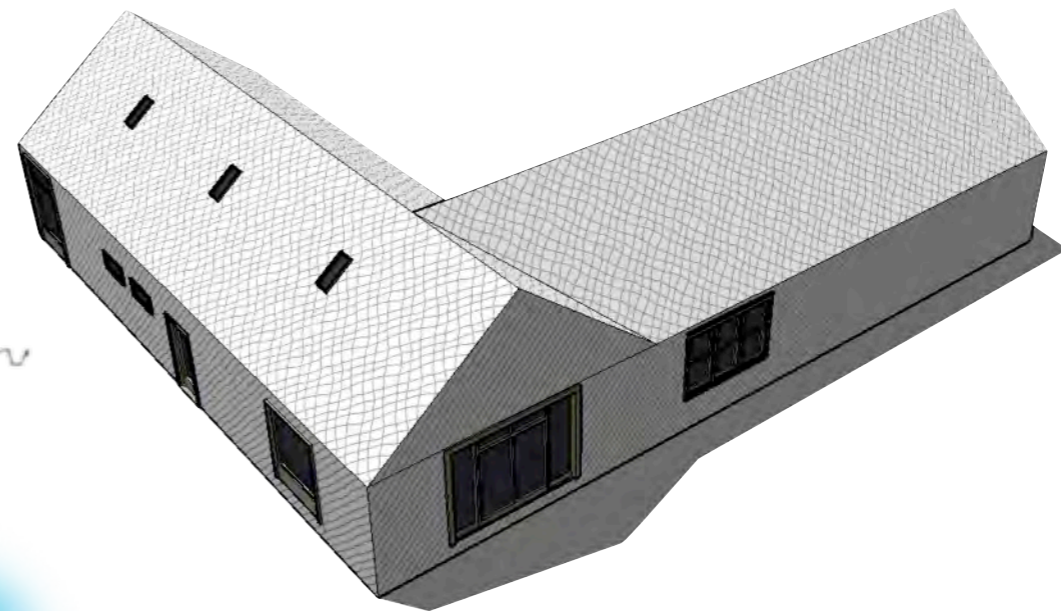
