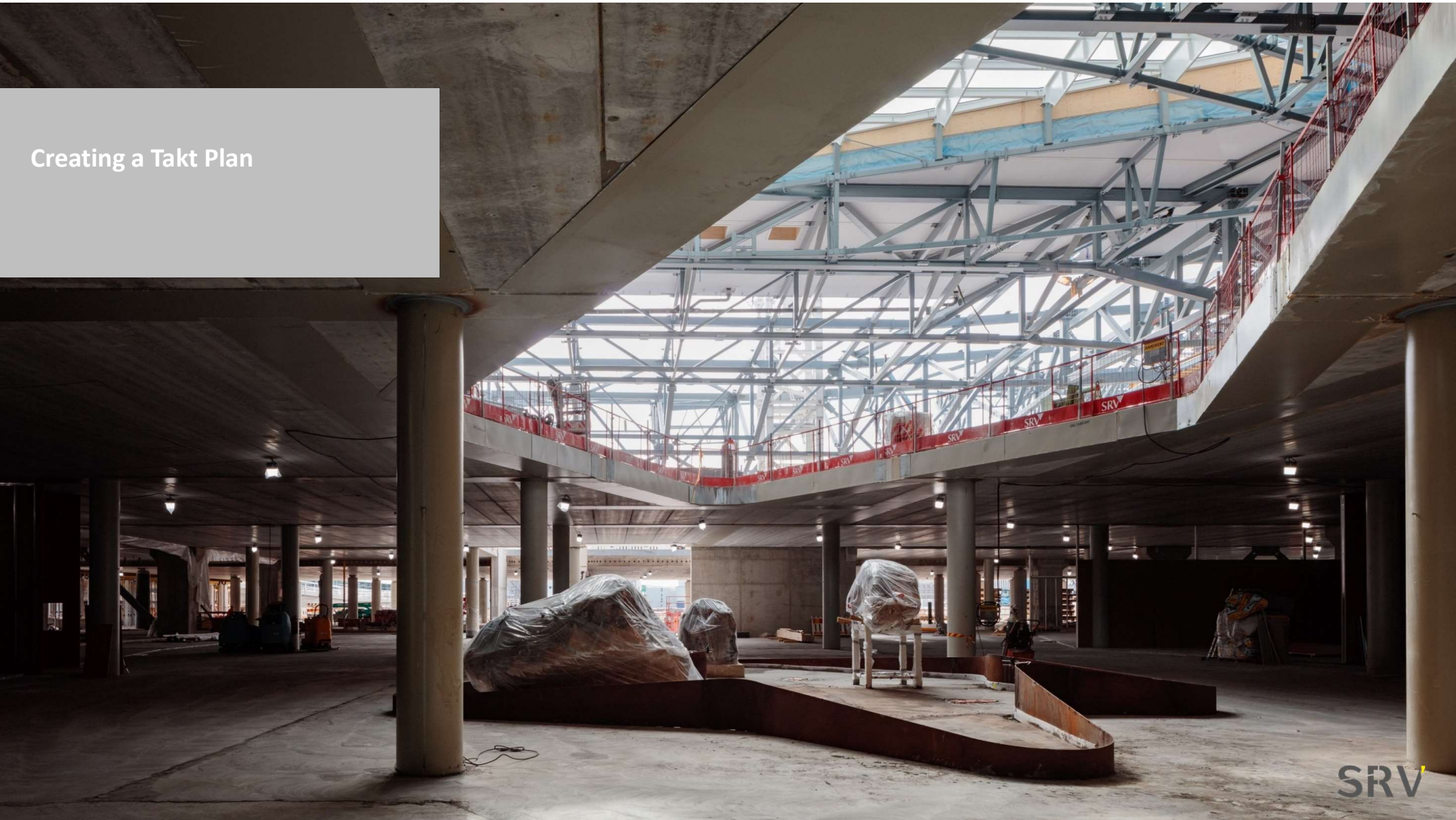
PROJECT SCHEDULE



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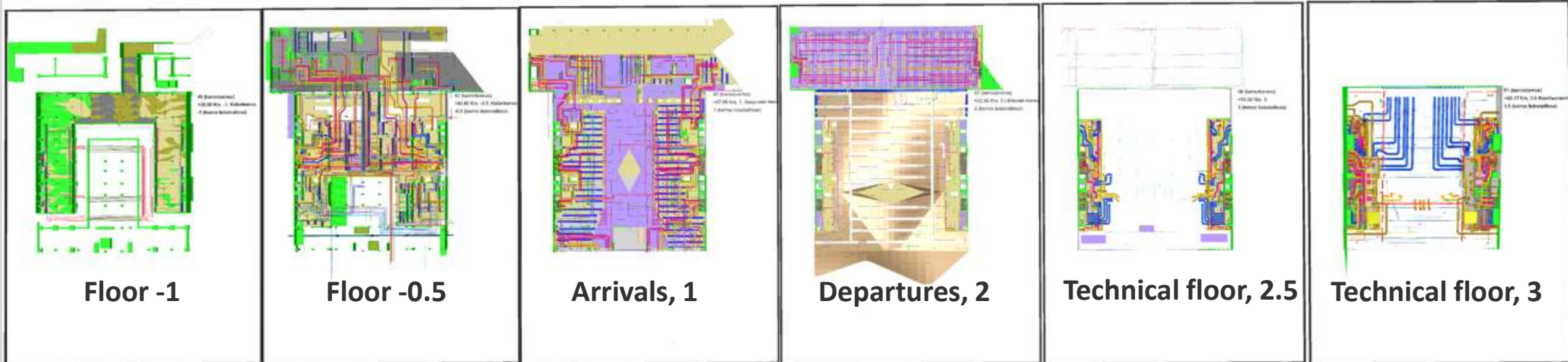
Creating a Takt Plan



