QUARRY RECLAMATION: A review of techniques

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Quarrying and its Impacts

- Quarrying and environmental impacts
  - Sources of impact
    - Land degradation
    - Waste piles
    - Waste water storage
    - Interference with biodiversity
    - Soil erosion
    - Plant (rock storage structure, conveyor belt, machinery)
    - Quarry wall (contrast and line)

- Affects landscape visual
Reclamation

- Abandonment of decommissioned quarries (legacy)
- Legislation (1948)
- “Licence to Mine”
- Development of reclamation techniques
  - Rollover slopes
  - Bench planting
  - Backfilling
  - Restoration blasting
Reclamation

- Can enhance environmental quality
  - Restore chemical, physical and chemical properties of soils
  - Biodiversity
  - Human activity
  - Visual quality
  - Create, preserve habitats for fauna and flora
  - Industrial archeology
Dirt Low Rake quarry
Reclamation

- Two major landscape elements
  - Quarry landform
    - Quarry wall
      - Quarry face (provide the most reclamation challenge; safety, visual quality, form and color contrast).
    - Bench
  - Floor
Reclamation

- Several techniques developed to reclaim quarries
  - Rollover slopes (Hope Cement Works quarry)
Reclamation

- Bench planting (Dene quarry)
Reclamation

- Backfilling (Holme Hall quarry)
Reclamation

- Restoration blasting

Great Rock Dale

Tunstead quarry

- Headwall
- Buttress
- Scree
Reclamation

- Choice of technique;
  - Intended after-use
  - Intended final grade
  - Character of the surrounding landscape
  - Availability of suitable topsoil
  - Availability of fill material
  - Cost
  - Significance and character of the regional landscape
  - Availability of technical expertise
Conclusion

- Challenges in reclamation
  - Establishment of vegetation
  - Availability of topsoil
  - Accessibility to parts of a quarry

- Selective treatment
- Industrial archeology
Thank you

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