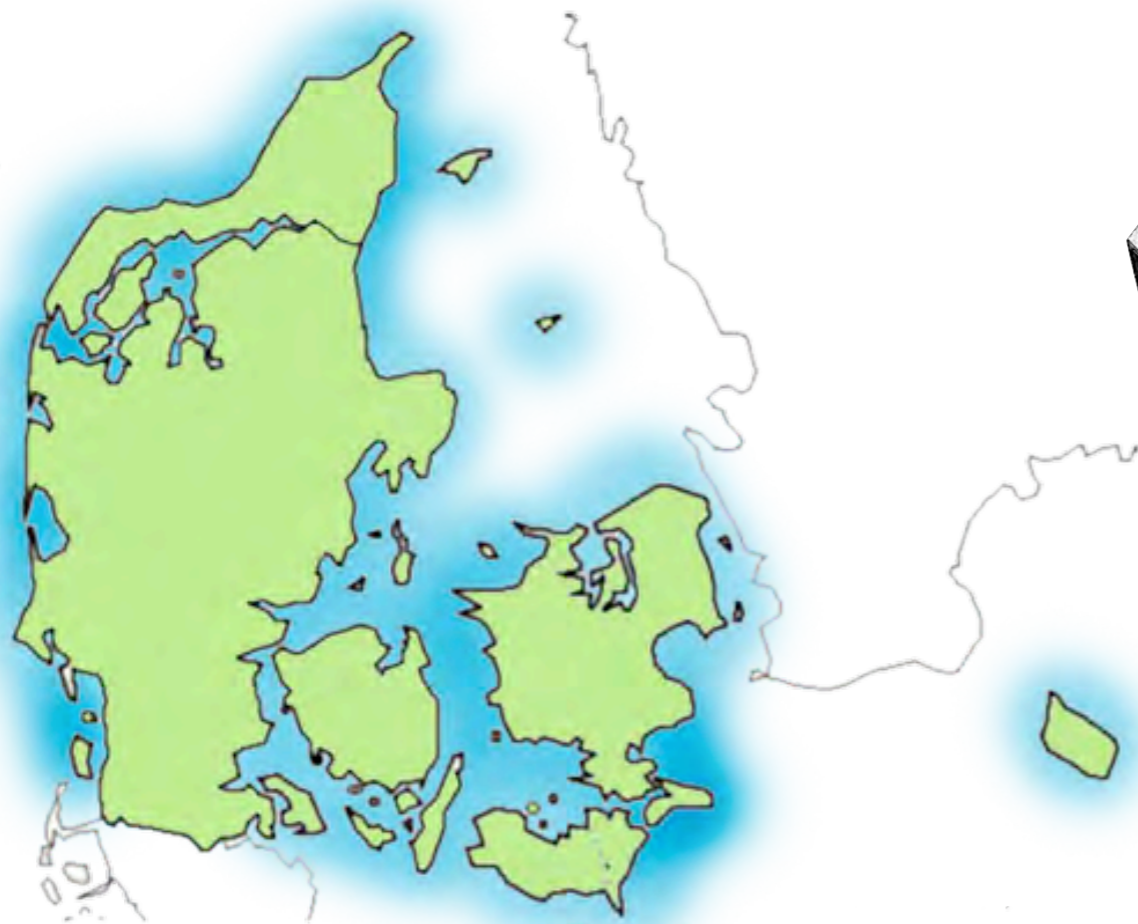


