

EAST RENFREWSHIRE COUNCIL31 October 2018Report by Director of EnvironmentBRAIDBAR QUARRY**PURPOSE OF REPORT**

1. The purpose of the report is to advise the Council of proposals to work jointly with Advanced Construction Group with a view to developing a remediation strategy/ proposal for the site.

**RECOMMENDATIONS**

2. It is recommended that the Council;
- (a) Authorises the Director of Environment to enter into discussions and negotiation with Advance Construction Group with regard to the remediation of Braidbar and that a further report will be submitted to the Council in due course; and
  - (b) Approves the proposed expenditure of £120,000 on fencing for safety purposes.

**BACKGROUND AND REPORT**

3. The Council has a clear policy position with regard to Braidbar Quarry.
4. Local Development Plan 1 which was adopted by the Council in 2015 contains the following statements:

“4.9 Braidbar Quarry.

4.9.1 Braidbar Quarry lies to the north-east of Giffnock town centre and is currently open space with associated woodland areas and sports facilities. The remediation of the site remains a priority for the Council and options, including housing and other uses, will continue to be investigated.

4.10 Policy M4: Braidbar Quarry

4.10.1 The site will be retained as protected open space under policy D5 and identified as a longer term development opportunity on the Proposals Map until an appropriate remediation strategy can be implemented. Appropriate development will be supported in accordance with policy M1, to be defined further through the preparation of a comprehensive development brief. The development brief will be adopted as Supplementary Planning Guidance.

5.20 Policy D13: Community, leisure and education facilities states that the Council will support the implementation of the projects listed in schedule 7. Schedule 7 includes the following reference

D 13.12 Huntly Park, Giffnock – improvement of soccer facilities and new build Pavilion”.

5. The issues and dangers with regard to Braidbar are well documented and have been the subject of previous reports in the past to the Council. An extract from a previous report of 15 September 1999 is attached. This extract summarises the key issues at that time. Many of the issues remain as current ones.
6. It is important to understand that the dangers of the site are not to be underestimated and the potential for a ground collapse as the natural sandstone pillars gradually wear away increases incrementally with time.
7. Finding resources in order to effectively remediate the site has been extremely challenging.
8. The Council's Capital Programme could not possibly deal with the costs of remediation of the scale necessary to stabilise the ground across the site.
9. In the past therefore the Council considered releasing all or part of the site for housing development in an effort to meet the remediation costs.
10. The Council previously entered into a joint venture agreement with McDonald Estates plc in that respect.
11. However, in 2011 McDonald Estates wrote to the Council indicating that they were no longer able to continue to promote the project and subsequently withdrew their planning application.
12. Since the withdrawal of McDonald Estates proposal in 2011 and until recently no active developer interest has been shown on the site.
13. However, in 2016 Advance Construction Group approached the Council expressing an interest in working jointly with the Council to remediate the site through the delivery of a residential led mixed-use development.
14. Advance Construction Group is one of the largest privately owned construction companies in the UK and specialises in groundworks, land remediation and major infrastructure projects.
15. Whilst initial collaborative and very positive discussions are taking place with Advance Construction the Council has given no commitment regarding any future relationship between them and the Council. Any such relationship would need to be carefully considered within the context of state aid rules, best value and procurement.

## **Proposal**

16. At this point in time Advance Construction Group are simply looking for the Council to agree in principle to work together to develop jointly a proposal to be considered by the Council on a basis yet to be determined. They have already incurred considerable cost in developing their proposals up to this stage.
17. The Director of Environment in discussions to date with Advance Construction Group has made it clear that in developing any proposal the following criteria would apply;
  - any impact on the school estate would have to be manageable
  - Huntly Park requires to be protected and/or improved
  - a joint masterplanning approach will be taken which will be led by the Council
  - any resultant proposal will be on a joint venture basis
  - community benefits would be expected

## **IMPLICATIONS OF THE PROPOSAL**

18. There are no staffing, IT, sustainability implications associated with this report. Any state aid and/or procurement implications will be taken into account as any proposal is developed.

## **CONSULTATION AND PARTNERSHIP WORKING**

19. Any proposal to remediate the site at Braidbar will require strong partnership working across a range of Council Departments, private-sector partners and those with a land ownership interest at the site.

### **Safety**

20. The Council previously agreed in 1999 to put measures in place to increase the safety of members of the public using the public open space under the Council's ownership and where the ground conditions were affected by the former quarry workings. The measures taken at the time included:

- ensuring the integrity of the fencing in the areas in the Council's ownership suggested by the consultants as 'no go' areas;
- erecting signs at strategic locations alerting the public to the dangers, including the establishment of a fence line between Council-owned land outwith the designated 'no go' areas and 'no go' areas in other ownership;
- using park rangers to inspect on a daily basis the integrity of the fences, and arrange for immediate repairs where necessary, and to inspect ground conditions on the affected Council land which lies outwith the 'no go' areas, so that any change which might suggest any incidence of subsidence can be identified.

