11 Landscape and Visual

11.1 Introduction

This Landscape and Visual Impact Assessment was written by Geraldine Hayes of Hayes Ryan, Landscape Architects. The assessment is based on a desktop study and a field survey of the proposed site and receiving environment. These assessments were conducted on 22nd of November 2024 and again on the 31st January 2025. The viewpoints selected were also photographed on February 17th, 2025, for verified photomontage. This report is to be read with the accompanying set of verified photomontages prepared by 3Dimensional in the accompanying verified view photomontage booklet. Weather conditions were dull with heavy snow laden clouds predominant but visibility on the January visit was excellent with bright clear weather and good visibility for the time of year. Deciduous trees had no leaf cover.

Although interlinked, the landscape impact and the visual impacts are assessed separately and with their own sets of criteria.

The Landscape and Visual Impact Assessment (LVIA), concerns itself with landscape, landscape values, aesthetic and visual amenity and landscape as a resource which provides society with cultural, economic, and environmental benefits. Landscape has come to be defined according to the European Landscape Convention as ‘an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors’.

The assessment is informed by EPA draft Guidelines on the Information to be contained in Environmental Impact Assessment Reports[1], 2022 and the methodology prescribed in the Guidelines for Landscape and Visual Impact Assessment, 3rd edition, 2013 (GLVIA) published by the UK Landscape Institute and the Institute for Environmental Management and Assessment.

The EPA sample guidelines analyse landscape from the visual and amenity perspective. Visual effects examine context, character of the view, significance and sensitivity with amenity regarding, public access, public amenities, recreation, and tourism. Landscape is studied under the headings; Landscape Appearance and Character, Landscape Context, Views, and Prospects (in the landscape character area and related areas), and Historical Landscapes.

GLVIA guidelines examine landscape and visual effects in a necessarily interconnected manner. However, they are studied as separate study components.

11.1.1 Landscape

The effects on landscape are studied with Landscape Character Assessment (LCA) as the guiding principle. This is concerned with the identification of and assessment of the importance of landscape characteristics, landscape quality and the condition of the landscape. According to the Guidelines for Landscape Visual Impact Assessment (GLVIA)[2], ‘Landscape’ results from the interplay between the physical, natural, and cultural components of our surroundings. Different combinations and spatial distribution of these elements create variations in landscape character. ‘Landscape Character Assessment’ is how landscape is described. It is the means by which we understand the effects of development on the landscape as a resource.

[1] https://www.epa.ie/publications/monitoring--assessment/assessment/EIAR_Guidelines_2022_Web.pdf
[2] Landscape Institute and the Institute of Environmental Management and Assessment, 2013 Guidelines for Landscape and Visual Impact Assessment 3rd Edition (GLVIA)

The impact of the development itself is studied as the impact of the proposals and development on the landscape, whilst ‘effect’ describes the changes brought about by these impacts e.g., a change to landscape character.

11.1.2 Visual

The visual assessment aims to assess the extent of visibility of a development, define the sensitivity of receptors and set out the likely perception of viewers and visually sensitive receptors. This is largely to do with views and visual amenity. ‘Visual’ addresses the effects on specific viewpoints of the Proposed Development as it is experienced by general viewers and those inhabiting the local area. The effect on the views and general visual amenity is assessed. In short, visual assessment is concerned with changes that arise in the composition of available views, the response of people to these changes and the overall effects on the area’s visual amenity.

11.2 Methodology

11.2.1 Baseline Information[3]

The baseline descriptions are required to consider the context of the landscape and views in terms of the proposed location, magnitude and spatial extent of landscape affected as well as current trends in that landscape/view.

Landscape Character Assessment and the character of the relevant views are described and checked against the local condition. The distinguishing characteristics of the landscape/view are examined.

The significance of the landscape or the view is assessed against current designations, significance of the landscape/view locally nationally or internationally. The quality of the landscape or the view is examined as are any legislative protections. The landscape/view is examined for its rarity, its ability to renew itself, uniqueness, and scenic qualities. The landscape/view is considered for its quality, value, designation, and any legislative protections connected to the landscape. The rarity/unique status and condition of the landscape is noted as is its ability to renew itself. Sensitivity relates to the sensitivity of the landscape or view to change.

Landscape assessment of potential landscape effects, involves assessing and classifying the sensitivity of the landscape as a resource and then describing and classifying the magnitude of landscape change which would result from the development. The combination of sensitivity and magnitude of change gives a classification for the significance of the landscape effects. The 'impact' of the development is the action which results in landscape and visual changes. 'Effect' refers to the changes brought about by such an impact. The effect may result in the alteration of the landscape character of the area. 'Effect' is defined as the change or changes resulting from those actions, e.g., a change in landscape character, or changes to the composition, character and quality of views in the receiving environment. This report focusses on these effects. The study considers the area from which the development will be seen and the landscape it is set in. As per the GLVIA the emphasis is on a "reasonable approach which is proportional to the scale and nature of the Proposed Development."[4]

11.2.2 Thresholds of Magnitude of Change

A set of viewpoints were studied for the visual section of the report and a general landscape photographic study was conducted to examine and confirm the landscape character, its form and pattern around the Proposed Development.

The area around the site of the Proposed Development was examined and from this field study a specific set of viewpoints were selected for the visual aspect of the study. Professional judgement as recommended by the GLVIA and establishing a proportionate examination of the area relative to the size of the project has allowed for a thorough visual study.

Various tools, techniques and criteria are used to judge landscape capacity and sensitivity. Thresholds of magnitude of change are established by using such tools. In addition to

[3] EPA Table 3.3 Typical Standards of Descriptions of Baseline Data for use in an EIAR
[4] Landscape Institute and Institute of Environmental Management and Assessment, 2013 Guidelines for Landscape and Visual Impact Assessment p 98

examining local Landscape Character Assessments (LCA), the field study was conducted to establish the magnitude of change to the landscape and views.

Assessment of “significance of landscape effects” requires a review of landscape character assessments at local level, establishing sensitivity against which any predicted change can then be measured. This involves a desk study review of published landscape characterisation studies and assessment of sensitivities for the case in hand.

Field observations are used to confirm decisions to assess landscape character and confirm landscape character against the desk top study. It is also used to assess the appropriateness of the landscape character type for this landscape.

Subjective information on less tangible characteristics is also recorded to inform the impressions or perceptions of the landscape and landscape value.

Ordnance Survey and other published information such as historical maps are also useful in examining the landscape, landscape history and its capacity for change.

The character, quality, scale, and value of the landscape is assessed according to the criteria below.

11.2.3 Landscape Quality

Landscape quality is primarily a matter of how clearly the distinctive character of a landscape is expressed in an area, and of the state of repair or condition of landscape elements and the integrity and intactness of the landscape. There are three categories of quality ranging from high to medium to low.

High – landscapes strong in character or distinctive character, in good condition and very few or no incongruous features. Excellent example of a landscape type.

Medium – moderate strength of character and retain many key characteristics. Such a landscape will typically have suffered some decline and is marked by the occasional incongruous feature.

Low – landscapes with weak strengths of character, fragmented and/or featuring significant atypical, incongruous, or discordant features.

11.2.4 Value

The value of a landscape reflects its value to society and in estimating this, the report sets out to establish levels of importance of the potentially affected landscape, aspects of the landscapes that are valued, to whom and for what reason. It refers to the relative value we attach to different landscapes and is the basis for designating or recognising certain highly valued landscapes. The reasons a landscape is valued are many and varied. It can include a landscapes’ scenic quality, its tranquillity, or its wilderness attributes. It may be highly valued at a national or local level due to conservation reasons or cultural associations.

Landscape value is categorised from high to medium to low.

‘**High**’ value landscapes covered by a national designation for landscape value and display a high number of locally valued features present or are very highly valued as a landscape for

other reasons.

'**Medium**' value landscapes are landscapes not covered by designation for landscape value. These landscapes may have a moderate number of locally valued features present, or they are moderately valued as a landscape for other reasons.

'**Low**' value landscapes are those not covered by a local or national designation for landscape with very few locally valued features present and not locally valued as a landscape for any other reason. A landscape with a low value may be degraded, display numerous incongruous features and have no obvious local association.

Landscape can also be seen to be valued at community level or for intangible reasons can be perceived to be valuable to a particular community. It may be valued for the elements that remain of a finely articulated landscape, with all its associations and connections over time.

11.2.5 Landscape Sensitivity

Landscape sensitivity refers to the degree to which a landscape can accommodate change without adverse effects on the landscape or its character. It has regard for the value placed on the landscape at all levels, how it is used, the patterns of the landscape, its sense of enclosure or openness and all of its visual receptors.

The nature and scale of development also reflects on sensitivity. Five categories are used to classify sensitivity.

Sensitivity Descriptions

Very High Areas; Where the landscape exhibits very strong, positive character with valued elements, features and characteristics that combine to give an experience of unity, richness and harmony. The landscape character is such that its capacity to accommodate change in the form of development is very low. Because of their very high sensitivity these landscapes are subject to protection by designation either nationally or internationally. The priority for such landscapes is the protection of their existing characters from change.

High Areas; Where the landscape exhibits strong, positive character with valued elements, features and characteristics. The landscape character has a limited or low capacity to accommodate change in the form of development. Such landscapes are recognised in landscape policy or designations as being of national, regional or county value. The principal objective for the area is the conservation of existing landscape character.

Medium Areas; Where the landscape has certain valued elements, features or characteristics but where the character is mixed or not particularly strong, or has evidence of alteration, degradation or erosion of elements and characteristics. The landscape character is such that there is some capacity for change in the form of development. These areas may be recognised in landscape policy at local or county level and the principal management objective may be to consolidate landscape character or facilitate appropriate, necessary change.

Low Areas; Where the landscape has few valued elements, features or characteristics and the character is weak. The character is such that it has capacity for change; where development would make no significant change or would make a positive change. Such landscapes are generally unrecognised in policy and the principal management objective may be to facilitate change through development, repair, restoration or enhancement.

Negligible Areas: Where the landscape exhibits negative character, with no valued elements, features, or characteristics. The landscape character is such that its capacity to accommodate change is high; where development would make no significant change or would make a positive change. Such landscapes include derelict industrial lands or extraction sites, as well as sites or areas that are designated for a particular type of development. The principal management objective for the area is to facilitate change in the landscape through development, repair, or restoration.

Sensitivity of the landscape and susceptibility to change are interlinked. This is the ability of the landscape receptor (overall landscape character, landscape quality, condition of the landscape area etc.) to accommodate the proposed development without undue consequences for the baseline situation and /or the achievement of landscape policies and strategies. [5]

Existing assessments are very useful and largely deal with intrinsic or inherent sensitivity. This occurs without reference to a particular type of development. According to the GLVIA, "These cannot reliably inform assessment of the susceptibility to change since they are carried out without reference to any particular type of development and so do not relate to the specific development proposed."[6] Therefore susceptibility must be related to the project.

Relevant to this project, the site of the Proposed Development is sited in a **low** sensitivity landscape.

11.2.6 Geographical Extent

Having regard to the geographical extent of landscape effects, it is important to iterate the effects which may have an influence on differing scales at landscape level.

The effect at (a) site level will refer to the effect within the site itself and at (b) the level of the immediate setting of the site and (c) at the scale of the landscape type or character area. Some effects may have a geographical extent (d) ranging over several landscape character areas.

11.2.7 Loss/No Loss of Landscape Elements

In addition to effects which result in the loss of landscape elements, it is possible to have effects which cause no loss of landscape elements and no removal of existing components but there is an introduction of new elements e.g. buildings which alter the skyline or arise over the tree line. In such a case, scale can be seen to alter the landscape character and quality of visual amenity.

11.2.8 Magnitude of Landscape Change

Magnitude of change is a factor of the scale, extent and degree of change imposed on the landscape by a development, with reference to its key elements, features and characteristics ('landscape receptors'). Five categories are used to classify magnitude of change.

[5] GLVIA 3RD Ed., Landscape Institute and Institute of Environmental Management and Assessment 2013 p 89.
[6] GLVIA 3RD Ed., Landscape Institute and Institute of Environmental Management and Assessment 2013 p 89

Description of the Categories of Landscape Change Magnitude

Very High: Change that is large in extent, resulting in the loss of or major alteration to key elements, features or characteristics of the landscape and/or introduction of large elements considered totally uncharacteristic in the context. Such development results in fundamental change to the character of the landscape with a loss of landscape quality and perceived value.

High Change: Change that is moderate to large in extent, resulting in major alteration to key elements, features or characteristics of the landscape and/or introduction of large elements considered uncharacteristic in the context. Such development results in change to the character of the landscape.

Medium Change: Change that is moderate in extent, resulting in partial loss or alteration to key elements, features or characteristics of the landscape, and/or introduction of elements that may be prominent but not necessarily substantially uncharacteristic in the context. Such development results in change to the character of the landscape but not necessarily reduction in landscape quality and perceived value.

Low Change: Change that is moderate or limited in scale, resulting in minor alteration to key elements, features or characteristics of the landscape, and/or introduction of elements that are not uncharacteristic in the context. Such development results in minor change to the character of the landscape and no reduction in landscape quality and perceived value.

Negligible Change: Change that is limited in scale, resulting in no alteration to key elements features or characteristics of the landscape, and/or introduction of elements that are characteristic of the context. Such development results in no change to the landscape character, its quality or perceived value.

11.2.9 Probability of Effects

Likely or probable effects can be described as those which are planned to take place and those which can be reasonably foreseen to be inevitable consequences of the normal construction and operation of the project.

Thus, the probability of the effects is defined as likely and unlikely.

Likely Effects; The effects that can reasonably be expected to occur because of the planned project if all mitigation measures are properly implemented.

Unlikely Effects; The effects that can reasonably be expected not to occur because of the planned project if all mitigation measures are properly implemented.

11.2.10 Significance of Effects

To classify the significance of effects, the magnitude of change is measured against the sensitivity of the landscape using the guide in Table 11.1 below. The matrix is only a guide. The assessor also uses professional judgement informed by their expertise and experience to arrive at a classification of significance that is reasonable and justifiable.

Table 11.1: Guide to Classification of Significance of Landscape and Visual Effects

		Sensitivity : Landscape/View				
		Very High	High	Medium	Low	Negligible
Magnitude of Change : Landscape/View	Very High	Profound	Profound to Very Significant	Very Significant to Significant	Moderate	Slight
	High	Profound to Very Significant	Very Significant	Significant	Moderate to Slight	Slight to Not Significant
	Medium	Very Significant to Significant	Significant	Moderate	Slight	Not Significant
	Low	Moderate	Moderate to Slight	Slight	Not Significant	Imperceptible
	Negligible	Slight	Slight to Not Significant	Not Significant	Imperceptible	Imperceptible

According to EPA guidelines the description of the likely significant effects on both the landscape and visual receptors should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the project.'

11.2.11 Duration of Effects

The duration of effect is categorised in this report according to the EPA guidelines[7].

- Momentary Effects: Effects lasting from seconds to minutes.
- Brief Effects: Effects lasting less than a day.
- Temporary Effects: Effects lasting less than a year.
- Short-term Effects: Effects lasting one to seven years.
- Medium-term Effects: Effects lasting seven to fifteen years.
- Long-term Effects: Effects lasting fifteen to sixty years.
- Permanent Effects: Effects lasting over sixty years.
- Reversible Effects: Effects that can be undone, for example through remediation or restoration.
- Frequency of Effects: Describe how often the effect will occur. (once, rarely, occasionally, frequently, constantly – or hourly, daily, weekly, monthly, annually).

11.2.12 Environmental Protection Agency Guidelines

The EPA Guidelines on the Information to be Contained in Environmental Impact Assessment Reports, May 2022, describes the significance classifications as follows:

Imperceptible: An effect capable of measurement but without significant consequences.

[7] Environmental Protection Agency, 2022 Guidelines on the Information to be contained in Environmental Impact Assessment Reports

Not significant: An effect which causes noticeable changes in the character of the environment but without significant consequences.

Slight: An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.

Moderate: An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.

Significant: An effect which, by its character, magnitude, duration, or intensity alters a sensitive aspect of the environment.

Very Significant: An effect which, by its character, magnitude, duration, or intensity significantly alters most of a sensitive aspect of the environment.

Profound: An effect which obliterates sensitive characteristics.

11.2.13 Methodology for Visual Effects Assessment

Assessment of visual effects involves identifying a number of key/representative viewpoints in the site's receiving environment, and for each one of these classifying the viewpoint sensitivity and the magnitude of change which would result in the view. These factors are combined to arrive at a classification of significance of the effects on each viewpoint.

11.2.13.1 Susceptibility of the Visual Receptor to Change

This depends on the occupation or activity of the people experiencing the view, and the extent to which their attention is focussed on the views or visual amenity they experience at that location. Visual receptors most susceptible to change include residents at home, people engaged in outdoor recreation focused on the landscape (e.g. trail users), and visitors to heritage or other attractions and places of community congregation where the setting contributes to the experience. Visual receptors less sensitive to change include travellers on road, rail and other transport routes (unless on recognised scenic routes), people engaged in outdoor recreation or sports where the surrounding landscape does not influence the experience, and people in their place of work or shopping where the setting does not influence their experience.

11.2.13.2 Value attached to the view

This depends largely on the subjective opinion of the visual receptor but also on factors such as policy and designations (e.g. scenic routes, protected views), or the view or setting being associated with a heritage asset, visitor attraction or having some other cultural status (e.g. by appearing in arts). Five categories are used to classify a viewpoint's sensitivity.

11.2.13.3 Categories of Viewpoint Sensitivity

Very High: (views towards or from a landscape feature or area) that are recognised in policy or otherwise designated as being of national value. The composition, character and quality of the view are such that its capacity for change is very low. The principal management objective for the view is its protection from change.

High: Viewpoints that are recognised in policy or otherwise designated as being of value, or viewpoints that are highly valued by people that experience them regularly (such as views from

houses or tourist-based views focused on the landscape). The composition, character and quality of the view may be such that its capacity for accommodating change may or may not be low. The principal management objective for the view is its protection from change that reduces visual amenity.

Medium: Views that may not have features or characteristics that are of particular value, but have no major detracting elements, and which thus provide some visual amenity. These views may have capacity for appropriate change and the principal management objective is to facilitate change to the composition that does not detract from visual amenity, or which enhances it. Such views can be judged to have some scenic quality, which demonstrates some sense of naturalness, tranquillity, or some rare element in the view.

Low: Views that have no valued feature or characteristic, and where the composition and character are such that there is capacity for change. This category also includes views experienced by people involved in activities with no particular focus on the landscape (e.g. shopping or they are on heavily trafficked routes). The view may make for an attractive backdrop but is not an important element for these activities. For such views the principal management objective is to facilitate change that does not detract from visual amenity or enhances it.

Negligible: Views that have no valued feature or characteristic, or in which the composition may be unsightly (e.g. in derelict landscapes). For such views the principal management objective is to facilitate change that repair, restores or enhances visual amenity. Such viewpoints reflect users whose activity has no focus on the landscape or where the view has no relevance to their activity. Such a view may be of poor quality.

11.2.14 Magnitude of Change to the View

Classification of the magnitude of change takes into account the size or scale of the intrusion of development into the view (relative to the other elements and features in the composition, i.e. its relative visual dominance), the degree to which it contrasts or integrates with the other elements and the general character of the view, and the way in which the change will be experienced (e.g. in full view, partial or peripheral view, or in glimpses). It also takes into account the geographical extent of the change, as well as the duration and reversibility of the visual effects. Five categories are used to classify magnitude of change to a view:

Categories of Visual Change - Magnitude of Change Description

Very High: Full or extensive intrusion of the development in the view, or partial intrusion that obstructs valued features or characteristics, or introduction of elements that are completely out of character in the context, to the extent that the development becomes dominant in the composition and defines the character of the view and the visual amenity.

