

ATTACHMENT 7

VISUAL IMPACT ASSESSMENT

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**Indaver
Carranstown Project**

Environmental Impact Statement - Visual Impact and Landscape Report

1. METHODOLOGY

1.1 Introduction

This report considers the impact of the proposed development on the existing character, the visual impact on properties, roads, public vantage points and views, as listed in the Meath County Draft Development Plan 2000 and the Meath County Development Plan 1994. A description of the landscape appraisal method is given before an examination of the existing landscape character and the impact of the proposed development.

1.2 Landscape and Visual Assessment Method

The assessment of the effect of the proposed development on the rural environment involves:

- An appraisal of the existing character.
- An assessment and evaluation of the likely visual impact of the proposed development within its rural context.

1.3 Basis for the Assessment of the Landscape Impact

The Environmental Protection Agency, (EPA) 1997 'Guidelines on the Information to be Contained in Environmental Impact Statements' are used as the basis for the landscape and visual assessment.

1.4 Landscape in the Existing Environment

The Guidelines recommend the following to be included in any assessment:-

i. Context

Areas from which the existing site can be seen are generally noted with particular attention given to views from roads, residences and designated tourism routes and viewpoints. Areas from beyond the site boundary from which the site can be seen should be noted. Principal landscape features and areas of distinctive character should be mapped.

ii. Character

A description of the Landscape character differentiates between subjective assessments and objective description. A description of the character of the site as perceived both from within the site and from the wider landscape is important, as is a description of the intensity and character of land use.

iii. Significance

This entails the level of visual intrusion upon designated views, designated landscape and designated landscape amenity areas. Also whether the site is visible from any historical site or location or is visible from a wide area.

iv. Sensitivity

A description of the attributes of the existing landscape or views capable of being changed in such a way as to significantly alter its perceived character and appearance.

1.5 Impacts on Landscape

This includes an assessment of the "do nothing" approach alongside the predicted impacts of changes in character, visibly and patterns of land use.

The predicted impacts refer to indirect, secondary and cumulative impacts.

1.6 Mitigating Impacts on Landscape

Impacts on the landscape can be mitigated either through avoidance or design. The primary mitigating measures are:

- To avoid developments in sensitive or prominent landscapes.
- To reduce the visual intrusiveness of the design.
- To reduce the visibility of the project.

1.7 Definition of Visual Impacts

The following terminology has been used in the visual assessment and is defined as follows:-

Visual Impact

Imperceptible	An impact capable of measurement but without noticeable consequences.
Slight	An impact which causes changes in the character of the environment which are not significant or profound.
Significant	An impact which by its magnitude duration or intensity alters an important aspect of the environment.

1.8 Visual Impacts may be Positive, Neutral or Negative

Positive	A change which improves the quality of the environment.
Neutral	A change which does not affect the quality of the environment.
Negative	A change which reduces the quality of the environment.

The duration of impacts is defined as:-

Temporary	Impacts lasting one year or less.
Short-term	Impacts lasting one to seven years.
Medium-term	Impacts lasting seven to twenty years.
Long-term	Impacts lasting twenty to fifty years.
Permanent	Impacts lasting over fifty years.

1.9 Summary

The significance of impacts on the perceived environment will depend partly on the number of people affected but also on value judgements about how much the changes will matter.

The first will be dependent on the visibility of the proposed development and the number of receptors affected. It is a quantitative and objective assessment. The second is a more subjective assessment in that it will to a certain degree depend on individual perceptions and experiences.

2.0 EXISTING ENVIRONMENT

2.1 Site Context

The site for the proposed waste management facility is located approximately mid-way between Drogheda and Duleek. It is situated in a landscape characterised by low undulating ridges and landforms, that stretches from the high ground of the Bellewstown Ridge, approx. 3 km to the south, to the Boyne Valley, approx. 3 km to the north of the proposed facility.

The site is accessed off the R152 regional road, Duleek to Drogheda arterial route.

The proposed northern motorway extension from Dublin to Drogheda will be located approx. 1.5 km to the east.

The large Platin Cement Works is located approximately 0.5 km to the north east of the site with the site for the proposed electricity generating plant immediately to the south east.

A number of one-off houses are located in the vicinity of the site.

The natural gas pipe-line reservation and the overhead E.S.B. power lines traverse the site in an east-west direction.

The total site area is approximately 10.7 hectares and is currently used as agricultural grazing land.

2.2 Character

The landscape character of this part of Co. Meath is essentially rural and agricultural.

