Swiss-COBie: Development of a Design for Information Exchange Between Planners, Contractors and FM in Switzerland

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Phases of a building’s life according to SIA 112

1. Strategic Planning
2. Pre-studies
3. Project
4. Tendering
5. Realisation
6. Operation

Information for FM's from phase 1-5 to manage building

- Principle tool for FM's is CAFM
- How to get best quality information from BIM to CAFM?
- COBie is established in UK & US. Could COBie be used in Switzerland?
Agenda

• Theory/literature
• Methodology
  • Data analysis
• Results
• Discussion
• Conclusion
• Recommendations
Theory/literature

- BIM used in construction, CAFM in operation phase
- “BIM can support FMs successfully and outstanding” (Abdullah et al. 2013)
- “FM should be involved in the planning process from an early stage” (Kassem et al. 2015)
- Transferring information from BIM to CAFM difficult
- In Switzerland, currently no standardized information exchange between planners, contractors and FMs
- COBie might be the solution for information exchange between BIM and CAFM as well as standardization for information exchange in Switzerland
- COBie-standards are already in practice (BS 1192-4 (2014))
- In Switzerland, SIA 2051 (basics for appliance of BIM method) guideline currently in development
Methodology

• 3 research questions:
  • 1. what information relating to assets/buildings do the users need most in operation?
  • 2. when does, the information need to be exchanged during the planning and construction process?
  • 3. how can FM benefit from a Swiss-COBie?

• Review literature/industry best practices in Switzerland
• Analysis of data given by three different company’s CAFM systems provided by IC Information AG
• Semi-structured interviews
Data analysis

• Permission to access data from three companies by their provider (IC Information AG)
• Data transferred into Excel-Spreadsheet
• Quality of data and Results depended on how the users code their data
Results, Question 1

What information relating to assets/buildings do the users need most in operation?

<table>
<thead>
<tr>
<th>Information</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>HVAC facilities</td>
<td>21.3%</td>
</tr>
<tr>
<td>Electric supply</td>
<td>20.4%</td>
</tr>
<tr>
<td>IT facilities and devices</td>
<td>17.9%</td>
</tr>
<tr>
<td>Sanitary facilities</td>
<td>8.8%</td>
</tr>
<tr>
<td>Electrical medical devices</td>
<td>4.5%</td>
</tr>
<tr>
<td>Transport facilities</td>
<td>3.1%</td>
</tr>
<tr>
<td>Shell 2</td>
<td>3.1%</td>
</tr>
<tr>
<td>Monitors for patients</td>
<td>2.0%</td>
</tr>
<tr>
<td>Medical devices</td>
<td>1.8%</td>
</tr>
<tr>
<td>Devices for extended care</td>
<td>1.6%</td>
</tr>
</tbody>
</table>
Results, Question 1

What information relating to assets/buildings do the users need most in operation?

<table>
<thead>
<tr>
<th>Information</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project contract</td>
<td>33.579</td>
</tr>
<tr>
<td>Service level</td>
<td>32.458</td>
</tr>
<tr>
<td>Usage status</td>
<td>29.193</td>
</tr>
<tr>
<td>Description</td>
<td>27.602</td>
</tr>
<tr>
<td>Serial number</td>
<td>27.533</td>
</tr>
<tr>
<td>Client facility number</td>
<td>24.337</td>
</tr>
<tr>
<td>Supplier</td>
<td>20.821</td>
</tr>
<tr>
<td>Location</td>
<td>20.021</td>
</tr>
<tr>
<td>BKP sub-group</td>
<td>19.658</td>
</tr>
<tr>
<td>Status</td>
<td>19.039</td>
</tr>
</tbody>
</table>
Results, Question 2

When does the information need to be exchanged during the planning and construction process?

• Difficult to establish a clear answer because:
  • No well documented BIM case studies in Switzerland
  • Interviewees had no experience in BIM projects
  • Old fashion way: Before operation phase
  • Most companies are not adequately prepared for digitasid asset data
Results, Question 3

*How can FM benefit from a Swiss-COBie?*

• All three interviewees agreed that FM will definitely benefit from a Swiss-COBie...

• ...but it should be aligned with construction standards currently in use (SIA, e-BKP-H, etc.)
Discussion

• Quality of results depended on the user’s data management
• Interviewees had limited knowledge of their CAFM system and how to use COBie in practice
• Three companies are not enough to give a clear picture
Conclusion

• COBie should be based on local standards
• PAS 1192-4:2014 was considered but seen to be over-detailed for use in Switzerland
• Therefore, COBie standard for Swiss Construction & FM market is needed
• Swiss-COBie should be treated as an industry standard but gives enough freedom for adjustments
• The success of Swiss-COBie depends on FM being involved in the planning and construction process
BIM-COBie (for a specific asset)

- Tab 1: (Planning & involved parties)
- Tab 2: (Plot of land)
- Tab 3: (Preparation)
- Tab 4: (Building)
- Tab 5: (Technics & Facilities)
- Tab 6: (Additional costs)

- BKP-Code (e.g. 231)
- eBKP-H-Code (e.g. D 1.1)
- Description/Name (e.g. heavy current facility)

- General Attributes (e.g. serial number)
- Maintenance & Warranty Attributes (e.g. supplier)
- Technical Attributes (e.g. voltage)
- Object (e.g. emergency light)
Recommendations

• FM should be more “pushier” towards planners & contractors
• FM should learn more about BIM
• Swiss-COBie needs to be verified and approved by local institutions
• Because of local rules and standards COBie preferably should be adapted to meet the local market conditions.
• COBie should be recommended in the EIR
Suggestions for future research

• Perform same approach with more and more diverse companies
• Conduct BIM case studies for Switzerland
Thank you very much for your attention

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