High: Extensive intrusion of the development in the view, or partial intrusion that obstructs valued features, or introduction of elements that may be considered uncharacteristic in the context, to the extent that the development becomes co-dominant with other elements in the composition and affects the character of the view and the visual amenity.

Medium: Partial intrusion of the development in the view, or introduction of elements that may be prominent but not necessarily uncharacteristic in the context, resulting in change to the composition but not necessarily the character of the view or the visual amenity

Low: Minor intrusion of the development into the view or introduction of elements that are uncharacteristic in the context, resulting in minor alteration to the composition and character of the view but no change in visual amenity.

Negligible: Barely discernible intrusion of the development into the view, or introduction of elements that are characteristic in the context, resulting in slight change to the composition of the view and no change in visual amenity.

11.2.15 Significance of Visual Effects

As for landscape effects, to classify the significance of visual effects, the magnitude of change to the view is measured against the sensitivity of the viewpoint, using the guide in Table 11.1 above.

11.2.16 Mitigation Measures

Mitigation Measures for both landscape and visual effects are categorised as;

- **Mitigation by Avoidance**
- **Mitigation by Prevention** e.g. Prevention measures are put in place to prevent the effects of accidental events from giving rise to significant adverse effects.
- **Mitigation by Reduction**; seeks to limit the exposure of the receptor.
- **Reducing the Effect**; This strategy is used for effects which occur over an extensive and undefined area of land view or landscape. The mitigation is often achieved by installing screening between the likely receptors and the source of the effects.
- **Offsetting**: This is a strategy used for dealing with significant adverse effects which cannot be avoided, prevented or reduced. It includes measures to compensate for adverse effects. e.g. planting of new vegetation elsewhere to replace unavoidable loss of similar vegetation.

11.3 Baseline Conditions

11.3.1 Ordnance Survey Ireland Historical Maps

The following historical maps from Tailte Éireann; (the OSI historical six inch black and white and coloured (first editions) and twenty-five inch black and white maps) (**Figure 11.1- 11.4**) were studied to identify the evolution of the landscape in and around the proposed site and to examine it in the context of the landscape and landscape character area as we find it today.

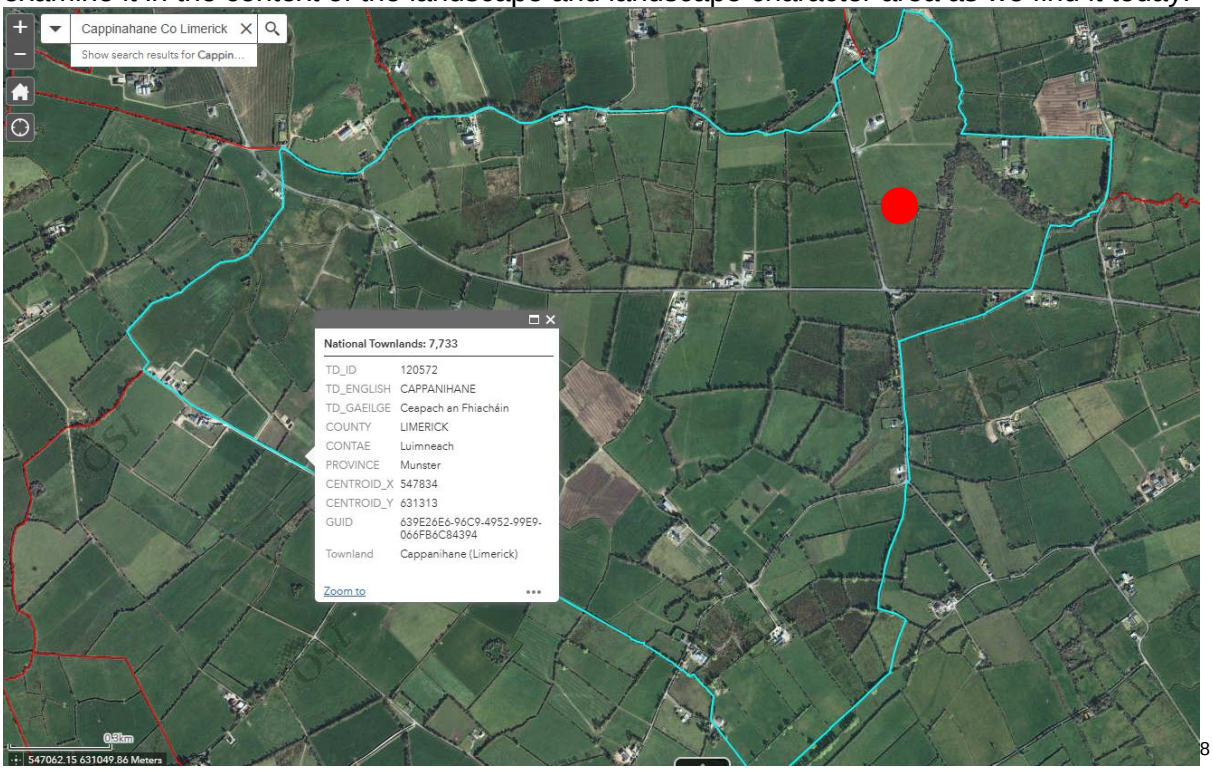
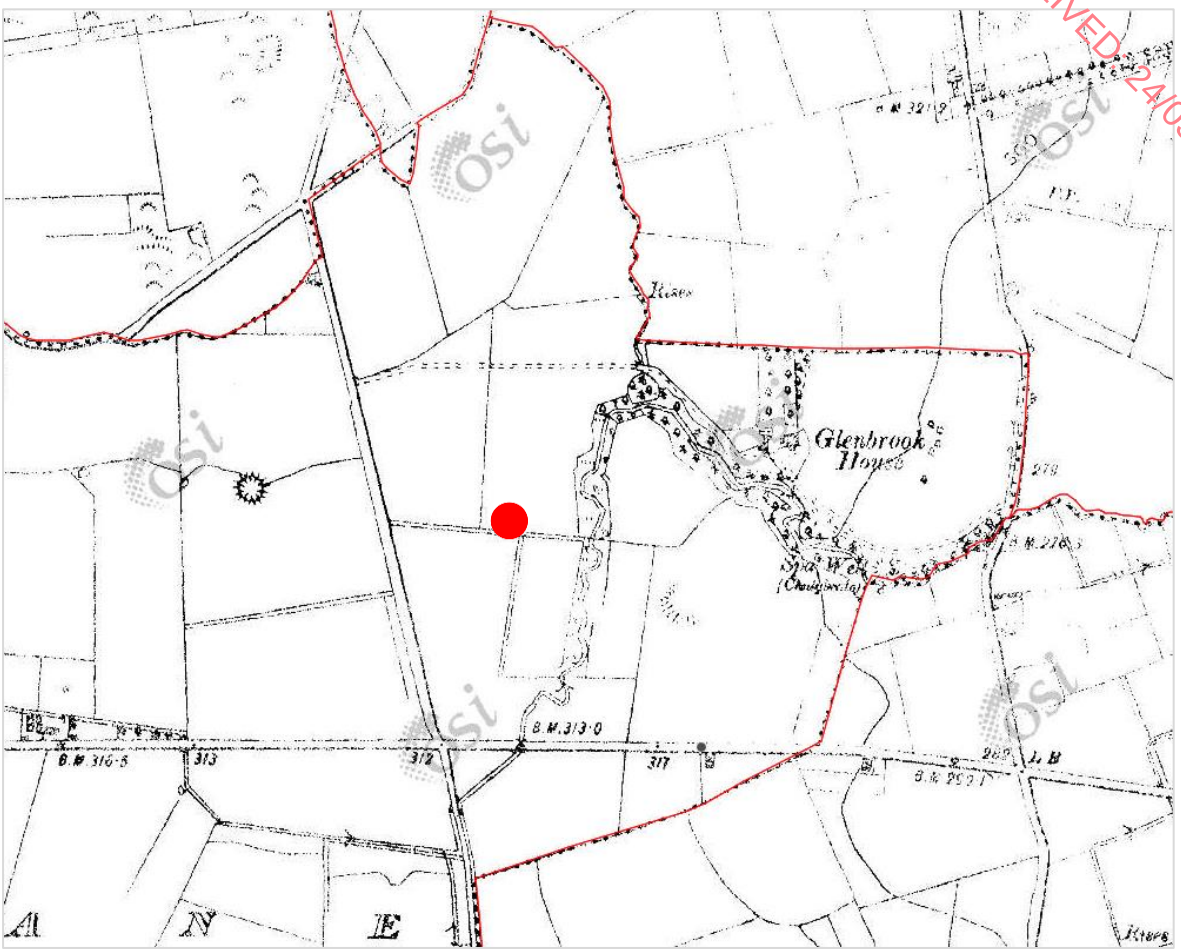


Figure11.1: Cappanihane Townland Boundary

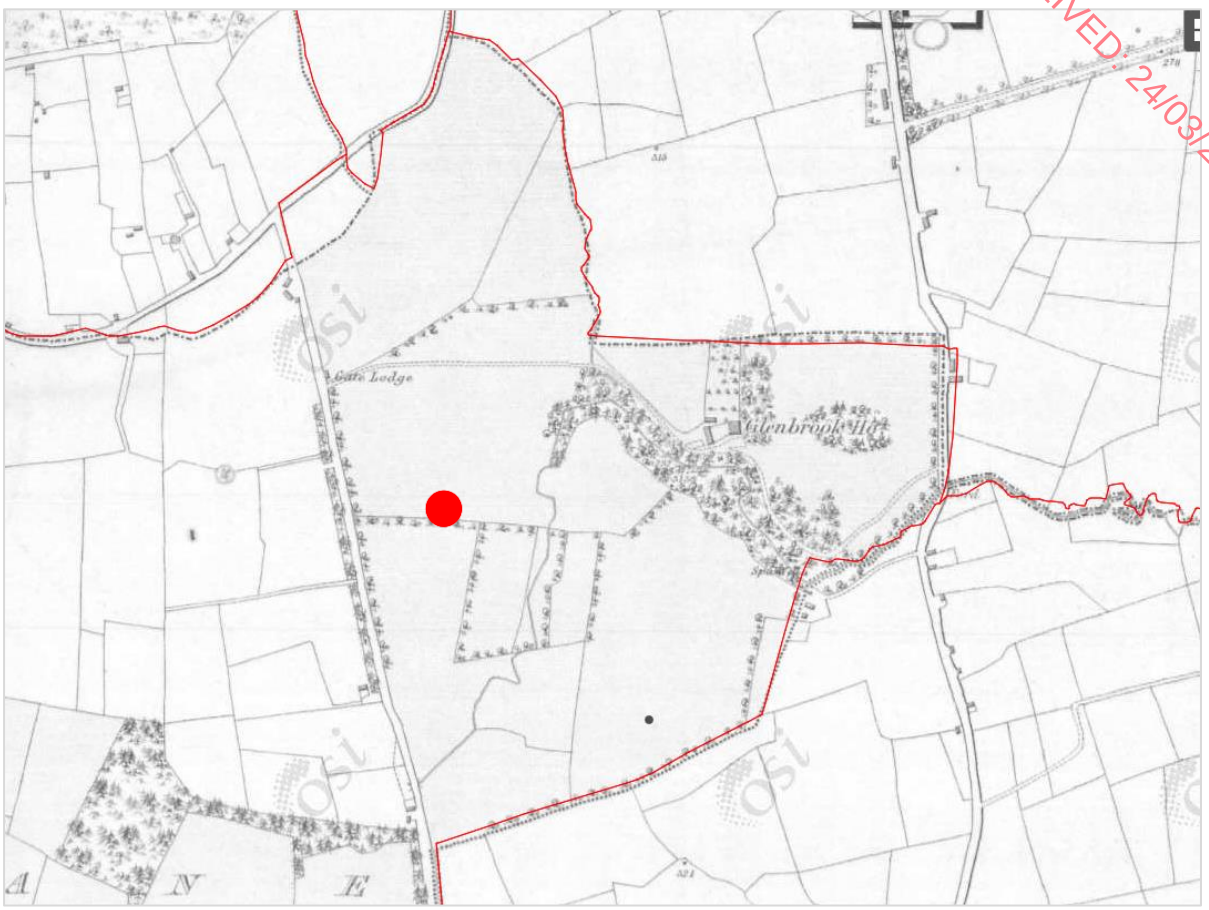
[8]Tailte Éireann https://osi.maps.arcgis.com/apps/webappviewer/index.html



9

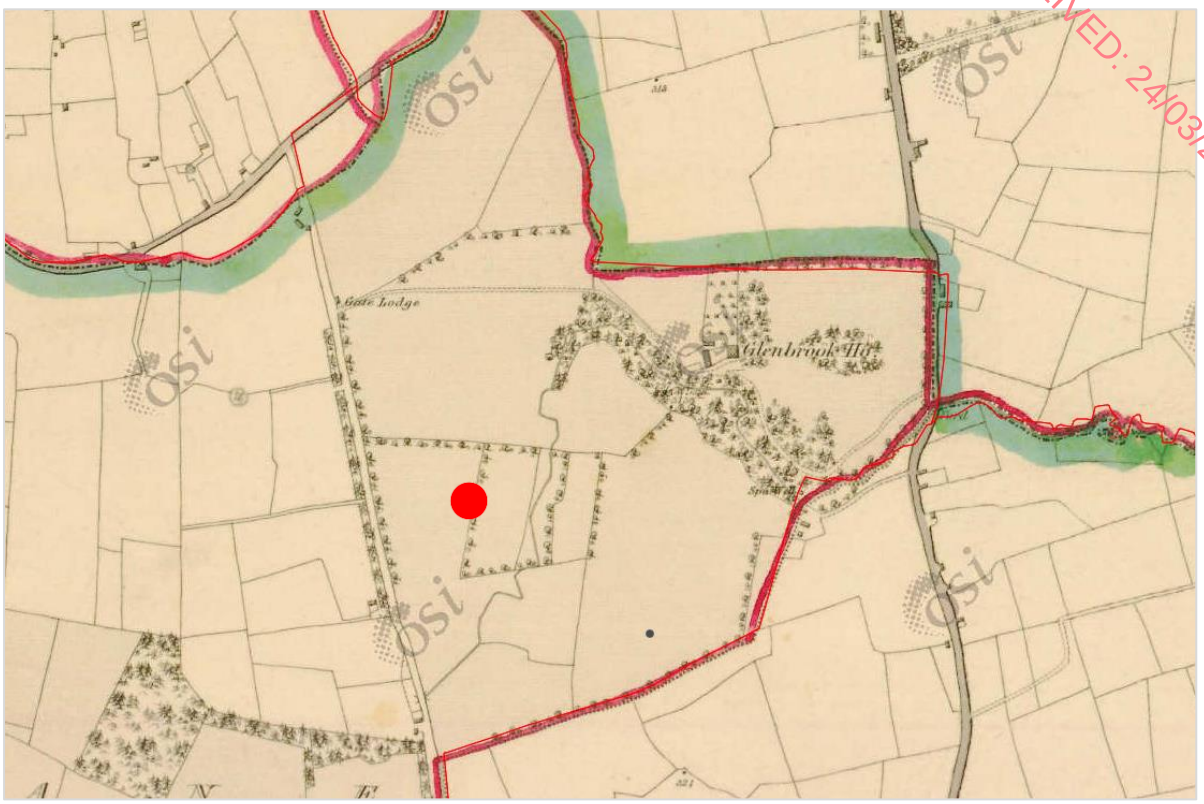
Figure11.2: OSI Historic Map 6-inch last edition black and white

[9] OSI 6 Inch Black and White

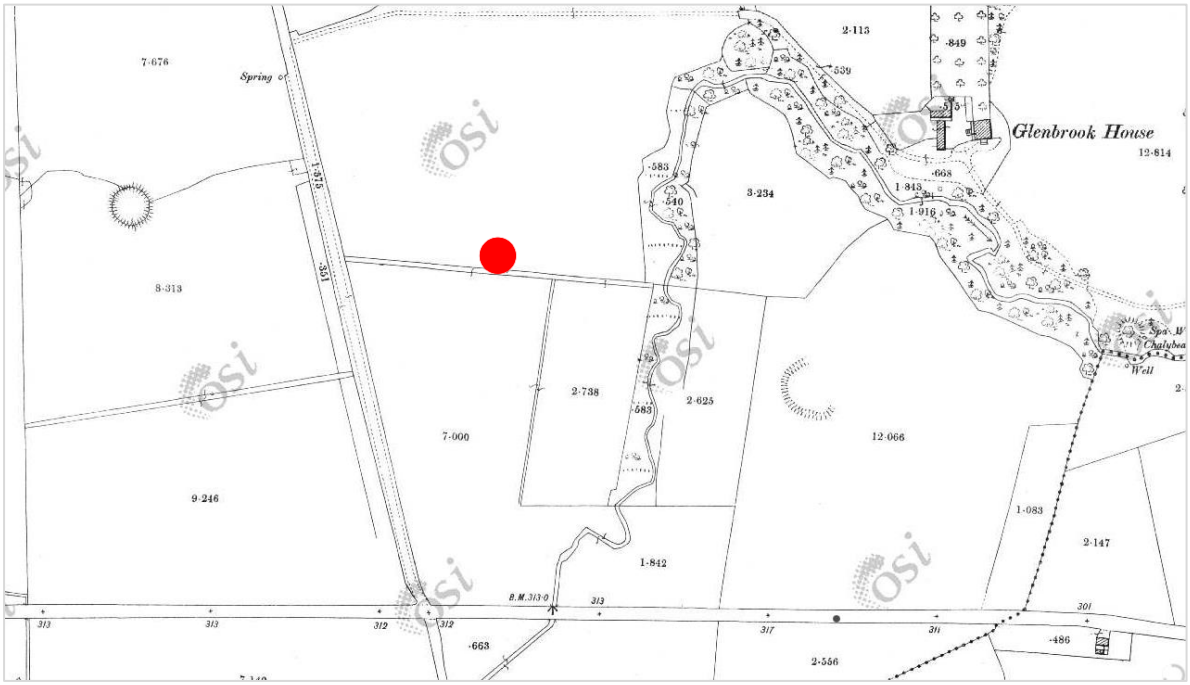


[10] **Figure11.3: OSI Historic Map 6-inch first edition black and white**

[10] First Edition Black and White OSI



[11] **Figure11.4: OSI Historic Map 6-inch colour first edition (1837-1842)**



[12] **Figure11.5: OSI 25 Inch**

[11] Six Inch First Edition OSI
[12] Tailte Éireann OSI

11.3.2 Landscape Associations

Associations of the landscape with arts / literary / historical / mythical figures or architecture etc. were examined.[13] The townland name Cappanihane or Cheapach an Fhiacháin translates as "the tillage plot of the small raven". Nearby Glenbrook House dates prior to 1851[14]and one can assume the surrounding trees and landscape date from this time also.

Figure11.6: Glenbrook House 1851

The townland boundaries will not be affected by the proposals as examined both in the current boundaries and the historical maps. The closest archaeological element in the landscape is northwest of the site of the proposed development. On the eastern side, east of Glenbrook, there is another archaeological mound and a rath (see RPS sheets below).

