Proposed Development of the Tullamore Dew Distillery, Tullamore, Co. Offaly

Environmental Impact Statement - Volume 1 : Main Report & Appendices

WILLIAM GRANT & SONS
INDEPENDENT FAMILY DISTILLERS SINCE 1887
IRISH BRANDS LTD

OCTOBER 2012

VOLUME 1 : MAIN REPORT

1 INTRODUCTION

1.1	Context	1
1.2	Structure of EIS	1
1.3	Scoping of EIS	1
1.4	EIS Consultation	1
1.5	Overview of William Grant & Sons	3
1.6	Tullamore Dew Distillery History	3
1.7	Need for the Scheme	3

2 PROJECT DESCRIPTION

A	**Irish Whiskey Production**	**5**
2.1	The Process	5
B	**The Project Design**	**9**
2.2	Introduction	9
2.3	Historic Context	11
2.4	Visitor Experience	12
2.5	Site Analysis	13
2.6	Overview of Site	14
2.7	Masterplan	15
2.8	Landscape Design	23
2.9	Design Development	25
2.10	Proposed Design	35
C	**The Construction Phase**	**38**
2.11	Introduction	38
2.12	Physical Consideration of Site	38
2.13	Construction Process	39
2.14	Description of Construction	40
D	**The Operational Phase**	**42**

3 PLANNING CONTEXT

3.1	Introduction	43
3.2	Relevant National Policies, Objectives and Guidance	43
3.3	Relevant Regional Policy Guidance	45
3.4	Local Policy Guidance	46
3.5	Conclusion	49

4 ALTERNATIVES CONSIDERED

4.1	Introduction	51
4.2	Methodology & Site Selection Criteria	52
4.3	Site 1 – Clonminch, Tullamore Town	54
4.4	Site 2 - Grange Castle	55
4.5	Site 3 – Swords (turvey-Donabate)	56
4.6	Site 4 - Mulhuddart - Damastown	57
4.7	Site 5 – Drogheda	58
4.8	Site 6 - Dundalk	59
4.9	Site 7 - Arklow	60
4.10	Site 8 - Ardee	61
4.11	Site 9 - Little Island, Co. Cork	62
4.12	Site 10 – Mitchelstown, Co. Cork	64
4.13	Site 11 - Belview, Waterford, Co. Kilkenny	65
4.14	Site 12 – Askeaton, Co. Limerick	66
4.15	Site 13 - Ballinigarrane, Clonmel, Co.Tipperary	67
4.16	Site Selection	69
4.17	Site Selection – Scoring of Shortlisted Sites	72
4.18	Alternative Site Layouts	73
4.19	Alternative Processes	73

5 LANDSCAPE & VISUAL IMPACT

5.1	Introduction	75
5.2	Description of Receiving Environment	75
5.3	Key Features of the Proposed Development	77
5.4	Assessment of Effect on the Landscape Resource	77
5.5	Assessment of Effect on Visual Amenity	79
5.6	Photomontages	87

6 TRAFFIC & TRANSPORT

6.1	Introduction	103
6.2	Receiving Environment	103
6.3	Proposed Development	105
6.4	Trip Distribution	106
6.5	Modal Choice and Trip Attraction	106
6.6	Assessment Years	106
6.7	Assignment of Development Traffic	106
6.8	Highway Impact	107
6.9	Mitigation Measures	108
6.10	Road Safety Assessment – Stage 1	108
6.11	Public Transport	108
6.12	Pedestrians	108
6.13	Internal Layout	108
6.14	Parking Provisions	108
6.15	References	108

7 SOILS & GEOLOGY

7.1	Impact Assessment Methodology	109
7.2	Soil Quality	112
7.3	Proposed Development	119
7.4	Construction Phase	119
7.5	Operational Phase	119
7.6	Impacts	120
7.7	Mitigation Measures	120

8 HYDROLOGY & HYDROGEOLOGY

8.1 Impact Assessment Methodology 121
8.2 Hydrology 121
8.3 Hydrogeology 122
8.4 Groundwater Wells 126
8.5 Groundwater Quality 126
8.6 The Proposed Development 130
8.7 Construction Phase 130
8.8 Operational Phase 130
8.9 Impacts 131
8.10 Mitigation 131

9 WASTE MANAGEMENT

9.1 Introduction 133
9.2 Construction Phase 133
9.3 Operational Phase 133

10 ECOLOGY

10.1 Introduction 135
10.2 Methods for the Ecology Assessment 135
10.3 Ecology in the Existing Environment 137
10.4 Potential Impacts on Ecology 145
10.5 Mitigation Measures for Ecology 150
10.6 References 152

11 NOISE & VIBRATION

11.1 Introduction 153
11.2 Receiving Environment 154
11.3 Characteristics of the Proposal 155
11.4 Predicted Impact of the Proposal 156
11.5 Ameliorative, Remedial or Reductive Measures 160
11.6 Predicted Impact of the Proposal 160

12 AIR QUALITY & ODOUR

12.1 Introduction 161
12.2 Assessment Methodology 162
12.3 Receiving Environment 163
12.4 Assessment of Impacts 164
12.5 Risk Assessment of Micro Flora Growth 170
12.6 Mitigation of Impacts 170
12.7 Conclusions 170
12.8 References 177
12.9 Tullamore Dew Distillery Odour Assessment 178

13 MATERIAL ASSETS

13.1 Introduction & Methodology 183
13.2 Description of Receiving Environment 183
13.3 Land Use & Natural Resources 183
13.4 Infrastructure & Utilities 184
13.5 Archaeological & Architectural Heritage 185
13.6 Built Industrial Heritage 192

14 HUMAN ENVIRONMENT

14.1 Introduction & Methodology 193
14.2 Identification of Principal Potential Receptors 193
14.3 Description of Receiving Environment 197
14.4 Potential Impacts & Proposed Mitigation Measures 200

15 CUMULATIVE INDIRECT & INTERACTION of IMPACTS

15.1 Cumulative Impacts 205
15.2 Indirect Impacts 206
15.3 Significant Interaction of Impacts 206

16 SUMMARY of MITIGATION MEASURES

16.1 Introduction 209
16.2 Pre-Construction Phase 209
16.3 Construction Phase 209
16.4 Operational Phase 211

VOLUME 1 : APPENDICES

1 INTRODUCTION

1.1 Glossary of Impacts 213

5 LANDSCAPE & VISUAL ASSESSMENT

5.1 Outline Landscape Specifications 215

6 TRAFFIC & TRANSPORT

6.1 The 'Tullamore Road Safety Audit' is provided as a separate document with the application. 219

7 SOILS & GEOLOGY

7.1 Trial Pit Records 221
7.2 Standard Operation Procedure Soil Sampling 240
7.3 Test Reports 241

8 HYDROLOGY & HYDROGEOLOGY

8.1 Laboratory Results 249

9 WASTE MANAGEMENT

9.1 The 'Waste Management Plan is provided as anExcel file on a CD at the end of this Volume 253

10 ECOLOGY

10.1a Summary of Ecology Field Surveys 255
10.1b Consultation Responses 256
10.2 Appropriate Assessment Screening Statement 258
10.3 Ecological Evaluation of Sites 271
10.4 Impact Evaluation 272
10.5 NPWS Site Synopsis 273
10.6 Photographs 280

11 NOISE & VIBRATION

11.1 The PPC 'Noise Assessment'is provided as a separate document with the application 283

12 AIR QUALITY & ODOUR

12.1 Ambient Air Quality Standards & Road Traffic Air Dispersion Modelling 285
12.2 Dust Minimisation Plan 287
12.3 Description of the AERMOD Mode 288
12.4 Meteorological Data - AERMET PRO 289
12.5 Photographs of Distillery Sites 297
12.6 Odour 308

13 MATERIAL ASSETS

13.1 Photographic Record 311
13.2 Cartographic Sources 315
13.3 Excavation Summaries 316

1 Introduction

1.1 Context

William Grant & Sons is seeking a ten year planning permission to develop a new distillery at Clonminch, Tullamore on a site area of approximately 28.8 hectares [71 acres]. The distillery will be developed in three phases with an ultimate projected output of 11.94 million litres of alcohol per annum (Mlaa). When complete the distillery will employ around seventy people and up to 40,000 visitors per annum are projected to visit the development, contributing significantly to the Midlands' tourism industry.

Part X of the Planning and Development Act 2000 (as amended) requires that any planning application referred to under Schedule 5 of the Planning and Development Regulations 2001 (as amended) must be accompanied by an Environmental Impact Statement (EIS). In addition a Planning Authority can request an EIS, even if the proposed development does not fall within the mandatory thresholds. Schedule 5 includes the following categories of development:

7(d) "*Installations for commercial brewing and distilling; installations for malting, where the production capacity would exceed 100,000 tonnes per annum…" and*

10(iv) *"Urban development which would involve an area greater than 2 hectares in the case of a business district, 10 hectares in the case of other parts of a built up area and 20 hectares elsewhere…"*

In this instance the proposed development is within the production capacity limits but will cover an area of approximately 23 hectares within a built up area, therefore the EIS is a mandatory requirement.

Figure 1.1 on page 2 shows the final site layout of the overall proposed development. More details of the description of the proposed development, including proposed phasing, construction activity and the operational phase are provided in chapter 2.

This EIS provides a detailed appraisal of the potential impacts of the proposed development and details mitigation measures proposed. In preparing the EIS, regard has been had to the following regulations and guidelines:

- The requirements of EC Directives and Irish Regulations regarding Environmental Impact Assessment;
- Guidelines on the Information to be Contained in Environmental Impact Statements (Environmental Protection Agency (EPA) 2002); and
- Advice Notes on Current Practice in the Preparation of Environmental Impact Statements (EPA 2003)

A glossary of the impacts detailed in the 2002 Guidelines is provided in Appendix 1.

The primary objective of the EIS is to identify baseline environmental and socio-economic conditions in the area of the proposed facility, predicted potential impacts during both construction and operational phases and propose appropriate mitigations measures where necessary.

The EPA 2003 Advice Notes provide examples of specific project types. The proposed distillery application falls within the category of 'Project Type 24', which included 'Installations for commercial brewing, distilling and malting'. The Advice Notes state that:

> *"These project types can give rise to concern about impacts on air quality, from dust and odours and on water quality from effluent discharges and accidental spillages. Other impacts include health hazards from meat, bone waster and vermin attracted by stored raw materials and product." (EPA 2003, p.106)*

1.2 Structure of the EIS

The EIS is prepared according to the 'Grouped Format Structure' as outlined in the EPA's Guidelines on the Information to be Contained in Environmental Impact Statements (EPA 2002). This means that each topic is considered as a separate section and is drafted by relevant specialists. Cumulative Impacts and Interaction of Impacts are considered in chapter 15.

The EIS is divided into a Non-Technical Summary, which is provided as a separate volume and 16 chapters, as outlined in the table of Contents.

