



Newcastle-under-Lyme Local Plan Examination

Further Work – CT1 Land at Red Street, Chesterton

1. The Inspector in her local plan post examination hearing views (EX/INS/06) asked the Council to provide more information on the following topic areas in relation to land at Red Street, Chesterton (site ref CT1): -
 - To inform Green Belt considerations, work carried out to inform decisions on site size, yield and likely disposition of development
 - Further justification for the policy requirements for highway access and traffic calming
 - In respect of the Local Centre proposed for the site, what is the justification for this, what it will comprise of taking into account any provision in the local area. To provide views also, on how the local centre will be secured and at what stage it will be provided
 - Evidence in relation to historic mining and contamination
2. The Inspector in her post hearing views has also asked for further information in relation to Minerals Safeguarding and Green Belt Compensatory Improvements. These are the subject of separate notes.

Green Belt Considerations

3. As set out at the hearings, the Council's Green Belt Assessment consisted of several assessment stages (parts 1,2,3 and 4). The Part 1 assessment [ED008c] covered the entire Green Belt by dividing it into general areas and then parcels and assessing these against the five Green Belt purposes. The Part 2 assessment [ED008b, 8a (Section 5) and 8] covered shortlisted sites and assessed these against the five Green Belt purposes. The Part 3 study, in 2023, included several additional site assessments alongside advice on exceptional circumstances and compensatory improvements [ED008a]. The Green Belt assessment work has been built upon incrementally resulting in the Part 4 Green Belt Assessment [ED008], which consolidates the various assessments which have been undertaken into a single report.

4. The earlier Part 2 Green Belt Assessment, in 2020, considered a larger site area for CT1 than is currently proposed to be allocated in the Local Plan [CD02, PDF pg 3]. It included a parcel of land to the south of Bell's Hollow (this is shown as reference CT1 in the Green Belt consolidated assessment [ED008, F34 – F37, pg 180]). During the development of the Local Plan, in 2023, it was determined by the site promoter that there were potential constraints, including the presence of extensive mining areas to the south of Bell's Hollow that would preclude a viable form of development for site CT1 as then proposed in this Local Plan.
5. Subsequently, the site promoter revised the boundary of CT1 in response to the matters raised above. The revised site boundary has been promoted for consideration in the Final Draft Local Plan [CD01] on the basis that the site is viable and deliverable in the Plan period. The revised site is bounded by Talke Road, the A500, the A34 and Bell's Hollow to the south of the site.
6. In Green Belt terms, the revised site has been assessed in the part 4 Green Belt assessment as site reference CT1a [ED008, F-38-F-41, pgs 184 – 187]. Site reference CT1a is considered to make a weak contribution to Green Belt purposes [CT1a, ED008, F-40, pg 186]. The conclusion to the ARUP Green Belt Assessment for CT1a notes that: -

“The site makes a weak contribution to Green Belt purposes. Development would entail an incursion into undeveloped countryside however development would not represent unrestricted sprawl as it would be reasonably contained and well defined along strong permanent boundaries, and development would not impact upon the setting or character of the historic town of Newcastle-under-Lyme. Whilst development of the site (alongside site CT1 and CT4) would not result in neighbouring towns merging, development of site CT1/CT1A and site TK17/TK18 would significantly reduce the gap between the Newcastle-under-Lyme urban area and Kidsgrove and result in the perceived merging of them which could harm the overall function and integrity of the Green Belt. If sites TK17 and TK18 are not taken forward for further consideration, then overall, removal of the site from the Green Belt will not harm the overall function and integrity of the Green Belt. A new recognisable and permanent Green Belt boundary would be created consisting of the A500 to the north, the A34 to the east, and Talke Road to the west” [ED008b, pg 186].

7. Site TK18 (Jamage South, Land North of A500) is not included in the Local Plan as a proposed allocation. A larger site parcel for TK17 (Land off St Martins Road, Talke) was assessed in the Green Belt Assessment [ED008, PDF pg 69] as having a weak contribution to Green Belt purposes [ED008, PDF pg 137]. A smaller

section of the TK17 site assessed in the Green Belt Assessment has been included in the Local Plan, as a proposed allocation.

8. In summary, site CT1 makes a weak contribution to Green Belt purposes, and a new recognisable and permanent Green Belt boundary could be created, as the site is bounded by roads, including the A500 which act as a recognisable and permanent boundary.
9. The Green Belt assessment for site CT1a [ED008, F-40, pg 186] recommended the site for further consideration, alongside site reference CT1 (the larger proposal) and CT4 'land opposite High Carr Business Park (west of A34)'. The CT1 larger proposal (including a parcel of land to the south of Bell's Hollow) has been discounted for the reasons outlined above.
10. In respect of CT4 'land opposite High Carr Business Park (west of A34)', this has an existing agricultural tenancy on site and therefore is considered unavailable for the purposes of the Council's Site Selection Report [ED029, Appendix 1 Site Sift, pg 65] and was not included in the site selection process on that basis. There are examples in the historical growth of the town of Newcastle-under-Lyme, of development 'fingers' that historically have stretched along major transport infrastructure, such as the A34 in Chesterton. It is considered that land to the south of Bell's Hollow (alongside CT4) will continue to be farmed and will be retained in the Green Belt and is of sufficient size to avoid the creation of isolated parcels of Green Belt. The A500 to the north of the site is of sufficient scale to provide a strong and permanent boundary and avoid encroachment towards Talke and Butt Lane.
11. The revised boundary for site CT1 (CT1a in the Green Belt Assessment, ED008) was considered through the several stages outlined in the Council's site selection report [paragraph 2.1, ED029]. Following the implementation of the site selection methodology, it was considered that the revised CT1 site was suitable for allocation with a reasonable prospect of delivery by the end of the Plan period. This has been further confirmed through a signed statement of common ground with the site promoter [EX/NBC/04 Pg 120 – 123]).