3D city models as part of the national infrastructure for geographic information in Denmark ?



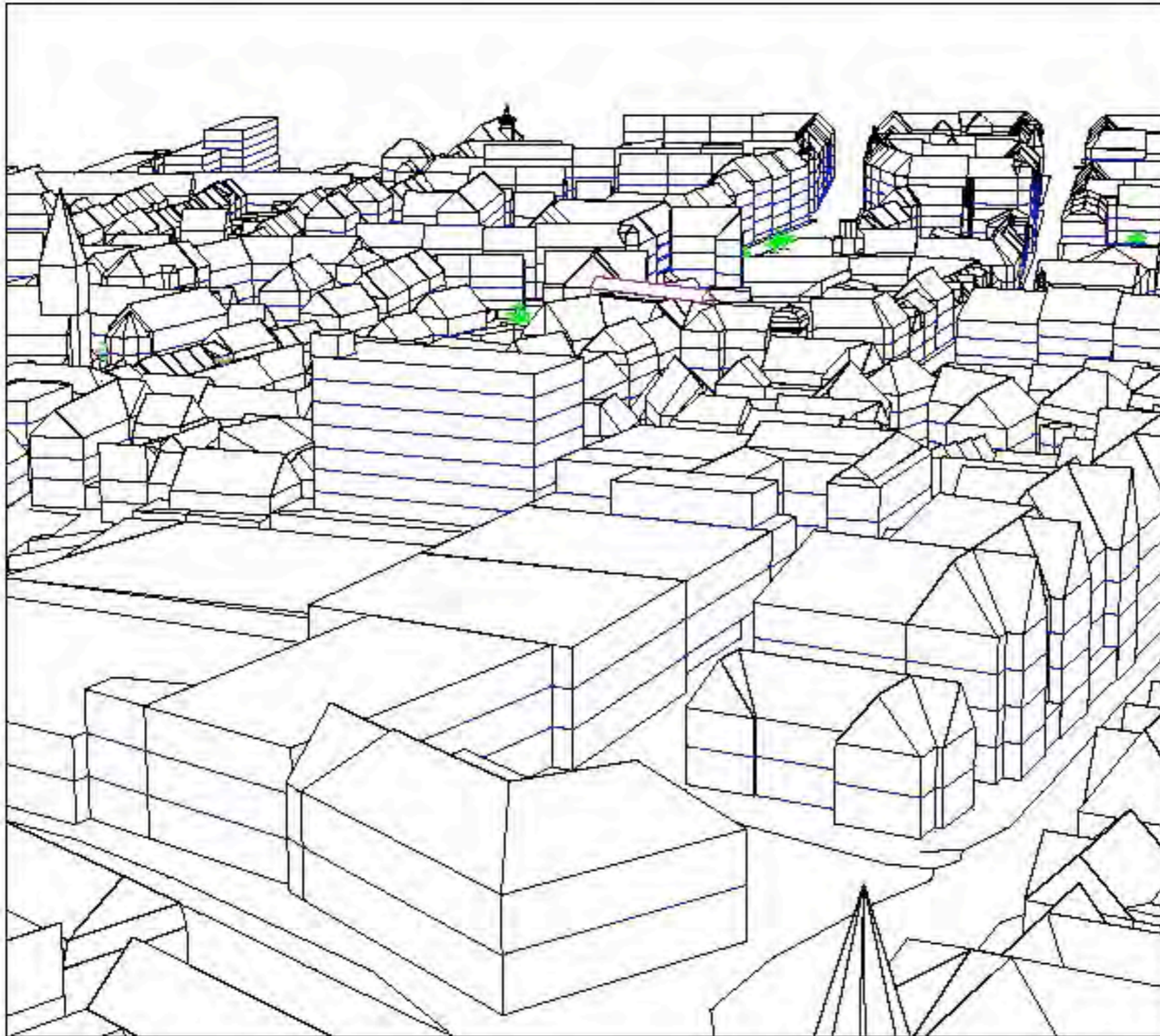
Prof. Lars Bodum
Centre for 3D GeoInformation
Aalborg University
Denmark