The project design has been led by Acanthus Architects DF and Barr Construction. McCutcheon Halley Walsh is the lead consultant for the planning application and project co-ordinator for the production of the EIS. The other specialist consultants responsible for drafting the EIS are:

- Horner & MacLennan Landscape Architects – Visual Impact Assessment;
- AWN Consulting – Noise and Vibration; Air Quality and Climate Assessment;
- OCM Environmental Management – Soils and Geology; Hydrology and Hydrogeology; and Waste Management;
- MHL Consulting Engineers – Traffic and Transport;
- Kelleher Ecology Services – Ecology; and
- John Cronin & Associates – Archaeology and Conservation (Material Assets).

Contact details of all the consultants involved in the production of the EIS are available on the inside cover.

1.3 Scoping of the EIS

A draft scoping document of information to be contained in the EIS was submitted to Offaly County Council in February 2012. This document was then reviewed in a meeting with representatives from the relevant departments of the County Council in March 2012. There was on-going and regular consultation with all relevant departments of Offaly County Council during the process of developing the EIS to review relevant issues as they arose.

1.4 EIS Consultation

Each specialist consultant undertook consultation with the relevant bodies and statutory agencies related to their specific discipline(s). Where appropriate, responses from the consultation process are incorporated within each relevant chapter or appendices. In addition to consultation with Offaly County Council, the following bodies and statutory agencies were consulted during the preparation of the EIS:

- The Environmental Protection Agency
- The Health & Safety Authority
- The National Roads Authority
- The National Parks & Wildlife Service
- Architectural Policy & Development Application Unit (Department of Arts, Heritage & the Gaeltacht)
- Bat Conservation Ireland
- Inland Fisheries Ireland
- Waterways Ireland
- Birdwatch Ireland
- Irish Raptor Study Group
- Irish Wildlife Trust
- An Taisce
- Fáilte Ireland
- Midland's Chamber of Commerce
- Midland's Regional Authority
- Mid Ireland Tourism
- Enterprise Ireland
- IDA Midland's Regional Office
- Tullamore & District Chamber of Commerce
- OCC Heritage officer

A public consultation meeting was held on 18th September, in the Bridge House Hotel to inform interested parties about the proposed development. A public notice outlining details of the information meeting was published in the Tullamore Tribune and Midland's Tribune on the 5th and 12th of September.

Figure 1.1
Site Layout of proposed Development

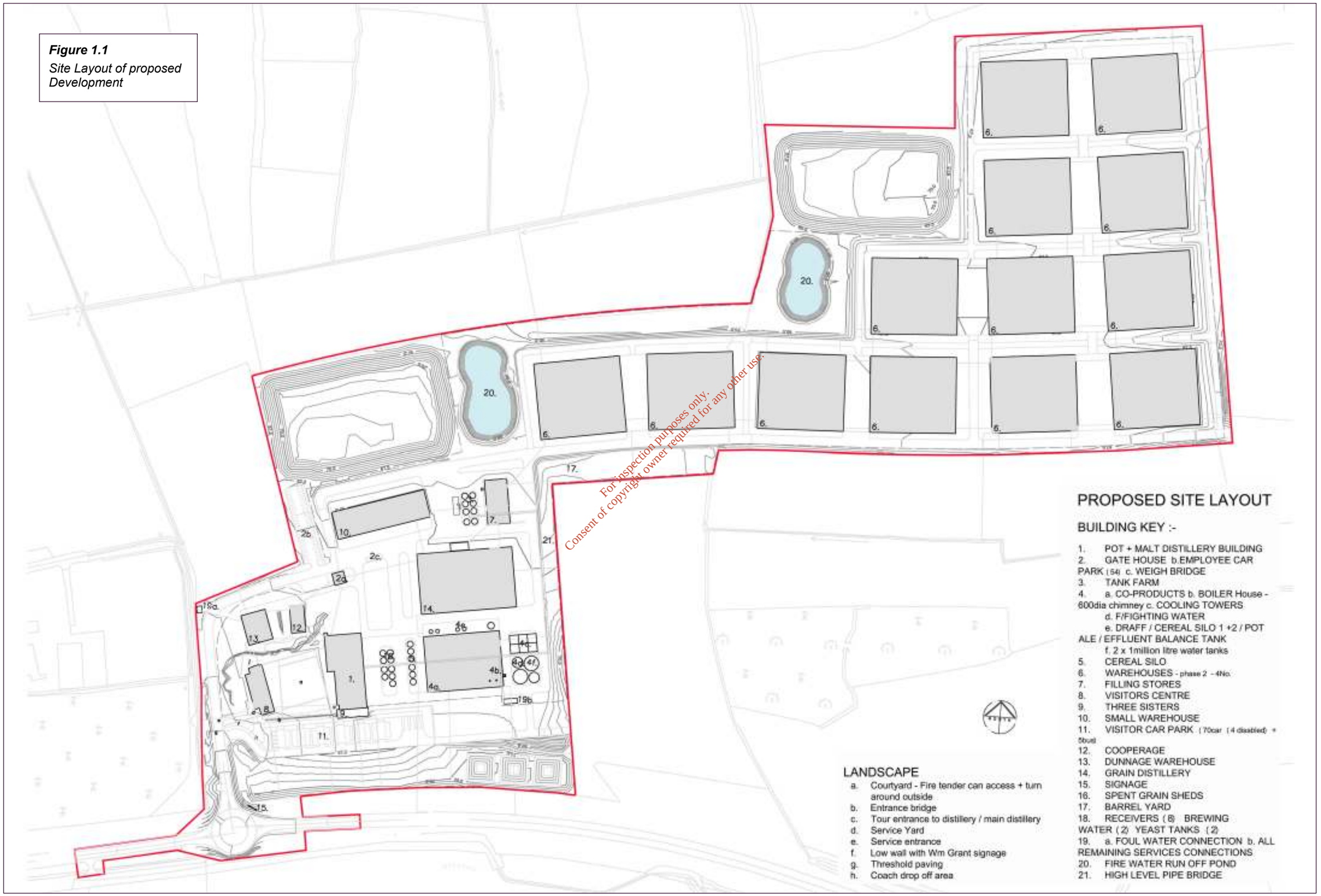


Figure 1.2 *- Public Notice*

The information evening was structured around a number of display boards, which detailed preliminary findings from the EIS work undertaken to date, provided photomontage images of the proposed development and outlined the anticipated impacts of the proposed development.

Representatives from William Grant & Sons and the project design team attended the consultation meeting to discuss details of the project with interested parties. Comment cards were available for attendees to leave comments on the evening and all attendees were advised of the proposed date for submitting the planning application and the statutory process which would facilitate the submission of formal observations on the planning application.

Although the meeting was well advertised there was a relatively low turnout, with only 11 members of the public attending.

The feedback from the day's public consultation was extremely positive. All the public attending the consultation day welcomed the proposed development and no one raised any direct issues of concern. The comments raised were:

- A welcoming of the project and appreciation that Tullamore Dew was to return to its 'spiritual home'.
- A general view that the project would be positive for Tullamore and would promote economic growth in the region.

In addition to the general views related to economic growth, 4 members of the public were specifically interested in the potential for employment related to either the construction or operational phases of the proposed development.

1.5 Overview of William Grant & Sons

William Grant & Sons is a family owned company founded in 1887 by the establishment of its first distillery in Dufftown, north east Scotland. The company grew steadily over the next 75 years, and then in 1963 William Grant & Sons opened the largest grain distillery in the world at Girvan, Ayrshire, Scotland. Also in 1963 Glenfiddich became the first single malt to be commercially exported outside the UK.

William Grant & Sons is now a global brand, with significant international interests (see Figure 1.3), although the company remains in the control of the original family and is run by a board of 9 directors.

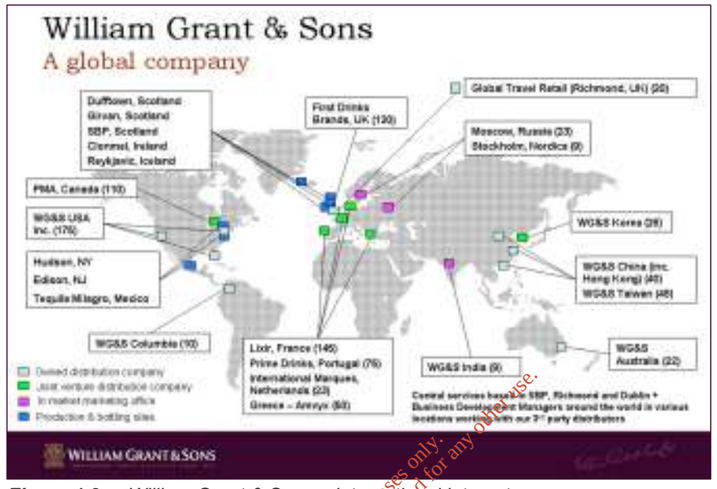


Figure 1.3 *- William Grant & Sons – international interests*

In 2010 the Irish Whiskey Brand, 'Tullamore Dew' became the sixth core brand of the William Grant & Sons family. The other main brands owned by the company include:

- Grants ®
- Glenfiddich ®
- The Balvenie ®
- Hendrick's ®
- Sailor Jerry ®

Figure 1.4 *- William Grant & Sons – Core Brands*

1.6 Tullamore Dew Distillery History

Tullamore Dew was first distilled in 1829 with the original distillery located in the heart of Tullamore town. The distillery closed down in 1954 and the site is now a heritage centre and was recently refurbished.

Figure 1.5 *- Tullamore Dew Heritage Centre.*

Tullamore Dew whiskey is currently produced under contract at Midleton Distillery to the specifications of William Grant & Sons. Bottling of Tullamore Dew is undertaken at Clonmel Bottling plant, where sixty people are employed.

Sales of Tullamore Dew are now growing at a rate of 15% per annum. The re-establishment of a distillery within Tullamore, strongly branded as the base of production for Tullamore Dew will support and enhance this growth rate, in line with William Grant & Sons commercial projections.

1.7 Need for the Scheme

Irish whiskey accounts for approximately 3% of the global whiskey category, with significant room to grow. It is the fastest growing spirit category worldwide, currently growing at over 12% per year. National policy recognises the economic potential of the sector. In 2010 a Department of Agriculture, Fisheries and Food discussion document noted that:

> "*… the Irish whiskey sector is a key driver of growth within the (alcoholic beverages) industry and is likely to continue to gain market share in the medium term.*"

Within the Irish whiskey sector, Tullamore Dew is the second largest brand globally, currently sold in over 45 countries. Tullamore Dew is one

of the fastest growing Irish whiskies, having more than doubled its size in the past seven years.

As noted previously, Tullamore Dew originated and was first distilled in the town of Tullamore. It is a firm belief of William Grant & Sons that great international brands need a strong provenance, as a firm basis for a marketing strategy to grow the brand in global markets. Tullamore Dew carries the name of the town where it originated and such the importance of having the distillery based in Tullamore was considered a key factor in establishing credibility of the brand worldwide.

Tullamore Dew is the only international Irish whiskey that is a triple distilled blend of Pot Still, Malt and Grain Whiskey. As it is currently produced under contract at another distillery, the potential to develop the brand is linked to the capacity of the existing supplier. The Tullamore Distillery, once complete, will meet William Grant & Sons full supply needs to produce the Tullamore Dew brand and develop new premium range entrants to the market.