Topographically the site is on the perimeter of the Boyne River Plain with a local average elevation of 36m OD (Malin Head).

Bellewstown Ridge 3 km to the south is the nearest high ground with a maximum elevation of 160m OD (Malin Head). Red Mountain which is approx. 2 km north east of the site has an elevation of 100m OD.

Within the site boundaries the ground falls from 41m OD in the south east to 33m OD in the north west. This level change will be used to reduce the impact of the larger buildings on site.

The proposed development will be situated in a landscape area of visual quality "V.Q 11. Rural and Agricultural", as defined in the Meath County Council Draft Development Plan 2000.

Land use in the area is typically agricultural, apart from the very large Platin Cement Works facility and a number of small to medium commercial developments in the general vicinity.

Planning Permission has been granted for the construction of a Power Plant on a site to the east of this proposal.

Settlement patterns are characterised by one-off houses and ribbon development adjacent to villages.

Open and 'glimpsed' views of the site are visible from the adjacent country road network, while only long-range 'glimpsed' views occur from the roadways on surrounding high ground.

Views Northward from Bellewstown, as identified in the Meath County Council Draft Development Plan 2000, include the site in the general panoramic vista.

However, the impact of the Platin Cement works with its associated open quarries is the most obvious feature in the Carranstown area. This industry extends over an area of approx. 23 hectares excluding the open quarries. The stacks to the cement plant are approx. 105 m high.

The existing undulating land form, with its varied field and hedgerow patterns stretches northward towards the River Boyne. The well established field patterns defined by high hedgerows and pockets of woodland provide intermittent rather than long distance viewing, promoting the semi-enclosed character of the area.

It will be by the use of colours and shapes extracted from this landscape that the visual impact of the proposed facility will be ameliorated.

2.3 Significance

Within this area of Co. Meath the rural landscape can be broadly divided into three character areas as follows:-

- The Boyne valley is designated a World Heritage Site and is of archaeological importance. It is also designated as an 'area of scientific interest' and an 'Area of High Natural Beauty and High Amenity' in the Meath County Development Plan.
- Bellewstown ridge while designated as an 'Area of High Natural Beauty and High Amenity' would not be as significant as the Boyne Valley and would be a landscape of local and regional significance.
- The third character area within which the site is located is of undulating low land and would not be significant or valued in a regional or national context. The extractive industry, proximity to Drogheda and Dublin and consequent development pressure somewhat detract from its rural quality.

2.4 Sensitivity

The landscape character of the area within which the site occurs has changed from a rural, agricultural landscape to one undergoing development pressure. The presence of Platin Cement Factory and its visual dominance also influences perceptions of the area. Construction of the proposed power plant will further increase this perception. Consequently the perceived character and appearance has been changed and the overall sensitivity of the landscape to change has been reduced.

3.0 PROPOSED DEVELOPMENTS

Indaver Ireland Ltd. are seeking Planning Permission to construct a waste management facility at Carraistown Co. Meath.

The proposed facility will consist of three main elements:-

- A Community Recycling Park
- A Recycling plant for Non-Hazardous Waste
- A Waste to Energy Plant for Non-Hazardous Waste

The following building structures will form part of the proposal:-

- 'Bring Bank' Recycling Area
- Administration Building
- Warehouse Building
- Security / Entrance Building
- Waste to Energy Building
- Pumphouse
- Utilities Area

Most of the proposed ancillary developments are of a relatively small scale which will have little significant visual impact from outside the site boundary. Drawing Nos. 2666-49-DR-004 and 2666-49-DR-005 Landscape Sections taken through the site show the comparative size and height of the proposed development.

The element that will have the most significant impact will be the Waste to Energy Plant, which with the other proposed developments is described in the following sections. The locations of these buildings and facilities are shown in Drawing No. 2666-49-DR-003 Landscape Plan.

3.1 Bring Bank Area

The proposed Bring Bank will be located at the front of the facility. It consists of a loop access road with covered lay-down areas to both sides. The lay-down areas will accommodate containers each receiving a different category of recyclable waste.

A Security/Information Building will be located at the entrance to the Bring Bank area. The building measures 4m x 7m on plan with a parapet height of approximately 4.5m. The building will be faced externally with colour coated profiled metal cladding.

A series of open sided roof structures will provide cover to the waste containers. The high point of these mono pitch structures will be approx. 5m above ground level. The roofs will be of metal decking with a 'green organic' system as a roof covering.