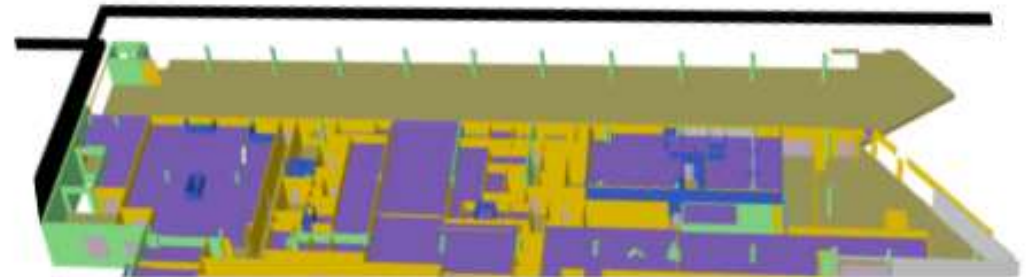
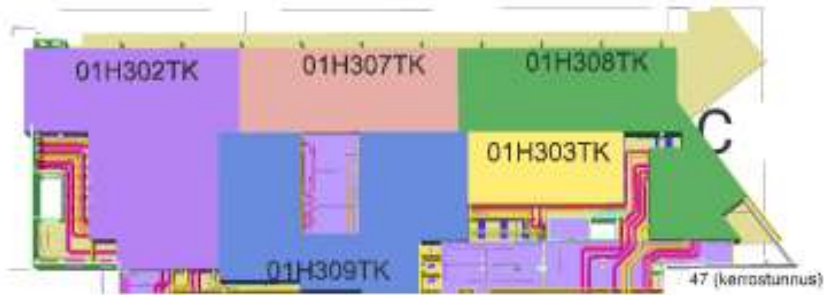
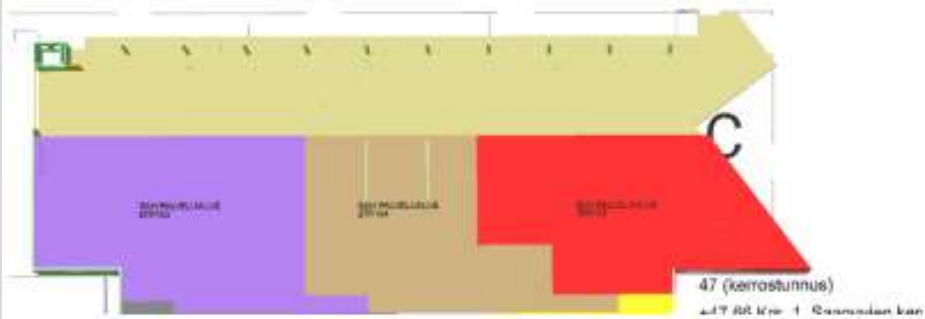
How it began?