21. In 2010, substantial additional fencing was erected around the areas deemed most likely to be accessible from a public perspective. However, Police Scotland have since indicated that there are multiple areas of the site where the natural vegetation has been breached and areas have become a regular visiting place for youths and dog walkers.

22. Although there are warning signs covering all areas of the site, the fencing on the outskirts of the quarry and the natural vegetation barriers are no longer sufficient deterrents to prevent access. This presents a liability issue for the Council.

23. The Council undertakes regular inspections of the current fencing and arranges repairs as necessary, where breaches have been identified.

24. In order to take reasonable and practicable precautions to restrict access to the most dangerous areas of ground, it is intended to fence off all of the Council's title at the site by erecting additional fencing and extending the current inspection and maintenance regime. In addition, there is an existing Right of Way on the site which may have to be formally closed for public safety reasons and a due process will need to be followed before the Right of Way could be closed.

25. The cost of these works will be in the region of £120,000 and would require to be funded from the repairs and renewals fund.

**Next stages**

26. Should the Council wish to proceed then the next stage is for Advanced Construction Group to carry out intrusive site investigations to establish more clearly the extent of the issue and the options with regard to remediation.

**CONCLUSIONS**

27. The remediation of the site of the former Braidbar Quarries has been an ambition of the Council for a number of years. However, this has not been possible to date due to the significant cost and scale of remediation required. The approach to the Council by Advance Construction Group offers the Council an opportunity, without any commitment, to explore the possibility of site remediation through a joint venture.

**RECOMMENDATIONS**

28. It is recommended that the Council;
- (a) Authorises the Director of Environment to enter into discussions and negotiation with Advance Construction Group with regard to the remediation of Braidbar and that a further report will be submitted to the Council in due course; and
  - (b) Approves the proposed expenditure of £120,000 on fencing for safety purposes.

Director of Environment

Further information can be obtained from: Andrew Director of Environment on 0141 577 3036 or [Andrew.cahill@eastrenfrewshire.gov.uk](mailto:Andrew.cahill@eastrenfrewshire.gov.uk)

October 2018

EAST RENFREWSHIRE COUNCIL15 September 1999Report by Directors of Environment,  
Central Services and Community & LeisureBRAIDBAR QUARRIES**INTRODUCTION**

1. It was reported to the Council in May 1998 that it was intended to commission a joint study of the former Braidbar quarries area. At that time, it was explained that while there was no specific reason to question the continuation of unrestricted access to open space areas in the Council's ownership, it was considered prudent that East Renfrewshire Council, which had inherited this situation, commission its own investigations to obtain an up to date and more comprehensive assessment of the extent of the voids which underlie the area.
2. This report describes the extent of the mining problem in the area of the former Braidbar quarries, outlines the findings of the extensive site investigations carried out by the Council through consultants Johnson Poole and Bloomer, and sets out the options for dealing with the issue.

**HISTORY OF MINING ACTIVITY IN THE AREA**

3. Braidbar was the source of a particularly good building sandstone, the 'Giffnock Freestone'. In the 19<sup>th</sup> century it was quarried southwards from what is now Braidpark Drive to the south and east of Giffnock North Sports Club, and northwards from Huntly playing fields.
4. The site rose to a small hill in the centre, occupied by the former Braidbar Farm steading. This area is now traversed by a right of way from the rear of Forres Avenue to Braidpark Drive near its junction with Braidpark Farm Road.
5. When it became too expensive or difficult to remove by quarrying the boulder clay and poorer rock overlying the building stone, excavation continued by mines driven under the hill. These mines were worked by the 'stoop and room' method where pillars of rock were left to support the roof with a grid pattern of passages or galleries extending throughout the area. An enormous volume of rock was excavated by this method, estimated to be around 1 million cubic metres. The galleries from which the rock was removed are also colossal, typically 10 to 12 metres in height and 10 to 15 metres wide.
6. Mining ceased around 1918, after which the quarries (but not the mines) were infilled with foundry waste to restore the area to something approaching its original ground levels.

**CURRENT USE OF SITE**

7. There are a number of land uses on the site. At the north end, Giffnock North Sports Club own a clubhouse, car park and two sports pitches at the lower level which were occupied by the quarries and lease a large grass playing field from the Council at a higher level over the mined area, near the site of an old farm.

