

# Manual-Shield Tunnelling Construction

**This northern section of the tunnel had to be excavated using a tunnelling shield to bore through solid earth. A formwork shield served as a temporary support structure that protected the workers from cave-ins as they laboured within it, digging the tunnel out in front of them.**

**The stone tunnel structure was built by masons at the trailing end of the shield, and the shield was then jacked forward as excavation continued.**

**This technique was the forerunner of modern tunnel-boring machines.**

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