3.2 Administration Building

The proposed Administration Building will be located approx. 50m to the North of the site boundary with the Public Road. The building measures 35m x 11m on plan with a parapet height of approx. 9m above a ground floor level of 35m OD. The building will be finished externally in a mix of stone cladding, timber cladding, and painted plaster.

The building will accommodate the administrative and public functions of the facility.

3.3 Warehouse Building

The proposed Warehouse Building will be located approx. 80m to the north of the site boundary with the public road. The building measure 42m x 18m on plan, with a parapet height of approx. 10.5m above a ground floor level of 33.8m O.D. The building will be

finished externally in colour coated profiled metal cladding. It will provide storage and workshop facilities to the development.

A driver reception and security annex is located adjacent to the Warehouse Building. This measures 18m x 5m on plan with parapet height of 5m. This building will be finished externally in colour coated profiled metal cladding.

3.4 Waste to Energy Plant

This is a building measuring approx. 130m x 80m on plan located 160m to the north of the site boundary with the public road. The highest parapet level will be 30.45 m above ground floor level of 30.3 O.D. The building has been located to take maximum advantage of the natural fall of ground in order to minimise the overall height. The height and foot print are dictated by process functions. No roof – top plant will be located on this building and it will present a clean parapet roof line.

A single stack with a height of 40m above ground floor level of 30.30 O.D. will be located in the north eastern sector of the building. As the plume will be heated to 100 oC, this will reduce the conditions that lead to the formation of a visible plume. Any visual impact will mainly occur during cold weather, with low wind speeds.

The structure of the proposed building will be a structural steel frame supporting steel and concrete floors. The building will be clad externally in a mix of profiled and flat metal cladding with an elevational pattern of texture and colour designed to reduce the scale and bulk of the building.

The overall shape is built up by a series of 'cubes' and 'blocks' arranged according to plan layout to create planes of light and shade. Smooth and textured, wall cladding will be used to reinforce this shade difference.

Externally the colours of the cladding will be a mix of greens, browns and greys which will be positioned to break the scale and form of the building and help blend it against the background when viewed from the high ground to the south.

The impact of the building when viewed from the local road network will be lessened by its position at the rear of the site along with the proposed siting of the Administration Building and Warehouse Buildings which due to their varying heights and locations will form a series of visual steps, reducing the Waste to Energy Plant down to a more human scale when viewed from the main entrance. Ground modelling and structural planting will also form part of this visual screening. See Landscape Site Sections Drawing Nos. 2666-49-DR-004 and 2666-49-DR-005.

3.5 Pumphouse

The pumphouse will be located north of the Waste to Energy Plant adjacent to the water storage tank. The building will be 20 m x 10 m on plan with a parapet height of 8m, above a ground floor level of 30.85m O.D.

3.6 Lighting

Plant lighting will be provided throughout the facility to operational and safety standards. Exterior light fittings will be specified where possible with a high cut-off value to minimise light spread.

3.7 Removal of Vegetation

All hedgerow and woodland vegetation on the site boundaries will be retained with the exception of that removed to form the new entrance to the site and also to facilitate

proposed climbing and deceleration lanes. A hedgerow transversing the central portion of the site will be removed to facilitate construction of the buildings.

A quality stone walled entrance will be integrated into the planted road boundary with a palisade type fence being located within this planted zone.

4.0 LANDSCAPING

Indaver Ireland Ltd. is committed to providing a landscaping scheme which will facilitate an amelioration of the visual impact of the development. By providing a scheme of similar scale to the surrounding woodland and hedgerows, the development will be visually moderated and integrated into the surrounding landscape.

4.1 Context of Surrounding Landscape

The surrounding landscape is dominated by existing farmland and residential properties surrounded by mixed hardwoods, and hedgerows providing the model for the landscaping and visual integration of the site.

4.2 Proposed Woodland Planting

A conceptual planting proposal is indicated in Drawing No. 2666-49-DR-003 Landscape Plan, and relates to a baseline study carried out to identify plants and trees presently growing in the locality thereby:-

- Specifying plants that are proven to be suitable to the surrounding soil and climate conditions.
- Visually integrating and merging with the surrounding woodland and hedgerow types.

It is also proposed to instigate a planting schedule that will ensure large quantities of indigenous saplings are planted during the initial stages of the project.

The planting proposals take their reference from the character of the existing local landscape which surrounds the site. The landscape is dominated by:-

- low undulating lands-forms, patterned by hedgerows and field shapes
- existing farm and residential properties surrounded by mixed hardwoods.

It is proposed to provide a landscape planting scheme of similar scale to the surrounding woodlands and hedgerows. By planting at this scale and density, it is possible to visually integrate the development onto the surrounding landscape, whilst providing the site with protection from wind exposure.