Agenda

- 3D mapping in Denmark
- National infrastructure for geoinformation
 - FOT - Public Common Geographic Basemap for the administration
- Geoforum - 3D committee
- Guidelines and recommendations (ver. 1)
- Recent/future work



First generation - early 90's



2nd generation - 2000/01



3rd generation - 2005/06



MIDTBYPPLANEN

EN KØRETUR AD AALBORGS
NYRENOVEREDE HOVEDSTRØG
MELLEM J.F. KENNEDYS PLADS
OG HAVNEFRONTEN

AALBORG KOMMUNE

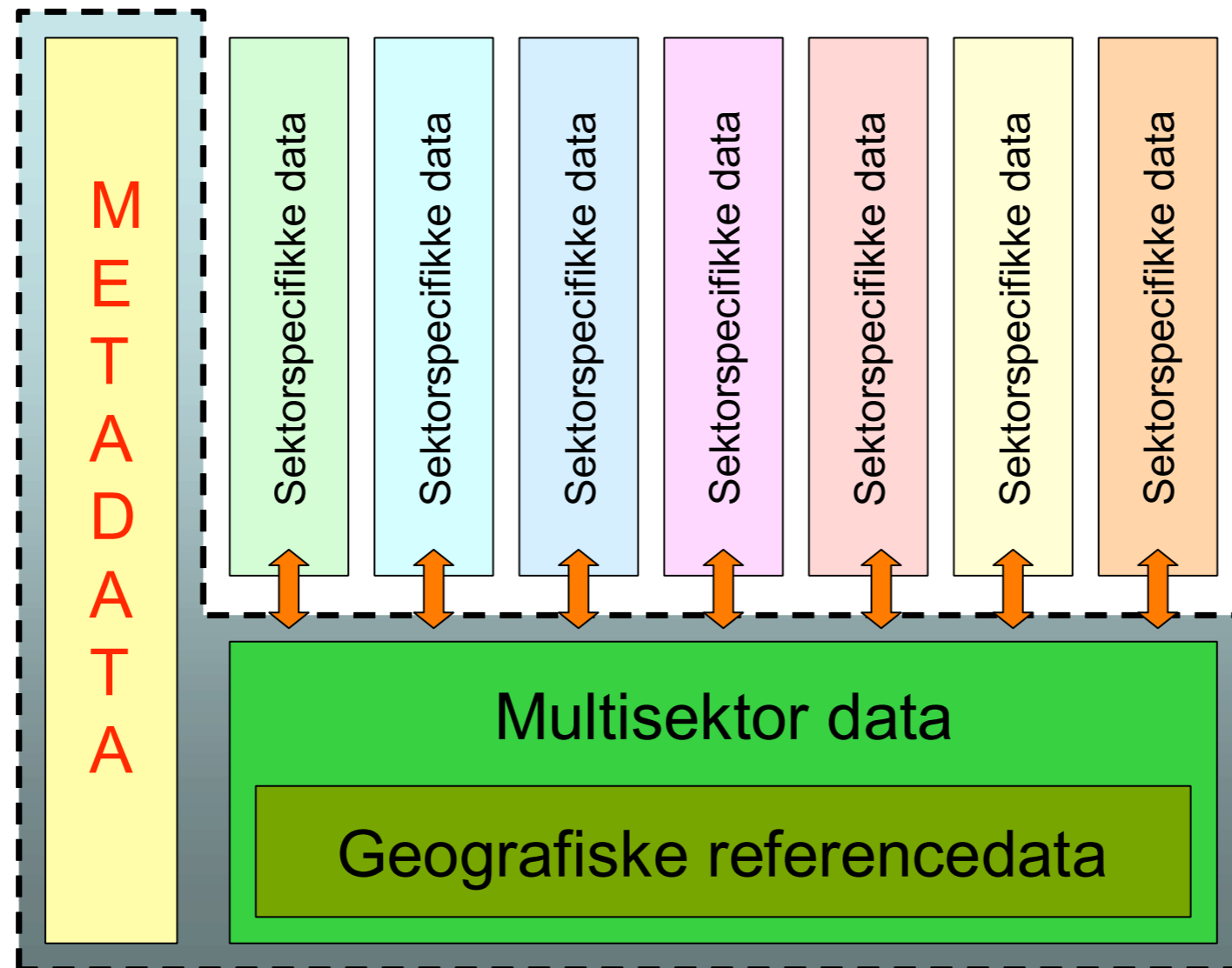


Next generation - 2010 ff.

- Object model (perhaps semantics - BIM?)
- Level of detail - probably adapt CityGML
- Each building geocoded with addresses
- Ready for web-services
- Better topological structure



National Infrastructure for Geoinformation



FOTdanmark



- FOTdanmark works for the establishment of a unified public topographic mapping of Denmark
- Wants to become one of the main elements in the national strategy for eGovernment in Denmark
- The purpose of FOTdanmark is to create a coherent mapping so that all Danish authorities – state as well as local – have a common understanding and a solid base for cooperation on a local and national scale
- The FOT-specification forms the basis for the creation of a geographic database containing a seamless and uniform set of geodata that covers all Danish territories except the Faroe Islands and Greenland

