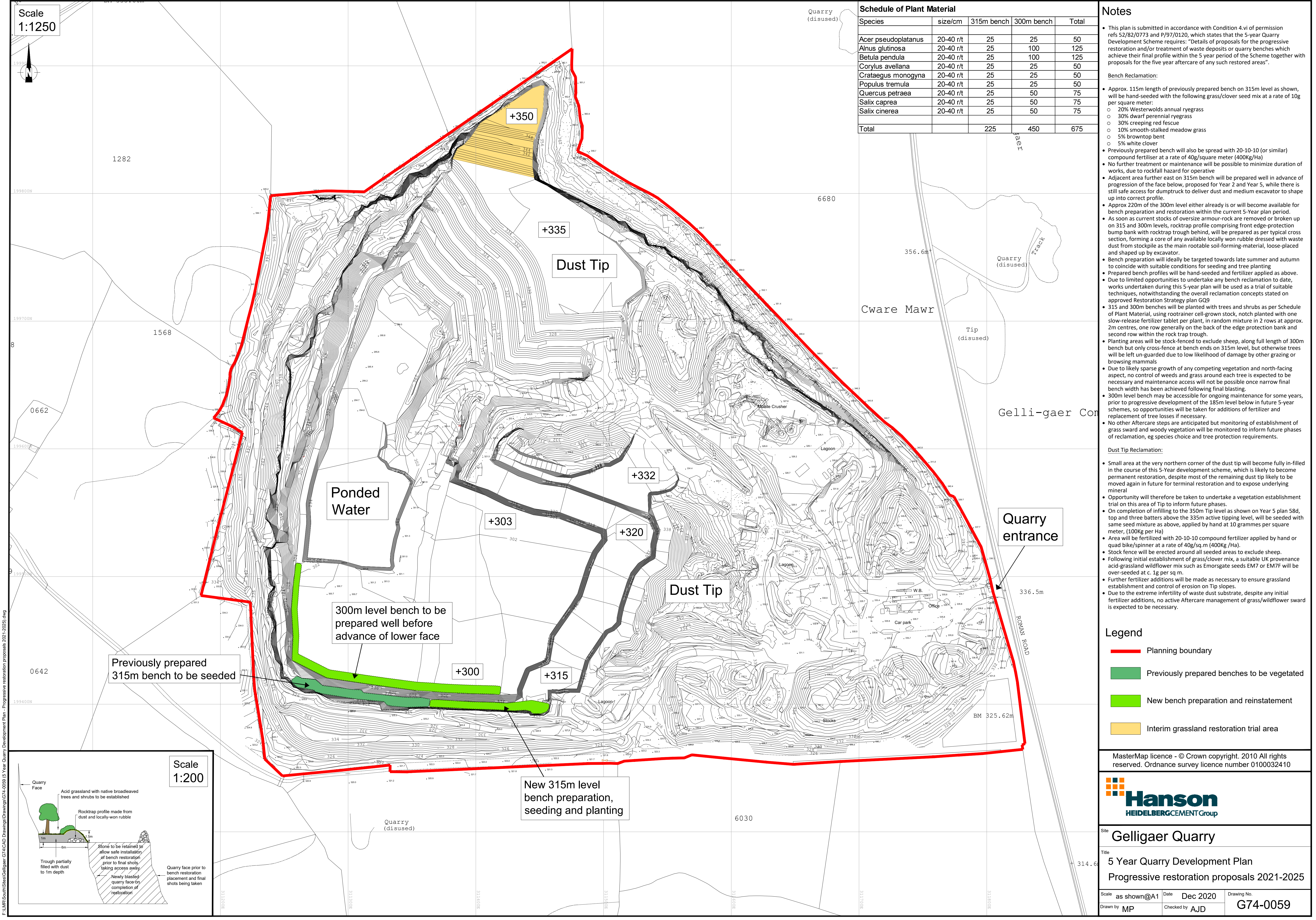




Schedule of Plant Material				
Species	size/cm	315m bench	300m bench	Total
Acer pseudoplatanus	20-40 r/t	25	25	50
Alnus glutinosa	20-40 r/t	25	100	125
Betula pendula	20-40 r/t	25	100	125
Corylus avellana	20-40 r/t	25	25	50
Crataegus monogyna	20-40 r/t	25	25	50
Populus tremula	20-40 r/t	25	25	50
Quercus petraea	20-40 r/t	25	50	75
Salix caprea	20-40 r/t	25	50	75
Salix cinerea	20-40 r/t	25	50	75
Total		225	450	675