4.3 Landscape Concept

A planted 3m high berm will be created along the eastern site boundary and along the site boundary with the main road.

Sections of the existing hedgerow, to the east and west of the proposed site entrance will have to be removed to create adequate sight lines and to allow for the construction of acceleration and deceleration lanes. These areas will be replaced by 3m high earth berms planted with a mix of shrub, saplings and semi-mature trees.

In addition to this screen planting, the monopitch roofs over the bring bank areas will be surfaced in an organic "green roof" system. These roofs will provide slopes of maintenance free vegetation consisting mainly of lichens, moss and other ground cover plants.

A 2m high palisade security fence will be located within this perimeter planted zone.

The careful siting of these visual layers adjacent to the public road will minimise the impact of the Waste to Energy building and should, with time, render it unnoticeable to passing traffic.

Land adjacent to the gas main way-leave will be landscaped with hardwood woodland planting thereby creating a planted zone of a scale and density which will have a significant beneficial impact both on the local and overall landscape vistas.

Shrubs such as Rubus Tricolor, Hawthorn etc., will be used to re-create a natural boundary ditch to the open end of the gas main way leave.

Existing hedgerows to the northern, eastern and western boundaries will be thickened with Hawthorn and Blackthorn and Holly. A 2m high chainlink fence will be provided to the plant side of these boundaries.

This woodland concept of planting large quantities of saplings during the early stages of the construction period provides a nursery of trees on site that can be relocated replanted as part of an on-going landscape development programme.

4.4 The species proposed are similar to those presently growing in the locality, thereby:-

- specifying plants that are proven to be suitable to the surrounding soil and climatic conditions, thereby guaranteeing their successful establishment.
- visually integrating and merging with the surrounding woodland and hedgerow types.

4.5 Outer perimeter hardwood woodland planting to integrate and merge into the surrounding landscape.

Acer campestre	Field Maple
Ainus ruba	Red Alder
Carpinus betulua	Hornbeam
Corylus avellana	Hazel
Fagus sylvatica	Beech
Ilex aquifolium	Holly
Malus sylvestris	Apple
Pinus sylvestris	Scots Pine
Prunus avlum	Cherry
Prunus spinosa	Blackthorn
Quercus petraee	Sessilo Oak
Quercus robur	Common Oak

4.6 Inner perimeter Pine forest plating to provide evergreen screening and shelter planting.

Larix decidua	Larch
Picea abios	Norway Spruce
Picea sitchensis	Sitka Spruce
Pinus contorta	Lodgepole Pine
Pinus nigra	Austrian Pine
Pinus radiata	Monterey Pine
Pinus strobus	Weymouth Pine
Pinus sylvestris	Scots Pine
Psuedotsuga menziesli	Douglas Fir
Thuja pllcata	Western Cedar
Tauga heterphyllis	Western Hemlock

4.7 Internal planting at car park areas to provide light woodland and groundcover to reduce scale of tarmac and parking areas.

Betula pendula	Birch Multistem
Hedera helix	Ivy
Vinca major	Periwinkle

4.8 Internal ornamental planting at Administration Building

Acer varieties	Maples
Sorbus aucuparia	Mountain Ash
Camellias varieties	Camelias
Parthenocissus	Virginia Creeper

4.9 Security Planting to Existing Site Boundaries

Prunus spinosa	Blackthorn
Crataegus mollis	Hawthorn

4.10 Plant Species Mix

Plants shall be planted in groups of 100 plants, reflecting the proportion of species in the planting area. Groups shall be set out avoiding obvious repetition, regularity or single lines of one species.

4.11 Density and Spacing of Forestry

Transplants shall be planted in staggered rows at the following density and spacing; 1 per 3 sq metres density at staggered spacing of 1.5m in rows 2 metres apart, the rows to run parallel to the perimeter boundary. Forestry transplants will be supplemented with semi mature trees along southern boundary,

5.0 VISUAL IMPACTS OF THE PROPOSED DEVELOPMENT AND MITIGATION MEASURES

- 5.1** The impact of the proposed development on the landscape character would depend upon the degree of vulnerability of the existing landscape and its ability to accommodate change. The significance of the change will be assessed on the existing character and also on the values attached to the landscape and its importance within a national or regional context.

The landscape of this part of county Meath is a rolling, agricultural landscape, noted by good quality farmland.

"As described previously, the landscape may be divided into three distinct local character areas."

