

City of Oslo



Since the 1990s the planning and building department in City of Oslo has created, maintained and developed a topological and relational database for planning data. This database has since then played a vital role as a basis for distribution and sales of map products.

Originally installed in the 1990s, the system was considerably out of date and the municipality was encountering issues of data quality, speed of processing and lack of compatibility with more modern technology. Using technology and expertise from 1Spatial, the City of Oslo has now updated its system to be more streamlined and user-friendly. Tasks can now be completed much more quickly and accurate data is widely available both internally and externally.

The Challenge

The City of Oslo has been running a planning database and applications provided by 1Spatial for over 10 years. The system was based on the Oracle 7 relational and topological database from 1990 to 2004, when it was upgraded to Oracle 9i Spatial. There were several issues with this dated system including lack of Web-compatibility and potential data errors.

City of Oslo's support on their hardware (HP-UNIX) was proving to be very expensive, and would have eventually been lost. The technology was 'old', and relied on a few individuals for support on standard modules and tailored applications. This presented further problems; it would have been difficult to expand the system and to integrate with other technology, and the new customer requirements would have been costly to develop on the old platforms.

City of Oslo wanted to considerably update their system to achieve the following objectives and requirements:

- A more open database model
- Ability to expand/change data model more easily
- More efficient editing on planning data
- Ability to tailor applications easily
- Reduce reliance on a few specialists by implementing a more mainstream hardware and software that is more widely supported
- Web compatibility
- Better print quality on planning and basemap paper plots
- More streamlined production and update of data
- Ability for WMS/WFS support
- Better and faster export functionality to more formats than SOSI and DXF
- Ability to vectorise planning raster files (symbols etc).

The Solution

The database was upgraded from Oracle 7 to Oracle 9i Spatial. All mapping objects were translated into Oracle SDO_Geometry objects, with all topological relations preserved and still a seamless database. Two physical databases were introduced, one for editing and one for distribution. Tools to keep them synchronized were also developed.

The previous editing application was replaced with Radius Vision, with additional tailored scripts to meet the special requirements of planning data editing.

GINIS PlanWeb was upgraded to display intelligent vector data directly from Oracle Spatial and linked to other web solutions (web order system, web cadastre application and the document management systems web solution) to provide a complete and very powerful solution for map distribution.

All applications (editing and web) now read directly from Oracle Spatial, and plot servers also read directly from Oracle Spatial schema.



The Results

The implementation of the 1Spatial solution enabled City of Oslo to achieve all its objectives, and with the following benefits:

- Full data export time reduced by more than 80%; now takes less than an hour
- Easier and more effective maintenance of both hardware and software
- Use of Oracle Spatial; possibility to run on latest Oracle versions and take advantage of Oracle Spatial functionality
- Moving to the latest versions of 1Spatial software ensures easy future upgrades
- More accurate data due to topological database model including node storage
- Open and flexible data model means that the system can be easily expanded
- Data update to the distribution database is simpler and faster
- Editing of planning data much more efficient and less time-consuming
- All planning data and information linked together, meaning that all necessary and accurate information is available both internally and to customers

As a result of the upgrade to the database and overall system, City of Oslo now have a more streamlined solution for both editing and distribution of planning data. The editing can be performed quickly, much more efficiently and the quality of the data is greatly improved. They are no longer dependant on old Unix systems; the database and solutions are now much more flexible and standardised, making it much easier to maintain and expand.

The sale of planning maps by the City of Oslo has greatly increased in the past few years. The new 1Spatial solution is mission-critical for them; it will ensure that their data is accurate, that their business processes remain efficient, and will continue to assist them with the production of high quality products.

<http://www.pbe.oslo.kommune.no>
<http://poi.extra.oslo.kommune.no/poi>

The Future

Further developments will be made to automatically produce PDFs to customers instead of the current paper plots, and to increase support to more data types such as water, sewage and environmental data. There are also plans to upgrade the database to Oracle 10g.

“Having used Radius Vision, and its predecessors, gives us a long history with different versions from 1Spatial. Upgrading the database to Oracle Spatial gave us a great opportunity to use the data in new ways. The ability to use the web interface for viewing data improved access for all users, and gave possibility to distribute information easier. The new PDF solution will be a great asset to our production line.”

**Bjorge Stavik, Chief Engineer,
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