William Grant & Sons aspires to significantly increase global growth of Tullamore Dew to achieve over one million cases by 2015 (3..6Mlaa) and over two million cases (7.2 Mlaa) by 2021. The development of its own distillery at Tullamore will contribute significantly to achieving and sustaining these targets in the long-term. The length of time required for maturation means that it will be some time before output from the distillery becomes product in the market place[1].

In addition, core to William Grant & Sons' strategy is to innovate and create new Irish whiskeys for the international market. Irish whiskey is becoming more sophisticated due to new premium range entrants such as single Malt and Pure Pot Still. It is William Grant & Sons' intention to enter both of these premium segments in a meaningful way. This can only be achieved if the company has full control of its own liquid production.

In a commercial market, if companies do not respond to growth in demand then there is a risk that they will lose market share, undermining existing demand. Establishing control over its own Irish whiskey production will allow William Grant & Sons to meet increasing market demand and support the economic growth of the sector, in line with national policy targets discussed in Chapter 3, Planning Context.

The development of Tullamore Distillery will help William Grant & Sons to achieve its corporate vision to become the most coveted branded spirits company in the world.

[1] *The whiskey industry relies on purchase and sale of alcohol from various distilleries to contribute to the final blending of any particular product, as a result the output from Tullamore Distillery will not exactly match the number of cases of Tullamore Dew sold.*

2 Project Description

This chapter details the process involved in the production of Irish whiskey and provides a detailed description of the construction and operational phases of the proposed development. It is divided into the 4 main sections A, B, C and D.

- Section A provides a general description of the process, which is indicated in a flow chart and diagram which illustrates the proposed on-site handling.
- Section B provides a description of the layout and design of the proposed development, including phasing proposals.
- Section C provides a description of the construction process involved, including details of anticipated construction workers and plant required.
- Section D provides a description of the operation for each phase of the proposed development, including details of raw material requirements, output, employees and traffic movements.

A - Irish Whiskey Production

2.1 The Process

2.1.1 Summary of Production Process

The whiskey manufacturing process into two distinct stages:

1. Production of new make spirit
2. Maturation of spirit (in casks)

The first stage is essentially the conversion of sugars naturally present in cereals (barley, malt and maize) into a potable alcohol. The processes involved during the production of new make whiskey spirit include:

- Brewing (milling, mashing / cooking)
- Fermentation
- Distillation.

This process takes approximately four days, after which the newly made spirit is filled into casks to mature.

The second stage is the maturation of the new make whiskey spirit into Irish whiskey over time in casks. By law this takes a minimum of three years, although it typically takes longer. Aged premium whiskeys can be laid down in casks for considerably longer (twelve years and over).

During the maturation period the casks of whiskey remain undisturbed in a maturing warehouse. A complex interaction develops between the spirit, wood and oxygen from the air to produce the unique flavour and colour associated with a mature Irish whiskey.

The Tullamore distillery will initially produce two types of Irish whiskey: Pot Still Whiskey and Malt Whiskey. Both will be distilled in a batch process from a mash of barley and malted barley for the Pot Still and malted barley for the Malt. A Grain Whiskey process will be added at a later phase. Grain Whiskey is distilled in a continuous process from a mash of wheat or corn (maize) and malted barley.

Whiskey Type	Cereals used	Mashing Process	Distillation Process
Malt Whiskey	Malted Barley	Mill and add hot water and enzyme	Double or Triple Distilled in Pot Stills
Pot Still Whiskey	Malted Barley + Raw Barley	Mill, add hot water and enzyme	Triple Distilled in Pot Stills
Grain Whiskey	Malted Barley + other Cereals	Mill, add hot water and enzyme	Continuous Distillation in Column Stills

Table 2.1 - Summary of Production Process

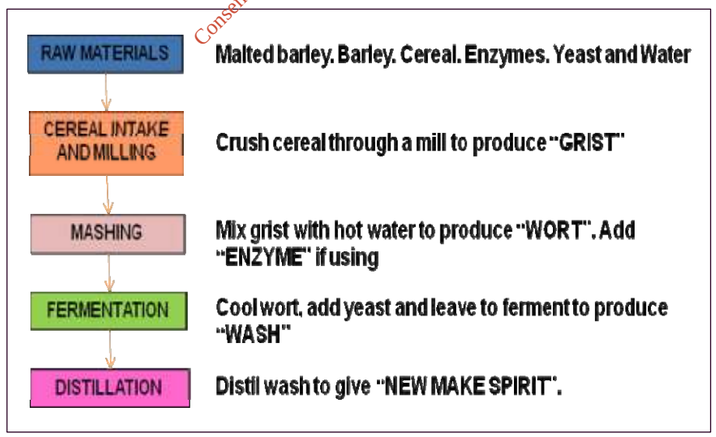


Figure 2.1 - Process Flow Diagram

2.1.2 Grains intake

All cereal deliveries will be recorded at the gatehouse where sampling and inspection will take place after passing over the weighbridge.

Malt and barley, corn or wheat at a later phase, will be delivered to site by truck, unloaded by drive-through tipping, and conveyed to storage in silo. Dust is carefully controlled during unloading / conveying.

2.1.2.1 Malting Process

Malt whiskey, Pot still whiskey and Grain whiskey all use malted barley in their production. Malted barley is produced by a process known as malting. The malting process causes biochemical changes in the internal structure of the barley which help to breakdown starch into sugar which in turn will be converted to alcohol (see fermentation).

The malting process involves steeping the grains in water for a period of time before removing the grains from the steep and allowing them to germinate under controlled temperatures. It is during the germination step that these biochemical changes occur. Following this, the germination is stopped by the action of kilning. Kilning is the process of drying the barley.

Malt can be peated to give smoky flavours. However, Tullamore Dew is made solely from un-peated malt.

2.1.2.2 Milling

The cereal is transferred from the storage silo to the mill house where it passes through a series of screens to remove dust and other erroneous materials such as straw, stones and cereal chaff before reaching the mill. The mill then transforms the whole cereal to grist. This process exposes the inside of the grain ready for the mashing process (see figure 2.2). .

A distillery may use between 6-12 tonnes of cereal per batch.

Figure 2.2
Whole Grist
Grist separated into fractions of decreasing particle size

2.1.3 Brewing

2.1.3.1 Mashing – Pot and Malt

- Mashing is a process where grist is mixed with hot water at a specific temperature to give a porridge like material. This is transferred into a vessel called a mash or lauter tun. In the presence of hot water, enzymes are released from the malted barley, the starch is dissolved and converted into fermentable sugar. 3 or 4 separate portions of hot water are added, each at a higher temperature than the last. This allows complete extraction of all starch and sugar from the grain. The final, sticky sugar solution is filtered off through the husk material and is called WORT.
- The leftover cereal solids are called DRAFF or Spent grains and are transferred to hoppers and then loaded onto a truck for delivery off site as animal feed.

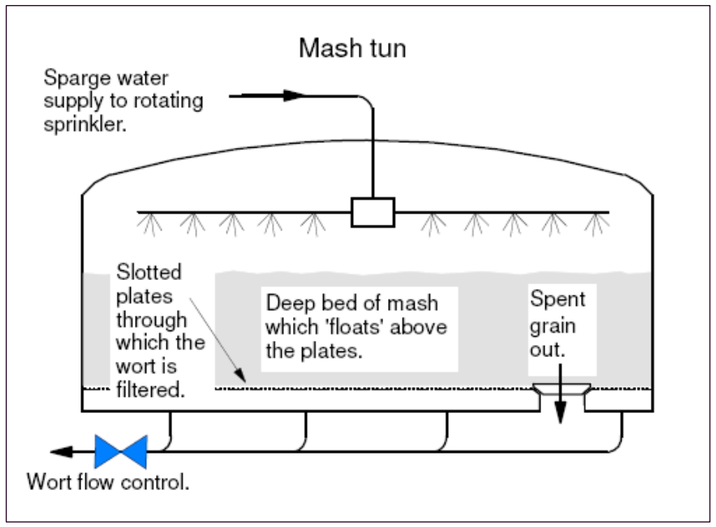


Figure 2.3 *- Mashing Process*

2.1.3.2 Mashing – Grain Whiskey

STEP 1 – COOKING

- Cooking is the process where wheat or maize grist is mixed with water at a high temperature and cooked under pressure to give a porridge like material. This process dissolves all of the starch into the water, making it ready for the next step, CONVERSION

STEP 2 - CONVERSION

- Conversion is the process which breaks down starch into sugar. The cooked wheat is cooled down to 63°C, and a slurry of milled malted barley in water is added. This is then allowed to stand for an hour to allow the enzymes in the malted barley to work on the starch. Malted barley contains enzymes produced naturally during the malting process. Raw barley contains starch but does not contain any of these enzymes. Enzymes are required in order to breakdown starch into sugar (only sugar is fermentable – not starch).

2.1.4 Fermentation

2.1.4.1 Yeast addition

- After mashing, the wort is cooled down and yeast is added by a dosing system to the cooled wort as it transfers to the fermenter. Yeast is living organism of the Fungi species

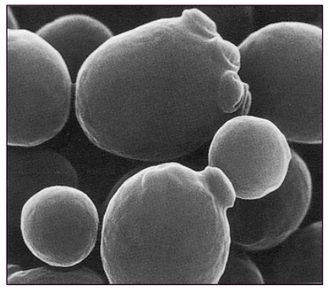


Figure 2.4 *- Yeast Fungi*

- It is only when the yeast is added that fermentation begins. Yeast is then added and fermentation starts

2.1.4.2 Fermentation

- When yeasts grow, they use sugar from around them and convert it into alcohol. Fermentation is the conversion of sugar into alcohol by yeast. Fermentation takes approximately 60 hours to complete. After 60 hours we have a solution known as WASH. Wash contains alcohol at approximately 9% by volume (similar to a strong beer). There are also small amounts of other compounds which will give flavour and character to the final spirit.
- Typically a fermenter will hold between 30,000 – 60,000 litres of wash. The vessels will all be held in a bunded area. This means that in the event of a leak the liquid will be contained and the drains in this area will be sent to a collection tank and not discharged to the sewer system.

2.1.5 Distillation for pot and malt

From the fermenter, the wash is moved to a wash receiver then the first distillation in the wash stills. The second distillation is carried out in the intermediate still. The third is carried out in the spirit still.

Products of distillation, such as low wines, high wines, intermediate feints, strong feints and spirit will be pumped to storage vats which will be bunded and safety systems installed.

Remnants from first distillation, pot ale, will be pumped to an evaporator in the co-product building where it will be converted into syrup.

Pot ale syrup will be loaded to tanker for delivery off site as animal feed.

The remnants from the second and third distillation, spent lees, will be combined with other distillery wash waters and will be discharged.

Malt and Pot Whiskey is traditionally Distilled 3 Times in Copper Pot Stills. During distillation, the still is heated and as alcohol boils at a lower temperature than water, the mixture is separated into its component parts. The spirit from triple distillation is typically 80% abv.