Highways Matters – A34 Left in, Left out

12. Following engagement with Staffordshire County Council Highways Authority, it is noted that on the section of the A34 adjacent to the site, the existing speed limit is 70mph. A lower speed limit is unlikely to be able to be enforced as the

road is dual carriageway with a central reservation. A signalised junction is not acceptable above 60mph.

13. There are other examples, such as, between the A500 / A34 junction in the north and A34 / Parkhouse Road junction in the south, where all access points for businesses are left-in, left-out only and therefore the recommendation for CT1 is consistent with these. It is not desirable to create an additional point of access and therefore improvement of the existing Bell's Hollow junction is proposed.
14. The A34 is a National Highways advertised heavy load route. Heavy loads are defined as all vehicles weighing more than 44 tonnes. The A34 provides a heavy load route for, amongst others, General Electric for transporting transformers between their site in Stafford and Ellesmere Port. Vehicles making this movement have previously been as large as circa 650 tonnes and 100m in length.
15. Any development creating an access onto the A34 should not restrict the full width of the highway including central reservations and verges. This would also extend to any new street furniture including lighting and signage. A left-in, left-out arrangement would meet these needs in the most cost-effective way. National Highways would likely need to be consulted on any other form of junction due to proximity to their network. There are no objections from National Highways to the left in / left out arrangement proposed in the Local Plan.
16. The plan below indicates the range of heavy load route accommodations already in existence along the route for a sample of junctions. The size of other roundabouts along the route are significant – the inscribed circle diameter is 74m for the junction immediately to the south of the site along A34. If an off-set roundabout is provided, then it would require significant land take within the development impacting the number of homes that can be provided. Off-set provision would also be likely to be required to ensure that heavy loads can bypass the roundabout geometry and utilise the straight southbound carriageway with appropriate provision for making contraflow movements. Such a junction may impact the viability of the site.
17. As part of the local plan process, the site owner has submitted a transport appraisal undertaken by SCP, a transportation planning and highway infrastructure consultancy. The appraisal confirms that a range of options are available to provide access to the site including a left in/left out access off the A34. The appraisal anticipates the development will be served by a combination of access options which will be the subject of detailed assessments as part of a

Transport Assessment submitted to support any planning application and would be developed to the approval of the local highway authority.

