

URBAN GEOLOGICAL MAPPING IN SWEDEN, THE GÖTEBORG CASE STUDY

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A principal task for the Geological Survey of Sweden in the next years is to supply urban areas and their vicinities with basic and applied geological information. Specific information packages for each city will be designed in collaboration with the main users. Databases on bedrock composition, Quaternary deposits (including marine sediments) and groundwater resources will be compiled. Chemical analyses of soils, sediments, surface- and groundwaters as well as specific geochemical investigations are included as a main reference for various environmental studies.

In Göteborg, mapping is presently in progress in the first major geo-urban mapping project. This coastal town (approx. 500 000 inhabitants), is characterized by small hills (100 m.a.s.l.) of Precambrian bedrock and valleys predominantly filled with clay. Only few coarse-grained glacial deposits are present at the surface and they have been extensively exploited during the last decades. Bedrock of good quality is investigated, as being the only available source for new material. Moreover, pits in the sorted deposits are often filled with building waste, also limiting their use as groundwater reservoirs. A potential alternative groundwater resource is confined aquifers frequently occurring in the valleys beneath the clay. Their location in the valleys coincide with the urbanised parts of the town and subsidence of the overlying clay prohibits any extensive discharge from most such confined aquifers. Salt groundwater is also common in this region. Other environmental aspects are studied by analysing sediments, groundwater and soils at representative sites within the city centre and in the near vicinity of Göteborg.