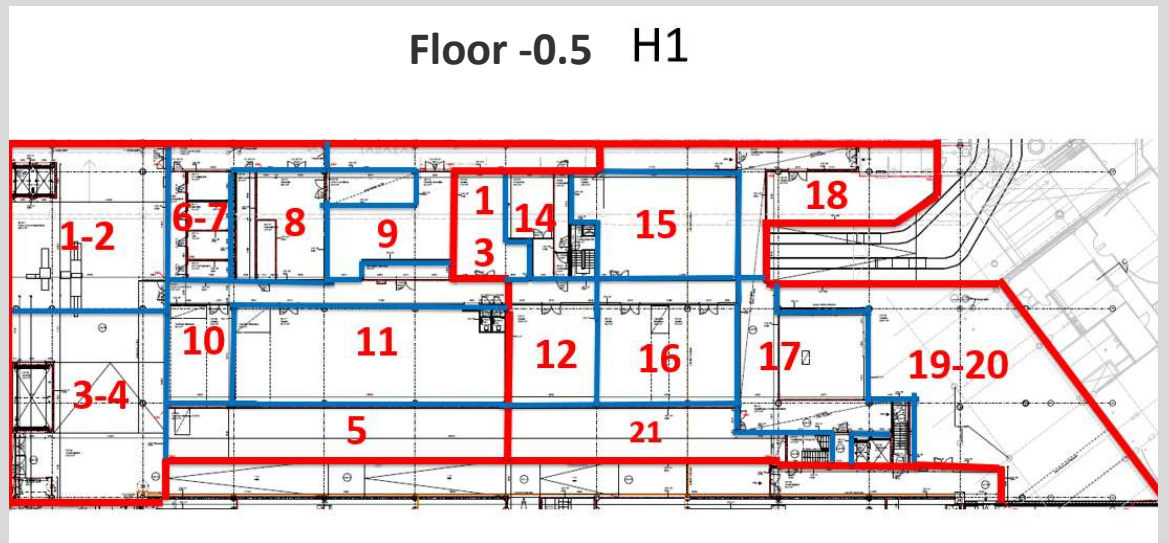
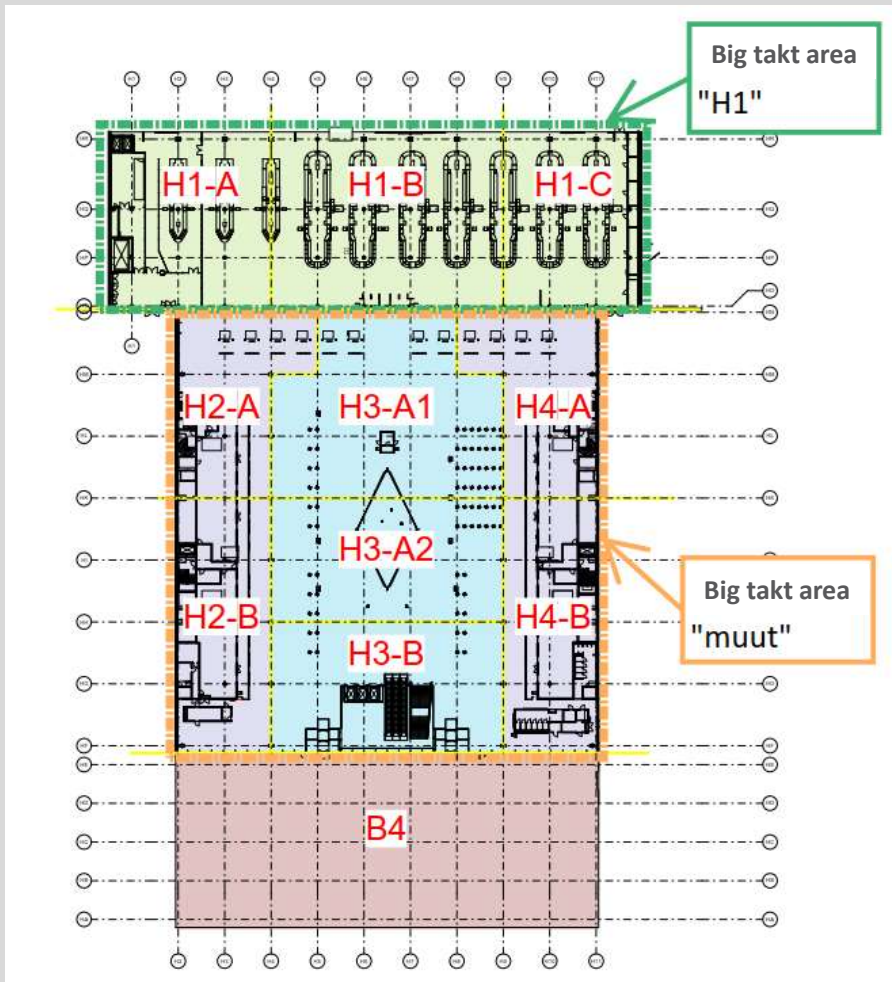
Visualizing and indentifying takt areas using models

- Quantities from BIM – a lot of information from models was utilized in scheduling and different analyzis, helping decision making
- Model data (Dalux, PowerBi, Simplebim, Solibri etc)



