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Civil engineering summary: cost drivers, risk factors, schedule for preparatory phase

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This presentation summarizes the civil infrastructure required to accommodate the hadron and lepton machines proposed for the Future Circular Collider. With the aid of a bespoke web-based tool, the position of the FCC tunnel has been optimised by integrating aspects such as geology, surface constraints and particular functional requirements of the tunnel system. This presentation will describe the developments of the baseline design and tunnel layout following the review of the surface sites and assessment of geological conditions. The civil engineering infrastructure will be built in a variety of ground conditions from limestone and molasses to water bearing moraines. A preliminary risk assessment has been carried out for the planned underground works, describing the main risk factors and proposed mitigation measures. The schedule for the preparatory phase will be shown along with the required types of site investigations. Detailed cost and schedule studies were conducted by the civil engineering expert company ILF. In addition to the bottom up approach to cost estimating, a 'scatter' graph showing comparable tunnelling projects and associated costs will be presented.

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