[13] https://www.logainm.ie/ga/30530/

[14] Collis, Maurice, d. 1855 Created by; Cartwright & sons, lithographers, Chancery Lane, 1851.

Figure11.7: Tailte Éireann 25 inch map Archaeological Elements in the Landscape

The field system, the drainage pattern, and the shape and structure of the field system in conjunction with planting on the eastern Glenbrook estate define the historical landscape pattern in and around the site of the proposed development.

11.3.3 County Limerick Development Plan LCA

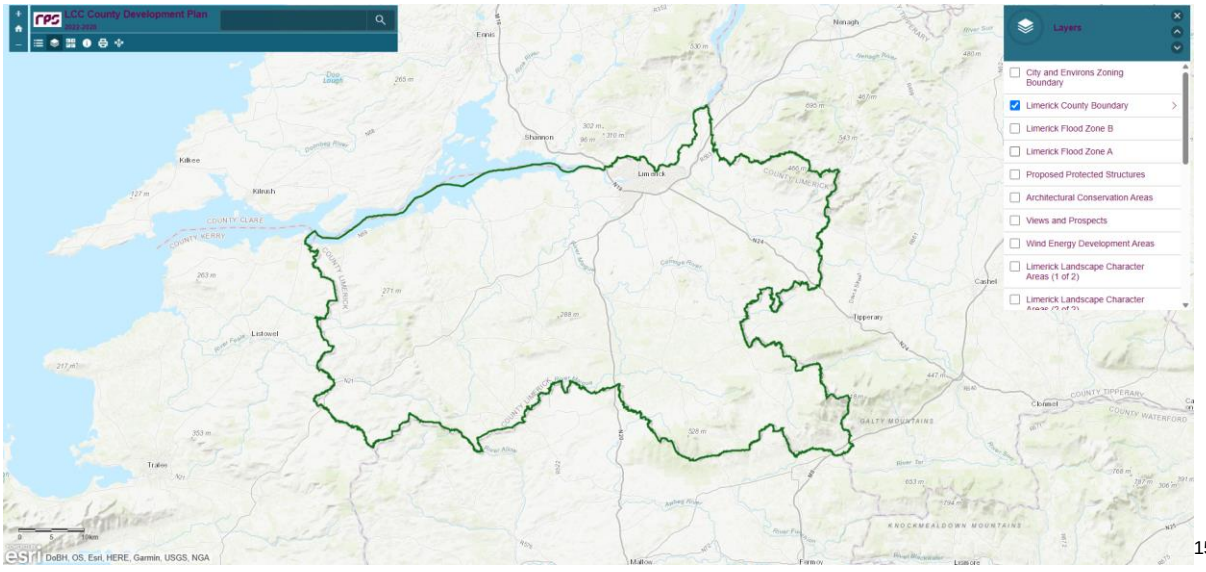
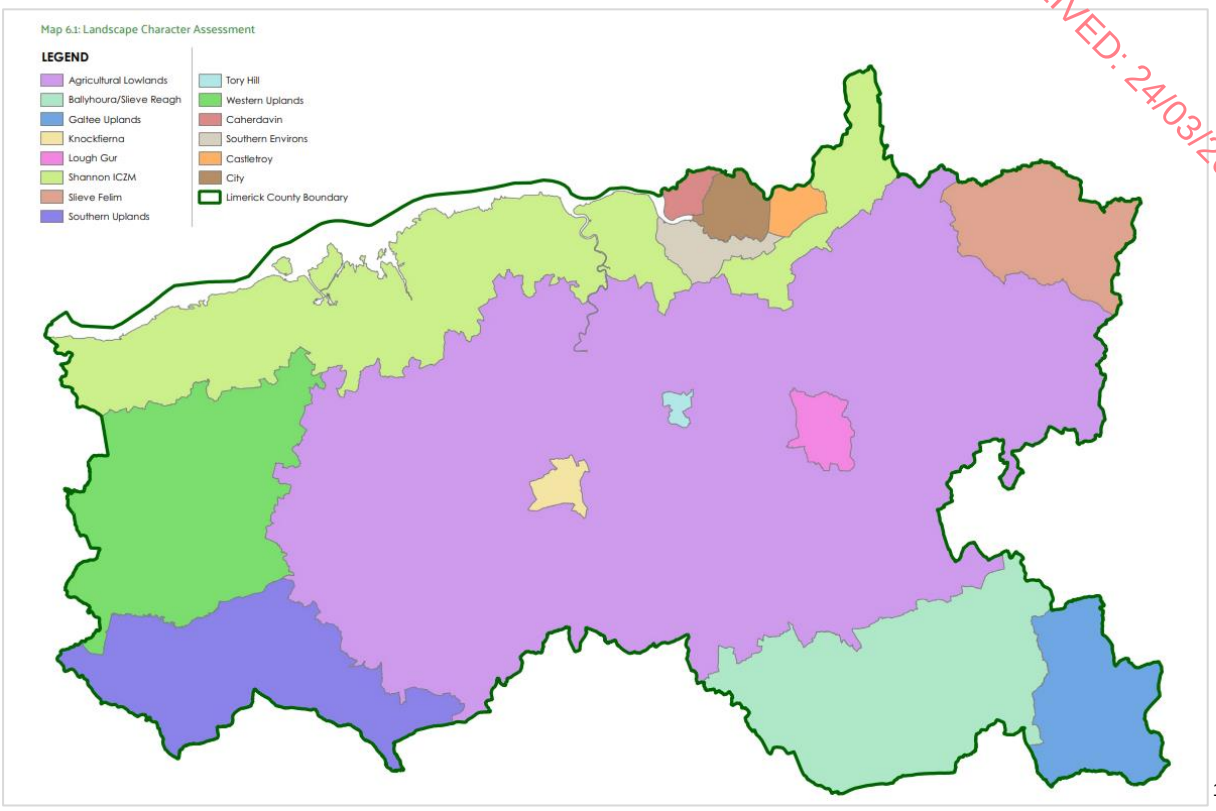


Figure11.8: Limerick County Boundary

[15]

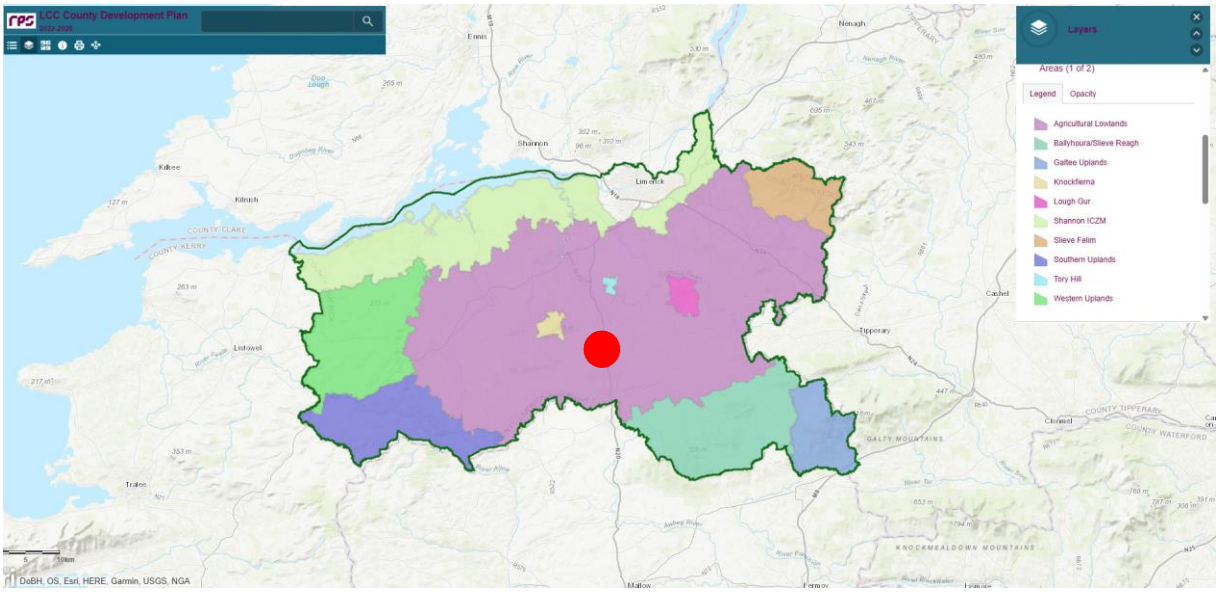
[15] Limerick County Boundary https://www.arcgis.com/apps



[16]

Figure11.9: Limerick Landscape Character Areas

The LCDP 2022-2028 categorises the landscape into a hierarchy of ten landscape types outside of the city region.



[17]

Figure11.10: Cappanihane Within the Agricultural Lowlands LCA

[16] LCDP 2022-2028 Limerick Landscape Character Areas

[17] Landscape.Category.https://www.arcgis.com/apps/View/index.html?appid=bb2201e5a7c84b8c9daaf5418d8c0be8

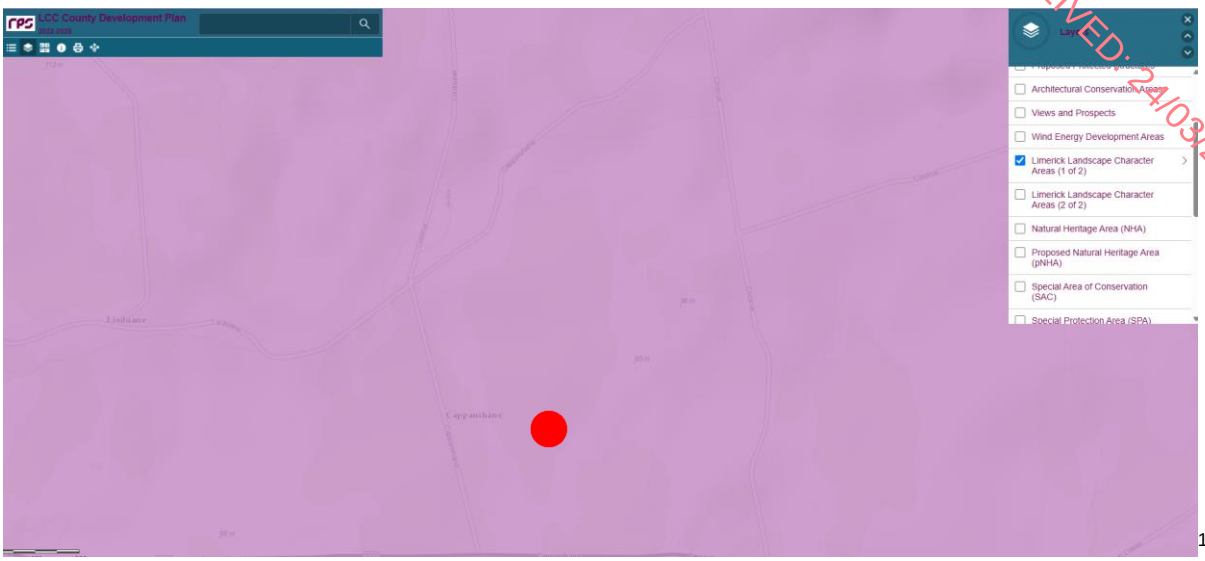
Cappanihane lies within the character area described as the agricultural lowlands. The following policy and objectives of the Limerick County Development Plan 2022-2028 relate to landscape and views;

"6.4 Landscape and Visual Amenity

6.4.1 Landscape Assessment and Landscape Character Areas Limerick possesses a varied landscape which is important not just for its intrinsic value and beauty, but also because it provides for local residents and visitors, both in terms of a place to live and for recreational and tourism purposes. The importance of landscape and visual amenity in the role of planning is recognised in the Planning and Development Act 2000 (as amended). The Act require that Development Plans include objectives for the preservation of the landscape, views and prospects. It requires objectives for Landscape Conservation Areas, Areas of Special Amenity and also for the assessment of landscape character. This approach towards landscape issues based on the Draft Landscape Character Assessment Guidelines stresses the distinctiveness of differing kinds of landscape and how differing kinds of development can best be integrated within them. The landscape character areas have incorporated the scenic views and prospects of Limerick County Development Plan 2010-2016 (as extended), which will ensure continuity between and further development of landscape policies for rural Limerick"

"Policy EH P8 Landscape Character Areas It is a policy of the Council to promote the distinctiveness and where necessary safeguard the sensitivity of Limerick's landscape types, through the landscape characterisation process in accordance with the Draft Guidelines for Landscape and Landscape Assessment (2000) as issued by the Department of Environment and Local Government, in accordance with the European Landscape Convention (Florence Convention) and with A National Landscape Strategy for Ireland – 2015- 2025. The Council shall implement any relevant recommendations contained in the Department of Arts, Heritage and the Gaeltacht's National Landscape Strategy for Ireland, 2015 – 2025."

The proposed development clearly lies within the Agricultural Lowlands landscape character area.



[18]

Figure11.11: Cappanihane within the Agricultural Lowlands LCA

11.3.4 Landscape Character Type

The landscape type of the character area was investigated at a local level in the field survey. The findings of the field survey (See Appendix 11.2) concur with the description of landscape character as outlined below. Near the site of the Proposed Development, the agricultural lowlands are typically expressed. There is an element of demesne landscape expressed in conjunction with a tributary of the River Maigue to the east of the proposed development with mature trees established in the landscape.

11.3.5 Landscape Character Assessment Policy Objectives and LCDP Policy Objectives

The objectives for the agricultural lowlands LCA as contained in the LCDP 2022-2028 is described as;

Character Area Description Specific Objectives LCA
01 Agricultural Lowlands This is the largest of the Landscape Character Areas in Limerick and comprises almost the entire central plain. This landscape is a farming landscape and is defined by a series of regular field boundaries, often allowed to grow to maturity. This well-developed hedgerow system is one of its main characteristics. In terms of topography, the landscape is generally rather flat with some locally prominent hills and ridges. The pastoral nature of the landscape is reinforced by the presence of farmyards. a) Encourage, where housing is permitted, design that reflects existing housing stock, such as the two storey farmhouses which are a feature in the area. b) Encourage retention of existing landscape features such as hedgerows and trees and their incorporation into landscaping for new developments. c) Discourage development of locally prominent sites. d) Encourage the regular arrangement of turbines with equal spacing in proposed wind farm developments, which take field boundaries into account. e) Encourage development within existing settlements.[19]

[18]https://hub.arcgis.com/datasets/wicklow::landscape-category-cdp-2022-2028
[19]https://www.limerick.ie/sites/default/files/media/documents/2023-05/Limerick-Development-Plan-Volume-1-Written-Statement-including-Variation-No-1.pdf

11.4 Landscape Character Area

This landscape character assessment describes the importance of hedgerows in defining the spatial pattern.

The hedgerow segments in the existing landscape pattern around the area features some mature deciduous trees especially on the eastern side bordering the stream. Although the hedgerows are excellent there are notable stands of mature deciduous trees due in large part to the effect of ash die back in the area.

There will be a removal of a segment of hedgerow- road boundary to facilitate the site entrance.

The Proposed Development will lie within the overall pattern of field boundaries though there will be a removal in the landscape of some of the hedgerow elements in the centre of the proposed site.

There are large agricultural units and modern single housing in the landscape character area. Tranquillity in this landscape character area is moderate. There is no great sense of remoteness at the site of the proposed development, the adjacent R518 to the south of the site is a busy road. A strong sense of the rural Irish landscape is prevalent in the character area.

11.4.1 Landscape Value

There is no strong landscape value attributed to the area around Cappanihane in the LCDP. The hedgerow system is the most valued element in its ability to define the landscape spatial pattern. The prominent areas in the landscape wrap around the proposed site. In comparison to other landscapes within the County and nationally the landscape value at the site of the proposed development is **low.**

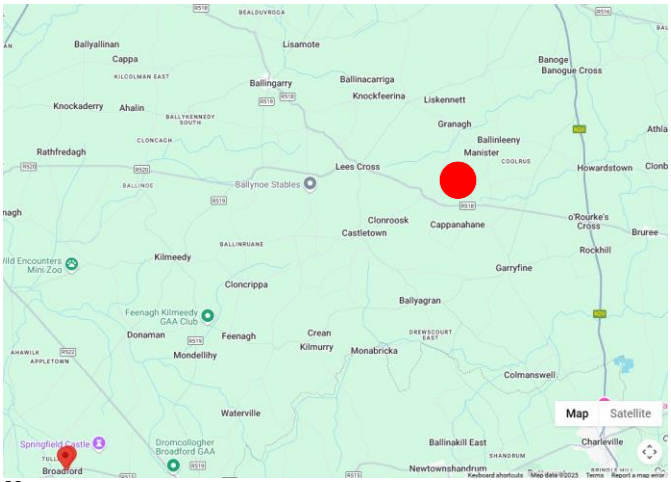
11.4.2 Geological Heritage

Examining the Limerick County Development plan, there are no areas of geological interest affected by the proposed development and from a landscape or intervisibility the Objective EH O9 Geological Sites are not relevant in this case.

The areas of geological Interest mentioned in LCDP 2022-2028 are "*Barrigone, which is located in the northern part of County Limerick, close to the estuary and shows some of the same characteristics as the Burren. A karst base layer is present in much of this part of Limerick and drainage features such as turloughs are also present. Individual sites such as Linfield Quarry, close to Pallasgrean in the east of the County, are also important parts of Limerick's geological heritage. Linfield is noted for its basalt formations, which may well be unique in the region."*

11.4.3 Recreation and Tourism

County Limerick has a wealth of hiking and cycling trails. There are none listed by Discover Ireland in the area. All trails list two at some distance from the site; Knockfierna Famine Trail and Liskennet Wood. Sports Irelands national trail office also list Knockfierna Memorial Loop.