Arrivals H1

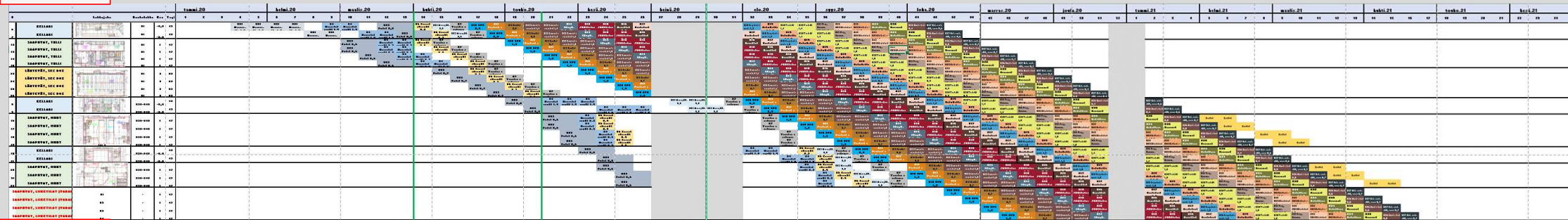






First version of takt - 1 week takt, big picture

TRAIN 1

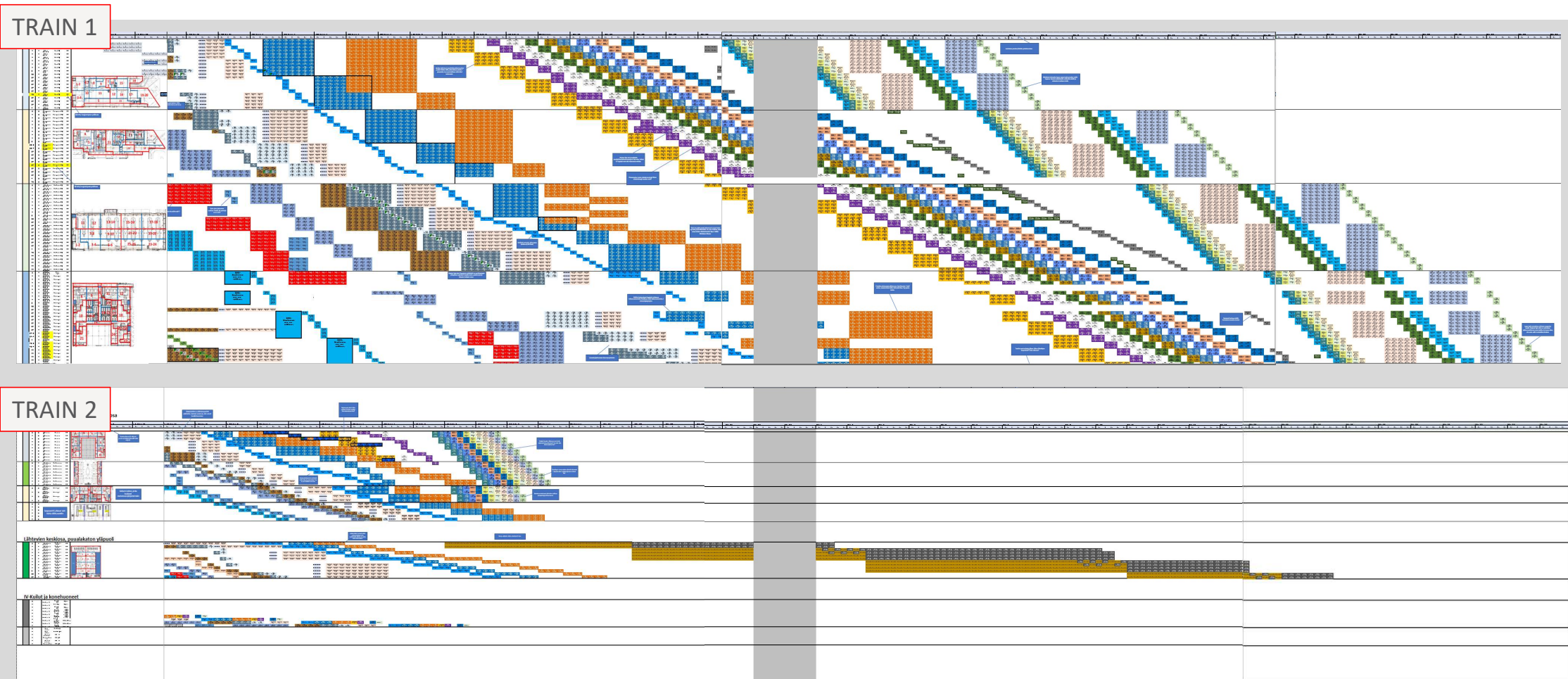


TRAIN 2



