



Sustainable engineering and design

**bSI – International User Group.  
Engineering Industry**

# Kaare Kleven

Project Director

Sweco Project Management and Administration

Member of the board of buildingSMART Norway

## - Speaking on behalf of:

### Sweco

5,500 employees in 10 countries

505 million EURO in annual sales\*

28,000 assignments per year

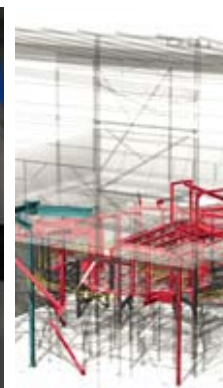
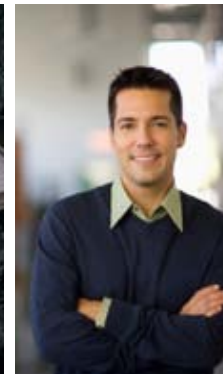
9,000 clients

\* Rolling 12 months



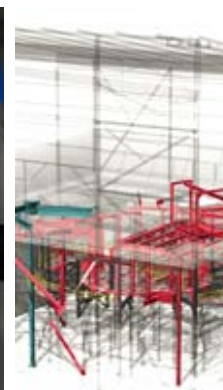
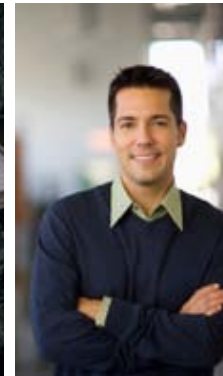
# RIF: Association of Consulting Engineers in Norway

- 260 member companies
- Employing approx. 7 500 consulting engineers
- Represents approx. 70 % of the independent consultant engineer branch in Norway.
- All engineering fields for the AEC Industry represented



# Partnership for implementing buildingSMART in all design contracts:

- Signed agreement between the **six largest multidisciplinary engineering firms in Norway** for joint efforts on influencing the AEC industry to increase the implementation of buildingSMART and use **open standards**
- Increase use of buildingSMART through information to the market in collaboration with buildingSMART Norway and others.
- Common efforts for adapting design contracts to buildingSMART context
- Two development projects released for improving contract standards
  - Mapping actual conflict risk and conflict issues using BIM
  - Investigate intellectual properties of the model in contract standards.



# buildingSMART in Norwegian AEC industry

- BuildingSMART is implemented as technology and design process tool in all major consulting firms in Norway. **ALL BASED ON OPEN STANDARDS**
- Implementation is driven by customer demands:
  - Statsbygg – Public Construction and Property Management
  - Norwegian Defense Estate Agency
  - Norwegian Health Regions/Hospital Projects
- Some of the largest Contractors use buildingSMART and demands bS from architects and engineers.
- This means that a major part of Norwegian building projects in the next decade will be designed according to buildingSMART standards





# buildingSMART development, our approach

- Expanding buildingSMART  
**beyond the BIM sphere:**
- Multidisciplin engineering companies in Norway are working towards implementation of bS methodology in **all engineering fields** to increase interoperability:
  - Reduce risk in our own engineering contracts
  - Improve "all engineering" quality
  - Improve multidisciplinary planning efficiency
  - Obtain efficient and quality assured "project centric" information flow, i.e. all information in one "global information modell"
  - Keep track of substantially increased interfaces between the various engineering disciplines.



# buildingSMART development Statements

- **Improve quality and populate the IFD**
  - i.e. a wider range of reference library, also implementing environmental issues to meet "SWECO Sustainable Engineering and Design" needs
- **Expand the IDM's to a wider range of early phase planning processes and engineering fields**
- **Support bS IC on the "sustainable build environment".**
- **Need of demonstrating and documenting positive results and projects where buildingSMART have been the used!**