20

Figure11.12: Discover Ireland Trails listed near Cappanihane

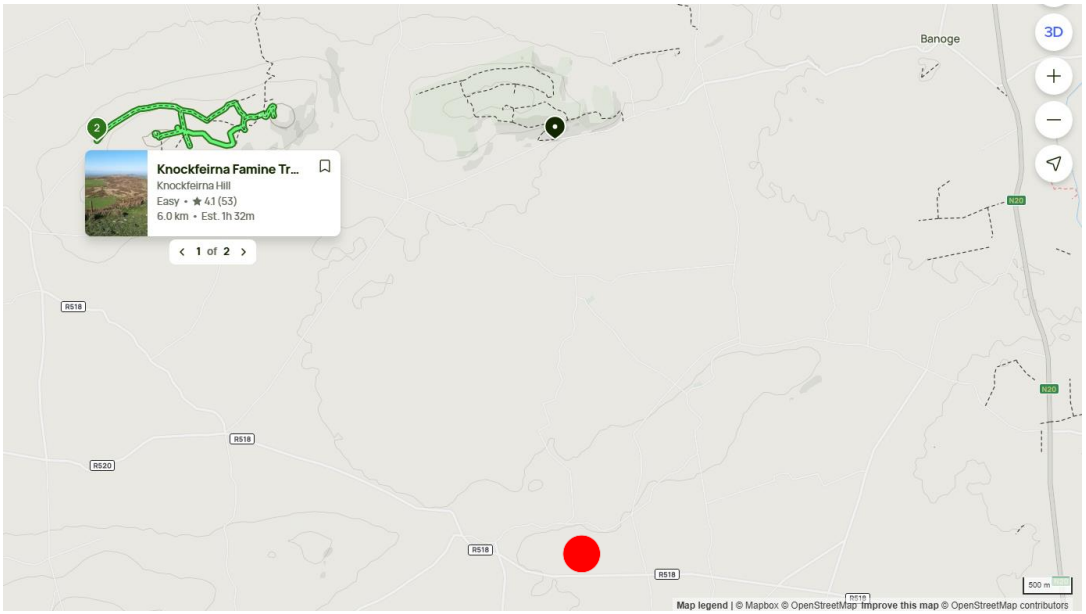
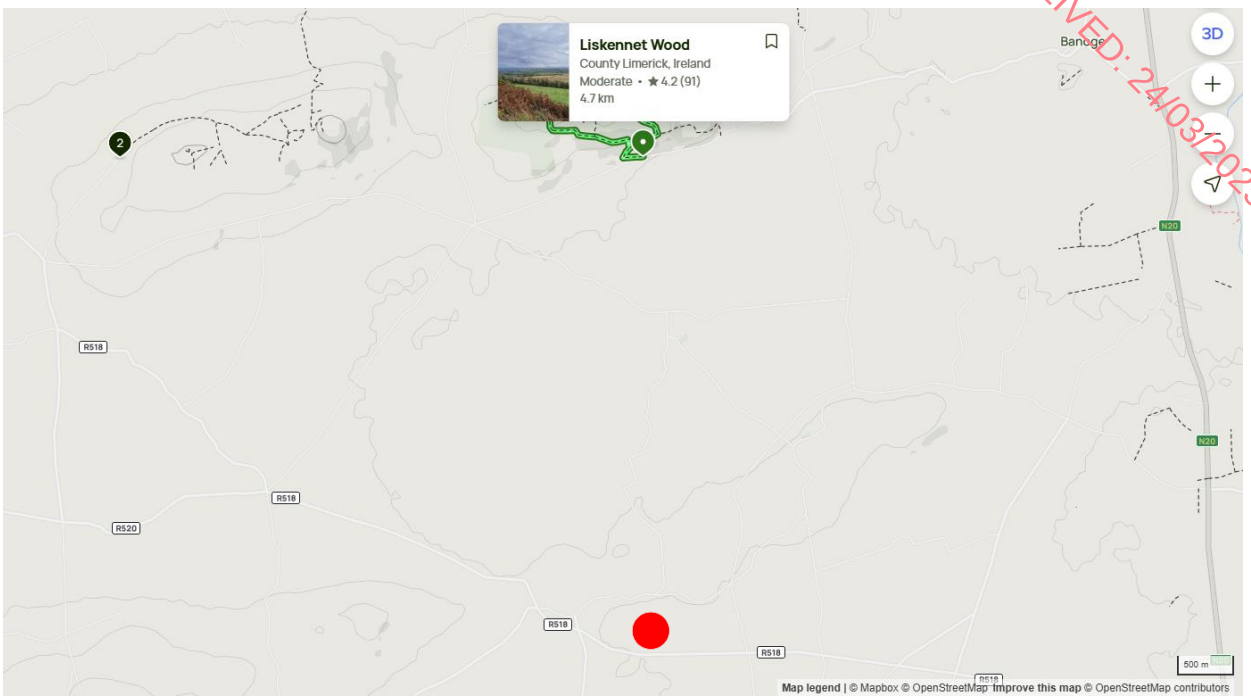


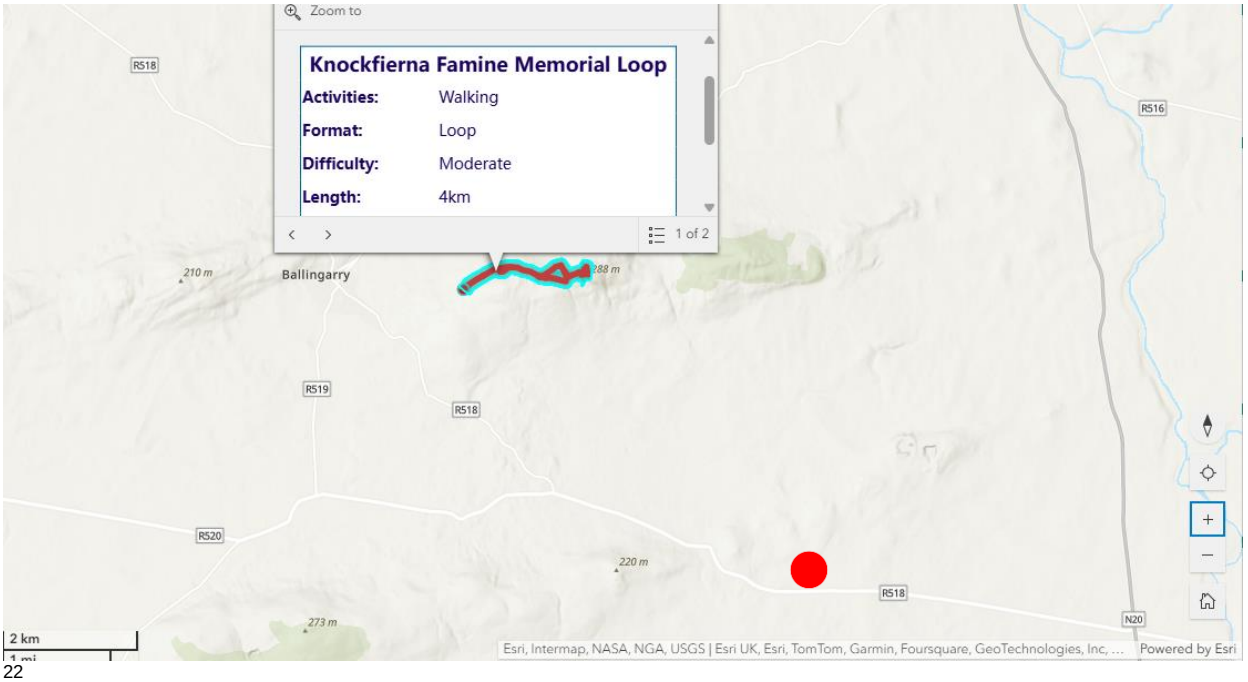
Figure 11.13 All Trails; Knockfierna Famine Trail

[20]https://www.limerick.ie/discover/eat-see-do/sports-recreation/activities/walking/county-limerick-trails



21

Figure 11.14 All Trails; Liskennet Wood Trail



22

Figure 11.15 Sports Ireland Trails listed close to Cappanihane

Distance will ensure there is no effect on the trail users as a result of the Proposed Development.

[21] https://hiiker.app/trails/ireland
[22] https://www.sportireland.ie/outdoors/find-your-trails

11.4.4 Natural Heritage

Natural heritage is examined in this report as it can contribute to landscape value.

None of the listed Natura sites (National Parks and Wildlife Service designations) are within the site of the Proposed Development. All the designated areas are at some distance from the Proposed Development and due to distance, intervisibility is also not a concern for these proposals.

There are no (SPA,SAC,NHA or pNHA) within the boundaries or close to the Proposed Development.[23]

The following objectives of LCDP are considered in relation to landscape and visual impact.

"6.3.3 Conservation outside Protected Sites In addition to the formal designations for nature conservation, much of Limerick's natural heritage resources lie outside such designated sites. Many areas that do not have formal protection under legislation still possess a level of natural heritage importance, which needs to be recognised and protected, where possible. These areas include woodlands, wetlands, seminatural grasslands, hedgerows, trees, rivers, streams, private gardens and other urban green spaces. Other areas of important biodiversity in Limerick can include graveyards, cemeteries and the green spaces associated with institutional lands. The Council recognises the importance of these areas as buffer zones and 'linkages', between formally designated ecological sites. The Council will require all new developments, where possible to identify, protect and where appropriate enhance ecological features by making provision for local biodiversity and providing linkages to wider habitats."

The hedgerows surrounding the site are protected and additional hedgerows and tree planting bulk out the buffer zones and reinforce the linkages to and between habitats.

Objective EH O4 Creation of New Habitats It is an objective of the Council to: a) Seek the creation of new habitats by encouraging wild green areas and new water features such as, pools and ponds in new developments. b) Encourage management plans for green areas to use the minimum of pesticides and herbicides. c) The creation of areas that are not subject to public access, in order to promote wildlife use is strongly encouraged.

The landscape masterplan which accompanies this application includes a large number of trees as well as new hedgerow material native and naturalised, which simultaneously generate new habitat areas and landscape amenity along with the development of semi natural grass spaces.

"Objective EH O5 New Infrastructure Projects It is an objective of the Council to require new infrastructure and linear developments in particular, to demonstrate at design stage sufficient measures to assist in the conservation of and dispersal of species and to demonstrate a high degree of permeability for wildlife, to allow the movement of species and to prevent the creation of barriers to wildlife and aquatic life in the wider countryside".

Although these proposals aren't linear, the large increase in the number of trees which will establish at the site of the proposed development will ensure there is good corridor connection to the hedgerow network. This will aid with the conservation and dispersal of species and replace the future loss of ash in the landscape.

[23] NPWS Tailte Éireann Mapping Service https://experience.arcgis.com/experience/edf

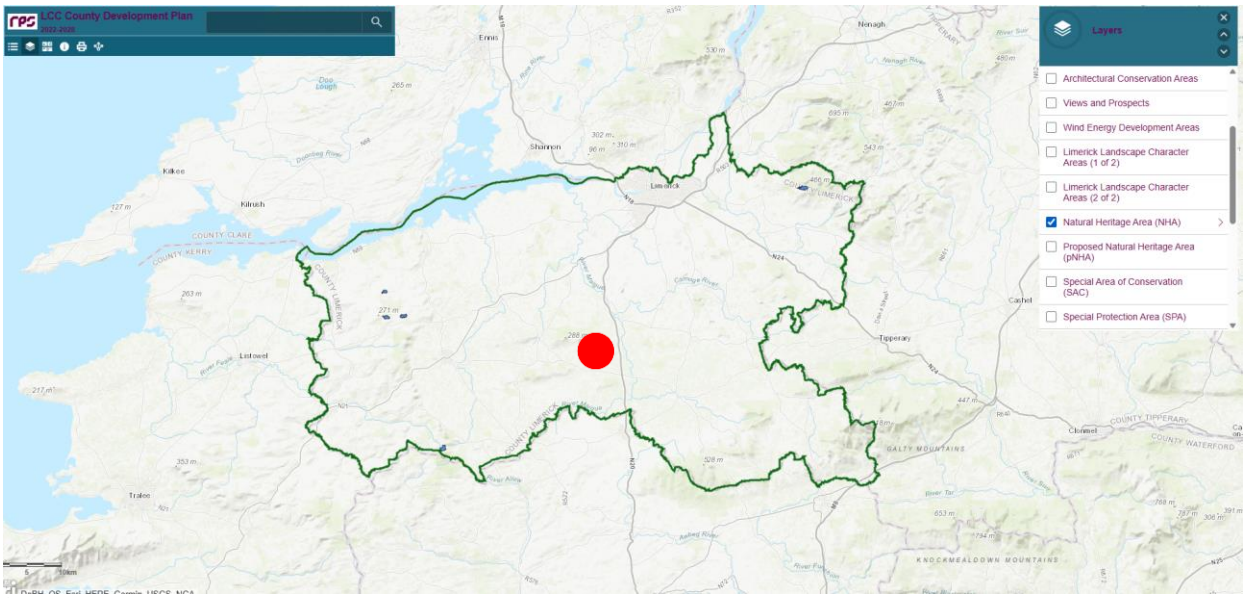
"Objective EH O7 All Ireland Pollinator Plan It is an objective of the Council to: a) Continue to actively support the aims and objectives of the All Ireland Pollinator Plan 2021 – 2025, by encouraging measures to protect and increase the population of bees and other pollinating insects in Limerick. b) Support the aims of the National Biodiversity Action Plan and succeeding plans, in emphasising the importance of ecological issues in planning."

Tree and hedgerow material like *Prunus and Crataegus sps.* are excellent pollinators and will increase the habitat for pollinating bees and insects.

Objective EH O8 Roosting Habitats It is an objective of the Council to require the provision of alternative roosting or settlement facilities for species, such as bird or bat boxes, swift boxes, artificial holts (for otters), or other artificially created habitats in proposed developments, where considered appropriate.

The increase in climax community trees at the site of the proposed development will also increase potential roosting sites into the future.

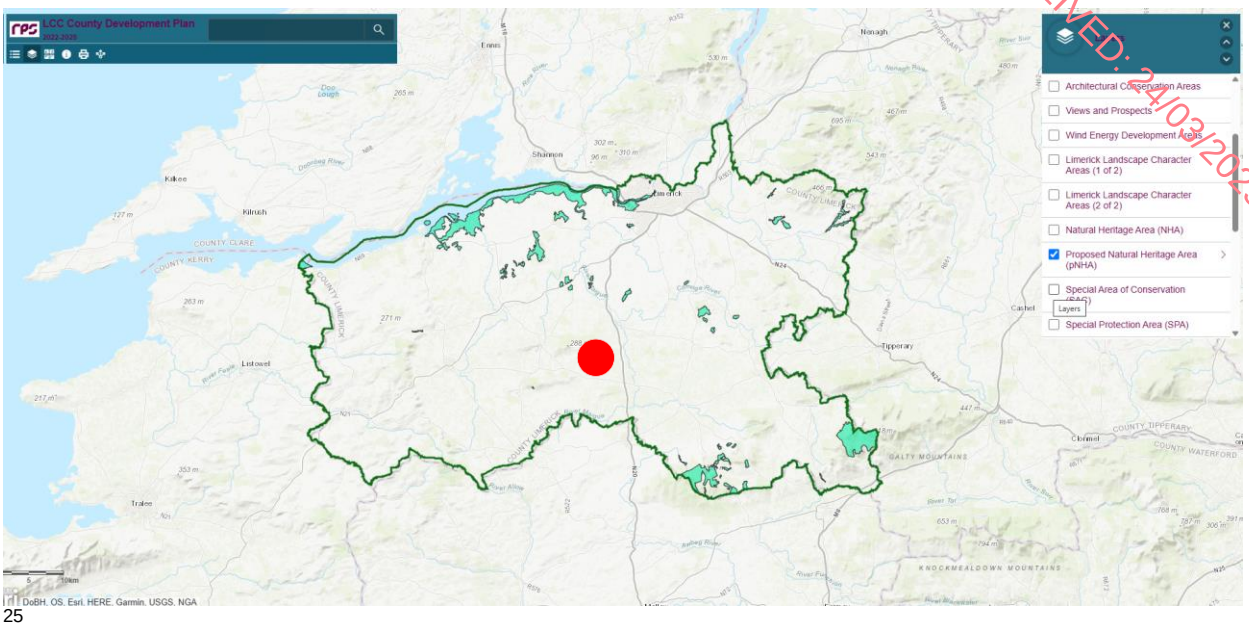
The Natura sites within Co Limerick don't share intervisibility or landscape with the site of the proposed development.



24

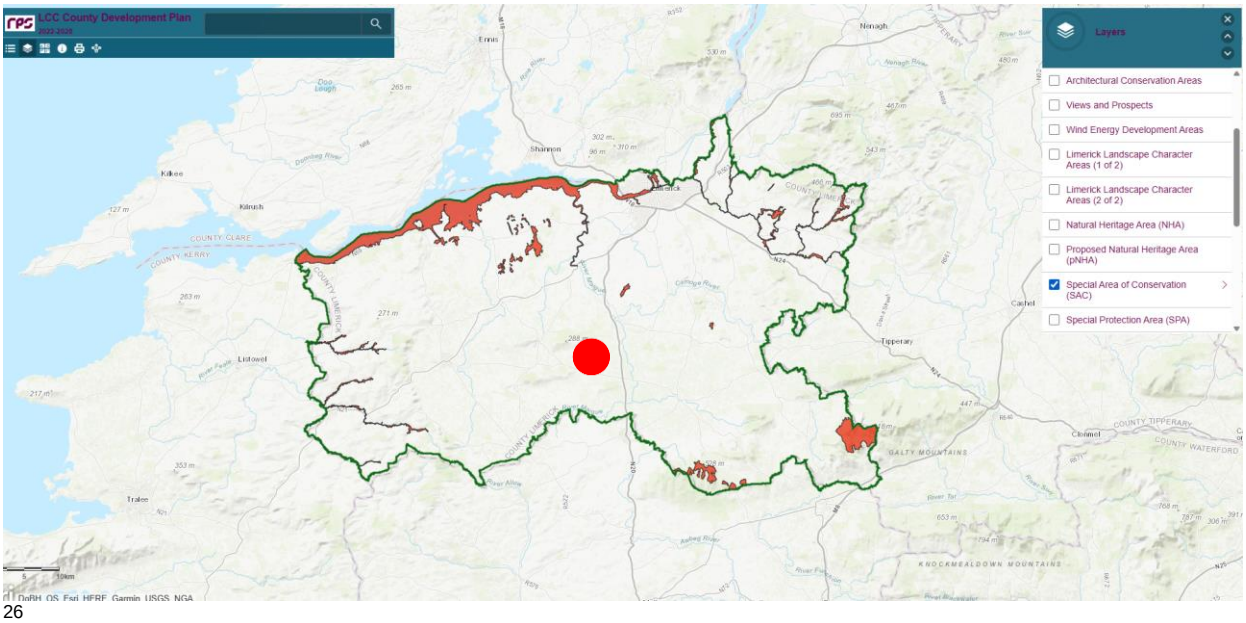
Figure 11.16 County Boundaries in relation to Natura Sites NHA's

[24] https://www.arcgis.com/apps/View/index.html



25

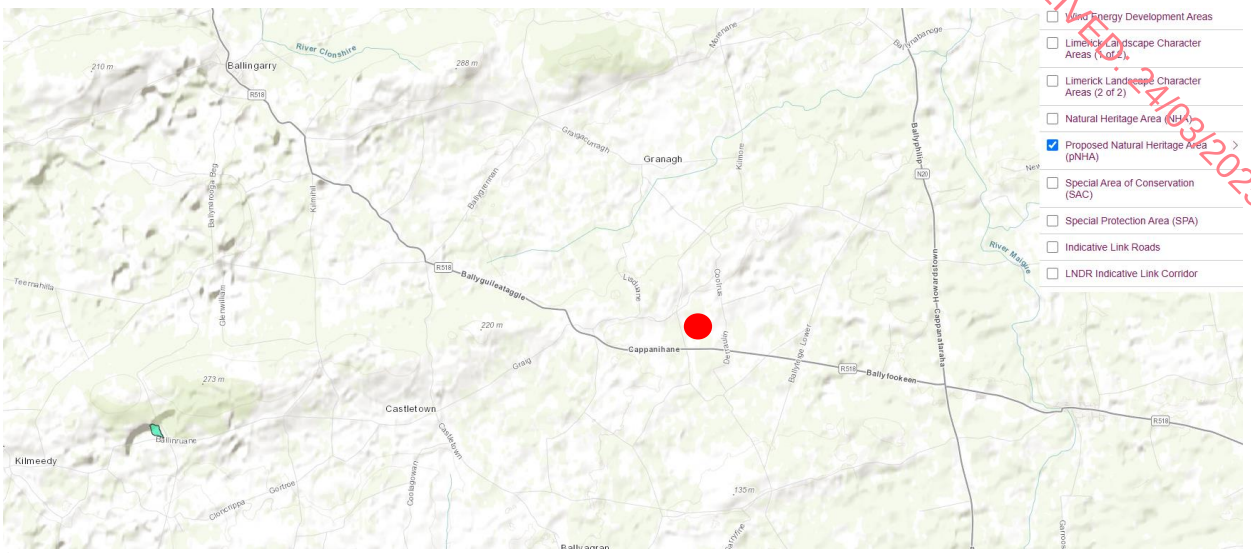
Figure 11.17 County Boundaries in relation to Natura Sites pNHA's



26

Figure 11.18 County Boundaries in relation to Natura Sites SAC's

[25] https://www.arcgis.com/apps/View
[26] https://www.arcgis.com/apps/View



27

Figure 11.19: There are no Natura Designations in the landscape surrounding the Proposed Development

11.4.5 Tree Protection Orders, Trees and Hedgerows

The following objectives of the Limerick County Development are considered as part of the landscape proposals which accompany the proposed application.