2.1.5.1 FIRST DISTILLATION explained

WASH STILL

- Wash is transferred to the WASH STILL @ 9%abv
- It is separated into portions
  1. LOW WINES (go forward to the next distillation)
  2. POT ALE (the residue which contains no alcohol)

2.1.5.2 SECOND DISTILLATION explained

INTERMEDIATE STILL

- Low Wines is transferred to the INTERMEDIATE STILL at approx 20% abv
- It is separated into three portions
  1. HIGH WINES (stronger alcohol which goes forward to third still)
  2. LOW WINES (weaker alcohol which goes back to the intermediate still with the next batch of low wines)
  3. SPENT LEES (the residue which contains no alcohol)

2.1.5.3 THIRD DISTILLATION explained

SPIRIT STILL

- HIGH WINES are transferred to the SPIRIT STILL at approx 55% abv
- It is separated into three portions
  1. SPIRIT (approx 80% alcohol which goes forward for maturation)
  2. FEINTS (remaining alcohol which goes back to the spirit still with the next batch of high wines)
  3. SPENT LEES (the residue which contains no alcohol)

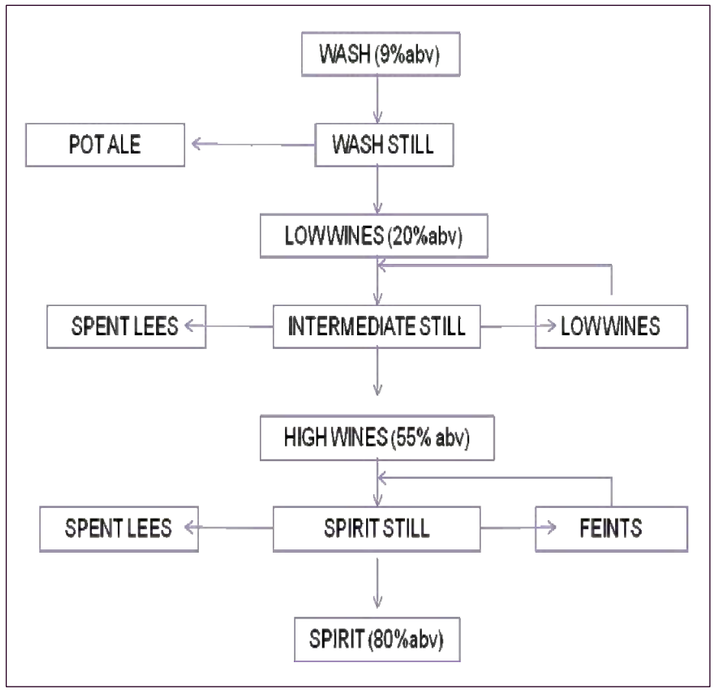


Figure 2.5 *- Distillation Process*

Stills used in pot and malt distillation can vary in size. Proposed sizes for the Tullamore distillery will be between 9,000 – 21,000 litres.

2.1.6 Distillation for grain

- Distillation of grain whiskey is a continuous process rather than a batch process. Typically, column stills are manufactured from stainless steel and will have some copper placed at defined points inside the columns. Wash is continuously fed into the first column. Steam is injected which boils off the alcohol and carries it up the still and over into the next column. After the first column, the liquid is appox 55% abv. In the second column, the alcohol is further concentrated and the final distillate comes off at 94.5%

Table 2.2 *- Summary of Distillation Strength*

Distillation Type	Typical Distillation Strength
Double	70-72% abv
Triple	80-85% abv
Continuous	Up to 94.8%abv

2.1.7 Maturation

2.1.7.1 2.1.6 Vat House / Filling Store / Tanker loading

Spirit is pumped to storage vats from the distillery. Thereafter, it is pumped to the filling store to be put into casks. From these vats spirit can be moved to filling casks or tankers.

Storage vats will be bunded and safety systems installed. Storage vats can be between 20,000 – 60,000 litres in capacity.

2.1.7.2 2.1.7 Cask Filling and Storage

An empty cask is placed under volumetric filling stations. Casks are moved along this process on conveyor. Once filled, casks are bunged, palletised and loaded by forklift on to site transport. Palleted casks are removed by forklift at the warehouse and stacked accordingly.

2.1.7.3 2.1.8 Maturation

Irish Whiskey must be matured in oak casks with a volume less than 700 litres for a minimum of 3 years. Maturation is the most important part of flavour development for a whiskey, contributing up to 70% of the product character.

Maturation is a combination of different processes happening in the cask. Some undesirable flavours are removed, and other desirable flavours are gained by the whiskey. Malt and Pot Still whiskeys are more complex and require a longer period of time to mature, typically 8-10 years. Grain whiskey is lighter in flavour and can be mature in 3 years.

Maturation can be carried out in casks of varying sizes. There is an occasional requirement to repair leaking casks. When necessary a pallet is brought to a work area and the cask repaired by a cooper.

Cask Type	Volume
Barrel	190 L
Hogshead	250 L
Puncheon	400 L
Butt	500 L

Figure 2.6 *- Barrel Sizes*

2.1.8 Removal

Pallets are removed by forklift from the warehouse and placed on site transport. Casks are transported to the filling store where they are placed on a disgorging rail and the bung removed. The action of disgorging means to forcibly remove the bung using a specially designed tool or piece of machinery.

The contents will then be emptied. Empty casks move along on conveyor to be refilled.

2.1.9 Blending

2.1.9.1 BLENDED IRISH WHISKIES

- Blending to produce a blended Irish Whiskey is the art of combining whiskies from several DIFFERENT distilleries, including malt, pot and grain. Producing a blend is considered an art. The objective of blending is to produce a whiskey with a definite and recognisable character, and a consistent quality.

2.1.9.2 UNBLENDED WHISKIES

- A single malt whiskey can only be produced using spirit from a single, named distillery. All whiskey must be produced using only malted barley. Single Pot Still Whiskies are also available from spirit produced in a single, named distillery, using a mixture of malted and un-malted barley. Many casks from the same distillery are blended together to produce a batch.

The age statement on a bottle is the minimum age of the whiskies used in its production i.e. if the bottle says 12 years old, the youngest whisky in the bottle is 12, however there may be whiskies up to 20 years old or older.

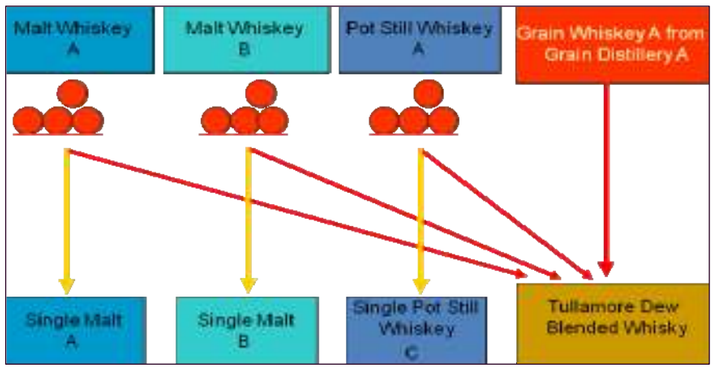


Figure 2.7 *- Whiskey Blending Diagram*

2.1.10 Site Transport

Articulated trucks will be used to transfer casks to and from the warehouses. Forklifts will be used for cask movement.

2.1.11 Waste Handling

Waste will be segregated as per common practice and a comprehensive system for reduction and recycling will be employed. Segregation areas will be utilised to ensure minimal handling of standard waste streams. (See Chapter 9, Waste Management).