The site occurs within a lowland, undulating landscape. This type of landscape has a semi-enclosed character by virtue of its topography and vegetation. Thus it has a high ability to absorb new development when viewed from within the landscape. The Boyne valley is another landscape character unit and is visually enclosed and distinct from the lowland, agricultural landscape. The other landscape character type is Bellewstown ridge which is open, allowing 360 degree panoramic views. This ridge would be considered visually

vulnerable with a low tolerance to change and a low ability to accommodate new development.

Thus while the site is located within a landscape with a high visual absorption capability, and low vulnerability, it may be viewed from other vulnerable landscape areas with a low visual absorption capability, such as the ridge at Bellewstown.

The significance of the change would be most apparent from elevated vantage points such as Red Mountain and Bellewstown Ridge. However, the character of the landscape and views from these areas are already influenced by Platin Cement Factory which is visually dominant due to its height and scale and also the associated open quarry of Premier Periclase, which lends an industrial quality to the landscape. The proposed power generation plant, if constructed will increase this perception. Within this context, the development would thus represent a cumulative impact, whereby there would be an increase in the perceived industrial character of the locality.

It is considered that the visual impact while negative when viewed from these locations will not be significant, as the proposed development will be viewed in the distance and against the background of the existing Platin Cement works installation with its high rise structures, stacks and open quarry rock faces.

5.2 Considerable research has been undertaken over the past half century into techniques for blending large installations into the landscape. The most effective methods involve the use of Disruptive Patterns and Materials. This is a combination of irregular patterns and colours based on shapes and tones occurring in the local landscape. It has been used successfully on recent projects in Ireland. This technique will be applied to the Waste to Energy Building to reduce its apparent height and mass, by using:-

- A carefully selected colour scheme to disrupt building outlines
- Panels of smooth and profiled wall cladding.
- Relief features, including stepping of plan and elevation lines.

5.3 The construction phase of the project will have a high negative impact due to stripping of top soil, alteration of ground levels and construction of buildings and ancillary developments. However, due to the construction schedule this visual impact is considered short term.

6.0 VIEWS

The proposed development will be situated in a landscape area of visual quality "VQ11, Rural and Agricultural" as defined in the Meath Co. Council Draft Development Plan 2000 - Area of Visual Quality Map.

"A number of specific views in this area are identified in the Draft Development Plan 2000 - Navan Area Amenity Map". All of the identified views, with the exception of the view from Bellewstown Ridge, look northward into the Boyne Valley and as such are not visible from the proposed development and will not visually impact on these views.

The view from Bellewstown Ridge looks northward over the proposed site. However, the view is panoramic and the proposed development forms a very small proportion of the total view and is located in the far middle distance.

It is considered therefore, that the visual impact, while negative when viewed from locations on the Ridge, will not be significant.

The Meath County Development Plan 1994 - Heritage and Views Map also listed the following views in the area of the proposed development; Views No.'s V5, V6, V7, V8, V13 and V 16.