6.3.5 Trees, Tree Preservation Orders and Hedgerows Trees, particularly native species, hedgerows and woodlands make an important contribution to the landscape of Limerick. They provide shelter and visual screening in addition to supporting a wide range of wildlife. Trees and in particular groups of trees can be locally important landscape features and when properly incorporated into development, can help to integrate them into the surrounding landscape. The retention of existing tree cover is a priority for the Council, not just for the amenity and ecological value, but also because of the carbon storage capacity of older trees. While planting trees can serve as part of climate mitigation, it should be noted that it is in its mature stage that a tree plays its greatest role in carbon storage. Where trees and groups of trees are of particular importance in a local area and may be at risk from surrounding activities, consideration will be given to the making of tree preservation orders. It is important that in making decisions concerning the planting of new trees, that the effect of these decisions should be to contribute both to tree regeneration generally and also to ensure there is sufficient stock at differing stages of growth. Trees at different stages of growth also provide different kinds of habitats for those creatures which depend on them. Landscaping plans often include elements for visual and ecological purposes. These needs may be fulfilled by different species, but any landscape plan submitted should outline the different purposes of its various elements e.g. such as a ground layer for pollinators and a tree or shrub layer for amenity or ecological purposes.

The Council will promote Limerick's hedgerows by increasing coverage, where possible, using native species and to develop an appropriate code of practice for road hedgerow maintenance.[28]

Objective EH O10 Trees and Hedgerows It is an objective of the Council to: a) Retain and

[27] https://www.arcgis.com/apps/View/index.html?appid=bb2201e5a7c84b8c9daaf5418d8c0be8
[28] LCDP p 176 2022-2028 Development Management Standard

protect amenity and biodiversity value of the County and City by preserving as far as possible trees, woodlands and hedgerows, having regard to the significant role that trees and hedgerows play in local ecology, climate change and air quality and their contribution to quality place making and the associated health and wellbeing benefits. b) Require, in the event that mature trees, or extensive mature hedgerow is proposed to be removed, that a comprehensive tree and hedgerow survey be carried out by a suitably qualified tree specialist to assess the condition, ecological and amenity value of the tree stock/ hedgerow proposed for removal and to include mitigation planting and a management scheme. The Council will seek in all cases to ensure when undertaking development, or when permitting development, that the loss of, or damage to, existing trees is minimised. c) Require the planting of native trees, hedgerows and vegetation and the creation of new habitats in all new developments and public realm projects.

There are no tree protection orders pertaining to the site of the proposed development. The landscape plans accompanying this application specifies a range of native and naturalised trees and hedgerow materials of differing ages and growth stages which offer immediate habitats and future habitats to a wide range of animals, birds and insects. Hedgerows removed are mitigated for by the planting new hedgerows. The landscape proposals will increase the carbon storage capacity of the proposed site in the short and long term.

Monuments and Protected Structures

The National Inventory of Architecture and the local Record of Protected structures are also considered as part of this report. The interaction of archaeology and landscape is also considered in this report as an element of landscape. There are no recorded monuments or protected structures on the site of the proposed development. The closest ring fort to the west is considered in the visual assessment of this report. The eastern ringfort and mound along with Glenbrook House are visually protected and enclosed in the landscape by the trees and vegetation on either side of the stream east of the proposed site.

“Objective EH O48 Assessment and Recognition of Archaeological Landscapes It is an objective of the Council to designate archaeological landscapes as part of an ongoing appraisal for Historic Landscape Characterisation of Limerick.”

There are no historical landscapes designated at the site of the proposed development. The record of protected structures and monuments as indicated below, show there will be no effect from the proposed development. The visual section of this report checks for intervisibility.

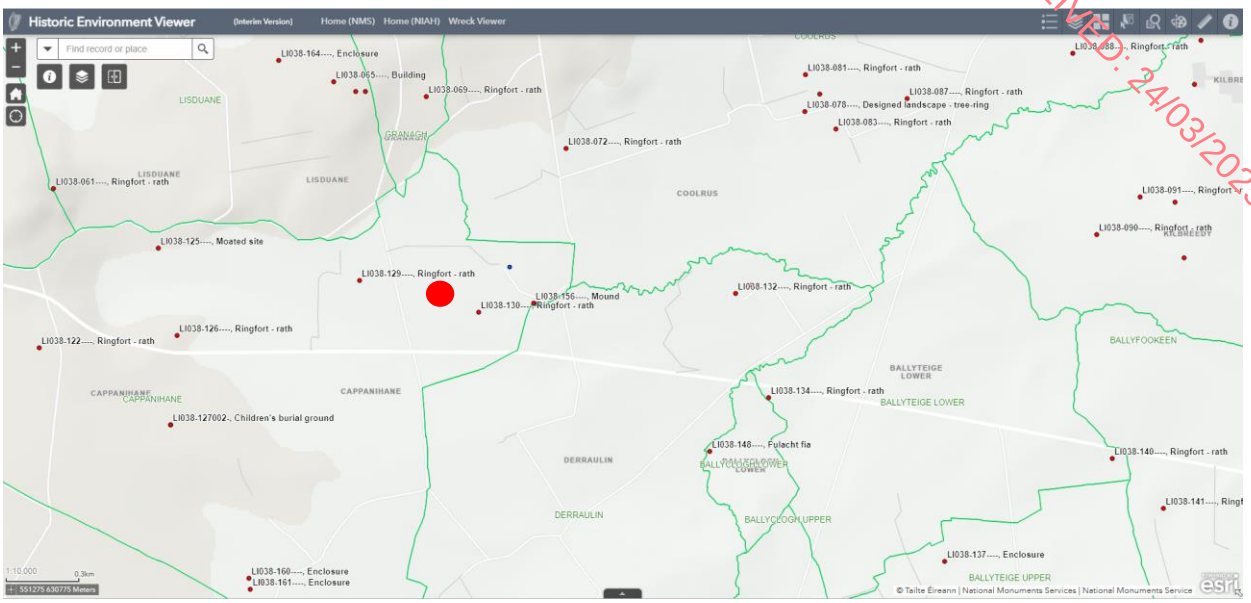
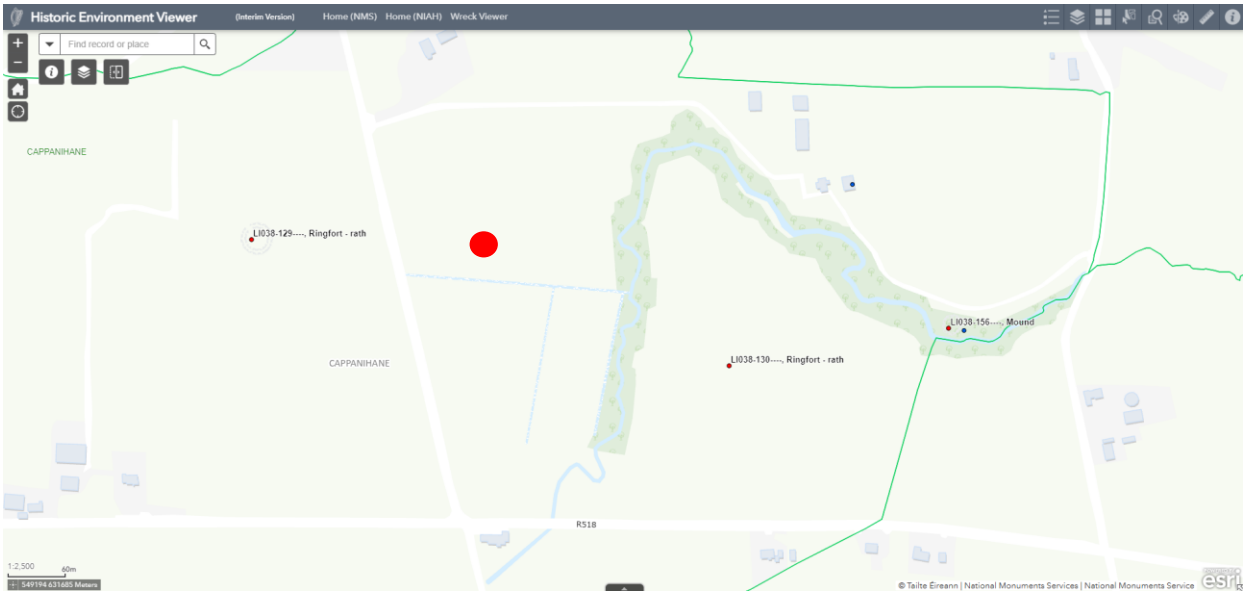
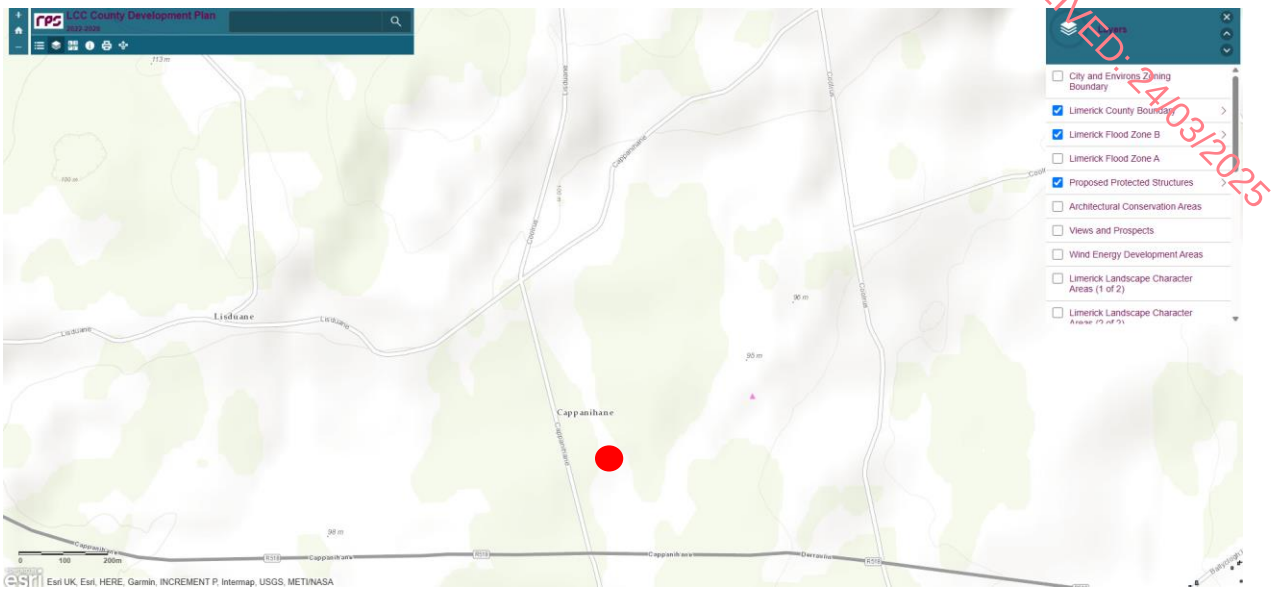


Figure 11.20: There are no national monuments or protected structures at the site of the proposed development



[29]**Figure 11.21: The ringforts to the west and east of the site, along with the mound to the east are considered for intervisibility.**

[29] https://heritagedata.maps.arcgis.com/apps/webappviewer/index



[30]**Figure 11.22: Proposed Protected Structures LCDO 2022-2028**

11.4.6 Views and Prospects

The designated amenity views and prospects in County Limerick will not be affected by the proposed development.

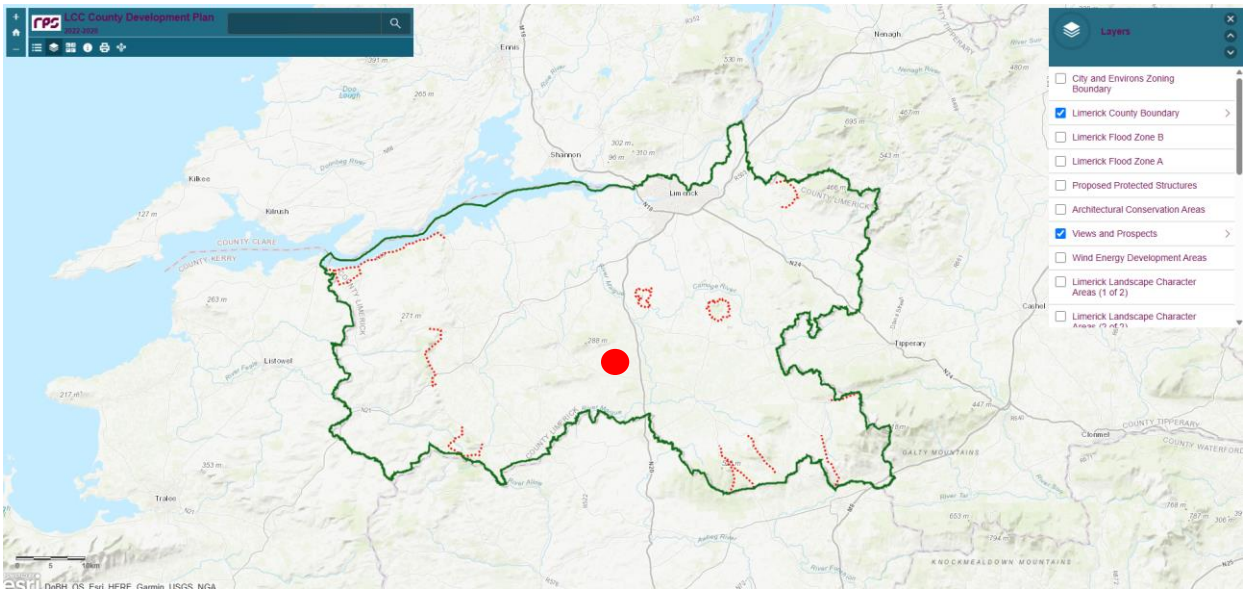
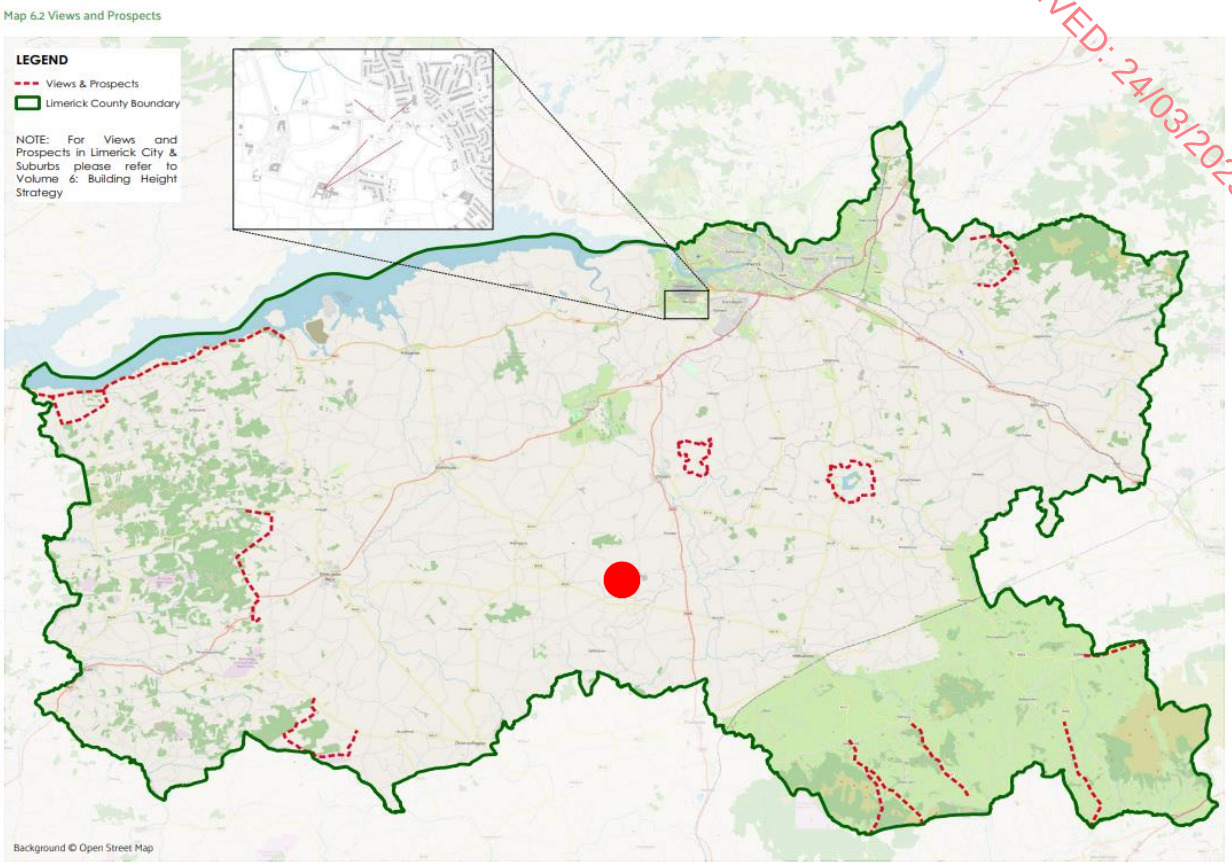


Figure 11.23 Listed Scenic Prospects LCDP 2022-2027

[30] https://www.arcgis.com/apps/View/index.html



[31]

Figure 11.24 Listed Scenic Prospects LCDP 2022-2027

The scenic viewpoints as listed in the LCDP were examined in relation to the Proposed Development. There are no listed views in the proximity of or focused on the proposed development site. This addresses the objective below.

Objective EH O31 Views and Prospects It is an objective of the Council to: a) Preserve, protect and encourage the enjoyment of views and prospects of special amenity value or special interests and to prevent development, which would block or otherwise interfere with views and/or prospects. b) In areas where scenic views and prospects are listed in the Plan, there will be a presumption against development, except that required to facilitate farming and appropriate tourism and related activities. The development must be appropriately designed so that it can be integrated into the landscape.

11.5 Cycling, Walking and Driving Routes

There are no other looped trails[32], long distance walking cycling or touring routes affected by the Proposed Development.