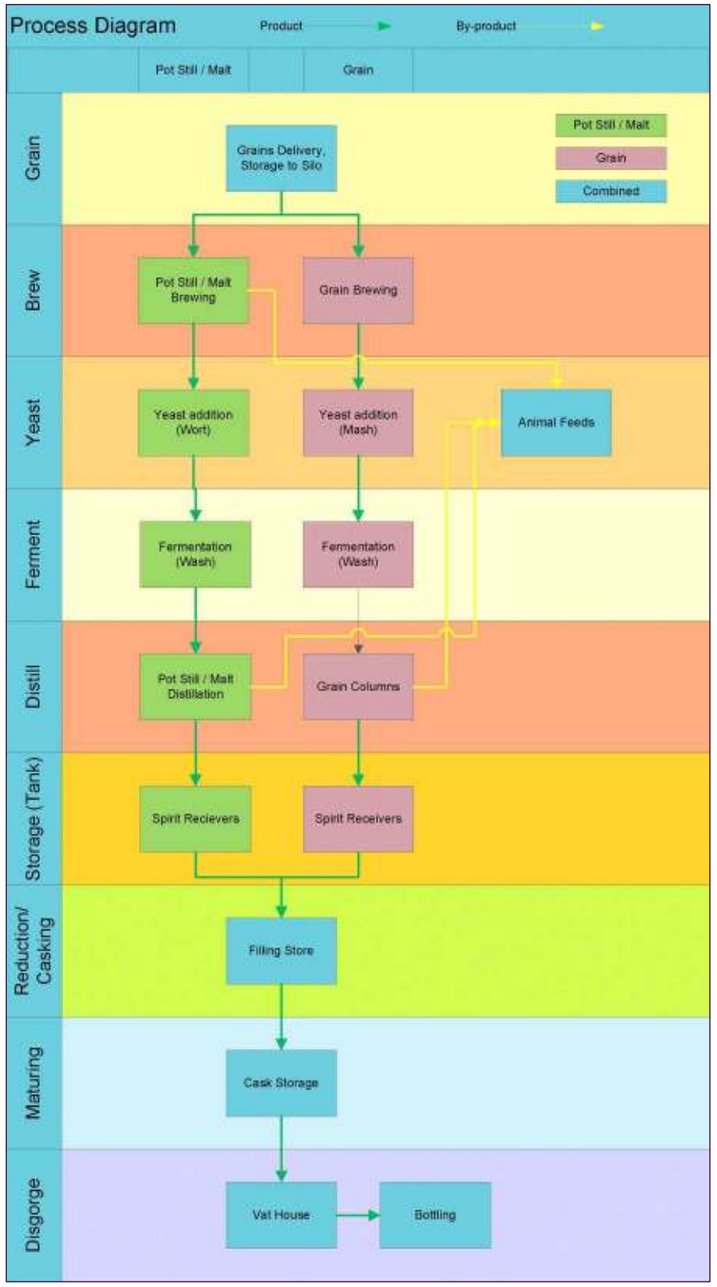


Figure 2.8 *- Process Diagram*

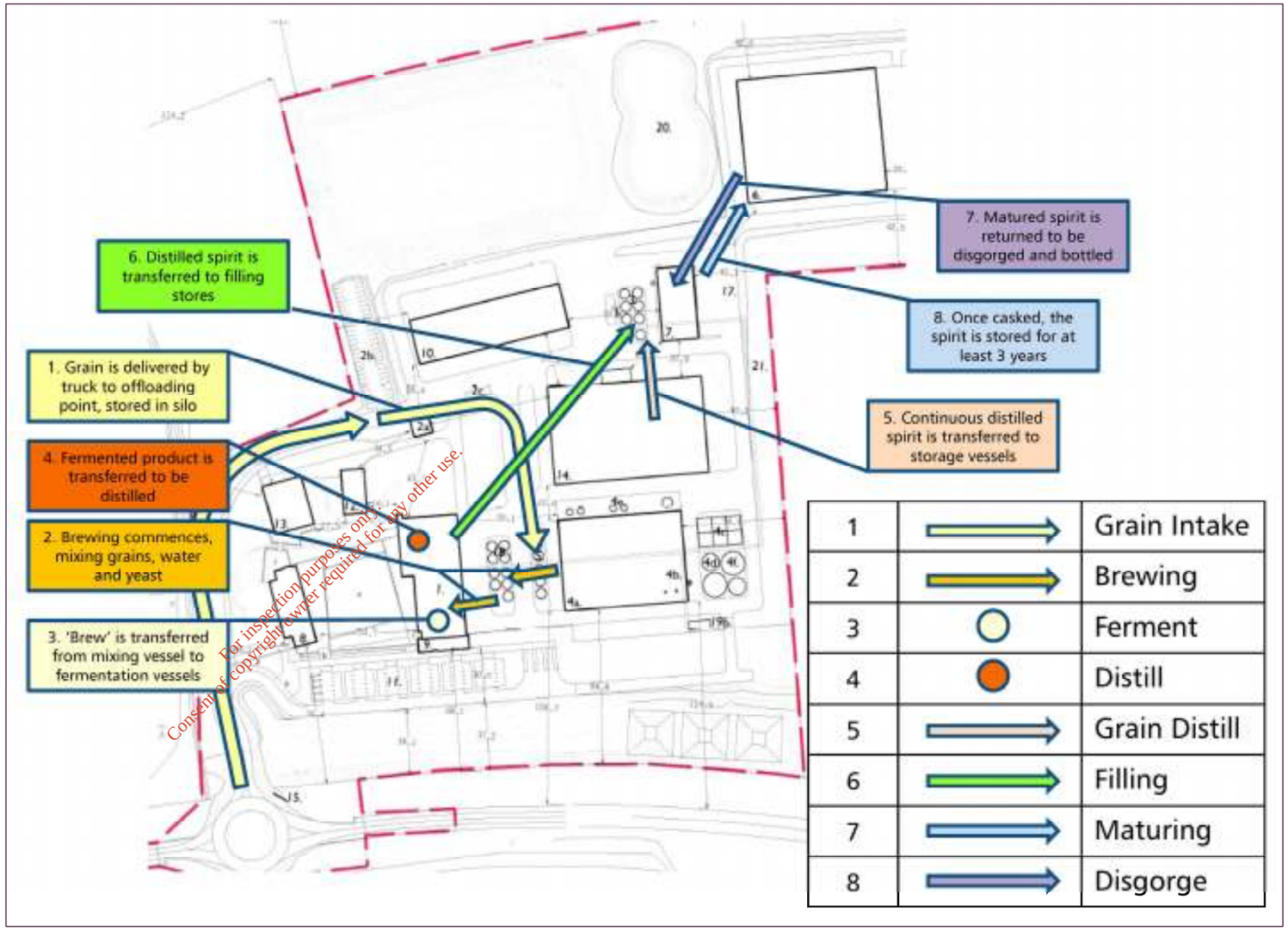


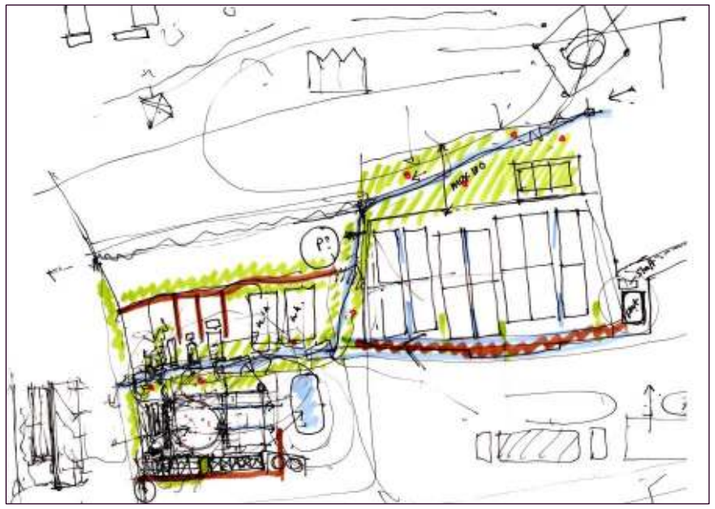
Figure 2.9 *- Diagram of On-site Product Handling*

B - The Project Design

2.2 Introduction

This portion of the document will concentrate on the Architectural Design Statement, primarily focusing on:-

- Initial Architectural briefing
- Historic context
- The masterplan of the site
- The built and landscape form concepts
- Individual building designs
- Final proposals



Initial Concept Sketch

Acanthus Architects df have worked previously with William Grants on a successful project entitled 'The Family Home' at their Glenfiddich Distillery. That projects title was specific to an individual idea, but also could be read as a mission statement for the company as a whole.

In aiming to bring Tullamore Dew home, the client has set out a clear objective to their designers to embrace that concept and work with it to deliver a new 21st century distillery within the framework of an historic brand being relocated back to its birthplace.

A series of alternative sites were considered but with the combination of proximity to the town, visibility from the N52 and enough land to grow the development over time the current site was seen as the ideal location, even if the ground conditions are challenging. Chapter 4, Alternatives Considered, provides a detailed account of the site selection process.

It would be simple for the clients to look at this venture solely in financial terms, but from the beginning the desire has been to create a new 'place' that the family owned business could be proud of, for generations to come. These buildings should become engrained in the fabric and become part of the ongoing history of Tullamore. This initial conceptual ethos set the benchmarks for the design brief.

In working through the brief for the project there are 3 crucial elements to address and judge the final proposals on:

- The quality and history of the brand
- The final and durable building quality
- A positive environment for the workers, the visitors and townscape

The design process has culminated in the proposed development layout, which is to be delivered in three phases. The final development will consist of following structures:

- Pot+Malt distillery Building
- Gate House, employee car park, weigh bridge
- Visitors carpark, including bus parking
- Tank farm
- Co-products building including boilerhouse
- Cereal Silos
- Filling Store
- 13 No. Warehouse
- Visitors Centre
- 3 Sisters building
- Small Warehouse
- Cooperage
- Dunnage Warehouse
- Grain Distillery
- 2 Peat Mounds
- 2 Storm & Fire Water retention ponds
- New roundabout access from the N52

Operational and security lighting would be introduced between the distillery buildings and the security fence, and between individual warehouses. This lighting would face into the site and away from the surrounding area, would operate at low lux levels and would be fitted with cut off shields to limit light spillage into the surrounding area. For security reasons, this lighting is likely to be operational during hours of darkness.

Decorative amenity lighting would be introduced into the visitor areas of the site, but would only be operational at limited times during hours of darkness or during occasional special evening events. This lighting would also face away from the N52 bypass, would operate at low lux levels and be fitted with cut off shields to limit light spillage.

It is assumed that the proposed roundabout on the N52 bypass which accesses the site would be lit in accordance with the appropriate road standards adopted at other roundabouts along the route of the bypass.

Details of how the proposed development is to be phased is provided in figures 2.10 – 2.12. Sections 2.3 – 2.9 provide a description of the design process, initial concepts and factors influencing the final design. Section 2.10 then provides aerial images of the final design.

. . . The quality and history of the brand

. . . The final and durable building quality

. . . A positive environment for the workers, the visitors and townscape

2.2.1 Phasing

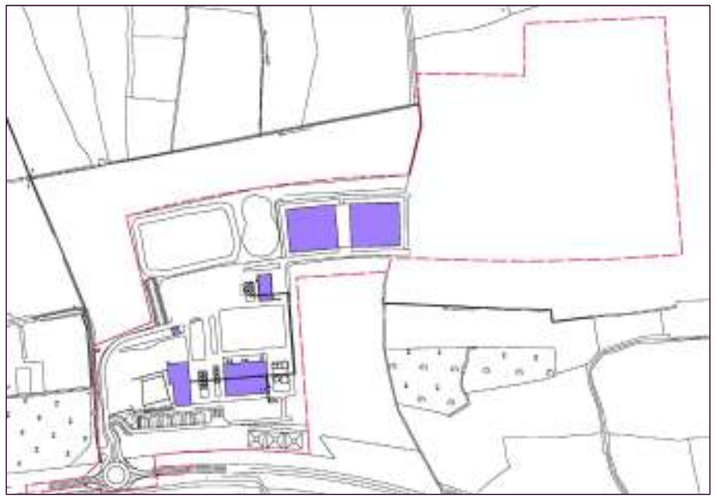


Figure 2.10 - Phase 1

Figure 2.11 - Phase 2

Figure 2.12 - Phase 3

PHASE 1 - Initial Development

Pot+Malt distillery Building
Gate House, employee car park, weigh bridge
Visitors carpark, including bus parking
Tank farm
Co-products building including boilerhouse
Cereal Silos
Filling Store
2 No. Warehouse
Peat Mound
Storm & Fire Water retention pond

PHASE 2 - Addition of Grain Distillery, Visitor Centre & Ancilliary Buildings

2 No. Warehouse
Visitors Centre
3 Sisters building
Small Warehouse
Cooperage
Dunnage Warehouse
Grain Distillery
Partial Peat Mound
Additional Storm & Fire Water retention pond

PHASE 3 - Additional Warehousing

9 No. Warehouse
Peat Mound completed

2.3 Historic Context

It's clear the original distillery had a strong influence on the town and its mark is still clear in many areas.

Tullamore, one of Irelands best known distilleries, has until recent times produced one of the country's most famous whiskeys, Tullamore Dew. Although the original distillery has fallen into disrepair, Tullamore Dew is still produced today.

Tullamore, a small flourishing town in Co Offaly, has had a long tradition of distilling. The Grand Canal connects Tullamore with Dublin and acts as the main route through the town. In the 1780s George Hamilton (with a 274-gallon still) and Joseph Flanagan (with a 300 gallons) ran the two legitimate distilleries in the town. At the time within Co Offaly there were no less than 32 distilleries however this total had significantly decreased by the end of the 18th century to just one.

In 1821 and 1829 distilling in Tullamore recommenced with the two distilleries opening their doors once again. The first had a brief existence. Brothers Henry and Charles Pentland built it from scratch near the market square however a year later cash flow problems saw them mortgage it to a local merchant, Tom Manley. By 1832 the Pentland-Manley distillery was producing 32,000 gallons per annum though competition and the growing temperance movement meant the distillery started to struggle. Following this John Locke of Kilbeggan took a lease on the works in 1839 but later gave it up in 1841. After its closure it was used as a famine-era workhouse and later converted into maltings. Little is recorded of its later history.