- Notes**
- This plan is submitted in accordance with Condition 4.vi of permission refs 52/82/0773 and P/97/0120, which states that the 5-year Quarry Development Scheme requires: "Details of proposals for the progressive restoration and/or treatment of waste deposits or quarry benches which achieve their final profile within the 5 year period of the Scheme together with proposals for the five year aftercare of any such restored areas".
 - Bench Reclamation:
 - Approx. 115m length of previously prepared bench on 315m level as shown, will be hand-seeded with the following grass/clover seed mix at a rate of 10g per square meter:
 - 20% Westerwolds annual ryegrass
 - 30% dwarf perennial ryegrass
 - 30% creeping red fescue
 - 10% smooth-stalked meadow grass
 - 5% browntop bent
 - 5% white clover
 - Previously prepared bench will also be spread with 20-10-10 (or similar) compound fertiliser at a rate of 40g/square meter (400Kg/Ha)
 - No further treatment or maintenance will be possible to minimize duration of works, due to rockfall hazard for operative
 - Adjacent area further east on 315m bench will be prepared well in advance of progression of the face below, proposed for Year 2 and Year 5, while there is still safe access for dumptruck to deliver dust and medium excavator to shape up into correct profile.
 - Approx 220m of the 300m level either already is or will become available for bench preparation and restoration within the current 5-Year plan period.
 - As soon as current stocks of oversize armour-rock are removed or broken up on 315 and 300m levels, rocktrap profile comprising front edge-protection bump bank with rocktrap trough behind, will be prepared as per typical cross section, forming a core of any available locally won rubble dressed with waste dust from stockpile as the main rootable soil-forming-material, loose-placed and shaped up by excavator.
 - Bench preparation will ideally be targeted towards late summer and autumn to coincide with suitable conditions for seeding and tree planting
 - Prepared bench profiles will be hand-seeded and fertilizer applied as above.
 - Due to limited opportunities to undertake any bench reclamation to date, works undertaken during this 5-year plan will be used as a trial of suitable techniques, notwithstanding the overall reclamation concepts stated on approved Restoration Strategy plan GQ9
 - 315 and 300m benches will be planted with trees and shrubs as per Schedule of Plant Material, using roottrainer cell-grown stock, notch planted with one slow-release fertilizer tablet per plant, in random mixture in 2 rows at approx. 2m centres, one row generally on the back of the edge protection bank and second row within the rock trap trough.
 - Planting areas will be stock-fenced to exclude sheep, along full length of 300m bench but only cross-fence at bench ends on 315m level, but otherwise trees will be left un-guarded due to low likelihood of damage by other grazing or browsing mammals
 - Due to likely sparse growth of any competing vegetation and north-facing aspect, no control of weeds and grass around each tree is expected to be necessary and maintenance access will not be possible once narrow final bench width has been achieved following final blasting.
 - 300m level bench may be accessible for ongoing maintenance for some years, prior to progressive development of the 185m level below in future 5-year schemes, so opportunities will be taken for additions of fertilizer and replacement of tree losses if necessary.
 - No other Aftercare steps are anticipated but monitoring of establishment of grass sward and woody vegetation will be monitored to inform future phases of reclamation, eg species choice and tree protection requirements.

- Dust Tip Reclamation:**
- Small area at the very northern corner of the dust tip will become fully in-filled in the course of this 5-Year development scheme, which is likely to become permanent restoration, despite most of the remaining dust tip likely to be moved again in future for terminal restoration and to expose underlying mineral
 - Opportunity will therefore be taken to undertake a vegetation establishment trial on this area of Tip to inform future phases.
 - On completion of infilling to the 350m Tip level as shown on Year 5 plan 58d, top and three batters above the 335m active tipping level, will be seeded with same seed mixture as above, applied by hand at 10 grammes per square meter, (100Kg per Ha)
 - Area will be fertilized with 20-10-10 compound fertilizer applied by hand or quad bike/spinner at a rate of 40g/sq.m (400Kg /Ha).
 - Stock fence will be erected around all seeded areas to exclude sheep.
 - Following initial establishment of grass/clover mix, a suitable UK provenance acid-grassland wildflower mix such as Emorsgate seeds EM7 or EM7F will be over-seeded at c. 1g per sq m.
 - Further fertilizer additions will be made as necessary to ensure grassland establishment and control of erosion on Tip slopes.
 - Due to the extreme infertility of waste dust substrate, despite any initial fertilizer additions, no active Aftercare management of grass/wildflower sward is expected to be necessary.

- Legend**
- Planning boundary
 - Previously prepared benches to be vegetated
 - New bench preparation and reinstatement
 - Interim grassland restoration trial area

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Hanson
HEIDELBERGCEMENT Group

Site: **Gelligaer Quarry**

Title: **5 Year Quarry Development Plan**
Progressive restoration proposals 2021-2025

Scale: as shown@A1	Date: Dec 2020	Drawing No.
Drawn by: MP	Checked by: AJD	G74-0059