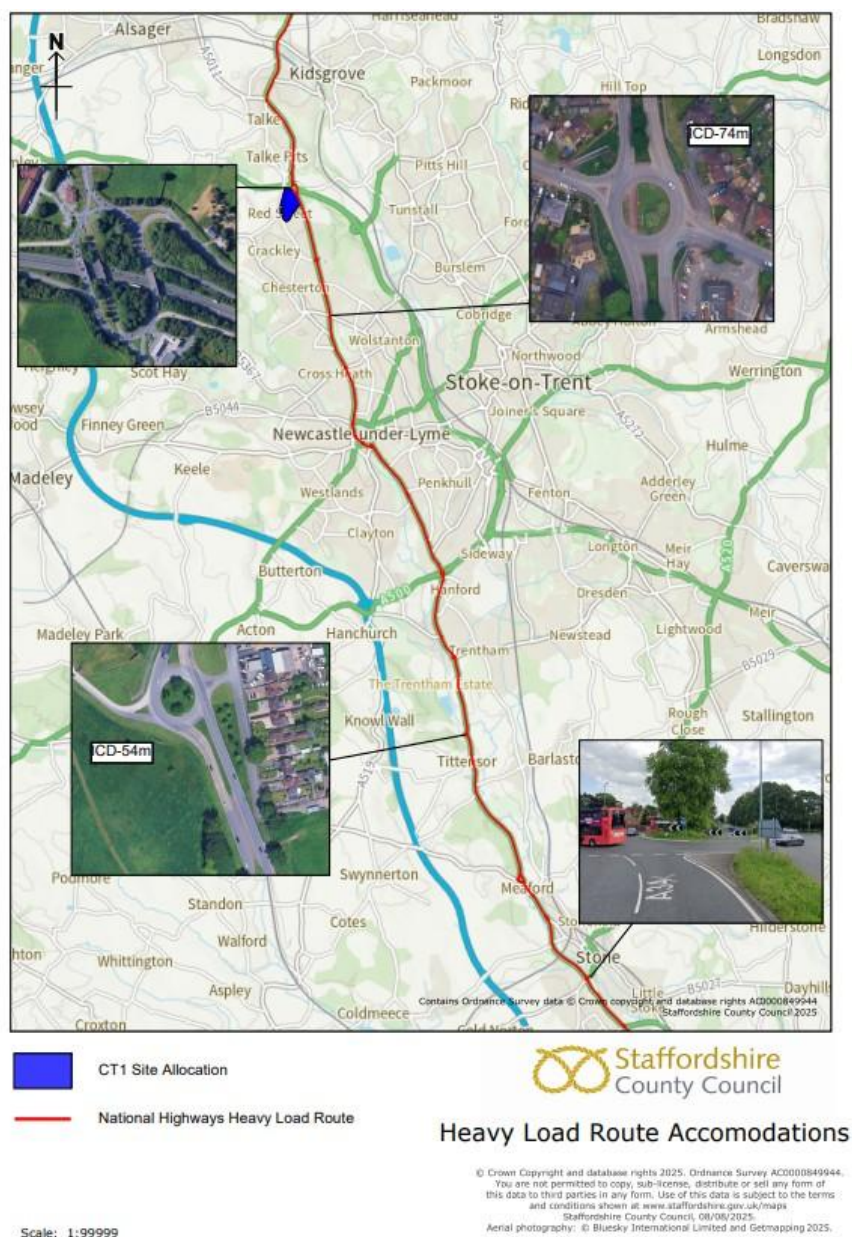


Figure 1: Heavy Load Route Accommodations

Highways Matters – Talke Road

- The speed limit changes from 60mph to 30mph at the edge of the built-up area entering Red Street. The screenshot below (Figure 2) shows the existing gateway treatment to support the speed limit change. It is proposed that the developer of CT1 be required to provide a new gateway treatment at what will become the entrance to the built-up area to replace the current provision. This will extend the

30mph to accommodate separate access points into site CT1 'Land at Red Street, Chesterton' along Talke Road.



Figure 2: Picture of current speed arrangement along Talke Road

Local Centre

19. Figure 3 (below) identifies convenience and retail provision at various buffer distances from the CT1 site. It highlights how a convenience store is within 400 metres of the site. However, this is positioned alongside other service area facilities just off the A34 Talke Roundabout. This would require residents from the CT1 site to traverse major road infrastructure (including the A34 and / or A500) in order to access those facilities by foot. Figure 3 also highlights that other convenience floorspace is located over 400 metres away. This distance may discourage future residents of the CT1 scheme from accessing local facilities by foot or other forms of active travel.

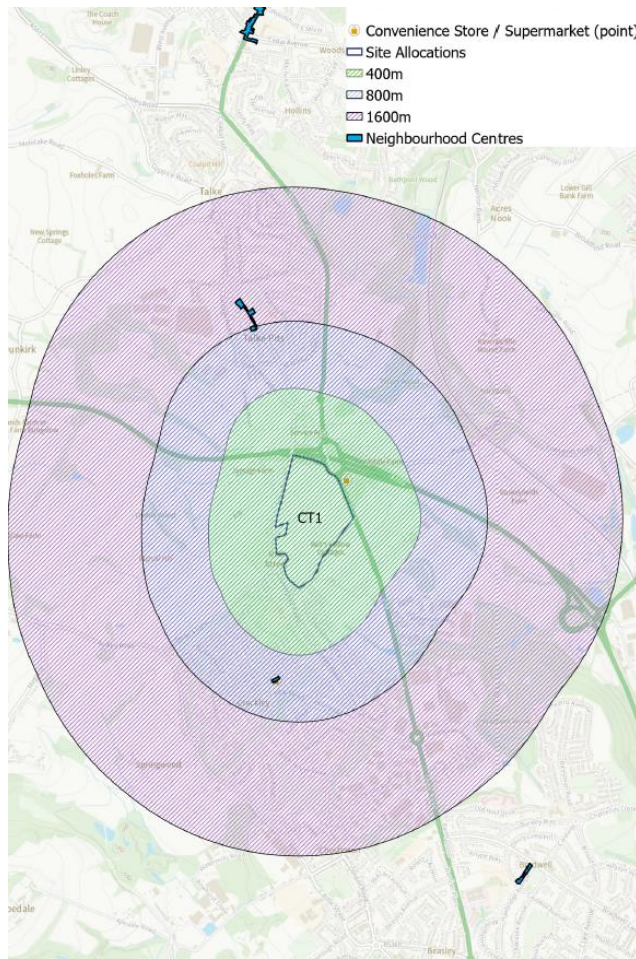


Figure 3: Buffer Zone in proximity to the CT1 site

20. The CT1 site is of scale, with 530 homes proposed on the site. As such, to support the sustainability of the site and provide alternative options for future residents and existing residents in the locality, it was considered necessary to include a requirement for a local centre to meet local needs. Whilst policy CT1 refers to a local centre, it is likely to comprise a local convenience store to meet day to day needs and possibly a takeaway that will serve the local community.
21. There are several benefits for providing for mixed use development in this location, including bringing amenities and services closer to existing and future residents, reducing the need to travel long distances for daily necessities, providing for shared spaces for community interaction and facilitating the opportunity to walk to nearby facilities.
22. The site promoter has signed a statement of common ground with the Council where there is agreement that the specific requirements of policy CT1 are appropriate and justified (Housing Land Paper and Trajectory [EX/NBC/04 Pg 120 – 123]). The site promoter has indicated that the development is expected to be

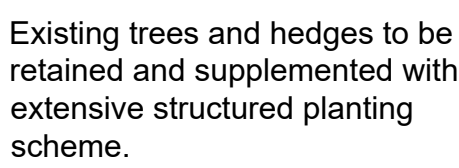
completed by 2035. A parameters plan has been prepared by the site promoter which shows the location of the local centre, on the frontage with Talke Road (appendix 1). The location of the local centre is such that it is not dependent, in access terms, on other parts of the development but in viability terms, will be delivered once the housing development is complete.

23. The retail study identifies that there is a nominal convenience floorspace requirement of 100 sqm [ED010, paragraph 8.5, pg 47] in the Plan. The retail study does not identify a need to allocate additional retail development over the Plan period [ED010, paragraph 8.7, pg 48] but the local centre would go some way to meeting that nominal convenience floor space requirement. It is expected to meet local needs and therefore is intended in size and scope to be, for example, a convenience store and takeaways. The Council would be agreeable to a modification to Policy CT1 to make it clear that the nature of the scheme is as suggested, a local convenience store and a takeaway to serve local needs.
24. The landowner has agreed to market the site opportunity, at the appropriate time and using the appropriate means to support the delivery of the local retail provision and the wider sustainability credentials of the allocation.