On the site of Joseph Flanagan's obsolete plant Michael Molloy built a new distillery in 1829. It was situated beside the River Tullamore and records show the distillery output at 22,000 gallons in 1832-33. The Molloys, born in the 1780s, were Catholic merchants well known in the town. After the death of Michael in 1846, the distillery along with £15,000 was left to his five nephews. The distillery was later sold by the Court of Chancery to his brother, Anthony who then left it to Bernard Daly (one of the five nephews who had inherited it originally) in 1857. In the mid 1880s he bequeathed it to his son, Captain Bernard Daly.

It seemed that Capt Daly had little or no interest in the business, preferring the social life of his big estate at Terenure, near Dublin. Daniel E Williams was promoted, as the most promising employee, to general manager which gave him free rein with the business. Williams spent 60 years at the distillery and it was him who persuaded Capt Daly to expand the plant, developing Tullamore into one of Ireland's most successful distilleries. Their greatest success was Tullamore Dew – an acronym of William's initials – and their sales slogan, 'Give Every Man His Dew', became the most recognised in Ireland. Sales boomed especially in Britain and Australia.

The construction of the Grand Canal which formed a link between Dublin and the River Shannon via Tullamore was a blessing for the distillery. It allowed the distillery to bring in English coal via their own chartered ships and canal barges which were then pulled back to Dublin laden with casks of the distillery's best. Soon after the railway reached Tullamore which allowed the distillery, like many others, to have their own spur line and sidings. Located in the heart of the midlands, there were ample supplies of barley and process water which was initially taken from the River Tullamore, however as its waters became unsuitable, water was brought by pipeline from a distant Lough.

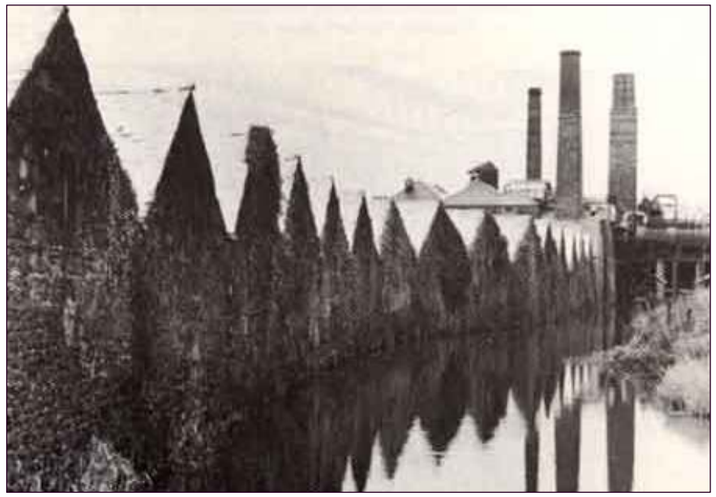
In 1887, Barnard described it as a thriving place and its best was still to come. Tullmore then had eight big granaries, four wire-floored kilns, each capable of drying 1000 barrels of cereals a week and eight pairs of milling stones. The two meal lofts fed two mash tuns, 24ft in diameter by 8ft deep, which mashed 1,000 barrels of meal and malt at a time. There were 100 employees, seven excisemen and annual output was put at 270,000 gallons.

Tullamore flourished for many years and in 1903 the firm was incorporated as B Daly and Co Ltd, with Capt Daly holding some shares and the Williams family the rest. Returning from war service in 1918, Daniel William's son, Capt John Williams, took over from his father who died in 1921. Capt Daly then resigned in 1931 as the director and the Williams family acquired all the company shares.

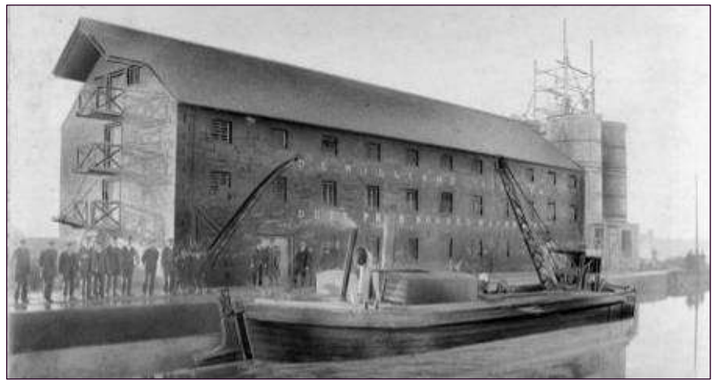
The distillery survived the difficult years of the Troubles, the loss of the UK and Empire markets, the great early 1930s recession and the downturn during World War 2, but these events took their toll. In a quest to emulate the obvious success of the Scotch blends, the distillery installed a Coffey still in 1948 but failed to restore their fortunes.

For decades both Daniel Williams and his son John tried to find the lost 17th century recipe for a liqueur called heather wine, reputedly made from whiskey. Many experiments, blending and tasting was carried out over many years in an attempt to find the right formula but all failed. The company circulated word of their quest throughout Europe. In 1948 a bedraggled Austrian refugee appeared in Tullamore with an Irish recipe which was passed down his family for generations. The recipe was similar to the ones which had been tried out but just that bit better. This was when Irish Mist was born and as the cliché goes – the rest in history.

Tullamore Distillery, c1890



Warehouses of Tullamore Distillery 1950s



Tullamore Distillery, Grand Canal Warehouse in 1904

Aerial of Tullamore 1950s

2.4 Visitor Experience

Wm Grants commitment to Tullamore is clear and that has manifest itself in the recent opening of the newly refurbished and enhanced visitor centre in the town.

This centre is a great reminder of the heritage of whiskey distilling in the town and forms an invaluable record for upcoming generations to remind them of their own place in the whiskey story of Ireland.

What is missing from the story.....the production of the whiskey.

In sighting the new distillery within walking distance of the town centre there is an opportunity for whole story to be portrait. The sights, sounds and especially the smells within the distillery buildings at the different stages of the process really bring the story to life.

As a key component in that story the new distillery buildings must tap into that historic tradition and evoke the feeling that you are stepping into a special world reborn again within Tullamore.

Even before entering the site, you must be able to identify the buildings as a distillery and be lured by the imagery that promises engagement with the brand as a whole.

The ambience of the distillery complex should be set the moment a visitor sets foot on site and be maintained through their journey. Visitors must feel at once intrigued, engaged and ultimately at home within the buildings.

2.5 Site Analysis

2.5.1 Constraints Specific to the Site

The existing site has various constraints both natural and man-made.

The site is split into two halves, the former Coillte and the Council land.

The former Coillte land is bounded on 3 sides by existing watercourses which fall, with the predominate topography to the North.

This land is mostly timber plantation with a mix of tree sizes representing the different foresting cycles. The main access to the whole site will be from the N52 to the south-western corner of the plot.

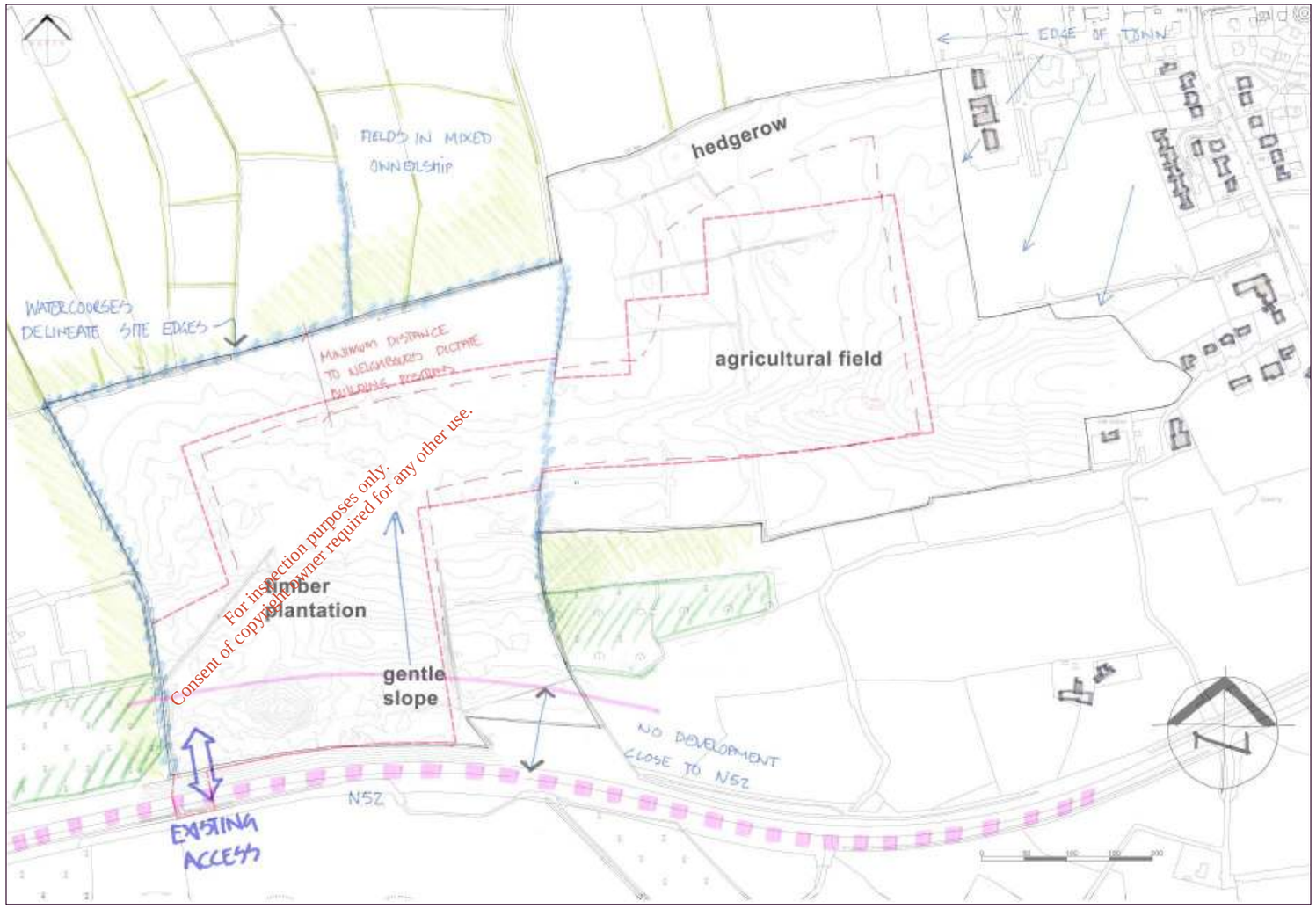
The other significant issue with the former Coillte land is that due to the proximity to the N52, there is an agreed distance back that no 'development' shall be permitted to retain the landscape margin from the road.

The Council land is predominately open fields with hedgerow. It's these hedgerows combined with simple post and wire fences that form the boundary to this side of the land.

Again there is a gentle slope down to the North.

The more open nature of the Council land means that structures may be more visible, but equally the trees within the hedgerows are in many cases mature and form a series of screens before the prescribed site boundary will occur.

Conversely the dense coniferous planting creates solid screening but will be subject to harvest over time and will ultimately disappear.



