HOW WE IMPROVE ASSET MANAGEMENT AT SCHIPHOL

Alex Worp, Strategic Advisor BIM
Who are we?

We come from the Netherlands

Alex: Amsterdam Airport Schiphol → strategic advisor BIM
Rob: BIM Captain → boardroom consultant → representing buildingSMART International
What is BIM for Schiphol?

BIM is essentially a value-creating **COLLABORATION** throughout the entire **LIFE CYCLE** of an asset, supported by creating, collecting and **EXCHANGING** shared 3D models and intelligent objects with linked **STRUCTURED DATA** (information).

OpenBIM is collaborating with other parties - to creating better processes and better buildings - without the obligation to use the same software.

Through open buildingSMART standards, software communicates with and each stakeholder works with the most suitable software.”

Rob Roef, BIM captain - 2014
INTRODUCTION
Can we make better decisions during the lifecycle of our assets?
WHY CHALLENGING?

- complex
- redundant
- time consuming
- error-sensitive
THE CHALLENGE WITH ASSETS AT SCHIPHOL

Many players, assets & data

Investments per year
CAPEX: € 500-600 million
OPEX: € 150 million
THE OPPORTUNITY

New technology opens opportunities for improvement
THE OPPORTUNITY

Information structure has to improve

collect data information knowledge insight wisdom
decision making

organize summarize analyze synthesize
THE OPPORTUNITY

Information structure has to improve

With wisdom we can make **better decisions**, and **optimize the performance of our assets**.
THE OPPORTUNITY

Central shared 3D model
Shared knowledge and data
THE OPPORTUNITY

To apply openBIM, we need two things:

- clear agreements
- uniform data structure

IDM

IFC
THE OPPORTUNITY

openBIM
THE OPPORTUNITY

clear agreements

IDM

uniform data structure

IFC
COMBINED FORCES to Structure Information

Clients

Airports
OUR VISION...

in 2027 (BIM level 3)

shared data  more knowledge  predictable maintenance

improved efficiency  cost reduction
THE OPPORTUNITY
Use Cases

- Benefits on the use of (open)BIM
- If we Have Time
- Schiphol GIS applications
- System integration
DATA used for Material Passport
G-pier: Design Costs vs Realization Costs

Shift in Design Costs

2D revision information transformed to 3D model
Visualization – Planning – Realisation

Walkthrough
Departure Hall 1a; limited Time

2 months design

5 months realization
Departure Hall 1a; Validation As-Build during construction

Scan 1, during

Scan 2, before handover

Changes in red
Departure Hall 1a; Validation As-Build vs Model

Ceiling higher than designed in IFC model
Validated (data)Information in FM-systems
Integration FM-system with IFC & 360pointcloud

https://schiphol.4indoor.nl/#/?poi=7&fov=61.3
Conclusions
OpenBIM – IFC, BCF Exchange WORKS!

Clear agreements are very important (BIM protocol, BIM Execution plan)

Quality of Employers Information Requirements is essential!

Being Compliant to Employers Information Requirements by engineers and construction companies is essential; “almost good = fatal”

Working together true all phases of the asset life cycle is essential

Usable technologies are developing rapidly
WILL YOU JOIN US?

The success of BIM is based on the managed exchange of structured information throughout an asset’s lifecycle.

Coming together is a beginning
Keeping together is progress;
Working together is SUCCESS

Henry Ford
SYSTEM INTEGRATION
ACSM system - GIS - BIM - Wayfinding app
EAM system – GIS – Indoor Viewer
EAM system – GIS – Indoor Viewer
GIS – BIM
SGIS APPLICATIONS
SGIS APPLICATIONS

Case: Portfolio App
Goal: Insights in Airside project development

Data Sources:
• Portfoliomanagement
• Maps
SGIS APPLICATIONS

Case: Bird App
Goal: Prevent birdstrikes

Data Sources:
- Bird Radar
- Dynamic planes positions
- Dynamic vehicles location
- Runway management
SGIS APPLICATIONS

Case: Wayfinding app
Goal: Dynamic route calculation for Schiphol travelers

Data Sources:
• 3D model
• Online status of the assets
• Floorplans