VI Seminario Peruano de
Geoingeniería
30 DE NOVIEMBRE
1 Y 2 DE DICIEMBRE
2022

Sociedad Peruana de Geoingeniería
Grupo Nacional del ISRM
International Society for Rock Mechanic and Rock Engineering
ISRM

Topic: "CHALLENGES, RISKS AND RISK MITIGATION IN DEEP UNDERGROUND MINING".

- Professor Emeritus and Inaugural Holder of the Lassonde Chair in Mine Design, Lassonde Mineral Engineering Program, Department of Civil and Mineral Engineering, University of Toronto, 1997 – 2013.
- Inaugural Chair in Mine Design and Department Head, Department of Mining Engineering, Queen's University, 1988 – 1997.
- Eleven years in various industry positions including Head of Rock Engineering, Noranda Mines Technology Center.
- CEO and founding partner, Mine Design Techologies, 1997 – present.
- Founder and President, Bawden engineering Ltd, 1988 to present.
- Consultant to many domestic and international mining companies.

William Frederick Bawden

Conferencista Magistral

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The paper will review the challenges, and in some cases, extreme risks commonly encountered when mining at great depth in hard, brittle rock masses. For context, mining at great depth is assumed to imply mining at depths in excess of 1,000 m below ground surface. The author has experience working with mines extending in excess of 3,000 m below ground surface. The paper will focus primarily on rock engineering risks [e. g. very high rock stresses; rock bursting; ground support; hole squeeze; ore pass erosion/failure; etc.]. The paper will also address risk due to extreme temperatures, [e. g. heat stroke; extremely hot water; etc.], commonly associated with mining at great depth as this can pose serious risk to mine personnel. Potential risk mitigation measures, [e. g. instrumentation; dynamic support; exclusion zones; re-entry times; destress blasting; automation; etc.], and the present limitations of such techniques, will also be discussed. Associated risks [e. g. infrastructure damage; cost control; etc.] will be briefly touched on. In addition, the paper will demonstrate that many of these same risks can be encountered in much shallower mines if an appropriate mine design is not selected.

William Frederick Bawden
Conferencista Magistral