Geoforum and 3D

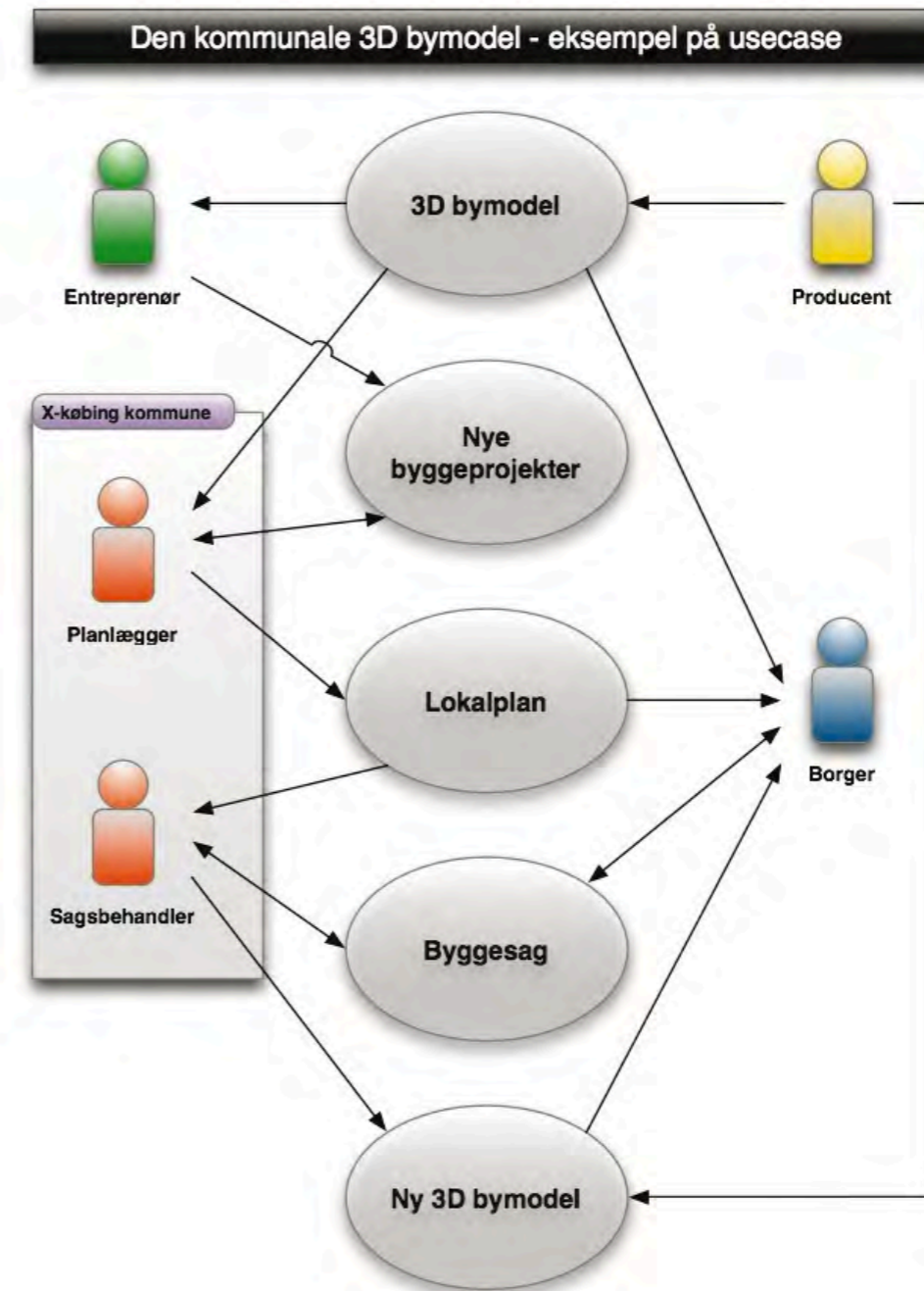
- Committee formed in 2007 with the goal of producing specifications or guidelines for 2008
- Members come from industry, NMCA and academia
- First report came in 2008 with focus on guidelines and advice for the municipalities
- The group are now working for tighter integration with existing SDI



Guidelines and recommendations - 2008



- Purpose and usergroups
- Definitions and concepts
- Typology of city models
- Practicals in production
- Exchange of 3D data
- Standards and other domains
- Good advice about updating
- Tools for handling the model
- Visualisation



