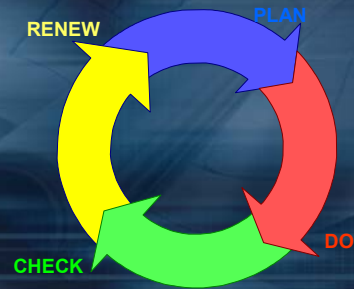


Sustainability Interface Workshop 2003

Industry Canada
Vancouver, June 19 2003



SMS



Activities

Set of human actions,
ranging from paid work to
free occupations.



Engineering Activity

Building a bridge is
Good for the economy
Well-performed by engineers /
geoscientists
Fully supported by APEGBC



SUSTAINABILITY

ACKNOWLEDGING THOSE OFFICIALS ASSOCIATED
WITH ITS DESIGN AND CONSTRUCTION

MINISTRY OF SUSTAINABLE MANAGEMENT

HON. A.V. FRASER
T.R. JOHNSON, P.ENG.
R.G. WHITE, P.ENG.

MINISTER
DEPUTY MINISTER
ASSISTANT DEPUTY MINISTER
(HIGHWAYS OPERATIONS)
EXECUTIVE DIRECTOR, ENGINEERING
DIRECTOR OF BRIDGE ENGINEERING
BRIDGE CONSTRUCTION ENGINEER (ANN
SPECIAL PROJECTS ENGINEER

CONSULTING ENGINEERS: SUSTAINABILITY NOW INC.

M.G. ELSTON, P.ENG.
L.G. JOHNSON, P.ENG.
P.H. BRETT, P.ENG.
B.N. MCKELWYN, P.ENG.

PROJECT MANAGER
CHIEF DESIGN ENGINEER
RESIDENT GEOSCIENTIST

CONTRACTOR: DO IT!

W. WEIR, P.ENG.
P.R. TAYLOR, P.ENG.
D.E.V. BOYD, PGEO
R.F. SANDERSON, P.ENG. PROJECT ENGINEER

Engineers Geoscientists Activities

What are they good at?



Diversity of activities

Type of activity may depend on

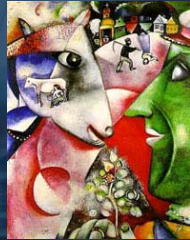
Discipline: Agriculture, bio, chemical, civil, structural, computer, electrical, electronic, forestry, geological, industrial, mechanical, metallurgical, mining, surveying, geoscience, geology, geochemistry, geophysics, geotechnics

Education: BSc, MSc, MBA, PhD.

Responsibility: Management, supervised, EIT/GIT

Location: City, plant, remote site, overseas

Sector: Consulting, utilities, government, primary and resource industry, construction, high tech, service



Engineers and Geoscientists Activities

What activities do engineers and geoscientists perform well?



Sustainable Activities



Sustainability: original

"...meets the needs of the present without compromising the ability of future generations to meet their own needs". Bruntland

Intergenerational equity

Sustainability: conservation

"...leave the world better than you found it, take no more than you need, try not to harm life of the environment, make amends if you do..."

Paul Hawken

the ecology of commerce: preserve the natural capital

Sustainability: well-being

"...parallel care and respect for the ecosystem and for the people within." NRTEE

the goal of sustainability: to achieve human and ecosystem well-being together.

Result-based pro-active approach

Measurement of benefits, instead of setting limits to negative impacts

Six Sustainability Issues

Water
Climate Change
Energy
Natural Resources
Consumption
Poverty

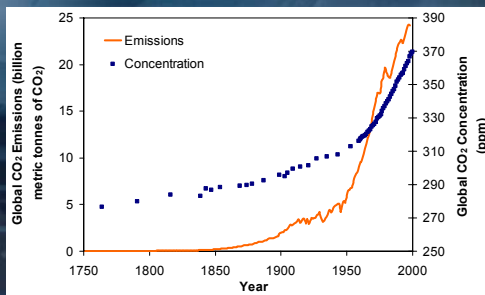


Water

Water demand doubles every 20 years.
1/3 of humanity have water shortage.
At current rate, all surface water will be consumed in 2100

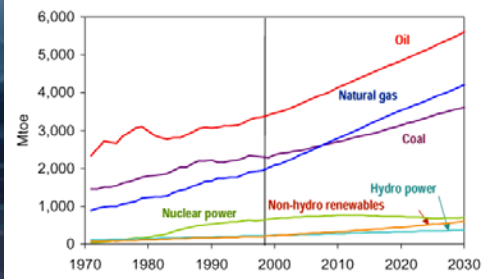


Climate Change



Energy

World Primary Energy Demand



IEA 2002

Natural Resources

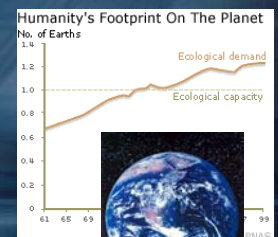
15% of land cover degraded
50% rivers are polluted or depleted
33% fish stocks damaged
2.4% forest fallen in 10 years



Consumption

Human consumption now exceeds earth's ecological capacity

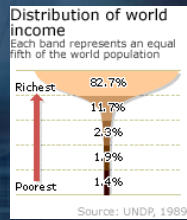
We have only one planet



Planet Earth

Poverty

25% of the world population is surviving with less than \$1 a day.



Connexity



Sustainability Activities

What activities in general lead to sustainability ?



...whether performed by Eng/Geo or not.

SMS



Road Map



Sustainability Guidelines

Develop awareness
Fully investigate the impact of potential actions
Evaluate alternative solutions
Consultation and Partnership

from "either or ..."

to

"... and ..."



Sustainable Management System

Integration in APEGBC activities and standards
Funding
Awareness & training
Communication
Monitoring
Reporting and renewal



Results

Funding
Sustainability researchers (2001-2004)
Primer (6 modules)
Communication plan
Sustainability.ca Web site (30,000 session this year)
Sustainability Now Newsletter (5 themes)
LEED
CPD modules
Doors to Sustainability Exhibition



Primers

General: What is sustainability
Guidelines explained
Municipal
Mining
Green Building
Climate Change
Transportation
Energy
Material
Industrial, eco-efficiency



Implementation - Integration

EIT/GIT requirements
Licensing requirements
Practice review Guidelines
Professional Practice Guidelines
Award



Interface

Eng-Geo Activities

Eng-Geo