2.6 Overview of Site

2.6.1 Outline of Possible Land Available for Development

It's clear from this photo the nature of the two halves of the site, dense coniferous to the former Coillte land and traditional well maintained agricultural fields and hedgerows to the council land.

It is also easy to see that the main N52 road will be the point where the development will be most visible, albeit some many meters back.

In addition, you can gauge that views from the surrounding land are screened by the many rows of hedges and trees.

Finally, the aerial image lets you appreciate that in terms of its area the site is relatively flat.

2.7 Masterplan

2.7.1 Proposed Principle Disposition Across Site

The development will utilise the existing access point form the N52 in the south-west corner to benefit from its extremely good lines of site, although it is proposed to place a new roundabout to serve the development.

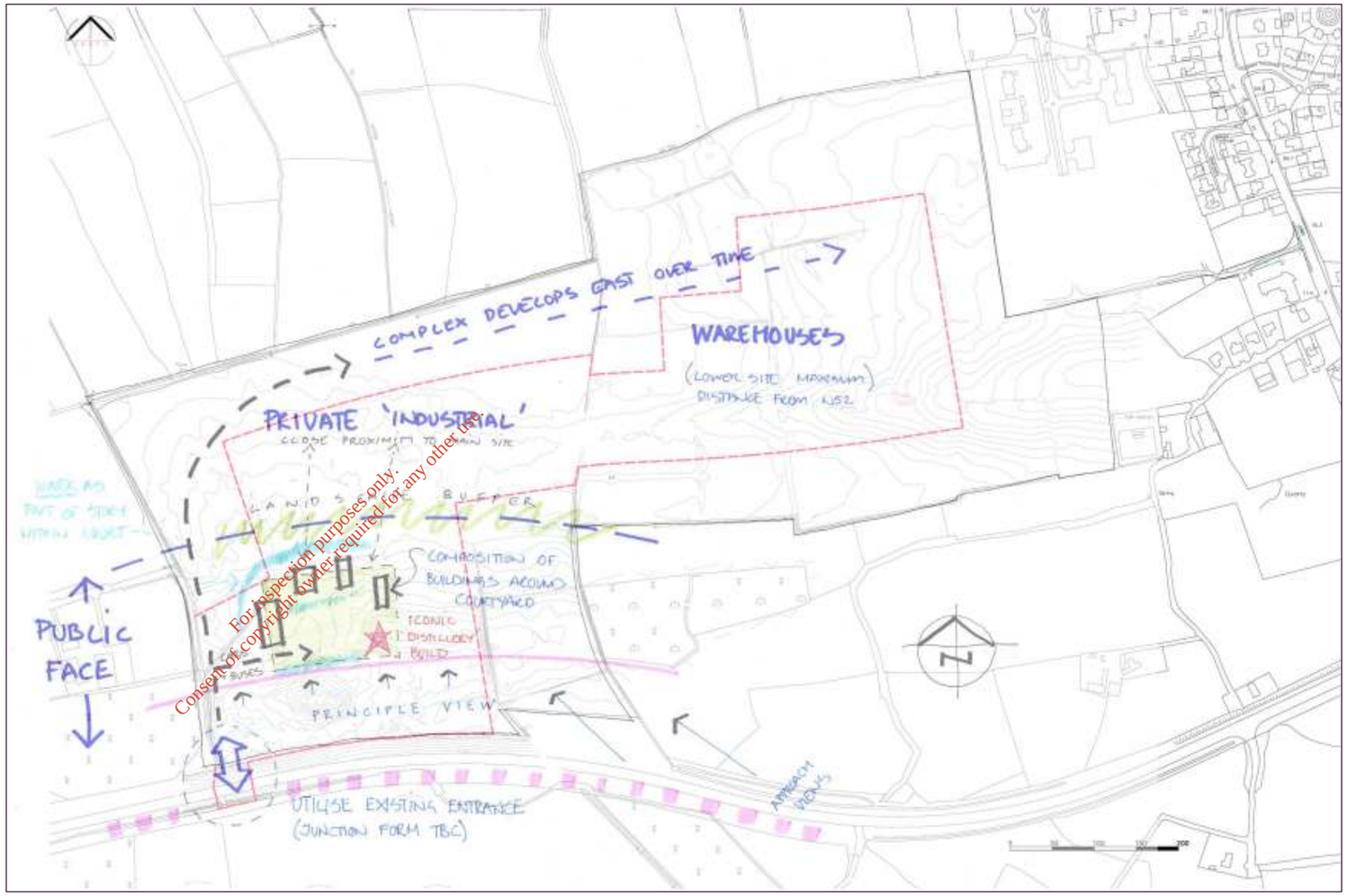
Although set back the views form the N52 will be the 'public face' of the distillery.

It is worth noting that the Iconic 3 sisters roof pagodas will be almost 100m from the roundabout once built.

It is intended that these 'public' buildings will promote the brand and make the correct statement about the product.

To that end the distillery must look like a distillery and act as a beacon on the road.

Beyond the public buildings the industrial elements of the project will develop over time and the site will gradually grow eastwards as production is increased as projected.



2.7.2 Design Concept Across Site

This early sketch explains the proposed disposition on site and how it manifests itself in the built form.

Early in the design development it was agreed that a traditional malt kiln 'pagoda' roof was the ideal building to symbolise the distillery as it was instantly recognisable.

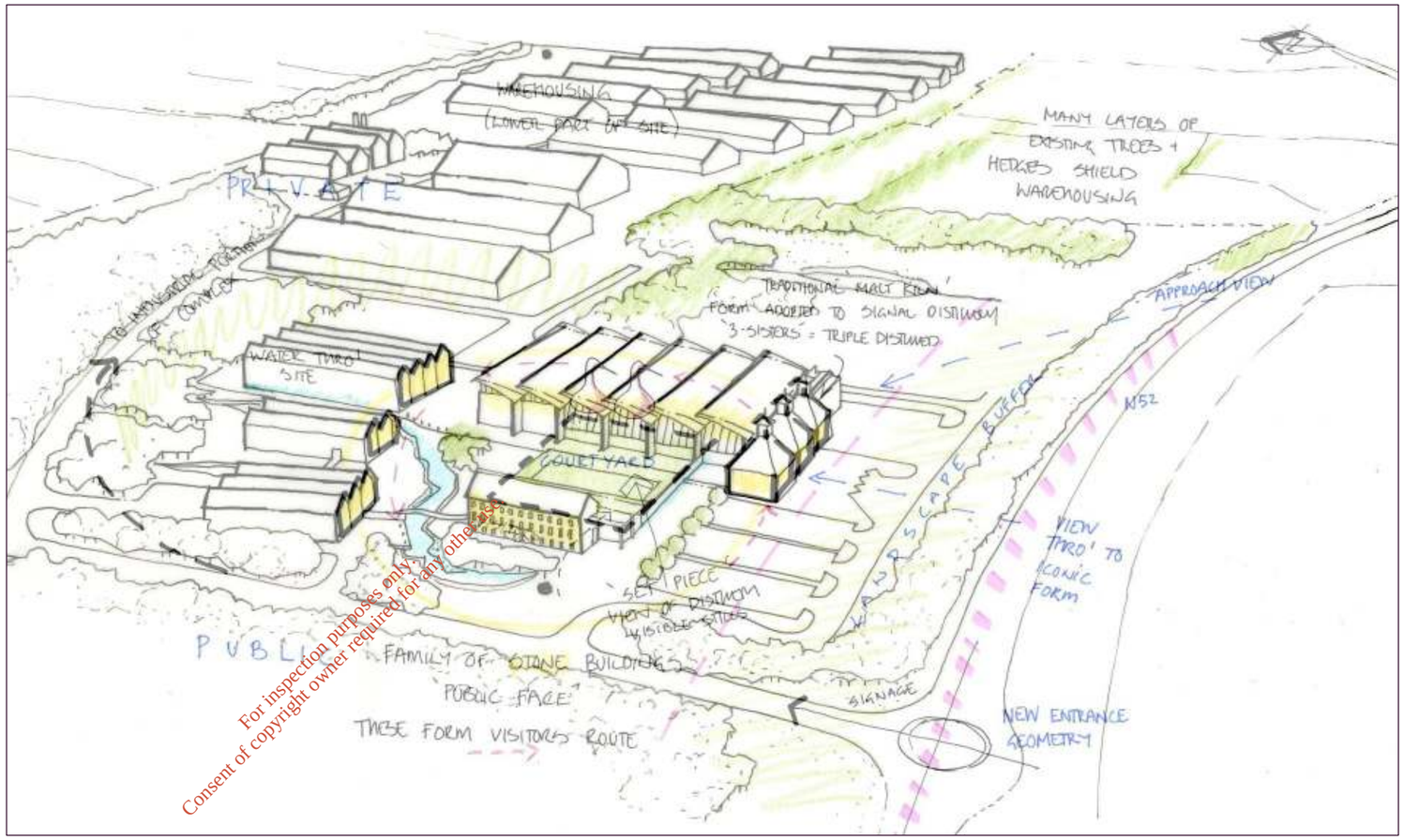
Malting is part of the story of whiskey, but no longer a process carried out on site but the form was used to create a great environment for the office and facilities management side of the business and fitted in perfectly with it being the 'signpost' for the site.

The '3-sisters', as they became known, would represent the triple distilled Tullamore Dew.

The distillery will also be a key tourist destination so the buildings must be inviting and photogenic.

The courtyard allows the process and the story to be told physically as you circulate around the court as well as forming the perfect postcard image.

Beyond the public face the site is a commercial industrial site that should work within the context of its surroundings. Stepping back from the road the main buildings merge into the trees and down the slope and even bigger buildings can sit in the landscape within dominating it.

