

what is the purpose of a soil investigation programme? explain the different stage of the investigation.

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The purpose of a soil investigation program is to obtain information about the soil and other subsurface conditions at a site to determine the geotechnical properties of the soil and the potential for any soil-related problems that may arise during or after construction. This information is essential for the design and construction of various types of structures such as buildings, roads, bridges, dams, and other infrastructure projects.

The different stages of a soil investigation program include:

1. Desk study: This involves gathering all available information about the site and its surroundings, including maps, aerial photos, geological reports, and any previous soil investigation reports.

2. Field investigation: This stage involves carrying out a site survey, which may include drilling boreholes, conducting geophysical surveys, excavating trial pits, and collecting soil samples for laboratory

testing. The information collected during this stage is used to determine the soil profile, soil type, groundwater level, and other subsurface conditions.

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3. *Laboratory testing:* This stage involves performing various tests on the soil samples collected during the field investigation, including tests for soil classification, moisture content, shear strength, compressibility, and permeability. The test results are used to determine the soil's properties and to assess its suitability for the proposed construction project.

4. *Data analysis and reporting:* This stage involves analyzing the data collected during the field investigation and laboratory testing and preparing a report that summarizes the findings. The report includes recommendations for the design and construction of the proposed project, including recommendations for foundations, slope stability, and soil treatment if necessary.

5. *Follow-up investigation:* This stage involves monitoring the site during and after construction to ensure that the recommendations

in the soil investigation report are being followed and to detect any unexpected changes in the soil conditions that may require remedial action.

Overall, a soil investigation program is critical in ensuring the safe and cost-effective design and construction of structures, and it helps to minimize the risk of soil-related problems that can cause delays, cost overruns, and even failure of the project.

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