Historic Mining and Contamination

25. The site promoter has prepared a geo-environmental preliminary constraints assessment (ground conditions) document (appendix 2). This has identified that most of the site is underlain by the Pennine Upper Coal Measures Formation, with the Etruria Formation Sandstone and Mudstone in the south of the site. The High Carr fault is thought to cross the site. The assessment identifies 90 recorded mine entries based on known desk-based information. In common with many areas in the north of the Borough, the site is in a coal mining high risk area, and it is appreciated that there is a likelihood that both recorded and unrecorded mine entries and mine workings exist on the site.
26. The coal mining legacy risks at this site are not unusual for the area and the geo-environmental preliminary constraints assessment notes that there are mitigation options available in respect of investigation of mine entries and activities to stabilise mines including drilling, excavation and pressure grouting. The note also considers the need to create development platforms across the site which would provide opportunities for the economic investigation and mitigation of shallow mining hazards in the course of the development.

27. Whilst the site has not historically been occupied for any potentially significant contaminative land uses, there is a recognised potential for land contamination risk to be present. In addition, and largely associated with the shallow coal geology and mining setting, there is potential for ground gasses to be present on site. These contaminated land risks are acknowledged as being able to be appropriately mitigated through the conventional use of suitable risk assessment, source removal and pathway intervention measures. It is likely that passive gas protection measures are likely to be required but are not likely to prejudice the viability of housing development at the site.
28. Overall, the conclusion of the note is that whilst there are potential contaminated land and land stability matters associated with the site, these matters can be appropriately mitigated through the use of ground improvement approaches to create suitable development platforms and provide for residential development on the site in the Plan period.
29. The Local Plan policies for site CT1 ‘Land at Red Street and High Carr Farm’, [CD01, PDF Pg 125] identifies the need for a land contamination assessment and mitigation strategy (criterion 5) and a coal mining risk assessment and mitigation strategy (criterion 6). It also requires additional assessments including drainage, noise and odour assessments to be considered when a planning application is submitted on the site.
30. The Local Plan Viability Report, in paragraph 6.18-6.19 [ED004] notes that for the purposes of the viability assessment, it is assumed that greenfield sites with 500 plus units will include a cost of £20,000 per unit to represent site opening up and factoring in other infrastructure costs. Paragraph 6.19 of ED004 notes the if actual site opening or remediation costs are higher than this, then they will be reflected in a reduced land value achieved on the site. The viability study also includes assumptions around external site infrastructure works including connections to infrastructure of 10% of build cost for houses and between 5-10% of build cost for flats [ED004, paragraphs 6.29-6.31]. The site promoter has signed a statement of common ground with the Council where there is agreement that site CT1 can come forward within the Plan period (Housing Land Paper and Trajectory [EX/NBC/04 Pg 120 – 123]).