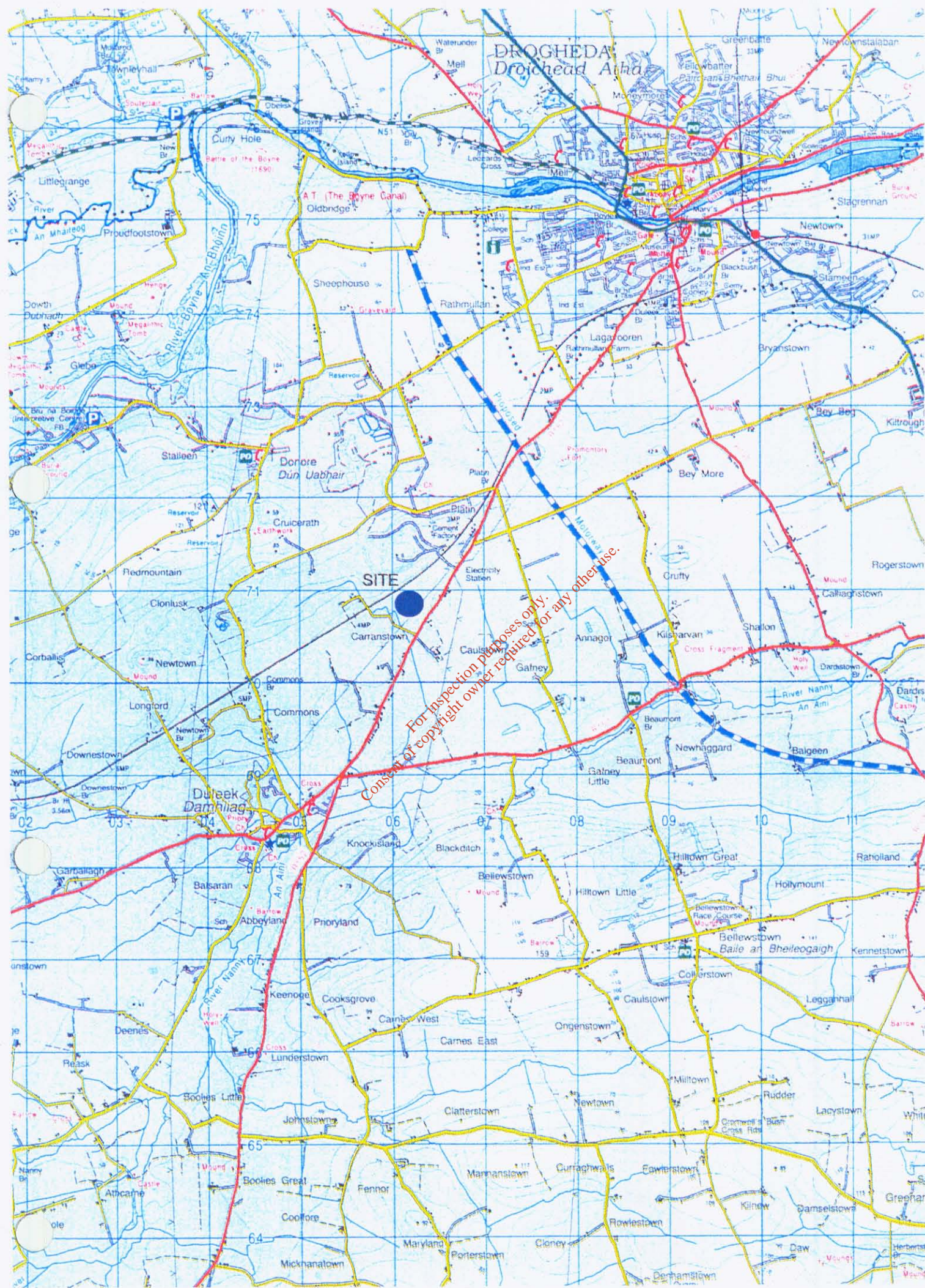
Again, only V16, the view northward from Bellewstown Ridge is affected by the proposed development and as stated previously, the visual impact, when viewed in context with Platin Cement Works is considered slight.

There will be glimpsed and open views of the development from the adjacent road network and from houses in the immediate vicinity of the site. However, the creation of planted berms and large areas of woodland planting will effectively screen the large building structures.