Synergy between FOT and 3D

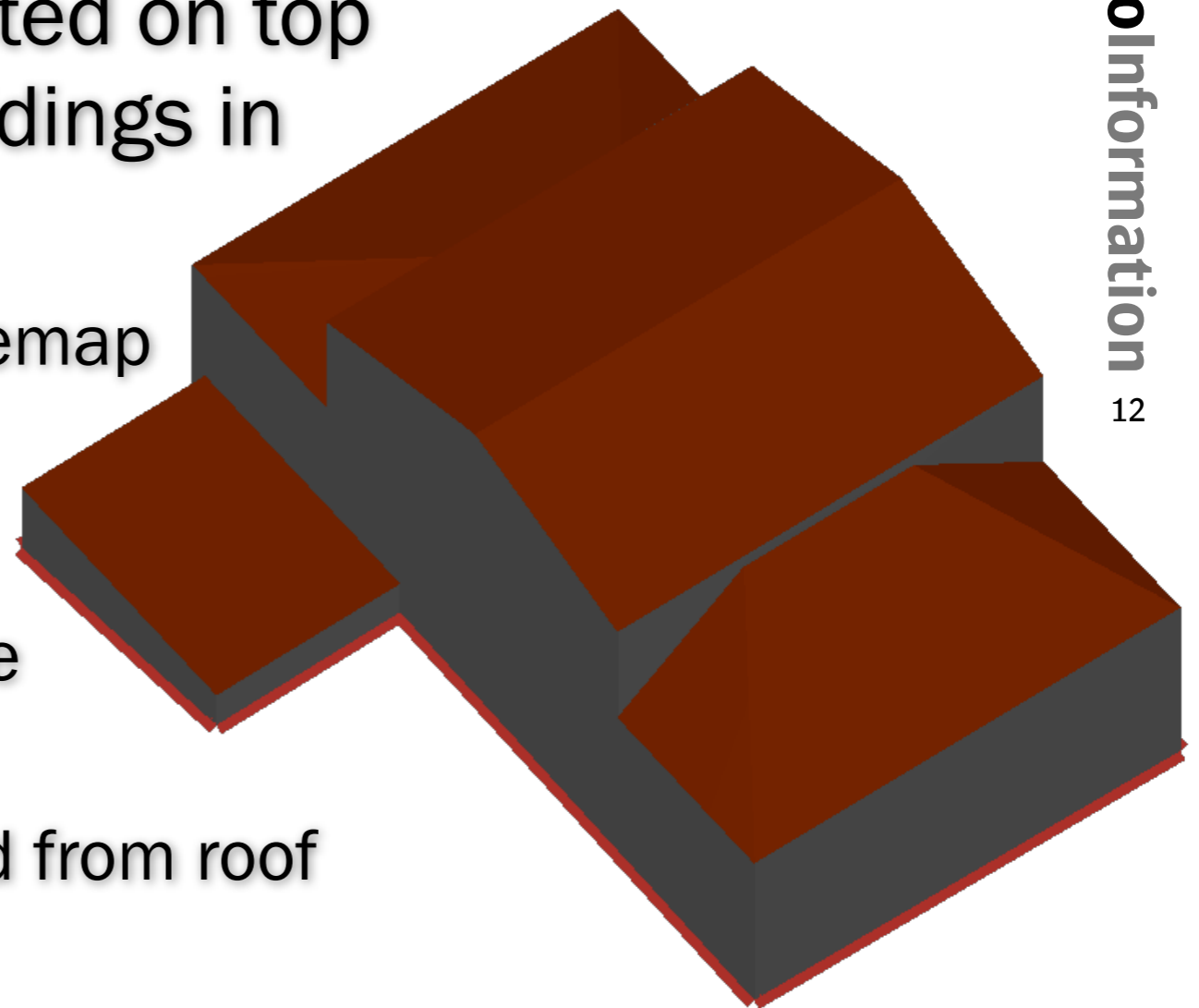


- The committee works with 3 different use-cases for an integration of FOT and 3D citymodel
 - From basemap (footprints) to 3D citymodel
 - From 3D citymodel to basemap
 - New registration of buildings in the basemap prepared to become 3D citymodel

