821076 IMPACT BREAKERS FOR SHAFT SINKING
Beus, M J; Phillips, S H E
Proc 5th Rapid Excavation and Tunneling Conference, San Francisco, 3-7 May 1981, V1, P815-830. Publ New York: AIME, 1981

Describes impact rock breaking equipment and its advantages over conventional drill and blast techniques. Gives results from preliminary field tests in Arizona, USA for performance of the technique. The shaft sinking system with this method is outlined.

821077 LESS CONVENTIONAL UNDERGROUND COAL MINING
Wood, P A
IEA Coal Research report ICTIS/TR12, Sept 1980, 85P

Reviews the literature on and discusses the following methods: auger mining, chain cutters and scraper ploughs, water jets, hydraulic borehole mining, in situ chemical comminution, mining systems operated from above ground, nuclear explosions. 165 refs.

Avail: IEA Coal Research, 14-15 Lower Grosvenor Place, London, SW1W OEX, UK

Tunnels

See also: 821073, 821121, 821149, 821154, 821155, 821156

821078 CHAINSAW SCORES ON LILLE'S NEW METRO
New Civ Engr, N465, 5 Nov 1981, P40-42

A brief report of the project including pregrouting and the use of a chainsaw to cut a 2m deep groove in the tunnel face along the tunnel roof profile, the slot is then grout filled and the material beneath excavated using a roadheader.

821079 GROUND CONTROL TECHNIQUES COMPARED IN THREE BRAZILIAN WATER TUNNELS. PART 1
Negro, A; Eisenstein, Z
Tunn Tunnlg, V13, N9, Oct 1981, P11-13

Three different tunnelling methods in nearly identical tunnels in soil were compared: full face excavation with steel segmental lining plates, berm-protected face excavation with horseshoe steel ribs and timber lagging, and the New Austrian Tunnelling Method (NATM). The paper concentrates on the geotechnical performance, particularly surface settlements and displacements within the soil mass, and their sources.

821080 NORWAY DRIVES FOR LOW COST ROAD TUNNELS
Martin, D
Tunn Tunnlg, V13, N9, Oct 1981, P35-39

Norway has developed techniques to reduce the cost of tunnel construction. Choice of site, smooth blasting techniques and tunnel support contribute to this. Three case studies (including the Holmestrand by-pass and the Hoyanger Tunnel) are given as illustration. Several types of tunnel lining are available for frost protection.

821081 BUDAPEST METRO - EXPANDING A CENTURY-OLD TRANSIT NETWORK
Rozsa, L
Underground Space, V6, N1, July-Aug 1981, P48-52

A general description of the expansion of the Budapest Metro, Hungary. The geotechnical conditions are outlined. Concrete segments are used for the tunnel lining.

821082 JAPAN'S NAKAYAMA TUNNEL
Paulson, B C
Underground Space, V5, N6, May-June 1981, P337-343

Briefly describes the geology of and construction methods for the 3800m long Nakayama Tunnel, Japan, including the excavation sequences used.

821083 CRITICAL OESERVATIONS ON CRITERIA FOR THE USE OF MACHINE DRIVAGE IN ROCK AND IN THE SEAM AND THEIR ECONOMIC VIABILITY COMPARED WITH SHOT-FIRING (IN GERMAN)
Morgen, W
Nobel Hefte, V46, N4, Oct-Dec 1980, P121-129

Discusses the use of full face machines in stone drifts and point-attack machines in coal.

821084 GROUTING AND EXCAVATION IN THE CONSTRUCTION OF THE SEIKAN TUNNEL
Mochida, Y
Proc 5th Rapid Excavation and Tunneling Conference, San Francisco, 3-7 May 1981, V1, P101-117. Publ New York: AIME, 1981

Describes the topography and geology of the Seikan Tunnel, part of which is below the sea. The design and application of suitable grouting to create a water-proof zone is described. The excavation work for parts of the pilot tunnel and main tunnel are described.

821085 RED HOOK INTERCEPTING SEWER. A COMPRESSED AIR TUNNEL CASE HISTORY
Casey, E F; Ruggiero, J G
Proc 5th Rapid Excavation and Tunneling Conference, San Francisco, 3-7 May 1981, V1, P179-200. Publ New York: AIME, 1981

821086 SHIELD TUNNELING PERFORMANCE AND BEHAVIOR OF SOFT GROUND, OSAKA, JAPAN
Kitamura, M; Ito, S; Fujiwara, T
Proc 5th Rapid Excavation and Tunneling Conference, San Francisco, 3-7 May 1981, V1, P201-220. Publ New York: AIME, 1981

Describes, in the form of construction examples, the development and performance of earth pressure shields for the Tennohji-Benten Giant Trunk Sewer in Osaka, Japan and the resultant ground surface settlements. The use of the freezing method of soil stabilisation is described, with the effect of frost heaving and thaw settlement.

821087 RECONSTRUCTION OF THE MAIN INTERCEPTOR SEWER LOWER BRISTOL ROAD, BATH
Moss, A F
Proc 5th Rapid Excavation and Tunneling Conference, San Francisco, 3-7 May 1981, V1, P221-240. Publ New York: AIME, 1981

Outlines the history and reconstruction by pipe jacking of the main interceptor sewer. Unforeseen ground conditions due to misinterpretation of data meant design changes and use of other techniques, considerably extending the construction programme. The geology of the site is described, together with the specially designed head plate shield, face probing equipment and horizontal air locks.