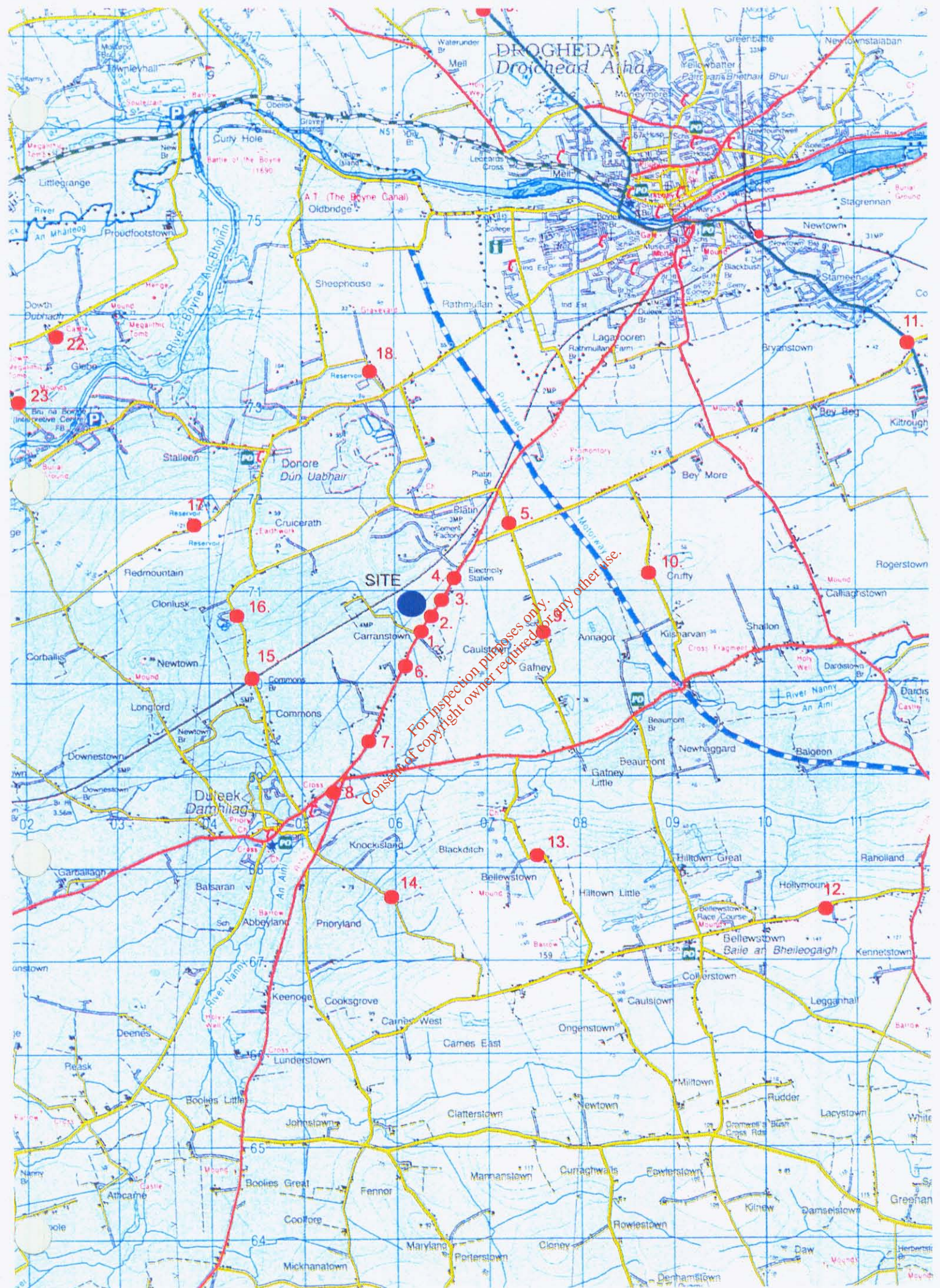
A colour scheme has been formulated for the entire development which will be implemented by cladding buildings, tanks etc. in a range of patterns and colours chosen to minimise their impact on the landscape. The use of a mix of green, brown and grey panels, along with relief features such as, staircases, stepped ancillary blocks, glazing and louvres, will assist in reducing the visual mass of the proposed structures.

The photomontage views accompanying this text are incorporated in the Appendix of this EIS document. These views clearly illustrate the effectiveness of the building colour scheme when combined with the proposed landscaping works.