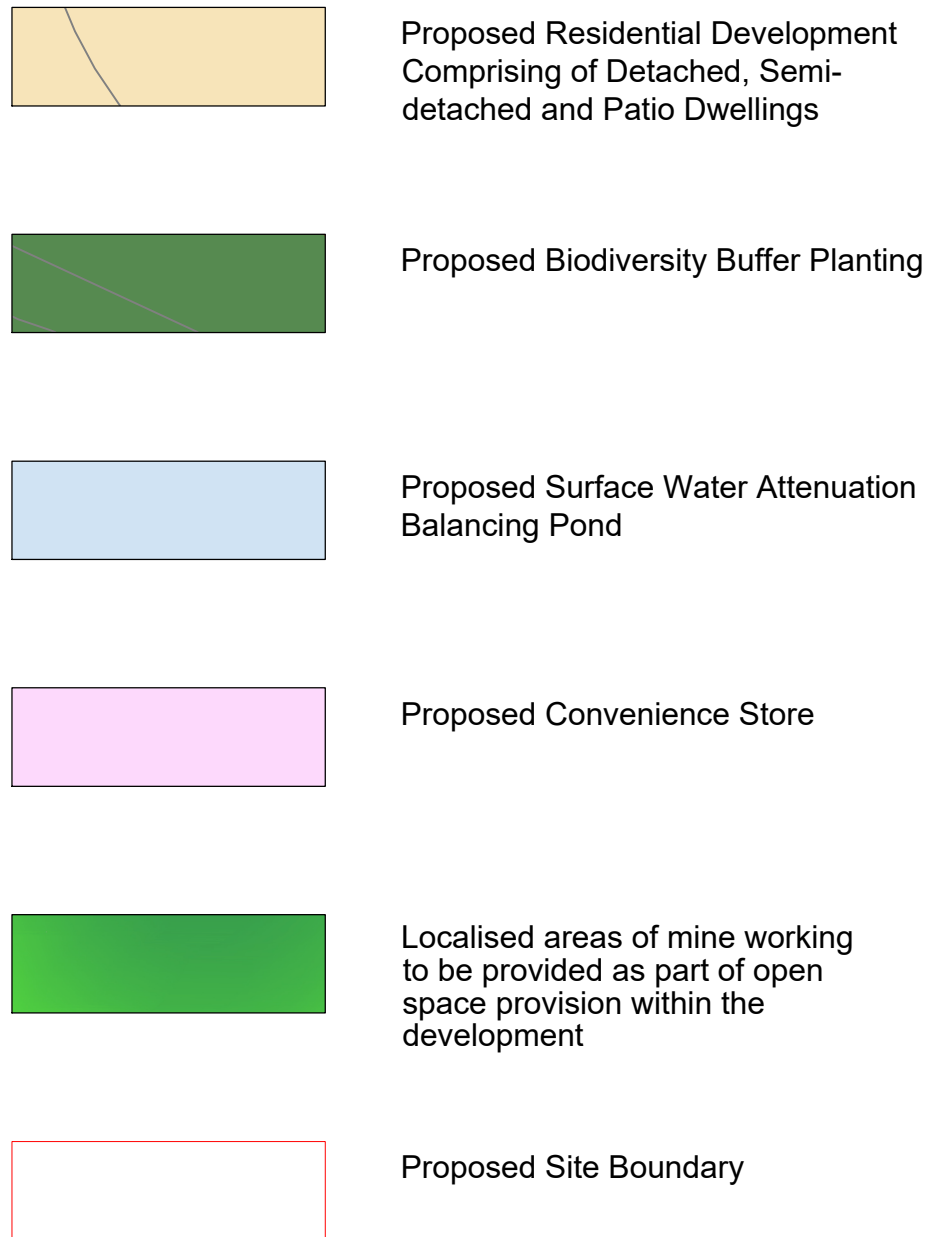


Proposed vehicular access formed with 2.4m x 215m visibility splays in accordance with Highway Authority specification

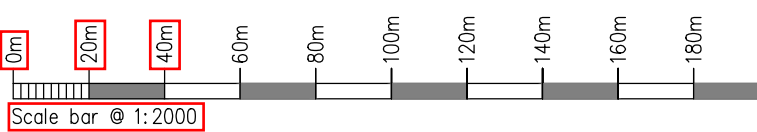
Preliminary layout for residential spine road and lower order roads illustrated minor access ways to be provided to suit detailed housing layout.

Proposed vehicular access formed with 2.4m x 43m visibility splays in accordance with Highway Authority specification.

Existing trees and hedges to be retained and supplemented with extensive structured planting scheme.



Rev.	Drawn	Comments.	Date



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Client:
Fradley Estates

Project:
Proposed Residential Development
on Land at Red Street,
Newcastle, Staffordshire.

Title:
Proposed Parameters Plan

Status:
Preliminary

Paper Size A1: May 2024 Drawing Ref: 1648-AL03F

Site Layout Plan Scale 1:2000 @ A1

Technical Note



CLIENT:	Fradley Estates Limited
PROJECT:	Land at Red Street, Talke
SUBJECT:	PRELIMINARY CONSTRAINTS ASSESSMENT (GROUND CONDITIONS)
JOB NO.:	ST20527
DATE:	29 May 2024
PREPARED BY:	R Boelema
APPROVED BY:	C Smith

Introduction/Summary

Approximately 22 hectares of land (comprised of Land Registry Parcels SF196395 and SF609999) are proposed for residential end use, helping to satisfy much needed demand for new residential properties in the Borough. The land is that outlined in red as shown in Figure 1, which is proposed for designation as site CT1 in the Newcastle under Lyme Local Plan (2020 – 2040).