From basemap to 3D model



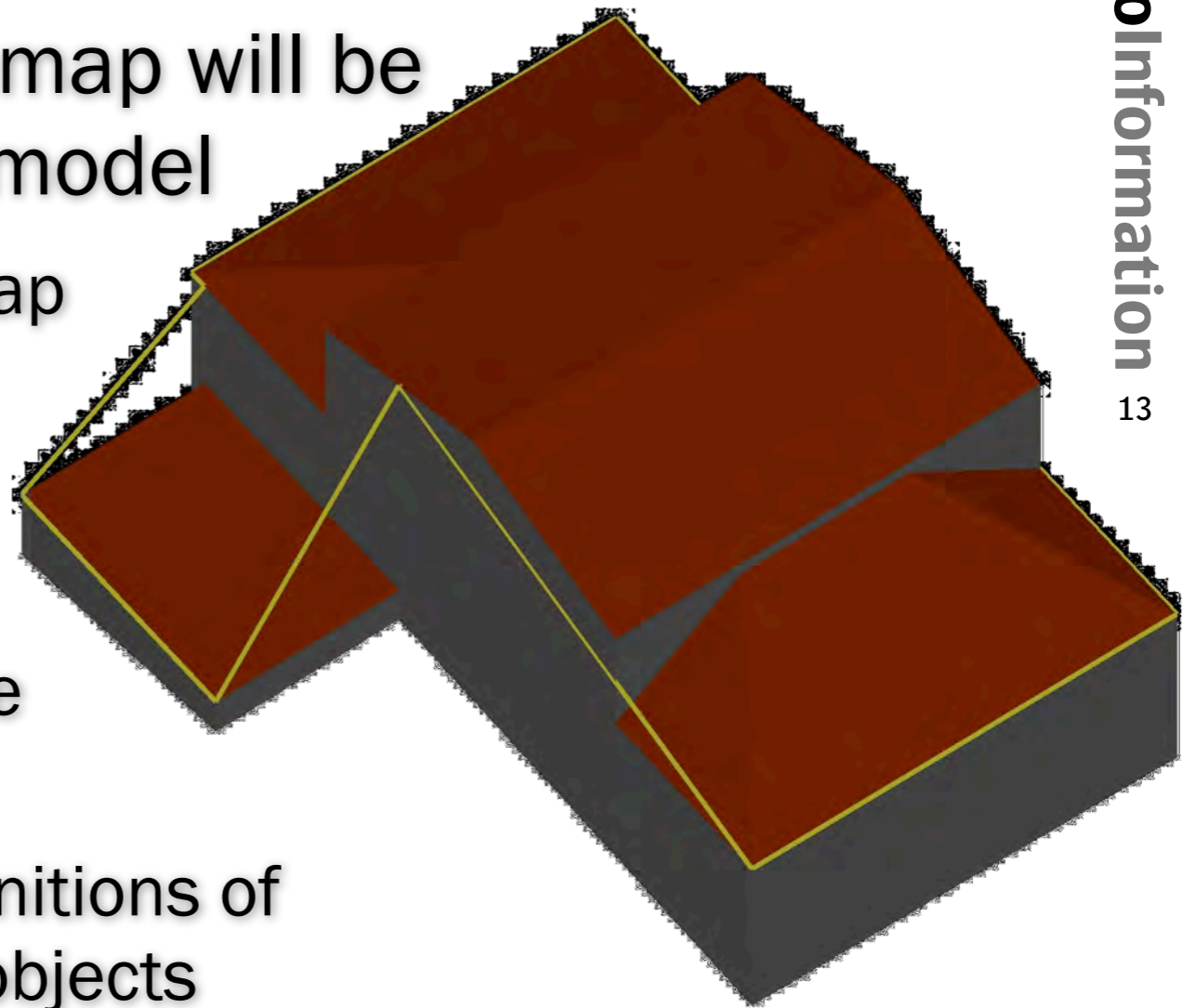
- The 3D model is constructed on top of the footprint of the buildings in the FOT basemap
 - 2D coherence between basemap and 3D building
 - Updating can be flexible
 - It should be easy to separate the data
 - Easy if basemap is produced from roof (photogrammetric)



