Engineering Geology (4)

- Discontinuity as geological structure
- -joints
- -bedding plane
- -fault
- -fold
- -fracture
- -fissure

- Joints according to rock type:
- -sheeting joint (granite)
- -bedding joint (sedimentary rock)
- -columnar joint (basalt)

- Joint vs microcrack

- Bedding plane:
- -itself is not broken plane
- -does not always occur with joint
- -however it is a kind of potential failure plane and sometimes occurs as joint after tectonic process such as compression
- -it should be considered as discontinuity

- Fault
- -Normal, Reverse, Strike-slip, Thrust

- -movement along the plane
- -always with other parallel fractures
- -considered as discontinuity

- Fold
- -itself does not mean any discontinuity but often accompanies joints due to the tensile stress from bending moment

- Engineering assessment of discontinuity
- -frequency of discontinuity is important
- (i.e.) more discontinuity means less stable, less strong rock mass

- -orientation of discontinuity is also important for the stability of ground
- (i.e.) vertical joint over tunnel

- Engineering assessment of discontinuity
- -both frequency and orientation of discontinuity are evaluated using stereographic projection method
- (e.g.) DIPS software