[31]https://www.limerick.ie/sites/default/files/media/documents/2023-05/Limerick-Development-Plan-Volume-1-Written-Statement-including-Variation-No-1.pdf
[32]https://www.limerick.ie/sites/default/files/media/documents/2023-01/Limerick-Walk-It-Run-It-Love-It-Digital-Guide.pdf

11.5.1 Green Infrastructure

The following LCDP Objectives relating to green infrastructure and landscape were examined in this report;

Objective EH O12 Blue and Green Infrastructure It is an objective of the Council to: a) Promote a network of blue and green infrastructure throughout Limerick. b) Promote connecting corridors for the movement of species and encourage the retention and creation of features of biodiversity value, ecological corridors and networks that connect areas of high conservation value such as woodlands, hedgerows, earth banks, watercourses, wetlands and designated sites. In this regard, new infrastructural projects and linear developments in particular, will have to demonstrate at design stage, sufficient measures to assist in the conservation of and dispersal of species. Projects which would be detrimental to existing blue and green infrastructure features will not be permitted. c) Ensure the integration and strengthening of green infrastructure into the preparation of Local Area Plans. d) Where possible remove barriers to species movement, such as the removal of in-stream barriers to fish passage for example. e) Seek to advance the use of an ecosystem services approach and ecosystem services valuation as a decision-making tool in plans and projects, subject to appropriate ecological assessment. The Blue and Green Infrastructure (BGI)

6.3.8 Nature Based Solutions Nature Based Solutions (NBS) have a role not only to meet certain infrastructure related needs (e.g. flooding management) and development needs, but also to maintain or benefit the quality of ecosystems, habitats and species. Examples of NBS solutions include landscaping, SuDs, creating permeable green areas and providing green roofs, restoring habitats such as wetlands, woodlands and hedgerows. Creating and restoring wetlands also functions to protect against flooding and creating blue and green spaces in urban areas, can also combat urban heating and enhance human health.

Objective EH O14 Nature Based Solutions It is an objective of the Council to increase the use of Nature Based Solutions (NBS) throughout Limerick.

There are generous planting measures accompanying the application for the Proposed Development. The inclusion of oak, holly, whitethorn, blackthorn, rowan and wild cherry[33] in the planting mix increases the pollinating capacity of the plantings and also allows for increased connectivity to other trees and hedgerow habitats locally. It is recommended that the landscape management regime at the operational stage will include hedgerow maintenance and cutting dates that is conscious of the need to allow flowering plants to stay in flower for as long as possible.

This is recommended as an avoidance measure in the mitigation recommendations. There were no obvious signs of invasive species present during site visits in November 2024 and January 2025.

11.5.1.1 Woodlands, Trees and Hedgerows

The landscape masterplan that accompanies this report along with measures ensuring the avoidance of damage to hedgerows address this objective. The planting mix is native and naturalised for the most part and the with native hedgerow material recommended as being sourced locally of local provenance. This is not expected to present any problem to the

[33] https://www.treecouncil.ie/.pdf (Trees for Pollinators)

developers as there is a ready source of plant material of local provenance available from long established tree nurseries and hedge propagation specialists in Co. Limerick.

The landscape proposals for this Proposed Development (as submitted in the accompanying landscape masterplan and planting plans) recommend increased planting of new hedgerows and replacement of a new hedgerow back from the proposed sight lines where a new entrance punctures the site entrance.

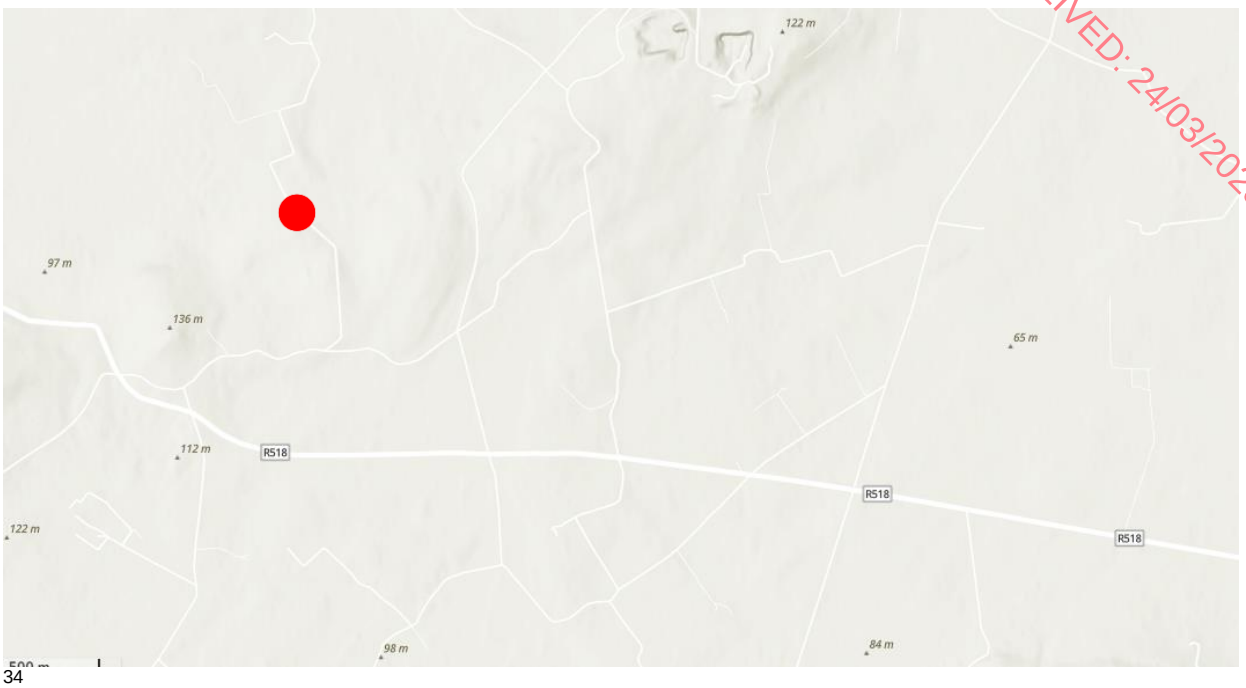
The increased planting proposed will ensure that there is a greater potential at the site to absorb carbon and maximise the potential as the plant material matures, to increase habitat connectivity and local landscape ecological gain. The proposed increase in the number of hedgerow trees will increase the potential for habitat development and connection within the hedgerow network. The wider landscape ecology is well considered and there will be a gain in connectivity and biodiversity in the overall landscape.

The issue of avoiding invasive species in the landscape is addressed in the mitigation measures and addresses this objective;

6.3.6 Invasive species Invasive alien species can represent a major threat to national, regional and local biodiversity. They can negatively impact on native species, can transform habitats and threaten whole ecosystems causing serious problems to the environment and the economy.

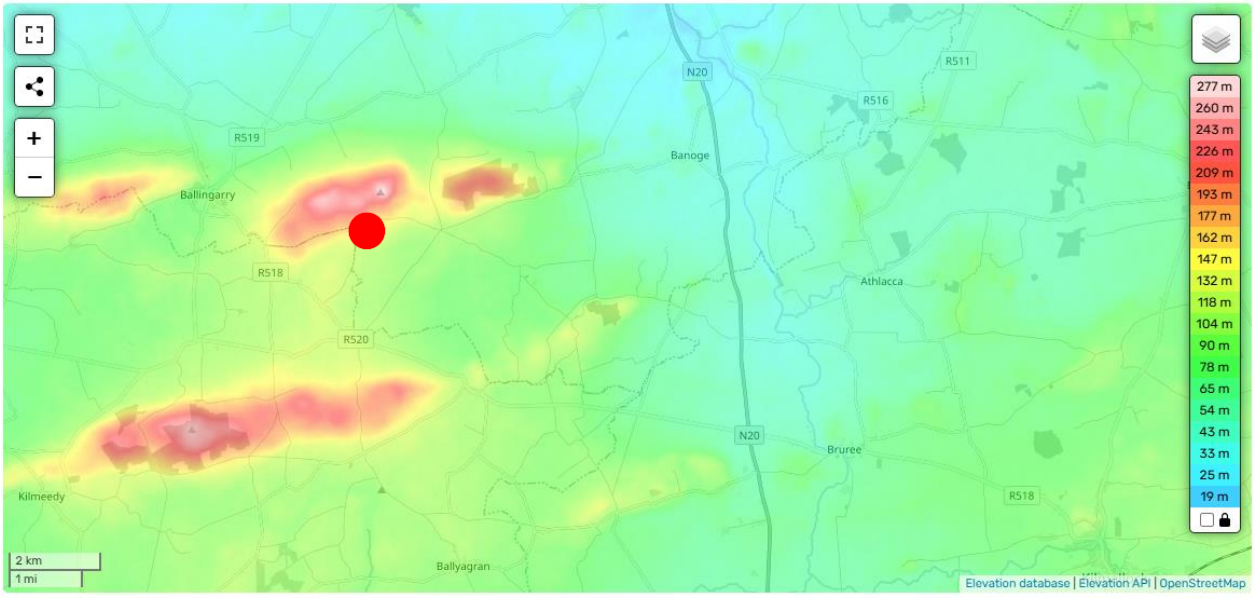
11.5.2 Potential Capacity

Landscape capacity is regarded as the ability of a landscape to visually absorb change and accommodate diverse types of development. Topography ensures there is good capacity for the area to enclosure and absorb the potential development. The topography is falling to the south and east but there is a good stand of woodland on the eastern side of the proposed development. The soils are very rich and among the best in the country. The Elton and Howardstown Soil associations are fine loamy drifts with limestones and clayey drift with limestones. The soils along with appropriate drainage and amelioration will support excellent tree growth and longevity. The generous stands of hedgerows and hedgerow trees in the area means there is good capacity to screen development and allow it to be absorbed into the wider landscape.



[34]

Figure 11.25 All trails local elevation points



[35]

Figure 11.26: Landscape Contours near Cappanihane

[34] All Trails elevation points
[35] https://en-ie.topographic-map.com/map-6f3q/County-Limerick

11.6 Characteristics of the Proposed Development

The applicants propose to develop an Anaerobic Digestion Facility. The site will be located in the townland of Cappanihane, Bruree, Co Limerick.

The development will consist of the following:

- Construction of 2 no. primary digesters (with an overall height of c. 9.1m), a pump house (with a gross floor area (GFA) of c. 279.8 sq.m), and 2 no. post digester tanks (with an overall height of c. 9.1m), located in the northeastern section of the site.
- Construction of 2 no. prepits (c. 4.8m in height), a pasteurisation buffer tank (c. 4.8m in height), and a pasteurisation unit (with a maximum height of c. 4.2m), located west of the primary digesters, within the northern section of the site.
- Construction of a digestate storage tank (c. 11.3 in height) located centrally on site, to the south of the primary and post digester tanks.
- Construction of a digestate treatment building and a feedstock reception building (with a height of c. 12m and a GFA of c. 2,797.2 sq.m) with odour abatement system (with a height of c. 11.0m to odour abatement stack), located in the northwestern section of site.
- Construction of combined heat and power (CHP) unit (c. 2.6m in height and c. 5.6m in height to flue, with a GFA of c. 38.53 sq.m), a biogas boiler (c. 2.6m in height and c. 5.6m in height to flue, with a GFA of c. 12.74 sq.m), a backup boiler (c. 2.6m in height), a gas treatment system (c. 4.2m in height), a biomethane compression system (c. 4.2m in height), and a safety flare (c. 11.3m in height), located south of the digestate storage tank, in the south-east section of the site.
- Construction of a CO2 liquefactor (with an overall height of c. 10.7m to top of storage vessels), a propane tank compound accommodating 2 no. propane tanks (c. 1.6m in height), and an ESB substation (with a GFA of c. 23.5 sq.m and a height of c. 3.4m), located in the south-eastern section of the site.
- Construction of roofed silage clamps (with a GFA of c. 2,424 sq.m and a height of c. 8.7m) and a fuel storage tank (c. 2m in height), located in the western section of the site.
- Construction of a two storey office building (with a GFA of c. 327.4 sq.m and a height of c. 11m) within the western section of the site, adjacent to the site entrance.
- Alterations to the adjacent local road including a new site entrance and access arrangements, provision of a passing bay, boundary setbacks and replacement planting, and road improvements to allow for improved access and safety.
- Associated and ancillary works including parking (8 no. standard, 3 no. EV and 1 no. accessible parking spaces and bike storage for 10 no. bikes), a new site entrance and gate, a weighbridge, solar PV arrays at roof level, wastewater treatment equipment, bunding and surface treatments, attenuation pond, boundary treatments, lighting, services, lightning protection masts, drainage, landscaping, and all associated and ancillary works.

11.6.1 Site Location

Figure 11.28: Site Location

The site is located in the townland of Cappanihane, Bruree, Co. Limerick. The site of the Proposed Development is currently in agricultural use. It is pastoral grassland surrounded by neat hedgerows and both a natural and anthropogenic drainage pattern in a relatively large field system.

11.6.2 Landscape Character and Sensitivity

Landscape character as discussed above is a significant aspect of the landscape receptors susceptibility to change. The effect on landscape character and its ability to accommodate the proposed development, maintain the baseline and achieve landscape planning policies is considered. The elements which contribute to positive landscape character at or near the site of the proposed development is as described in the Limerick CDP landscape character area, is the enclosed field system and strong relationship to a pastoral landscape and farmsteads.

The findings of the field study (Appendix 11.2) concur with the description of the Agricultural Lowlands LCA in the LCDP; "*This landscape is a farming landscape and is defined by a series of regular field boundaries, often allowed to grow to maturity. This well-developed hedgerow system is one of its main characteristics. In terms of topography, the landscape is generally rather flat with some locally prominent hills and ridges. The pastoral nature of the landscape is reinforced by the presence of farmyards*".

There is a noticeable loss of ash in the hedgerow network and there is obvious Chalara dieback disease in the remaining trees, and this is likely to worsen over the coming years. There are good examples nearby the proposed site of stands of other deciduous trees and mature Scots Pine providing good silhouettes, shelter and screening in the landscape (Appendix 2).

The drainage pattern is closely associated with the hedgerow system with hedgerows planted on good wide banks running parallel to associated drains.

The most relevant objectives which address the sensitivity of this landscape type and character are;

b) Encourage retention of existing landscape features such as hedgerows and trees and their incorporation into landscaping for new developments.

and

c) Discourage development of locally prominent sites.[36]

Soils are loamy drift with limestones and clayey drift with limestones and support a pastoral landscape and potential for tree growth.

Agricultural lowlands are frequently attributed a '**low'** landscape sensitivity**.** The hedgerows are the most valuable landscape elements contributing to spatial integrity and landscape quality at the site of the proposed development.

Considering the nature of the proposed development, the intrinsic and inherent values attributed to the landscape character area and assessing the landscape at and near the site of the proposed development the rating '**low'** is appropriate for landscape sensitivity.

11.7 Predicted Impacts

11.7.1 Landscape Construction Phase

The changes to the landscape will occur during the construction stage. The proposals will require an entrance which will puncture the existing hedgerow line and facilitate sight lines. A central drain with hedgerow planting on both sides of the drain will be removed and there will be no other loss of landscape elements that would alter the landscape character at a local level. However, there will be a new scale introduced into the landscape. The landscape exhibits a reasonable capacity for change when accompanied with tree planting. Woodland and trees are an addition to the existing landscape which add to the overall landscape pattern and will effectively blend with the eastern woodland and field mosaic of the area.

The soils will contribute to excellent tree growth. The proposed topographical adjustment will work with the existing topography in the area. Any soil disturbance or overload is to be utilised onsite as far as practicable. The proposals are accompanied by a landscape masterplan indicating how the development is to be integrated into the surrounding landscape and how hedgerow removal is compensated for. This will achieve in protecting the existing landscape character and reinforce it somewhat. The soils will support the tall vegetation selected in the landscape masterplan which will screen the development in time.

11.7.1.1 Magnitude of Change

During the construction phase there will be activity at the site of the Proposed Development. Machinery travelling to and from the site, site compounds and storage facilities as well as

[36]https://www.limerick.ie/sites/default/files/media/documents/2023-05/Limerick-Development-Plan-Volume-1-Written-Statement-including-Variation-No-1.pdf

lighting and other construction aids will have an impact on the landscape in the short term.

During the construction process hedgerows will need to be cut back and there will be some removal of hedgerow to allow for the site entrance and sight lines. The outer field pattern will remain intact but the central drain and an east west segment of hedgerow will be removed. The proposed planting of new hedgerows, trees and screening will add new elements to the landscape pattern which will benefit it positively over time.

This development will be in place for more than 15 years which constitutes a long-term change (15 and 60 years as per the EPA guidelines).
Landscape character will be affected by the change in land use resulting from construction on the site of the Proposed Development. The change experienced to the landscape will be due to the introduction and scale of the components of the proposed facility. The geographical extent will be confined to the fields and road network surrounding the development.

The scale of change will be due to the digestors and their contrast in form to other agricultural buildings and its difference from the agricultural character of surrounding fields.

However, the scale and form of the Proposed Development will have a noticeable influence on the landscape within and near the site and incongruity will result directly following construction.

The Agricultural Lowlands is a large LCA occupying most of the central plain. The greater landscape character area won't be affected in its geographical extent. The general quality of existing trees and woodlands will help integrate the Proposed Development into the landscape. The proposals include screen planting and tree and hedgerow planting using native and naturalised trees and hedgerow materials. The reversibility of the development is not considered for the construction phase.

The overall magnitude of change will be **'medium.'** This is in line with the description of medium landscape change which is moderate in extent with the introduction of elements that may be prominent but "not necessarily substantially uncharacteristic in the context. Such development results in change to the character of the landscape but not necessarily reduction in landscape quality and perceived value."

11.7.1.2 Significance of Effects

Setting a **medium** magnitude of change against **low** landscape sensitivity gives a significance of effects that is categorised as **'Slight'.** Bearing in mind that **'Moderate'** is the rating for '**medium'** sensitivity according to the matrix in Table 11.1, above. Professional judgement recognising both the strong valuable rural character of the landscape and the quality of the landscape mosaic the significance of effects rating **'moderate to slight'** is more appropriate.

As per EPA guidelines slight and moderate effects are defined as;

Slight: An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.

Moderate: An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.

The likely **slight to moderate** effect will be adverse and medium term until the development is absorbed by maturing trees.

11.7.2 Landscape Operational Phase

There will be no change to the landscape form or structures placed therein from the construction phase as the facility becomes operational. As part of the landscape proposals, it is recommended that there will be a significant mixed screen planting wrapped around the proposed facility. This will largely include native and naturalised trees and plant material. Hedgerows are to be managed as tall hedges to 2.4m high, where sight lines allow. This will effectively screen the proposed development from the public roads.

It will also screen the scale and form of the structures and add additional deciduous trees and Scots Pine to the overall landscape which blends with the landscape character area. Trees will add another favourable element to the landscape in the long run.

During the operational phase of the development, maturing trees present an opportunity to make a positive contribution to the overall landscape. The landscape sensitivity is not likely to change from the construction phase, but the magnitude of change will be lower as the landscape proposals start to establish and grow. In the medium term, the positive landscape impact of the trees and understory development will reduce the magnitude of change experienced at landscape level from medium to low.

Landscape Sensitivity: **Low**

Magnitude of Change: **Low to medium**

Setting a **medium to low** landscape sensitivity against a **low** magnitude of change gives a **'slight'** rating for medium landscape sensitivity and a **'not significant'** rating for significance of effects at the operational phase of the proposed facility. Given the scale of the development, a significance of effects rating of '**slight'** is appropriate.
Significance of effects: **Slight**

The likely effect will be adverse and long term, but the tree planting and general landscape proposals will be positive and the benefits to the landscape will be permanent with many of the species listed in the planting schedule capable of living for more than 100 years.

11.7.3 Visual Assessment

In conducting the visual assessment for the Proposed Development, issues relating to views and viewpoints were considered including the amount of time over which a view would be experienced, the angle of the view and whether views would be full, partial, or glimpsed. The distance from the Proposed Development was considered and the extent of the area over which the proposed works would be visible. Initially a zone of theoretical visibility (Appendix 11.1) or viewshed influenced the areas being considered for intervisibility. A ZTV is computer generated and presents the worst-case scenario and examines intervisibility without the effect of natural land cover, forests, woodlands, trees, buildings and vegetation. The area was visited and the most likely visual receptors identified. Again, as for the landscape effect, the duration of the visual impact was considered. The duration of the visual effects is considered as appropriate. As per EPA guidelines, duration of effects is categorised as follows.