From 3D model to basemap



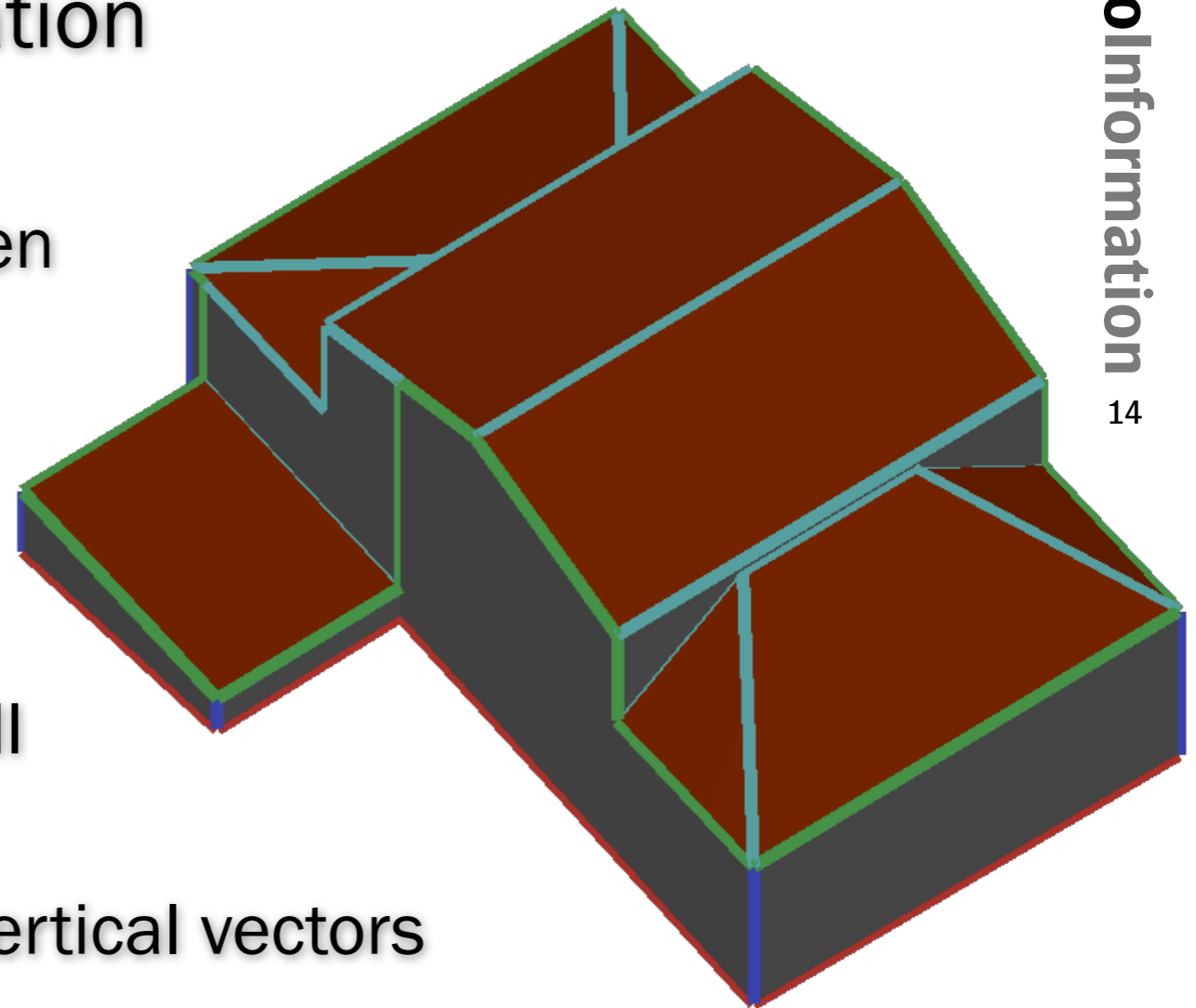
- Building rep. for the basemap will be generalized from the 3D model
 - Coherence between basemap and 3D model
 - 3D city model must be up-to-date for good result
 - Buildings in basemap will be obsolete
 - Many challenges in the definitions of buildings and attributes of objects
 - 3D city model will become future basemap



New registration of building



- New registration specification for buildings
 - Complete integration between 3D model and basemap
 - Production of basemap more expensive
 - Production of 3D models cheaper - since basemap will be main datasource
 - Technical challenges - e.g. vertical vectors and handling in DBMS
 - Possibilities for new innovative products such as automatic generated models
 - Great concept for large organisations



3D as part of the infrastructure for geoinformation - challenges

- Vertical vectors and faces (not possible in FOT2007)
- Exchange formats? CityGML and??
- Will 3D citymodel be part of the ordinary FOT call?
- What about former 3D citymodels?