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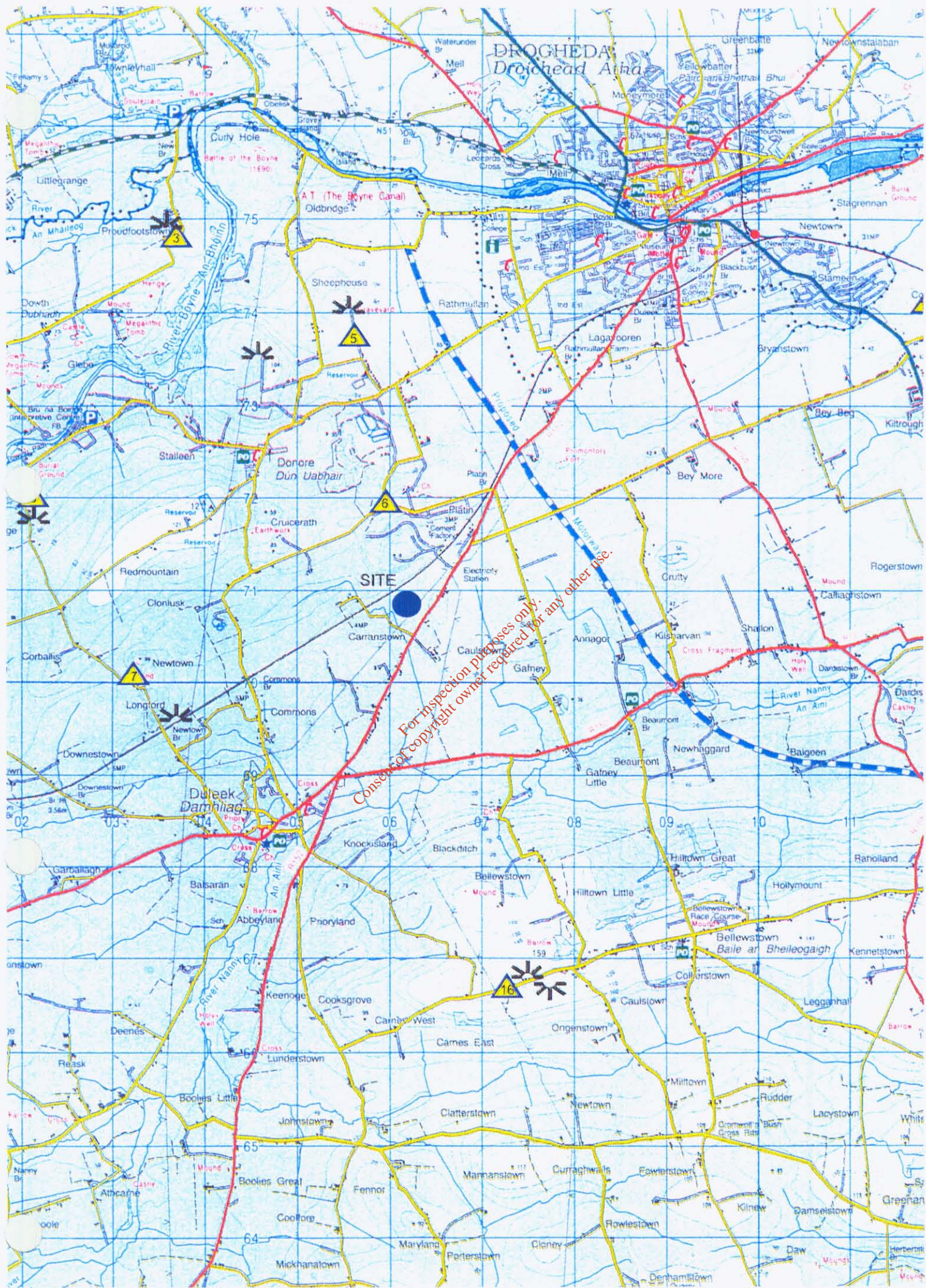
Site Location Map
Scale 1:50,000



Photomontage Views
 Location Map. 1 Scale 1:50,000



Photomontage Views
 Location Map 2 Scale 1:50,000



Key Views as listed in the Meath Co. Development Plan 1994



Key Views as listed in the Meath Co. Draft Development Plan 2000



Scale 1:50,000



Methodology for the preparation of photomontages for Proposed Management Facility at Carranstown, County Meath.

PHOTOGRAPHY

The photomontages are based on photographs taken using Corfield WA67 camera. This is a medium format camera, with a fixed 47mm lens, yielding a horizontal angle of coverage of 73.5°. The viewpoints used were selected to represent the visual impact from all four points of the compass. All the photographs were taken in bright, clear weather conditions, with good visibility.

SURVEY INFORMATION

A full electronic survey was available which included the R152 along the site frontage and beyond, and also included the location and level of the two existing stacks at the Plating Cement Factory. In the case of the viewpoints along the front of the site, Views 1 to 4, the camera positions were surveyed electronically in three dimensions, and referenced to the main survey file. In the case of the rest of the views, the camera position was located on either the 1:10560 or the 1:50000 Ordnance Maps using field boundaries or buildings as reference points. In order to establish the camera level for these viewpoints, vertical angles were taken using a theodolite from each of the camera positions to the two existing stacks at plating.

CALCULATING VIEWPOINTS

By plotting the survey information, it was possible to establish the location of the camera points relative to the site and the existing stacks. This allowed us to measure the distance from the viewpoints to the stacks. Using the distance and the vertical angles, we were able to calculate the level of the camera. Using the position of the stacks in the photographs, and knowledge of the geometry of the camera lens, it was possible to establish the plan rotation of the centre of vision for each view.

DIGITAL MODEL

A digital model of the proposed facility was built using drawings supplied by the Architects and the Engineers. The two stacks were also built in the model. It was then possible to generate the same perspective from the model for each of the viewpoints.

PHOTOMONTAGES

The perspective views were taken and overlaid onto the background photography. An accurate fit was established by ensuring the stacks in the rendered image overlaid accurately onto the real stacks in the photographs. After, this a clipping path was made to remove any parts of the proposals which would be screened by foreground obstructions.

PRINTS

The images have been printed at A3 size, and as such, will appear at the correct scale at a reading distance of 265mm. It is intended that the images be viewed on site, from the same point as the original photographs were taken. This will assist the observer in forming an opinion as to the visual impact of the proposed development.

John Kelly
8th January 2001

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