Short-term Effects: Effects lasting one to seven years

Medium-term Effects: Effects lasting seven to fifteen years

Long-term Effects: Effects lasting fifteen to sixty years

Permanent Effects: Effects lasting over sixty years

As described in Table 11.1 above, the magnitude of change is judged according to a set of criteria with results ranging from very high to negligible. Judgements are made based on the size of the proposed works and the geographical extent of the viewpoints. Consideration is also given to duration of effects as outlined above. In choosing the viewpoints to be assessed the scale at which the Proposed Development will have influence was considered and this is considered within the magnitude of change as assessed. The sensitivity of each view is adjudged taking into consideration other factors apart from value and recognised designations. These include the susceptibility of the viewers, panoramas, frequency of visits, features and rarity of the view and the intact nature of the landscape being viewed. Sensory experiences of place, tranquillity, history, nature and awe also factor into viewpoint sensitivity. A comprehensive assessment was made of potential viewpoints. These were then distilled down to a set of viewpoints which are the subject of the verified photomontage study. The accompanying, 3-Dimensional verified photomontage booklet is to be read in conjunction with this report. In making these assessments, topography, site location, hedgerows systems, woodlands, and residences were considered as well as designated sensitivities and landscape as a resource for visual amenity, recreation, culture, and tourism.

11.7.4 Visual Impact – Construction Phase

The selected viewpoints were assessed, and this is summarised as outlined in Table 11.2 below. The sensitivity at each viewpoint is set against the magnitude of change to arrive at a significance of effects as outlined in Table 11.1 above. Again, the sensitivity of each viewpoint is set against the magnitude of change to that view to arrive at a significance of effects at each viewpoint. The matrix is not over relied on and where appropriate, professional judgement and experience is exercised.

11.7.4.1 Initial Field Study

The area around Cappanihane was visited on 22nd November 2024 and again on the 31st January 2025. The viewpoints selected were also photographed on February 17th, 2025, for verified photomontage production. The visual impact assessment is to be read with the 3Dimensional, verified photomontage booklet which accompanies this report. The site location and its hinterland were examined referencing the viewshed analysis. Taking topography and vegetative cover into consideration, an inventory of viewpoints was selected. Upon establishing the location of likely viewpoint receptors each was visited and an assessment with respect to viewpoint sensitivity and the likely magnitude of change to this view due to the Proposed Development was made. The verified photomontages of these views examine the extent of any visual impact or loss of visual amenity at these viewpoints.

On the occasion of these initial field studies, conditions were gloomy with snow laden cloud cover on 22nd November, but conditions were crisp and clear on the 31st January. The hedgerows and trees were in a winter presentation, devoid of deciduous leaf cover.

These views, VP 1-6, are assessed in detail at the construction stage and at the operational phase. The accompanying verified photomontage booklet prepared by 3Dimensional, gives a clear indication of the magnitude of change at each of these viewpoints. All viewpoints were taken from publicly accessible areas. Many have been accorded '**high**' receptor sensitivity which as iterated in the methodology above; is defined for viewpoints "that are recognised in

policy or otherwise designated as being of value, or viewpoints that are highly valued by people that experience them regularly (such as views from houses or tourist-based views focused on the landscape). The composition, character and quality of the view may be such that its capacity for accommodating change may or may not be low. The principal management objective for the view is its protection from change that reduces visual amenity."

At the construction phase, the placing of the structures into the topography helps partially absorb them into the landscape. The objectives of the landscape plan to protect the landscape and views from change that reduces visual amenity cannot be realised fully at the construction phase. The full effect of the tree planting will be more apparent during the operational phase when the plant material starts to establish and mature.

11.7.4.2 Visual Impact - Construction Phase

Table 11.22: Predicted Visual Impacts on Selected Viewpoints Assessed – Construction Phase

Viewpoint No.	**Location**	**Sensitivity**	**Magnitude of Change**	**Significance of Effects**	**Nature of effects**
VP1	Cappanihane	High	High	Very Significant	Adverse
VP2	Cappanihane	High	High	Very Significant	Adverse
VP3	Cappanihane	High	Medium	Significant	Adverse
VP4	Coolrus	High	Medium	Significant	Adverse
VP5	Coolrus	High	Low	Moderate to Slight	Adverse
VP6	Cappanihane	High	Low	Moderate to Slight	Adverse

View Point 1

This viewpoint represents pedestrians, road users and local residences. The landscape being viewed from this viewpoint is towards the Proposed Development over a large field. The landscape rises gently northwards behind the site of the Proposed Development. There will be a loss of view towards the hills and a removal of some hedgerow as an element of landscape. Pedestrians, motorists, and cyclists have a low viewer sensitivity at this viewpoint as their experience is brief and glimpsed. However, residential receptors are accorded a '**high**' viewer sensitivity. The Proposed Development will be visible during construction. Therefore, the magnitude of change attributed to this view is '**high**'. Setting a '**high**' viewpoint sensitivity against a '**high'** magnitude of change to the viewpoint, results in a significance of effects that is rated as '**very significant'** as outlined in Table 11.1 above. The nature of the effects will be adverse. The beneficial impact of tree planting and screening is not taken into consideration at the construction phase.

View Point 2

This viewpoint represents road users and local residences. A rath to the west of the

development was also examined for intervisibility. This is considered at this viewpoint given the hedgerow height on the publicly accessible road. Heritage and local residential receptors are accorded a '**high**' viewpoint sensitivity whilst road users who experience the view in a fleeting way are a low sensitivity receptor group.

The Proposed Development will be visible from this viewpoint at the construction stage. Construction traffic, plant and machinery will be visible during construction. There will be no loss of elements in this view, but the form shape and scale of the proposals will be apparent at the construction stage. The magnitude of change at this viewpoint will be **'high'**. Setting a **'high'** magnitude of change against **'high'** viewpoint sensitivity as set out in Table 11.1 above, gives a significance of effects that is rated as '**Very Significant'.** At the construction phase, the potential benefit of planting and screening is not considered.

View Point 3

This viewpoint represents road users and local residences. Local residential receptors are accorded a '**high**' viewpoint sensitivity.

The Proposed Development will be partially visible during the construction stage at this viewpoint. Construction materials, large plant and machinery will be visible during construction. The proposed digesters do not break the skyline but the large feedstock reception and digester building on the right of the view will. The expected magnitude of change at this viewpoint is **'medium'**. Setting a **'medium'** magnitude of change against **'high'** viewpoint sensitivity as set out in Table 11.1 above, gives a significance of effects that is rated as '**Significant'.** The impact of the landscape proposals is not considered for the construction stage as growth will not be effective until the Proposed Development is at the operational phase. This effect will be **short to medium term** and will reduce year on year as trees fill out and eventually screen the Proposed Development.

View Point 4

This viewpoint represents residential receptors and local road users. The presence of local residential receptors means this view has been accorded a '**high**' viewpoint sensitivity. Road users, pedestrians, cyclists, and motorists have a **low** viewer sensitivity as this view will only be experienced in a fleeting manner. The magnitude of change to this view will be '**medium'** at the construction stage. Setting a '**high**' viewpoint sensitivity against a '**medium'** magnitude of change to the viewpoint, results in a significance of effects that is rated as **'significant'** as outlined in Table 11.1 above. This effect will be **short to medium term** and will reduce year on year as trees fill out and eventually screen the Proposed Development. Until then the nature of the effects will be adverse.

View Point 5

This viewpoint represents residential receptors and road users. The view has been accorded a '**high'** viewer sensitivity because of the presence of residential receptors. This viewpoint also considers a rath on the east of the viewpoint and an eastern panorama. Road users are accorded a low receptor sensitivity as their experience of the viewpoint is fleeting and glimpsed. There is enough distance between the proposed development and the viewpoint to reduce the impact of the construction.

The magnitude of change to this view will be '**low'** during construction. Setting a '**high**' viewpoint sensitivity against a '**low'** magnitude of change to the viewpoint, results in a

significance of effects that is rated as '**moderate to slight'** as outlined in Table 11.1 above. The impact will be short term to medium term and will diminish annually during the operational phase once the proposed planting softens the development in the view.

View Point 6

This viewpoint represents pedestrians, road users and local residences. This view from the R518 demonstrates to good effect the role hedgerows and woodland planting have in the landscape. Pedestrians, motorists, and cyclists have a low viewer sensitivity at this viewpoint as their experience is brief and glimpsed. However, residential receptors are accorded a '**high**' viewer sensitivity. The Proposed Development will be largely screened during construction. Therefore, the magnitude of change attributed to this view is '**low**'. Setting a '**high**' viewpoint sensitivity against a '**low'** magnitude of change to the viewpoint, results in a significance of effects that is rated as '**moderate to slight'** as outlined in Table 11.1 above. The effect is adverse and short term to medium term. The effect of further buffering of the landscape proposals is not considered for the construction phase of the proposals.

11.7.5 Visual Impact – Operational Phase

The operational phase of the project will not have any additional large impacts on visual receptors. There will be no change to structures in the views from the construction phase. There will be more vehicular movement into and out of the facility. There are specific considerations at each viewpoint which are addressed here below.

As part of the landscape and mitigation measures long term changes to the landscape are taken into consideration over the life of the project. The ability of the landscape proposals to not only mitigate but improve the quality of the views in line with landscape character over time is factored in at the operational stage of the Proposed Development. The landscape measures are important during the operational phase of the project when tree growth will start to contribute to protecting visual amenity. The species, plant specifications optimum growth rates and establishment time is considered. The development and growth of plant material in the short to medium term is considered for the screening effect of tree and hedgerow growth.

The selected viewpoints were assessed as for the construction phase above, and this is summarised as outlined in Table 11.3 below. The sensitivity at each viewpoint is set against the magnitude of change to arrive at a significance of effects as outlined in Table 11.1 above. The matrix is not over relied on, and professional judgement and experience is employed to rate the viewpoints.

The operational phase of the project gives an opportunity to the developer to future proof the visual amenity afforded by trees and hedgerows.

The operational period will coincide with the establishment of the screen trees which will buffer the key areas around the structures. It is estimated that there will be effective screening established in the medium term with the ameliorating effect of the landscape proposals increasing each year. Many of the selected species will live for more than 100 years having a permanent positive impact on the views. This will compensate for the loss of ash trees in the landscape and views.

All the plant material as well as the trees specified are to be sourced and propagated locally. This material is to be disease free and well maintained, irrigated appropriately and allowed to establish optimally to achieve the best possible growth outcomes. Correct earthworks and

contouring in conjunction with local drainage design will optimise tree growth and hedgerow establishment. Hedgerows are to be maintained at 2m-2.4m outside of sight line safety considerations.

Table 11.23: Predicted Visual Impacts on Selected Viewpoints Assessed – Operational Phase

Viewpoint No.	**Location**	**Sensitivity**	**Magnitude of Change**	**Significance of Effects**	**Nature of effects**
VP1	Cappanihane	High	Low	Moderate	Adverse
VP2	Cappanihane	High	Medium	Moderate to Significant	Adverse
VP3	Cappanihane	High	Low	Moderate	Adverse
VP4	Coolrus	High	Low	Moderate	Adverse
VP5	Coolrus	High	Negligible	Not Significant	Adverse
VP6	Cappanihane	High	Negligible	Not Significant	Adverse

For the purpose of this assessment the beneficial effect of tree screening as specified in the landscape plans is considered in the short to medium term. Likely growth and screening to year ten post construction forms the basis of the assessment during the operational phase. The ability of tree screening and tree development to continue to provide visual amenity in the medium to long term is noted for all the viewpoints.

View Point 1

This viewpoint represents pedestrians, road users and local residences. The landscape being viewed from this viewpoint is towards the Proposed Development over a large field. As for the construction stage, the landscape rises gently northwards behind the site of the Proposed Development. A central segment of hedgerow removal constitutes the main elemental loss in the landscape. There will be a loss of view towards the hills, but this will be replaced by a mid-ground view of hedgerows and maturing trees including flowering pollinators like wild cherry, rowan, whitethorn etc. along with climax tree species such as oak and beech. This planting mix will offer a pleasant seasonal variation in the view. Pedestrians, motorists, and cyclists have a **low** viewer sensitivity at this viewpoint as their experience is brief and glimpsed. However, residential receptors are accorded a '**high**' viewer sensitivity. The Proposed Development will be screened as the plant material establishes and develops during the operational phase. The proposed development will be quite well screened in the short to medium term and will increase every year thereafter. Therefore, the magnitude of change attributed to this view will change from 'high' post construction to '**low'** once the mitigating effect of tree and hedgerow establishment is considered.

Setting a '**high**' viewpoint sensitivity against a '**low'** magnitude of change to the viewpoint, results in a significance of effects that is rated as '**moderate**' as outlined in Table 11.1 above. The effect will be adverse in the medium to long term. This will further reduce each year as the

effect of the maturing woodland planting and hedgerows establish fully. Eventually the view will be that of a small woodland.

View Point 2

This viewpoint represents road users and local residences. A rath to the west of the development was also examined for intervisibility. Heritage and local residential receptors are accorded a '**high**' viewpoint sensitivity whilst road users who experience the view in a fleeting way are a **low** sensitivity receptor group. The proximity of the proposed development to this viewpoint demands the planting density as proposed to screen the development.

The loss of hedgerow in this view, will be replaced by new tree and hedgerow planting. The form shape and scale of the proposals will be screened during the operational phase.

The magnitude of change at this viewpoint will change from 'high' at the construction stage to '**medium'** at the operational phase. It will decrease to low after a time. For the purpose of this assessment the view is examined during the short to medium term of operations. Given the dynamic nature of plant growth with the expectation further screening will develop and using professional judgment this is considered for the significance of effects.

Setting a **'high'** magnitude of change against **'medium'** viewpoint sensitivity as set out in Table 11.1 above, gives a significance of effects that is rated as **'**Significant'. The adverse effects will decrease after the short to medium term when the year-on-year greater maturity in the tree stand and the maturity of the hedgerows will increase the screening capacity of the plant material. The climax trees will eventually screen the development. Therefore, a significance of effects rated '**moderate to significant'** is more appropriate.

View Point 3

This viewpoint represents road users and local residences. Local residential receptors are accorded a '**high**' viewpoint sensitivity.

The digesters in the Proposed Development will not break the skyline but the feedstock reception on the right of the view will. This view will benefit from the growth of the trees and new hedgerow at the operational phase of the project. The expected magnitude of change at this viewpoint will reduce to **low** from medium at the operational phase of the project. Setting a **'low'** magnitude of change against a **'high'** viewpoint sensitivity as set out in Table 11.1 above, gives a significance of effects that is rated as '**Moderate'.** The landscape proposals will greatly help with screening and absorbing the development into the landscape. This adverse effect will be **short to medium term** and will reduce year on year as trees fill out and eventually screen the Proposed Development and absorb its height in the view.

View Point 4

This viewpoint represents residential receptors and local road users. The presence of local residential receptors means this view has been accorded a '**high**' viewpoint sensitivity. Road users, pedestrians, cyclists, and motorists have a **low** viewer sensitivity as this view will only be experienced in a fleeting manner. Again, the proposed development does not break the skyline.
The expected magnitude of change at this viewpoint will reduce to **low** from medium at the operational phase of the project due to the maturing trees and understory. Their density will ensure that they contribute to a full presentation in this landscape view. Setting a **'low'**

magnitude of change against a **'high'** viewpoint sensitivity as set out in Table 11.1 above, gives a significance of effects that is rated as '**Moderate'.** The landscape proposals will greatly help with screening and absorbing the development into the overall landscape view. This adverse effect will be **short to medium term** and will reduce year on year as trees fill out and eventually screen the Proposed Development and absorb all its height in the view.

View Point 5

This viewpoint represents residential receptors and road users. The view has been accorded a '**high'** viewer sensitivity because of the presence of residential receptors. This viewpoint also considers a rath on the east of the viewpoint and an eastern panorama. Road users are accorded a low receptor sensitivity as their experience of the viewpoint is fleeting and glimpsed.

The magnitude of change to this view will be '**negligible'** at the operational phase due to the softening effect of establishing woodland trees and hedgerow material. During the operational phase once the proposed planting softens the development against the skyline the development will not be easily seen. Setting a '**high**' viewpoint sensitivity against a '**negligible'** magnitude of change to the viewpoint, results in a significance of effects that is rated as **'not significant'** as outlined in Table 11.1 above. The effect is slightly adverse.

View Point 6

This viewpoint represents pedestrians, road users and local residences. This view from the R518 demonstrates to good effect the role hedgerows and woodland planting have in the landscape. Pedestrians, motorists, and cyclists have a low viewer sensitivity at this viewpoint as their experience is brief and glimpsed. However, residential receptors are accorded a '**high**' viewer sensitivity. The Proposed Development will be largely screened at the operational phase and will benefit from further hedgerow establishment and tree growth at the development. Therefore, the magnitude of change attributed to this view will be '**negligible**'. Setting a '**high**' viewpoint sensitivity against a '**negligible** magnitude of change to the viewpoint, results in a significance of effects that is rated as '**not significant** as outlined in Table 11.1 above. The effects are slightly adverse.

11.7.6 'Do Nothing' Scenario

There will be no difference to the views or the landscape for a 'Do Nothing' scenario. It is likely the site will remain as pastoral grassland. It is unlikely senescent trees will be replaced without a requirement due to development.

11.7.7 Cumulative Impact

There are no other known proposals of a similar nature planned for this area. The significance of effects will therefore be no greater on the landscape or visual receptors than as assessed above.

11.8 Mitigation Measures

The following landscape protection and landscape impact mitigation measures should be put in place to avoid, eliminate, or minimise any potential landscape and visual impact associated with the construction of the Proposed Development.

- Any area of site subject to soil disturbance is to be repaired, the soil reworked into the site, recontoured and modelled. Matching sod/seed sown to blend the topography back into the rural landscape.
- All construction materials, fill, gravel, etc to be removed from the site and surrounding fields once the works are complete.
- Earthworks and hedgerow banks to facilitate appropriate drainage for the soil type and this to be detailed at the design detail stage.
- An irrigation plan to be put in place to allow for establishment of plantings with the irrigation water source to be identified prior to the spring of the first year of planting. A plan to irrigate in hot weather and as required to be put in place especially for the first two years after planting. Recovered process water which has been cooled may be used.
- Hedgerows are to be maintained as thick tall hedgerows with an A shaped profile, min. 2-2.4 m high everywhere sight lines allow.

Avoidance Prevention Reduction and Offsetting

Mitigation is discussed below as a measure of avoidance, prevention, reduction and offsetting of impacts and effects. The positioning of the digestion tanks into the topography along with specified screen planting reduces impact of the structures against the skyline. Other measures include;

Disease

- The avoidance of any further *Fraxinus excelsior*, ash, in any planting will not only protect existing landscape trees from the biologically infectious chalara disease, but it will also protect the local habitats that ash supports for as long as possible, by avoiding this biosecurity risk.

- Any plant materials brought on site to be disease free of local provenance, to at a minimum hold all relevant plant passports and preferably be sourced field grown and inspected at source prior to planting. This is to avoid spreading potential infections to local populations. All trees and shrubs will conform to the specification for nursery stock as set out in British Standard 3936 Parts 1 (1992) and 4 (1984). Advanced Nursery stock trees where used in tree planting shall conform to BS 5236.Standards for plant establishment to conform to at a minimum BS 8545:2014 Trees: from nursery to independence in the landscape.