Final takt schedule – 1 day takt

- 2 trains
- app 60 wagons
- app 250 takt areas



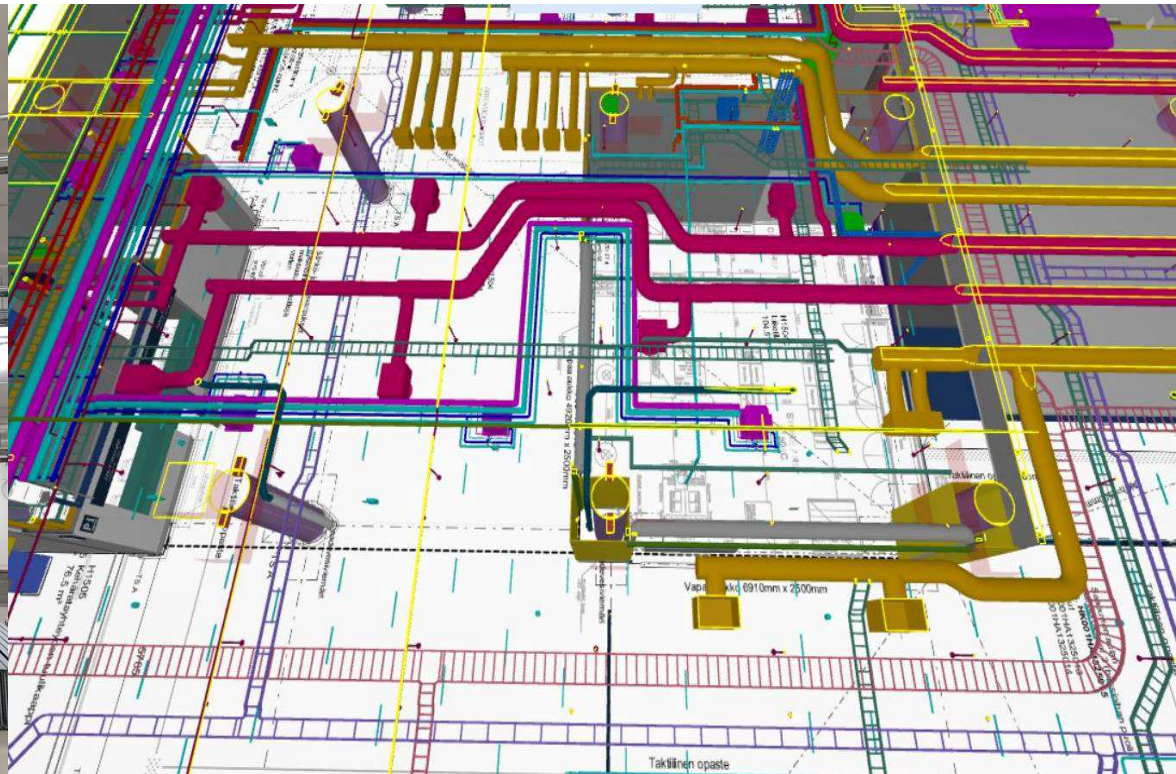
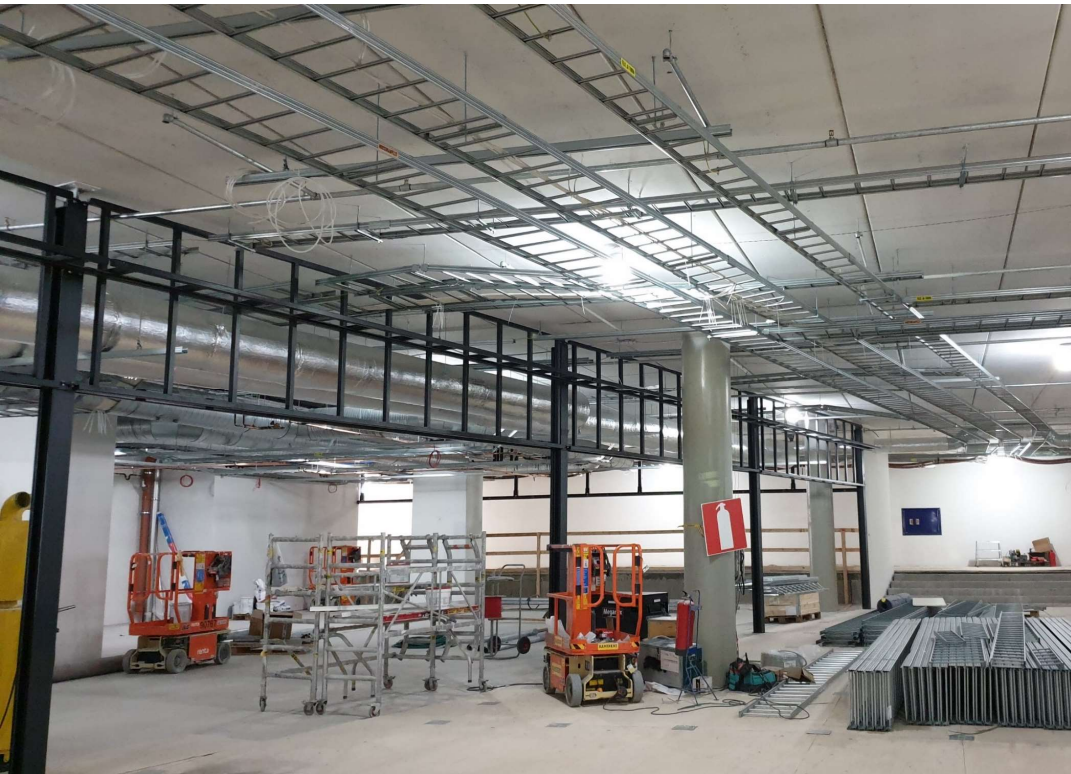
Workflow and advance planning

