

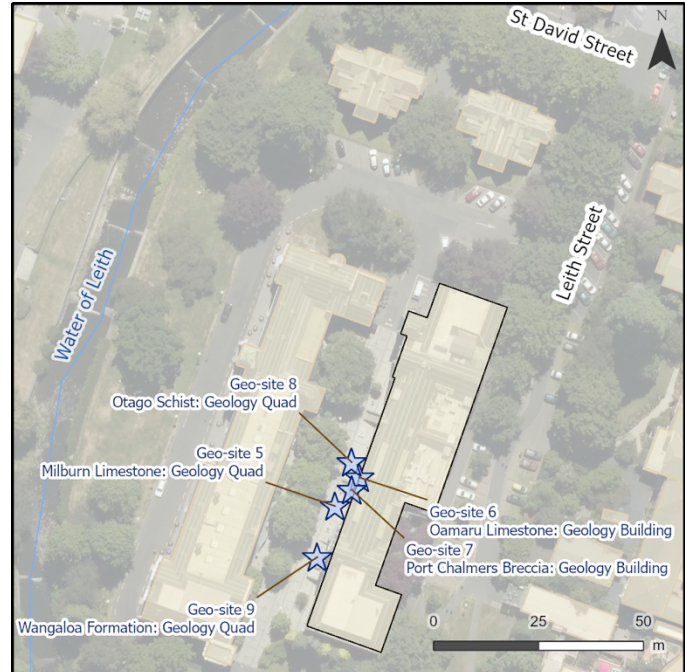
# Otago Schist: Geology Building

## Site 8: Campus Geosites @ Otago

**Location:** In the quadrangle in front of the Geology Building (west side of building)

**Learning outcome:** Understand and describe some key characteristics of schist, a common metamorphic rock.

**Keywords:** Metamorphic rock; Schist; Foliation



*Metamorphic rocks* arise from the transformation of existing rock types during a process called metamorphism, which means "change in form". The original rock ("protolith") is subjected to heat and pressure, causing significant physical and/or chemical changes. The protolith can be a pre-existing sedimentary, igneous, or metamorphic rock.

*Schist is a metamorphic* rock formed from mudstone or shale. Schist has a strong foliation, and often contains abundant platy and elongate minerals.



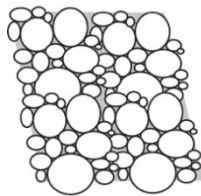
Figure 1: Chlorite-zone schist with folds and quartz veins



## Exercises

- 1) Look at all sides of the specimen and describe the range of colors that you can see.
- 2) Based on the images of crystalline and granular rock textures below, what is the correct textural term to describe this schist?

Granular



Crystalline



A *granular rock* contains grains that were deposited. Most sedimentary and volcaniclastic rocks are granular. The areas between grains can either be empty (pore space) or filled. A very wide variety of granular textures occurs.

A *crystalline rock* is composed entirely of crystals that formed during cooling and crystallization of magma/lava, or by recrystallization during metamorphism. The crystals are often tightly-packed. A very wide variety of crystalline textures occurs.

- 3) Can you recognize any geological structure? (Hint, look at the Figure 2)





*Figure 2: Detailed photo of chlorite-zone Otago Schist*

- 4) Identify a folded layer in the photo above. Sketch the layer as accurately as possible, then annotate the hinge and the limbs of the fold(s).