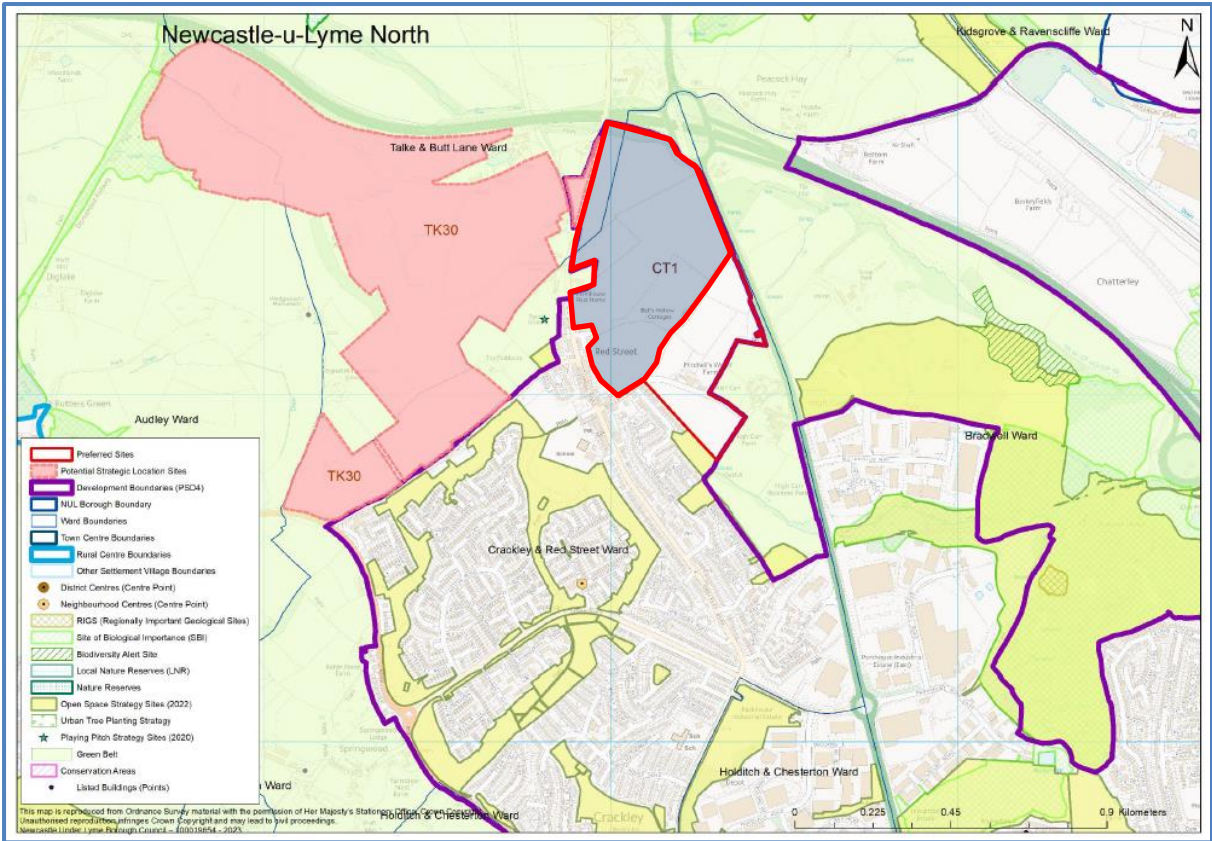


Figure 1: First Draft Local Plan (Regulation 18 stage) – Draft Policies Booklet, June 2023 (Map 3), amended to reflect proposed extent of CT1 (shaded blue).



This high-level technical note has been prepared outlining the potential geo-environmental constraints associated with the CT1 site. The high-level Technical Note draws on currently available information provided by the landowners and is supplemented by publicly available information. The purpose of this Technical Note is to provide background information regarding the anticipated site condition and potential applicable mitigation options. The Technical Note concludes that the site is deliverable for the residential use proposed in the plan period. Whilst a number of potential contaminated land and land stability risks are anticipated in association with the site, well-practiced and effective mitigation measures are available to facilitate the safe and successful construction of a residential development.

This technical note is confined to the consideration of mining and ground related development constraints.

Site Setting

The site is bounded by fences or hedgerows on all sides, the majority of which adjoin public adopted highway. The site is primarily used for agricultural purposes.

An intermediate pressure gas main crosses the site, with an orange marker post noted on Bell's Hollow. Other services, including water mains and private services may potentially cross the site. The approximate location of the gas main is shown in Drawing No. ST20527-111.

The site slopes towards the A34 to the east is generally undulating and uneven, with localised steep slopes within the site. Historical OS mapping identifies a number of ponds and mineral workings within and in the vicinity of the site, in addition to numerous coal and ironstone mine shafts, wells and buildings. A former railway line is recorded to have crossed the extreme north of the site, adjacent to the site boundary.

The majority of the site is underlain by the Pennine Upper Coal Measures Formation, with the Etruria Formation Sandstone and Mudstone conjectured to be present in the extreme south of the site. The High Carr fault is conjectured to cross the site trending northwest to southeast, down-throwing strata to the east.

Fifteen coal seams are recorded to outcrop within the site, with 11 of these coal seams recorded to have been worked at depths shallower than 30mbgl. It is anticipated that much of the site is underlain by recorded or potentially unrecorded coal mine workings at shallow depth. A total of 90 mine entries are recorded within the site boundary. The mine entries are



predominantly adits (inclined roadways) and follow the outcrop of a number of the coal seams, notably the Cannel Row, Great Row and Spencroft, where clusters of mine entries are evident. Coal Authority records indicate that remediation has been undertaken at a number of locations at or close to the site. The Coal Authority refer to seven claims for alleged subsidence damage to property within 50m of the site.

In addition to a number of landfill sites within 500m of the site, areas of potential infilled land within the site are recorded and may contribute to the presence of ground gasses and ground instability risks.

Topography/Landform

Some locally steep slopes and hummocky ground that is present within the site are potentially due to past mining activity. It is anticipated that some regrading and earthworks will be required in order to create a suitable development platform(s) and to provide suitable gradients for the construction of adoptable highway and drainage infrastructure.

Contamination Risk Assessment

Based on the historical land uses of the site, it is anticipated that there is limited potential for contaminants to be present within the Made Ground, primarily associated with areas of infilled land, past mining activity and agricultural uses. Deposits of Made Ground and shallow mine workings / mine entries provide a potential source of ground gas.

Human Health

As is common with sites of a similar historical land use, areas of localised gross contamination may be present within near surface soils, in addition to more extensive areas of lower-level contamination. Such areas of gross contamination can typically be treated as “hot spots” and may need to be satisfactorily delineated, excavated and removed from site to a suitable licenced waste disposal facility, or relocated to less sensitive parts of the development, if possible. In this regard, it is anticipated that, generally, the site is not likely to be underlain by significant thicknesses of Made Ground and as a scheme of earthworks is considered likely to be required across much of the site in order to form development platforms, there could be an opportunity to ‘invert’ soils bearing low level contamination. This process would effectively break the pathways for human health risk by placing impacted materials beneath clean soils, and therefore avoid the need for off-site disposal of soils bearing low level contamination.

Significant levels of asbestos contamination are not expected across the site. Low levels of asbestos may be present associated with the former railway line in the north of the site. If



encountered, low levels of asbestos fibre contamination present within near surface soils may be appropriately mitigated by the placement of a suitable thickness of clean cover soils, preventing exposure to the contaminated materials by end site users.

Ground Gas

Several potential sources of ground gas have been identified from off site and on-site sources. The most significant potential ground gas sources arise due to the presence of extensive shallow mining and mine entries across the site. It is likely that mitigation measures will be required to be incorporated in to new residential development.