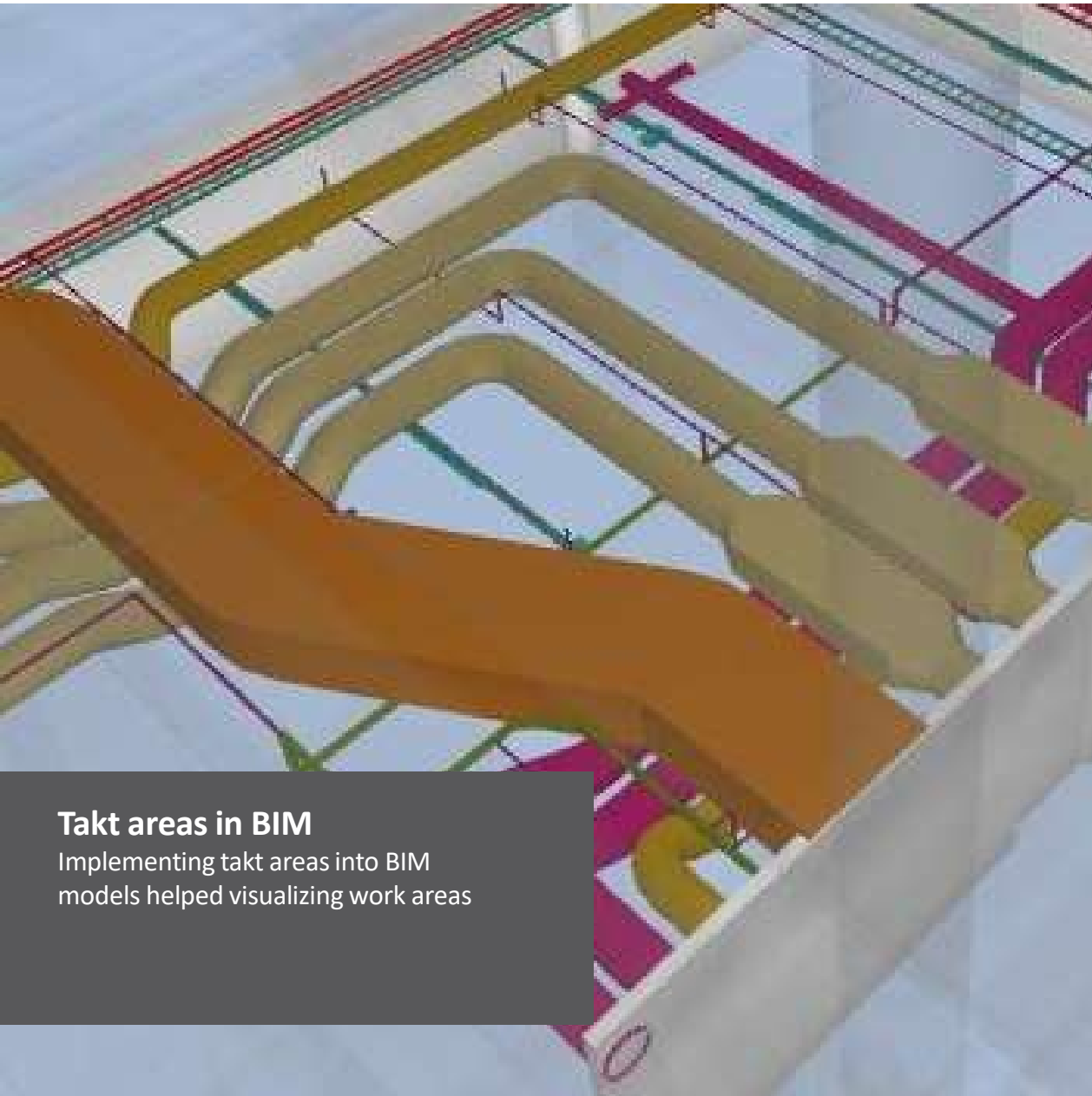
Less interference and clarity to work



BIM at site

Easy to use, also views that combine 2D and 3D



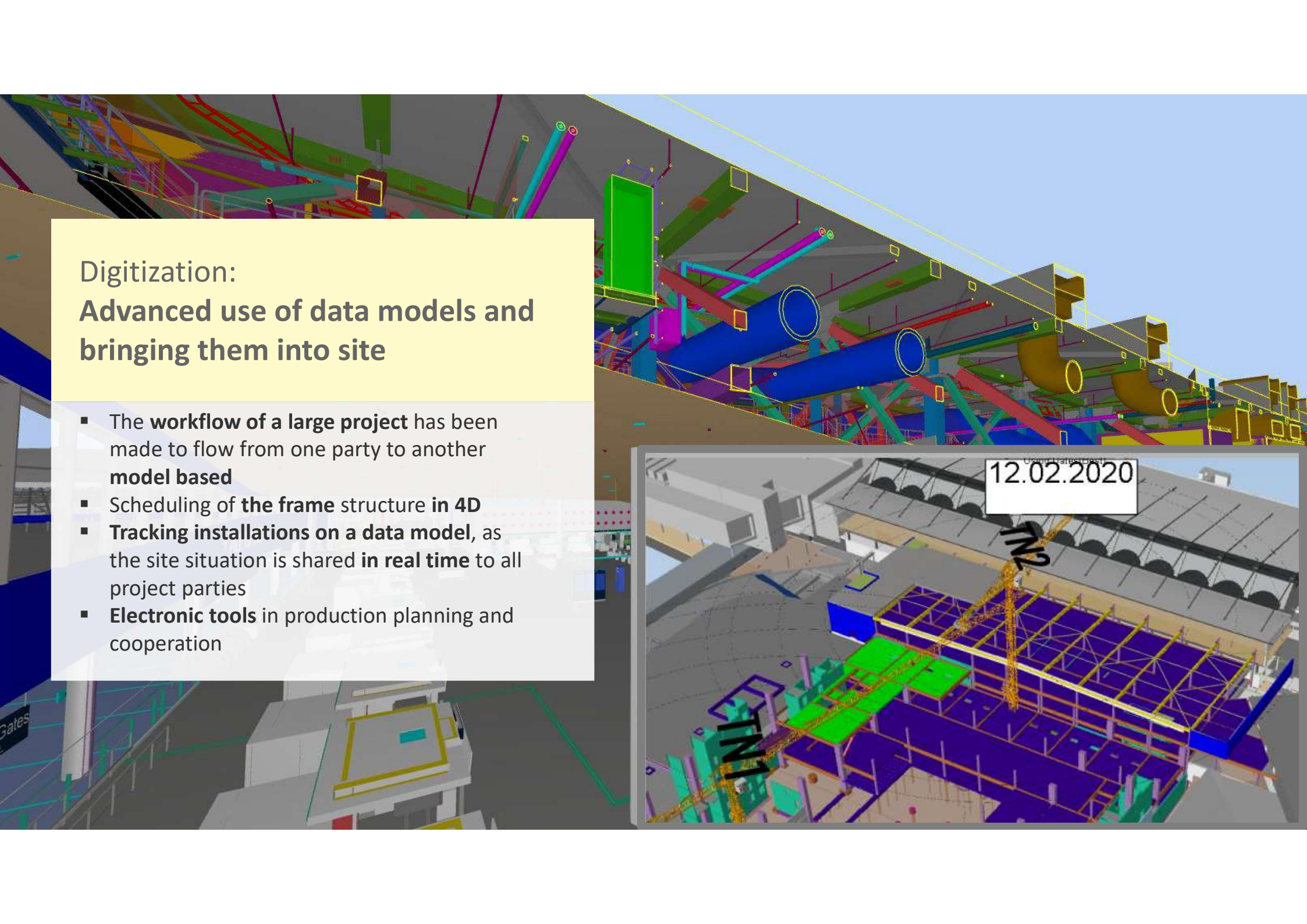


Takt areas in BIM

Implementing takt areas into BIM models helped visualizing work areas

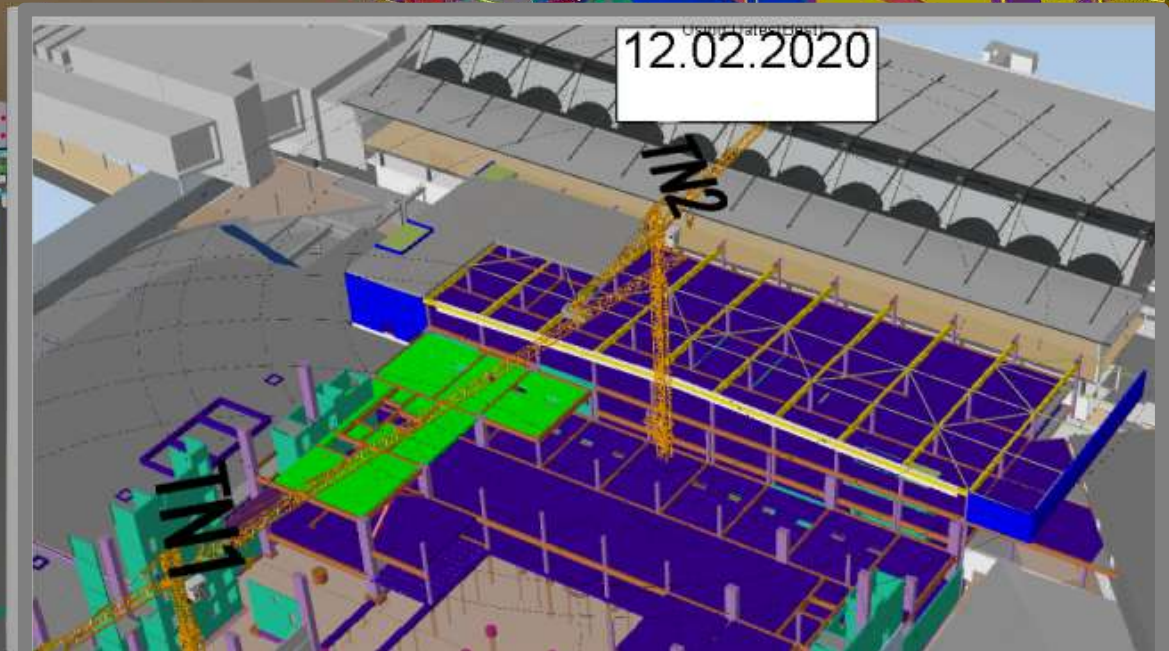
Using takt in nonrepetitive complex surroundings

- With the **certainty gained in the project schedule** through takt, it was decided to shorten the general schedule by 2+2 months in construction phase in order to reduce the project cost
