Faculty of Engineering  
Summer Research Program 2020-2021  

Project Title: Repurposing of abandoned quarries / mines: the good, better and best examples around the world  
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**Objective**

In parallelising the work here are how the various elements transfer:

- End use cases (whether it's 101 or just a handful of uses) should be based on what we know so far of what people have done and what we think are useful
- Factors or criteria should be based on a range of multi-criteria (i.e. environmental, social, economic, technical, etc.)
- We need to know the location attributes, i.e. what locations are suitable for what rehabilitation applications and whether the current abandoned quarry (which we could assess against our classification system) are suitable for particular uses

The student would undertake a summer research project, hopefully a follow-up FYP project next year, looking at bringing in structure and proper framing to this problem statement

- A review of existing and new uses for abandoned mines
- Find case studies around the world of where this has already been accomplished
- Use the literature to come up with a list of suitable criteria into the multi-criteria group i.e. social, economic, environmental, technical, planning, etc. (criteria to be determined)
- Bring some structure into this whole story in a decent review paper

**Project Details**

Mining is important to the Australian economy contributing to roughly 10% of the Australian GDP. Although it brings positive impacts towards the community and economy it can also create negative impacts from poor rehabilitation and closure. Neglected mines (also known as abandoned, legacy, derelict or orphaned mines) are mines that have not been terminated and have no obvious owner. A mine that is neglected usually has little to no rehabilitation, creating potential risks to the environment and community such as pollution (acid mine drainage & heavy metal runoff), subsidence and poor vegetation regrowth.

**Prerequisites**

Current ability to use GIS software and Google Earth is beneficial but can be self-taught. Mining or Environmental Engineering students are preferred.

**Additional Information**

This is fantastic opportunity for high achieving students be able help the Government of Australia’s policy on rehabilitation of mining and resources projects. The previous work by student’s FYP work been submitted to the Australian Senate Committee's current inquiry (submission 74 at the following link):

https://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Environment_and_Communications/Mining andResources/Submissions

These research findings have been submitted to the Australian Senate Committee's inquiry into the rehabilitation of mining and resource projects:


https://www.mdpi.com/2075-163X/10/9/745