Low to moderate ground gas risks (as are anticipated at this site) are commonly mitigated through the use of passive gas protection measures installed within the new built development. This would typically comprise the use of suspended floors, passively vented sub-floor voids and combined damp proof and gas resistant membranes. Such measures are commonly deployed within developments at brownfield sites and do not represent a significant constraint to development viability.

Controlled Waters

The Superficial Deposits are designated as a Secondary Aquifer, whilst the bedrock strata are classified as Secondary A Aquifers. The Site does not lie within a Source Protection Zone. Drainage ditches across the site drain eastwards and ultimately flow into the Fowlea Brook. It is considered that there is likely to be hydraulic continuity between the Made Ground and both the surface and groundwater. The Made Ground therefore also poses a potential risk to Controlled Waters (namely the underlying Superficial and Bedrock Aquifers, and the Fowlea Brook). Whilst further consideration of this potential risk is required at a later stage of the planning process, it is considered that the risk could be mitigated by way of the removal of any identified sources of gross contamination within the site, or via other appropriate remedial actions, if required.

Geotechnical Risk Assessment

Slopes

There are a number of locally steep gradients within or adjacent to the site. The changes in elevation across the site will likely be dealt with by earthworks operations to regrade the site, with the use of small retaining structures such as gravel boards or gabion walls, constructed as required between plots, and reinforced earth or mass concrete retaining structures demarking development platforms across the site. These measures are not unusual for large



development sites on variable topography and would not be considered likely to preclude development but may be expected to control development layout and density.

Buried Slopes

Areas of historical mineral extraction and tipping may give rise to the risk of buried slopes that can result in differential settlement of structures spanning over them. Industry best practice advice is to avoid construction of sensitive or linear infrastructure or development over potential buried slopes. This can be achieved at the site layout design stage.

Should construction over buried slopes be unavoidable, the use of appropriate foundation and ground improvement options such as piled or reinforced strip or raft foundations can allow construction on sites affected by buried slopes.

Low strength soils

Based on available desk-based information, significant and widespread thicknesses of Made Ground are not considered likely to be encountered across the site. It is therefore anticipated that the solid geology, recorded as mudstones, sandstones and siltstones of the Pennine Upper Coal Measures, will generally be encountered at shallow depth and are likely to provide a suitable bearing stratum for conventional shallow strip foundations. This will be confirmed by an intrusive Phase II Site Investigation at the planning application stage.

As it is proposed that a scheme of earthworks will be undertaken as part of the development process, in order to form development platforms across the site, it is anticipated that engineered compaction techniques could feasibly be incorporated to remediate any areas of low strength soils and to construct a suitable founding stratum for conventional low rise residential development.

Mining Legacy Risks

Mine Entries

The site is within a Coal Mining High Risk Area as defined by the Coal Authority. Based on desk-based information, there are 90 recorded mine entries known to be within the site. Of these, only 1 is recorded as having previously been treated. Due to the presence at the site of a number of locally important and thick coal seams at very shallow depth, there is a likelihood of additional unrecorded mine entries being present. A total of 10 of the mine entries recorded on site are mine shafts, with the rest being adits.



As is routine practice at similar development sites, mine entry positions will be physically investigated to confirm the position of the mine entry and the layout of the development designed to account for the presence of the proven (or probable) mine entry position. This investigation is commonly achieved by either trenching with mechanical excavators, or probe drilling. Once located, mine entries are commonly stabilised by means of Drilling and Pressure Grouting. Where mine entries are located close to proposed built footprint (i.e. house plots or highways), the mine entries may also be capped using a reinforced concrete cap. In areas of lower sensitivity to potential settlement, such as landscaped open space, the use of techniques such as geogrid reinforcement or mass concrete plugging are also commonly used.

Shallow Mine Workings

As is noted above, a scheme of earthworks as part of the development process is proposed in the light of the site topography. This will involve excavation of varying volumes of material across the site to create the development platforms and in doing so, is likely to confirm the location of the majority of the mine entries. Where mine entries extend to shallow depths (say less than 5-6mbgl) it is anticipated that they could be economically removed by excavation during the course of an earthworks operation, thus negating the requirement for further treatment of the mine entry. Where it is demonstrable that a mine entry has been fully removed by excavation, it is typically possible to gain regulatory agreement to construct new built development over the removed mine entry position, such that their recorded former position does not necessarily constrain layout.

In relation to any features that are unable to be removed during the preparatory earthworks operation, a program of drilling and pressure grouting can be carried out to target the footprint of buildings and highways infrastructure, as appropriate. These mitigation measures are commonly used to effectively stabilise shallow mine workings on development sites.

Geo-Environmental Constraints Assessment and Mitigation

Significant thicknesses of Made Ground are not anticipated across the site, but may be present in some areas, particularly associated with former mining activities. It is anticipated that, following a detailed intrusive ground investigation and the preparation of a comprehensive human health and controlled waters risk assessment at the planning application stage, a suitable remediation strategy with appropriate measures can be defined to adequately mitigate any risks. This may take the form of in-situ remediation, localised hotspot removal and/or the utilisation of an appropriate cover system, depending on the nature, extent and severity of the contamination. Remedial measures will also be commensurate to the proposed residential end use.