- **Schedule status was clear to everyone** in the project -> it was easily seen that tightening of the schedule could be done
- **Using BIM** in forming takt areas and counting workloads
- **Quality management** was linked to takt wagons



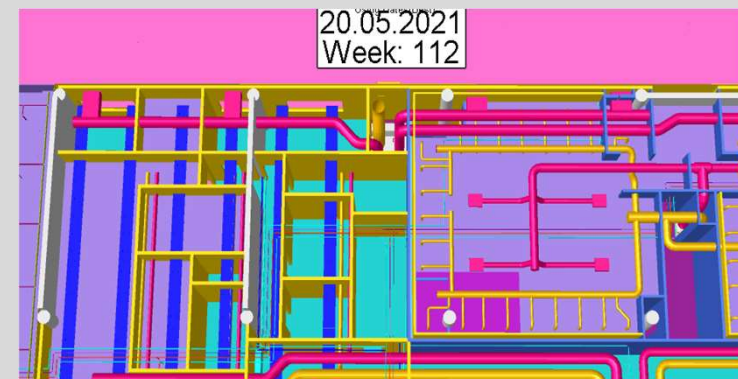
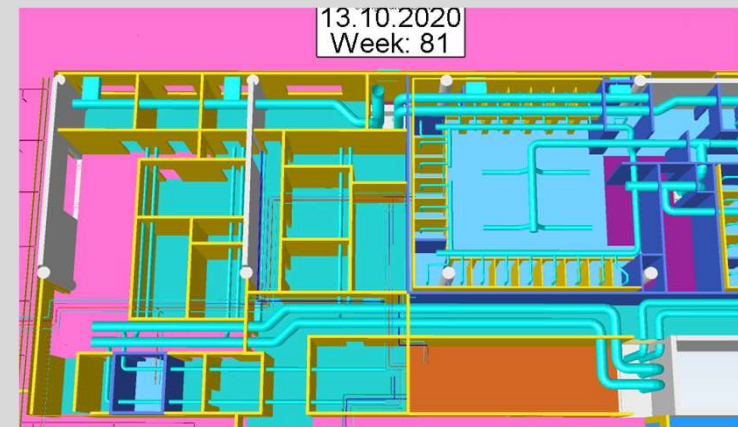
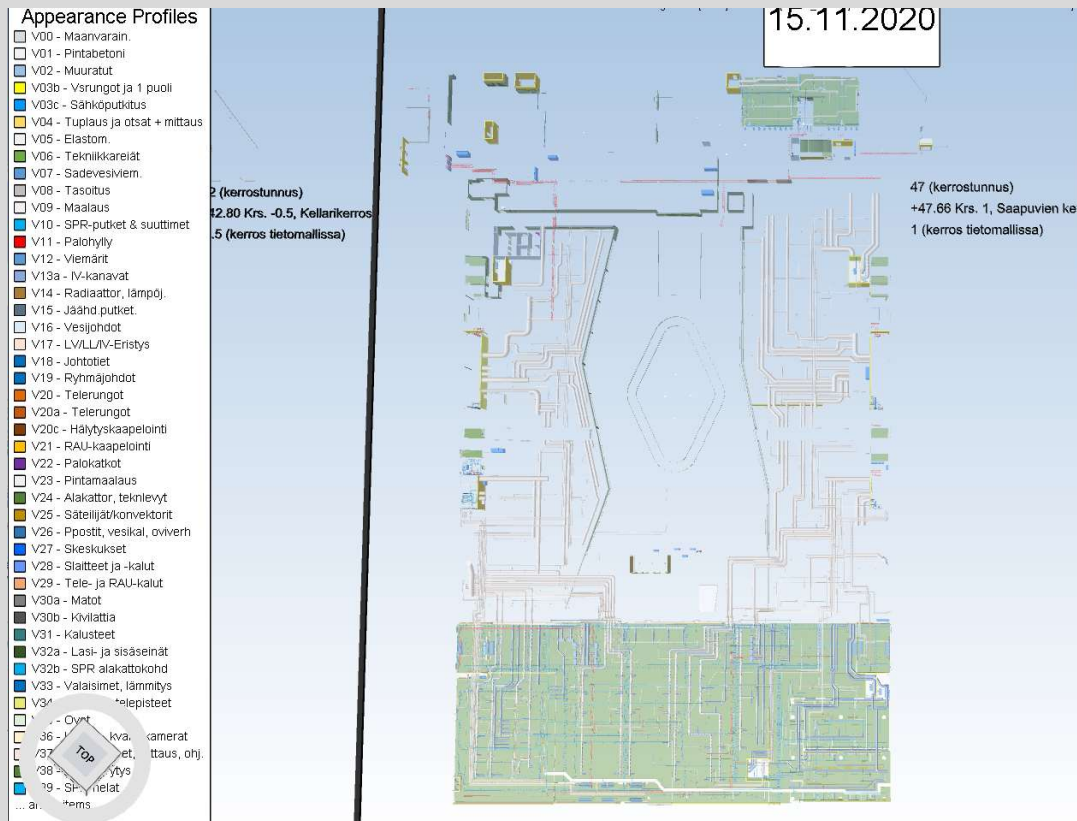
Digitization: Advanced use of data models and bringing them into site