8. On the northern periphery of the site, recent housing developments at Melbourne Court and along Braidpark Drive are not affected by the mine or quarry workings. Ground consolidation was carried out wherever necessary in these areas.
9. At the south end of the site, the Council has a large recreation area consisting of Huntly Pavilion and a number of pitches, located largely over infilled quarries. The consultants are of the opinion that the areas at the site which have been subject to quarrying operations may be considered as stable from the mineral support aspect.
10. The central part of the site overlies the mined area and has been partially treated in the past in an attempt to keep the public away from areas considered dangerous. A variety of methods were used including warning notices, fencing, dense planting and a small area of netting with a geotextile membrane. These precautions are, at best, only partially effective: notices have been vandalised or removed, fences cut and footpaths established throughout the area.

A plan of the site highlighting the areas considered to be most at risk is attached to this report.

#### **FORRES AVENUE & FORRES GATE**

11. Two areas of private housing in Forres Avenue (nos 2-6 and 24-56) are affected by the presence of the workings. While most of the houses sit outside the mined area it is considered that, if a collapse was to occur in the adjacent workings, the resultant movement of material into the void could affect the stability of the buildings. This opinion has for many years formed the basis for the Council's response to property enquiries for these houses which consequently have a considerably reduced market value and indeed may be regarded as blighted.
12. During the overall site investigation, a development of 14 houses at Forres Gate was also re-examined. These houses are not within the zone of influence of the workings and are not at risk. Workings do however extend into some garden areas and it is possible that minor subsidence could affect rear gardens. This information is reflected in the property enquiry response which refers to restricted permitted development rights.

#### **CONSULTANTS FINDINGS & RECOMMENDATIONS**

13. There are no documented records of collapse of the workings having occurred. The Council's mining consultants believe however that there have been at least two events prior to the Second World War leading to large 'plump holes' forming at the surface, both in the northern part of the site. There is also believed to have been a plump hole near the Forres Avenue end of the Right of Way in the 1960s.
14. It is impossible to establish the precise nature of underground conditions but the information available from boreholes suggests that material is continuing to break away from the roof of the workings, causing the voids to 'migrate' towards the surface. The rate at which this is occurring cannot be accurately predicted from the information available. The consultants have also tried to model the likelihood of collapse of the pillars using data from similar workings in limestone mines and take the view that a number are potentially unstable, but cannot predict a timescale for failure. It has to be emphasised that limestone and sandstone have differing characteristics and behave differently under stress. Accordingly, these findings should be regarded as indicative only.

15. The consultants consider that there is a risk of subsidence over the entire area of the mine workings, with a zone of influence extending outwards from this area. They have also suggested a range of options for remedial action and public safety.
16. The risk of subsidence does not apply uniformly across the area, and the consultants suggest that it can be divided broadly into two areas – the central site and the peripheral area. In the centre of the site, given the thickness of the overburden which includes stiff boulder clay, the surface would be likely to suffer 'general subsidence' in the event of a collapse in the underlying workings. In discussions with the consultants this type of subsidence has been described as being most likely to appear as shallow dish-shaped depressions.
17. The peripheral areas of the site are of greater concern, with a higher risk of the formation of plump holes. This risk is highest at the interface between the mines and the infilled quarries, where the granular infill material is thought to be capable of pouring rapidly into any void created by a collapse in the adjoining workings.
18. The area of highest risk extends around the north, east and south edges of the site. Much of the eastern and southern area has been densely planted to impede public access but a network of informal paths has been established by local residents throughout the area at risk.
19. The north west area affects land owned by Giffnock North Sports Club. Both of the main football pitches used by the club are within the area most likely to be affected by plump hole formation. The Director of Community and Leisure is currently investigating the possibility of accommodating the Club's football requirements on Council pitches.
20. The south western periphery of the area, adjacent to Forres Avenue, is also considered capable of plump hole formation which, in the view of the consultants, could compromise the structural integrity of some properties in Forres Avenue. This confirms the Council's position in respect of the issue of warnings in property enquiry certificates since three different investigations have come to the same conclusion (1983, 1991 & 1998).
21. The consultants are unable to predict when any underground collapse might occur. They can, with reasonable accuracy, identify the degree of risk associated with the workings and the likely effects at the surface, but cannot suggest whether this might occur in the near or distant future. It is well established that such occurrences are extremely difficult, if not impossible, to predict in terms of time and magnitude. As indicated in paragraph 14 above, there is some evidence from the boreholes that the roof of the mine is breaking up. This seems likely to continue and the probability of failure will inevitably increase over time. However, it could be many years before any further damage occurs at the surface.
22. The most recent investigation has shown that the areas considered to be at risk are more extensive than the previous surveys and that there is some evidence to suggest that the position is deteriorating as a result of some upward void migration due to roof collapse as described in the paragraph immediately above. These areas referred at paragraph 10 above as areas most at risk have to be regarded as "no go areas" according to the consultants. In addition, the consultants have recommended that the area leased to Giffnock North by East Renfrewshire Council, currently used as a football pitch, should no longer be used for organised activities, including football.

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