Topsoil

- Avoid bringing any additional topsoil on site. Use local soil to make localised repairs. Where additional topsoil is required use from a matching source as local as possible to the Proposed Development. Do not mix topsoil and sub soil during construction. Identify storage area where soils are to be stored separately until they are reworked into the contours.

Invasive Species and Biohazards

- Avoid spreading or bringing invasive plant species onsite in soil or plant materials. Soil and plant material hygiene to be observed and plant, boots, tools, and equipment to be clean before being brought on site. All involved at the construction stage to be made aware of

this prior to coming on site.

Invasive Alien Plant Species include;

- Japanese knotweed *Fallopia japonica*
- Giant knotweed *Fallopia sachalinensis*
- Bohemian knotweed *Fallopia x bohemica*
- Himalayan knotweed *Persicaria wallichii*
- Old man's beard *Clematis vitalba*
- Winter heliotrope *Petasites fragrans*
- Garden Yellow Archangel *Lamiastrum galeobdolon ssp argentatum*

Of these, knotweed is most likely to be problematic if introduced on site.

- *Thaumetopoea processionea*, commonly known as the Oak Processionary Moth (OPM) is not to be brought onsite and reported immediately to the Department of Agriculture, Food and the Marine (DAFM), if identified on or near to the site.
- *Xylella fastidiosa* also presents a threat to new and existing planting and is to be avoided and reported to DAFM if detected on or near the site.

- All hedgerows and hedgerow trees which are being retained are to be protected during the construction process with a root protection zone established, prior to the commencement of construction. No root systems to be trenched severed or cut and there is to be no piling of building materials, soil, plant, containers, or any loading material on the protected root zone during construction. All parties involved in the construction process to be made aware of this avoidance measure. No unnecessary damage is to occur to the existing tree and hedgerow complex during construction or afterwards during operations. At the detailed design stage tunnelling is to be preferred over trenching where pipework interacts with existing hedgerow systems in selected areas. This to minimise the impact of pipe works on adjacent hedgerow structures. The root protection zone is to at a minimum be positioned outside the drip line of the hedgerow system.

- Palisade fencing is to be screened with hedging and trees.

- Planting specifications to be overseen by a qualified landscape architect during the construction and operational period as required.

Reinforcing landscape

Any damage to field boundaries received during construction to be repaired in the traditional manner. Low banks for planting trees and hedgerows are to be reinforced where possible. The screening planting and new tree planting will reinforce much of the landscape pattern.

Following correct landscape construction and planting, all plant material is to be properly and satisfactorily, irrigate, pruned and given correct amounts of appropriate fertiliser to ensure plant health and vigour.

Landscape Maintenance and Management Plan

- A landscape management plan is to be produced and ready post construction so that all new and existing planting, hedgerows, and trees will be immediately cared for and promptly maintained. This plan along with any necessary method statements to be produced during the operational phase of the planting by a qualified landscape architect.

- Landscape maintenance and management plans ought to remain in place until all plantings are fully established and during the life of the Anaerobic Digestion Facility. The aim of the plan is to continue to ensure landscape character is maintained as well as biodiversity and habitat protection.

- A landscape maintenance and management plan will include a small woodland/hedgerow management plan and will address appropriate hedgerow cutting, timing of operations, protection of hedgerow habitats, address irrigation of newly planted trees or infill plants, accessing water, pruning, weeding, fertilising, trimming, management of dead and diseased wood, and general maintenance. Plant establishment to be provided for appropriately. All amelioration as required for good plant establishment to be tailored to the plants, trees, and hedgerows to satisfy their continued growing needs.

- The mitigation measures as outlined are conducted throughout the life of the operation.

- Periodically the landscape maintenance and management plans to be reviewed to ensure growth, screen establishment and general appearance of the site is fulfilling its original intent. Stake belts are to be loosened as required and stakes cut down and or removed as appropriate.

- Hedgerow maintenance and laying are to occur outside of the nesting season and where hedgerows are weak and require significant work to rejuvenate the hedgerows, this to be completed on each side, on alternate years.

- Appropriate native infill materials to be used in the rejuvenation of the hedgerows e.g. *Crataegus monogyna*, *Ilex aquifolium* etc,

- Flowering hedgerow plants and other pollinators are to be factored into the hedgerow cutting regime with respect to timing of operations and infill planting opportunities.

- **Buildings and Structures**
  The colour of the buildings as selected will blend into the landscape similarly to agricultural buildings. Wall colours are to be lighter than roof colour. A suitable dark green specification is to be applied on all metal cladding. The least reflective colours to be chosen to avoid light reflection and to reduce the apparent size of the buildings in the landscape. Standards as expected for large agricultural buildings to be applied to prevent incongruent colour choices on the buildings and structures.

11.8.1.1 Failure of Mitigation Measures

The landscape proposals can be regarded as mitigation measures in this context. A good diversity and mix of species sizes and varieties along with the landscape management proposals as outlined above will ensure there is little chance of complete failure of the planting. In the unlikely event that this is the case, the screening potential of trees will be lost and the ability of the landscape to absorb the development will be diminished. The potential visual amenity that maturing trees lend to a landscape will also be lost. The long term and permanent benefit of trees will also be lost if there is a failure of planting as a mitigation measure. Should failure occur, the entire planting proposals will have to be reinstated upon detailed examination as to why they were not successful in the first instance. Competent and qualified horticulturist

to be employed to plant, establish and manage the landscape and trees once they are growing effectively.

11.9 Interactions and Cumulative Impact

Other environmental impacts which will interact with landscape and visual impacts in the case of this Proposed Development are biodiversity related and are generally positive and beneficial. Mitigation measures which avoid damage to the landscape and views will also help mitigate biodiversity loss.

11.9.1 Biodiversity and Carbon Absorption

Biodiversity, floral, faunal, and microbial will benefit from tree planting and tree maintenance and the use of native and naturalised species as prescribed in the planting mix. There will also be a pollinator benefit from the hedgerow specifications, increasing the habitats for bees and other pollinating insects. Adding native and naturalised trees to the landscape has a generalised effect of increasing habitat size and habitat connectivity in the area. It adds to the corridors which connect hedgerows, woodlands, and habitats to each other.

The avoidance of *Fraxinus excelsior*, in the planting plan species mix will not only protect existing landscape trees from the biologically infectious chalara disease, but it will also protect the local habitats that ash supports for as long as possible, by avoiding this biosecurity risk. Avoiding infectious plant diseases in plant selection will also prevent spreading disease to local tree stands.

The emphasis is to be on plant selection of disease resistant, resilient, locally produced and propagated, screening trees of native and naturalised provenance. This will incorporate alternative climax species to ash and will ensure a good addition to the local biodiversity. The requirement to use locally sourced, produced and propagated, native and naturalised plant material will decrease the chances of introducing disease to the system. Climax trees like oak in the planting specification ensures the schedule of planting is maximising its capacity as a carbon absorptive sink. This service will continue permanently i.e. for a period of greater than 60 years. The plantation of native and naturalised trees around the proposed facility will also ensure that as trees age and decline in the landscape and commercial forestry is harvested, in this area, there will be a woodland replacement in place. Maturing oak, Scots Pine, beech and other climax trees will ensure there are species present to replace ash in the ecosystem. These species can absorb carbon in increasing quantities each year until maturity. Maturity is expected to continue for greater than 100 years.

11.9.2 Residual Impacts

Once all mitigation measures have been implemented and there is ongoing care provided to the landscape tree planting and hedgerows over the life of the project, the Proposed Development will not be hidden but it will be effectively screened, and a plantation of trees will be an addition to the landscape. Year on year the development of taller trees will continue to absorb the Proposed Development at viewpoints 1,2,3 and 4. Apart from the impacts as outlined in the assessment above no further residual impacts are expected.

References

Environmental Protection Agency, 2022. Draft Guidelines on the Information to be Contained in Environmental Impact Assessment Reports

Landscape Institute and the Institute of Environmental Management and Assessment, 2013 Guidelines for Landscape and Visual Impact Assessment 3rd Edition (GLVIA)

Limerick Council County Development Plan 2022-2028

Teagasc and Cranfield University ISIS – Irish Soil Information System

https://www.townlands.ie

https://www.logainm.ie

https://www.alltrails.com/ireland

https://www.sportireland.ie/outdoors/find-your-trails

Tailte Éireann OSI 2013, Historical Maps

County Limerick Landscape Character Assessment for LCDP 2022-2028

ORS

Appendix 11.1: Zone of Theoretical Visibility ZTV, Viewpoint Locations, Soil Type Map

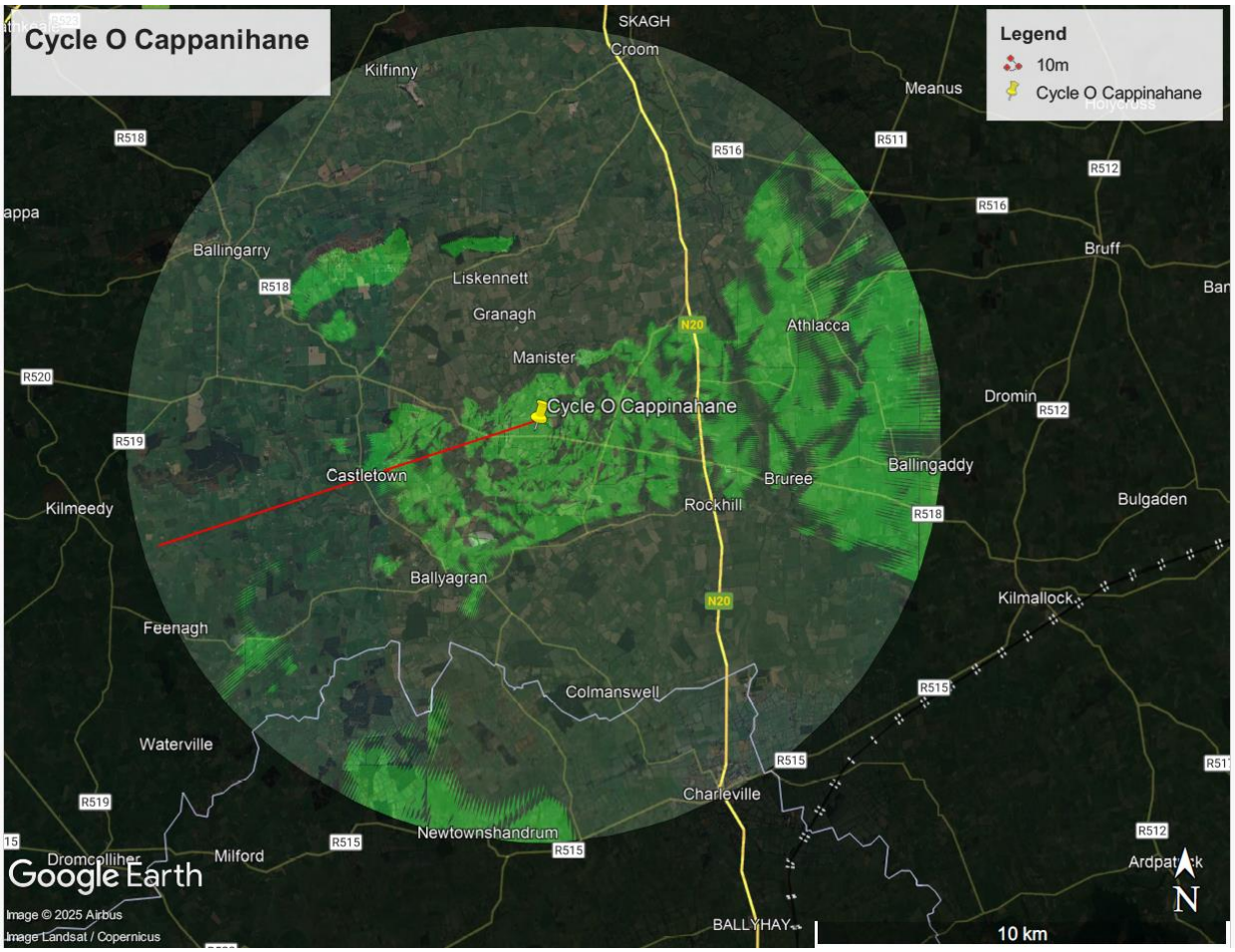


Figure 11.23: Zone of Theoretical Visibility.

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Figure 11.14: Verified photomontage viewpoint locations.

[37] Image;3 Dimensional

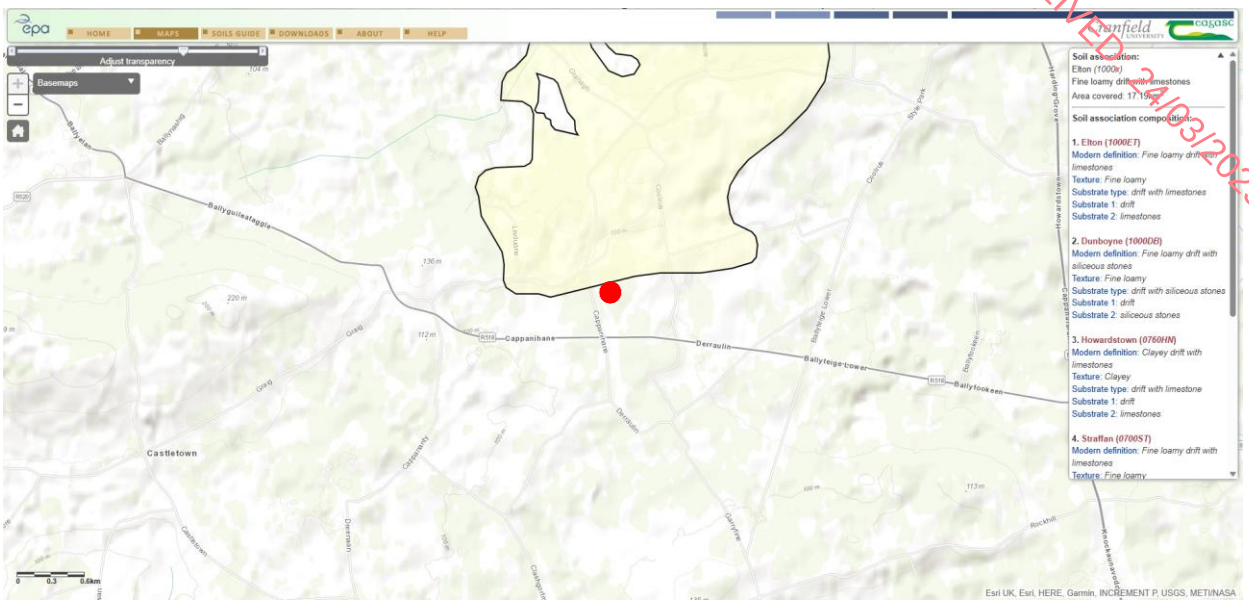

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Figure 11.25: Soil Association Elton Association

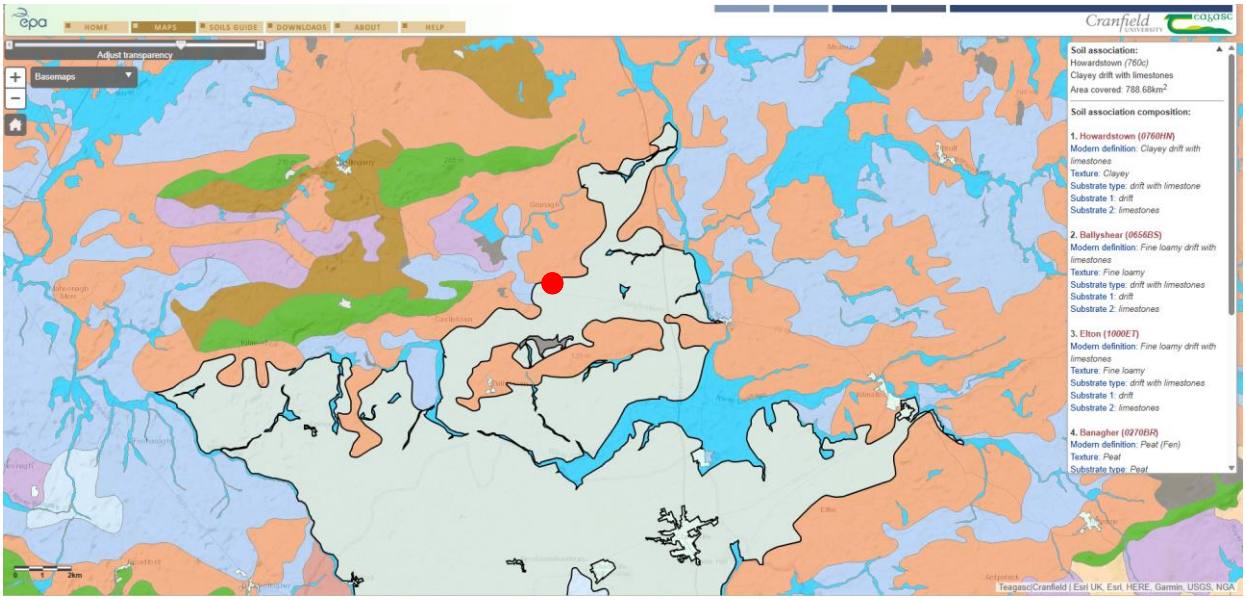

Figure 11.26: Soil Association Howardstown Soil Association

[38] http://gis.teagasc.ie/soils/map.php Esri, Environmental Protection Agency & Teagasc SIS National Soils Map Ireland

Appendix 11.2: Field Survey Photoset

Landscape Character



At the site of the proposed development the landscape displays characteristics typical of the Agricultural Lowlands of Limerick County Development Plan landscape character assessment. Neat hedgerows surround a pastoral field system. Drainage both natural and anthropogenic define the area in conjunction with hedgerows. On the site of the proposed development, there is a central drain with hedgerow on either side.


The site of the proposed development is protected in the overall landscape by rolling topography at higher elevations. The spatial division of the landscape is generated by the hedgerows into a well-articulated mosaic of a relatively large field system. The hedgerows are of good quality and generally high. The material is generally a mixture of whitethorn, blackthorn and native species though there are examples around the area where stone walls with whitethorn divide the fields.





There is a strong relationship between the drainage system and the hedgerow system. Generally, in the area the drains are deep and clear with the hedgerows established on good wide banks. Ash trees predominate the hedgerow tree species. Many of the existing stand demonstrate symptoms of ash dieback. The landscape would benefit from additional climax trees in the area to substitute for the likely loss of the ash stand in the years ahead. There are good examples of evergreen coniferous Scots Pine in the local landscape which blend very well with the deciduous native hedgerows.



To the east of the site of the proposed development the remnants of the original plantation of Glenbrook demesne encloses the landscape. There is a good mix of mature, deciduous oak and beech in the stand as well as significant tree cover along the natural stream to the east of the site of the proposed development.




Tall deciduous trees in the local landscape afford a large measure of congruency. They wrap the landscape to the east and north of the proposed site.

At a distance from the local landscape, prominent elevations contribute to enclosing and generating the landscape character.

Elevated areas in the landscape character area and locally give reveal the extent of the plain.

The landscape rises to the northeast of the proposed site revealing the wider agricultural plain.

Whilst the landscape is generally pastoral there are examples of arable fields in the area, which are enclosed in the same field pattern contributing to the richness of the mosaic. The soils are fertile and support a strong agricultural sector.

The landscape demonstrates good capacity for absorption and compartmentalises space quite well over relatively short distances.