- The **workflow of a large project** has been made to flow from one party to another **model based**
- Scheduling of **the frame structure in 4D**
- **Tracking installations on a data model**, as the site situation is shared **in real time** to all project parties
- **Electronic tools** in production planning and cooperation



12.02.2020

4D, internal works and building systems works schedule



Design

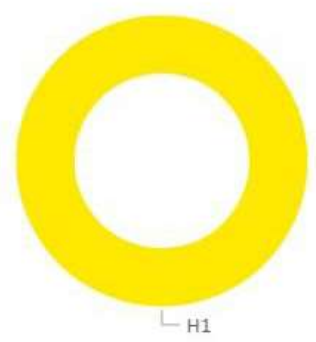
- IV
- U
- SPR
- SÄH
- WV

2020
2019

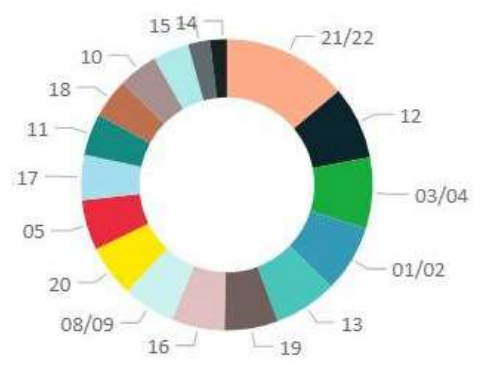
Location

- Valitse kaikki (lohko)
- H1
- IVKH
- KUILUT
- KULJ
- LÄMM

Distribution per big takt area (length)



Distribution per takt area (length)

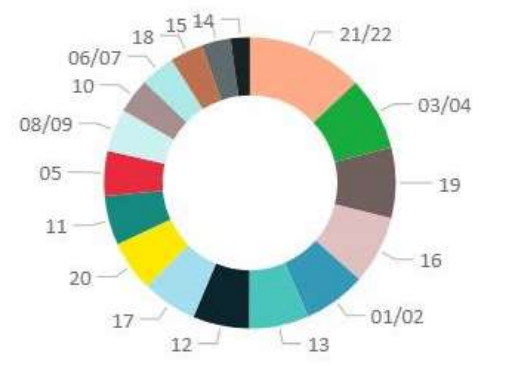


01_SRV Tunnus	05_SRV Pituus
SPR-haaraputket	1 059,75
SPR-runkoputket	316,28
Yhteensä	1 376,03

Distribution per big takt area (number)



Distribution per takt area (number)



01_SRV Tunnus	05_SRV Lukumäärä
SPR-haaraputket liitososat	980
SPR-muut osat	4
SPR-runkoputket liitososat	238
SPR-suuttimet	407
SPR-suuttimet alakatto	20
Yhteensä	1649

Takt areas and quantities information
 Takt areas were entered into BIM which allowed to measure and compare quantities in different areas.

The future megaprojects?

We go towards digital building

- Data and digital technology are ways to improve productivity in the construction industry
- Using digitalization with takt gives the best benefits
- Earlier adaptation to takt improves benefits

-> Let's invest in it