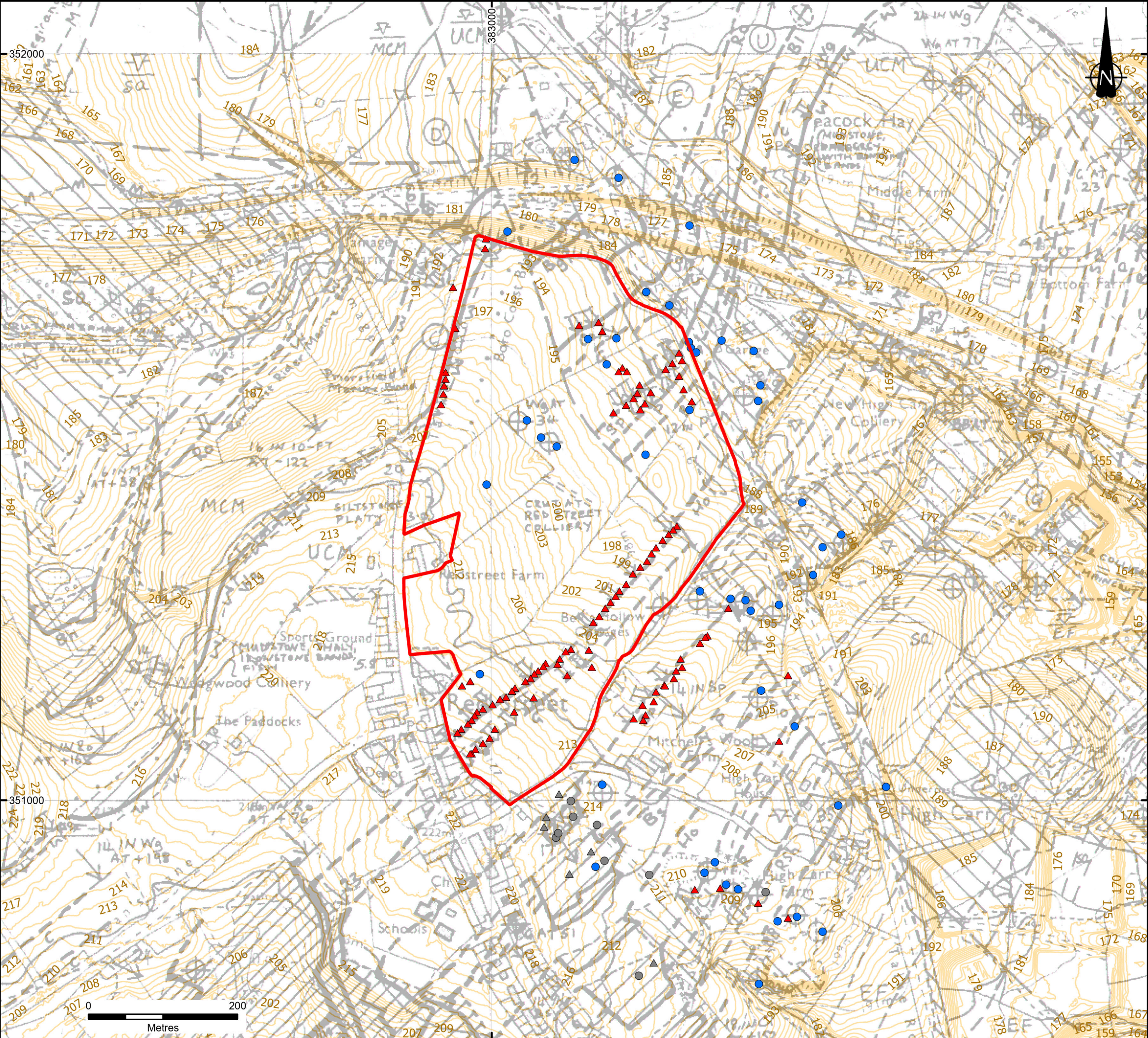
Contaminated land risks at the site are therefore anticipated to be able to be appropriately mitigated through the conventional use of suitable risk assessment, source removal and pathway intervention measures.

Ground gasses arising from landfilled deposits adjacent to the site, Made Ground on the site and mines gas are likely to warrant further consideration at the planning application stage through a detailed intrusive ground investigation and gas risk assessment. It is likely that passive gas protection measures will be required to be incorporated as part of the residential development at the site. The incorporation of such measures is not uncommon in new residential development. Ground gas risks are, therefore, not anticipated to provide a significant risk to the viability of a housing development at the site.

The variable geotechnical properties of the Made Ground on the site are such that a scheme of ground improvement may be required as part of the development of the site. It is anticipated that this will be achieved as part of a scheme of earthworks to provide the development platforms on site. Alternatively, the use of common ground improvement or piling techniques could be utilised to successfully mitigate against any parts of the site with potential poor ground conditions and differential settlements. The selection of the most appropriate and cost-effective engineering approach can be determined, as is usual practice, following the detailed ground investigation, tailored to any built development proposal.

Conclusions

The Technical Note concludes that the site is deliverable for the residential use proposed in the plan period. Whilst a number of potential contaminated land and land stability risks are anticipated in association with the site, well-practiced and effective mitigation measures are available to facilitate the safe and successful construction of a residential development.



KEY

- Site Boundary
- Contours

Coal Authority Mine Entries

- Adit (present)
- Shaft (present)
- Adit (removed)
- Shaft (removed)

Notes:

Boundaries are indicative. Aerial imagery shown for context purposes only.

Mine entries obtained from Consultants Coal Mining Report, reference 51001857237001

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REVISION		DETAILS		DATE	DRAWN	CHKD	APPD
CLIENT							
FRADLEY ESTATES LTD							
PROJECT							
LAND AT RED STREET, TALKE							
DRAWING TITLE							
GEOLOGICAL - MINING SETTING							
DRG No.		ST20527-111		REV	P0.01	SUIT. CODE	
DRG SIZE		A3		SCALE	1:5,000		DATE
DRAWN BY		RCB		CHECKED BY	--		APPROVED BY