

Internship 2020 - Malmö city planning office - geodata unit

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During the time period 31st of September until the 30th of October I have spent my time doing an internship at the department of city surveying at the Malmö city planning office. The internship has been concluded in the geodata unit where the work has been focused on 3D-data. Malmö city has an ongoing work where they are attempting to shift their focus from classic map applications to 3D City Information Model (3CIM). Their current building model covers roughly 35% of the city's buildings but in the future this will increase. Therefore, the geodata unit has identified the need for a structure to support the storage and availability of this data. The possibility of implementing 3D-data in other systems is also an area of focus.

This internship has focused on investigating the conditions which would allow the storage of 3D building models to satisfy the plans and strategies of Malmö city. The following areas has been explored:

1. Data knowledge
2. Storage in 3D City Database and visualisation in GIS
3. Quality control of 3D-models
4. Availability through export

Throughout my internship at Malmö city I have gained an insightful view on how 3D-data is handled from raw point clouds and oblique images all the way to physical 3D-prints. My practical tasks involved the handling of 3D-data. More precisely, how it should be structured when storing it in databases and considering quality controls and availability through exports to other formats. In addition to this I have been given several presentations from my co-workers in order to gain a wider knowledge of what the data goes through for Malmö city to apply it for their purposes. This has involved: Raw data collection, modelling and printing.

Through my work I have discovered the lack of data interoperability between data represented in the CityGML standard and software. There is a lack of GIS-programs, both online and desktop applications, for visualising and editing CityGML. One of the main reasons for this is the complex structure CityGML inherits because of its dependence on the XML- and GML-formats. Also, CityGML is an Open Source format which may lead to the bigger software companies (Autodesk and Esri) not prioritising it properly as they want the focus to be on their proprietary solutions.