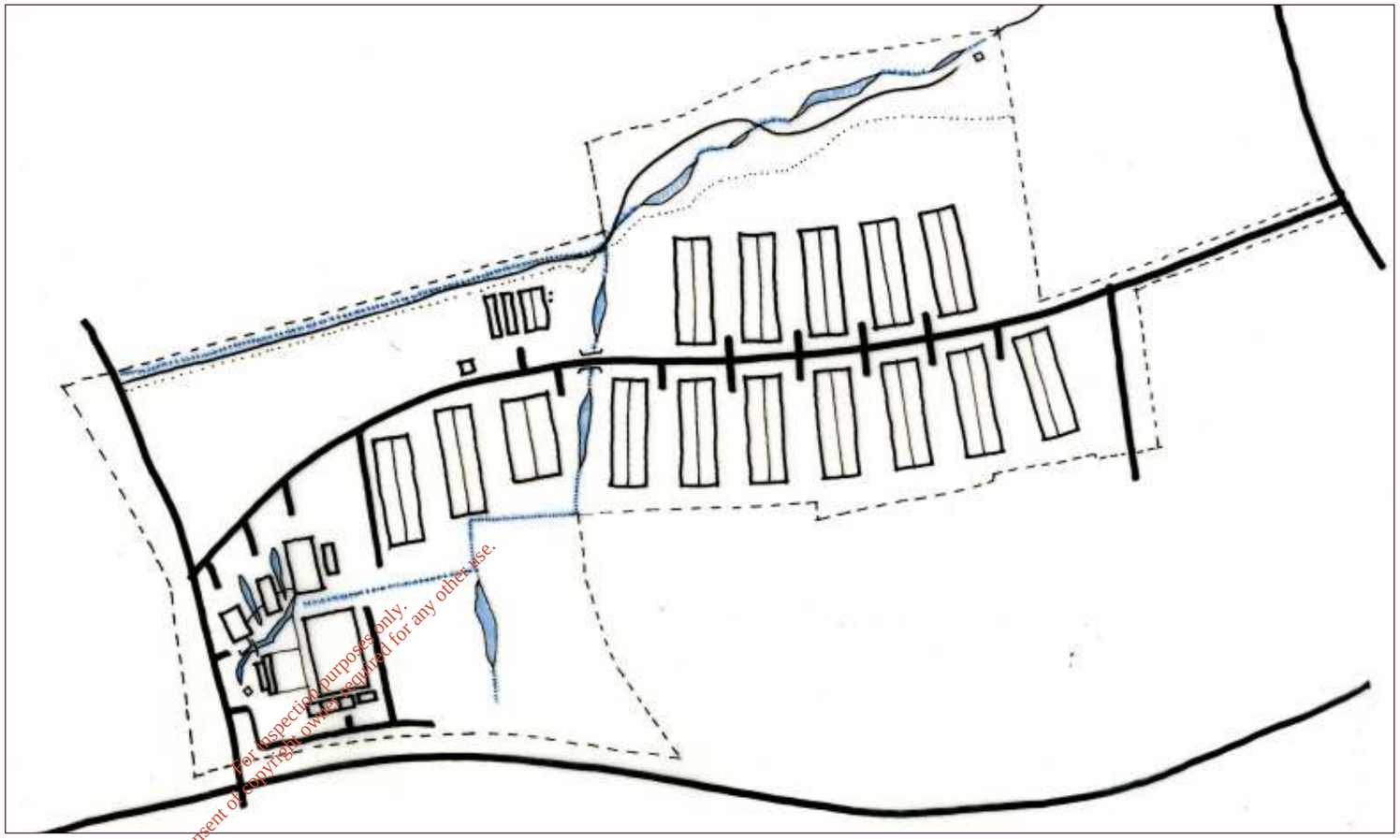


2.7.3 Water

The design includes a series of ponds and swales to create an attractive landscape setting for the distillery which recalls the original canal side home of Tullamore Dew.

The carefully arranged formal and informal waterways will handle rainwater onsite as part of the sustainable drainage system. The siting of new waterways has been integrated with the buildings so as to act also as low visual impact devices for separating visitors from the industrial processes of the distillery.

The ponds and swales will work together as a series of connected wet / marginal habitats to support wildlife on the site, supplemented by selective planting of native species.



Concept Design

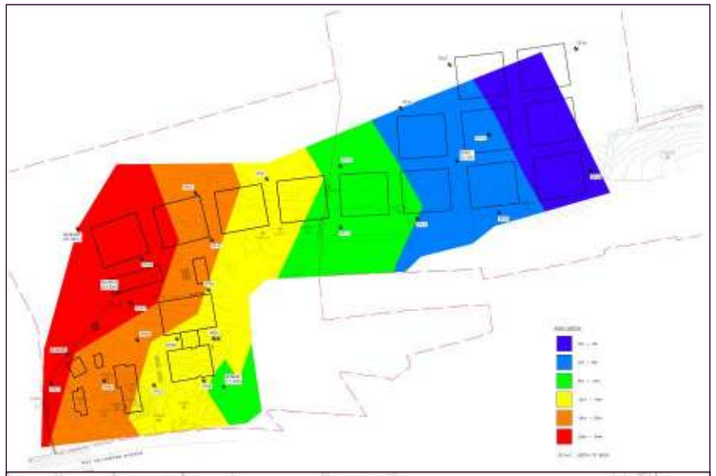
Early Concept Sketch integrating water in the Design

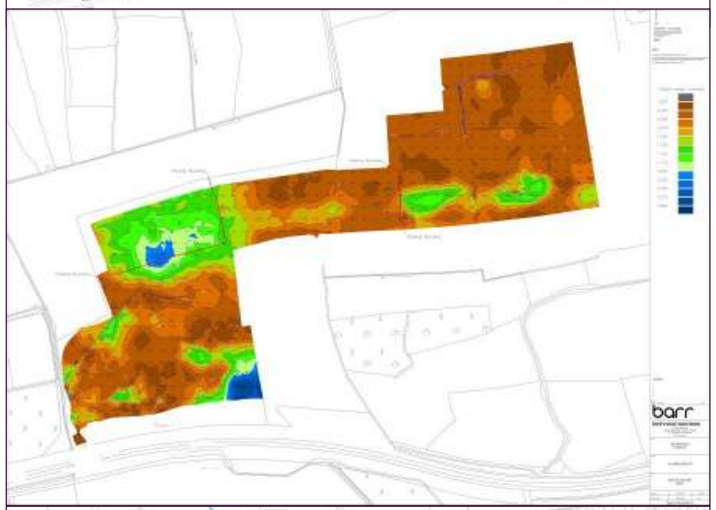
Sackler Bridge (John Pawson)

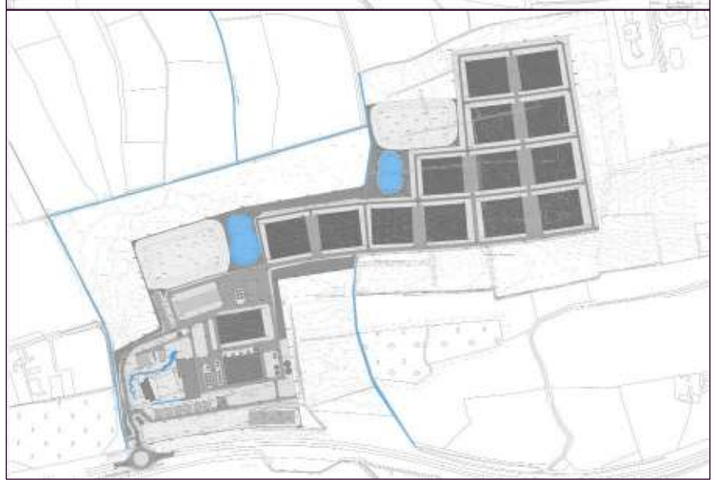
Landscaped swales will be used throughout the distillery

Slieve Bloom Mountains

2.7.4 Ground Analysis







2.7.4.1 GENERAL

This page is a brief summary of the impact that the ground investigation had on the design of the distillery moving forward and how individual parts of those investigations manifested themselves in design changes.

Detailed data on ground investigations is provided in Chapter 7 (Soils & Geology) and its associated Appendix.

2.7.4.2 ROCK DEPTH

Detailed geotechnical analysis has shown that the rock depth changes quite considerably across the site. The issue is that the basic strata level is too deep to be utilised as part of the foundation strategy.

2.7.4.3 PEAT DEPTH

The survey information also reveals that there is varying peat depth across the site. This information was key in deciding the final positions of all buildings including, in particular the warehouses which have large floor plates.

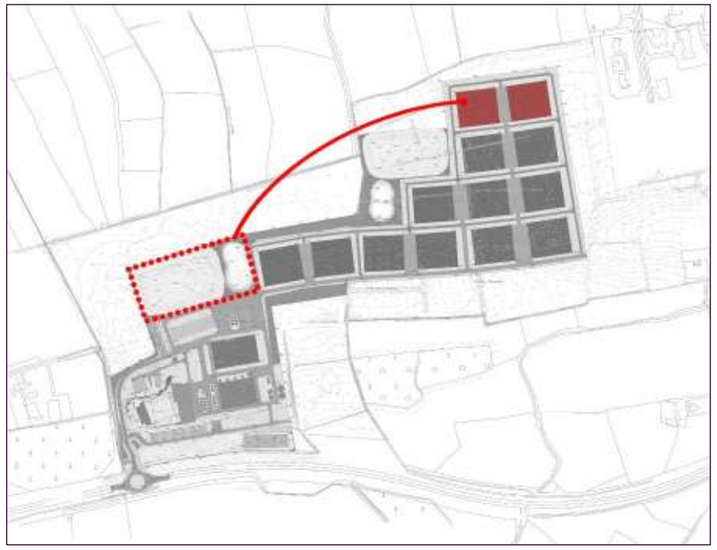
The depths to the west of the site are particularly low and as such would require an excessive amount of peat to be removed. It was decided to avoid the original location for the first two warehouses. An alternative site would be considered for relocating the warehouses.

2.7.4.4 WATER

The heart of the distillery complex has been designed to be a coherent green space that dissipates the site water to swales. As part of the landscape strategy the whole of the 'public' space can be addressed , but as the industrial portion of the site progresses there is more and more requirement for hard landscaped yard space and therefore more requirement for controlling the surface water.

There are effectively two separate sides to the site (former Coillte / Council) with a ditch and burn between. The solution was to control the water flow separately to either side and have an attenuation pond to each.

The generic slope of the site, meant that the overall site should flow to the north.



The revised location of warehouse

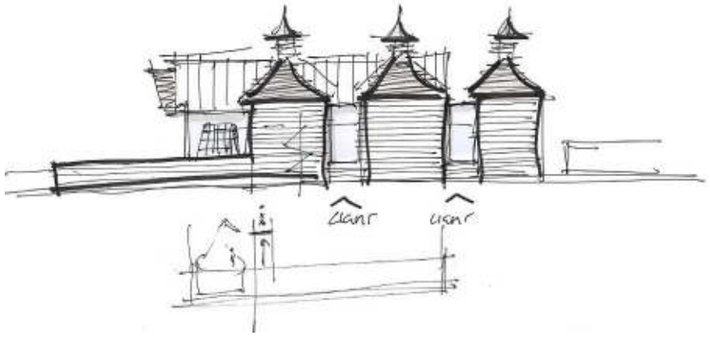
2.7.5 Public Space

It was clear that the fabric design of the distillery complex would fall into two distinct categories:-

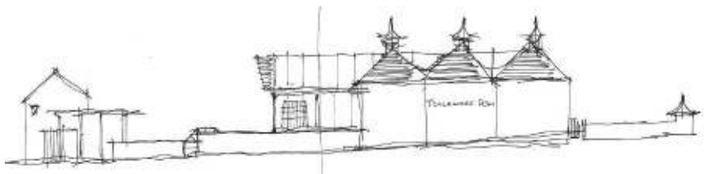
The public heart of the distillery built in high end materials around a landscaped courtyard that would become the 'front of house' for the site.

The more engineered prosaic design solution required in a commercial facility would operate in a secure environment behind closed doors.

Much of the design focused on that main courtyard and how the buildings would relate to each other, how the visitors would circulate and what the aesthetic would be for those buildings. At the same time the remainder or the site was being honed to be technically efficient but also environmentally forward looking, while allowing for ongoing development over time.



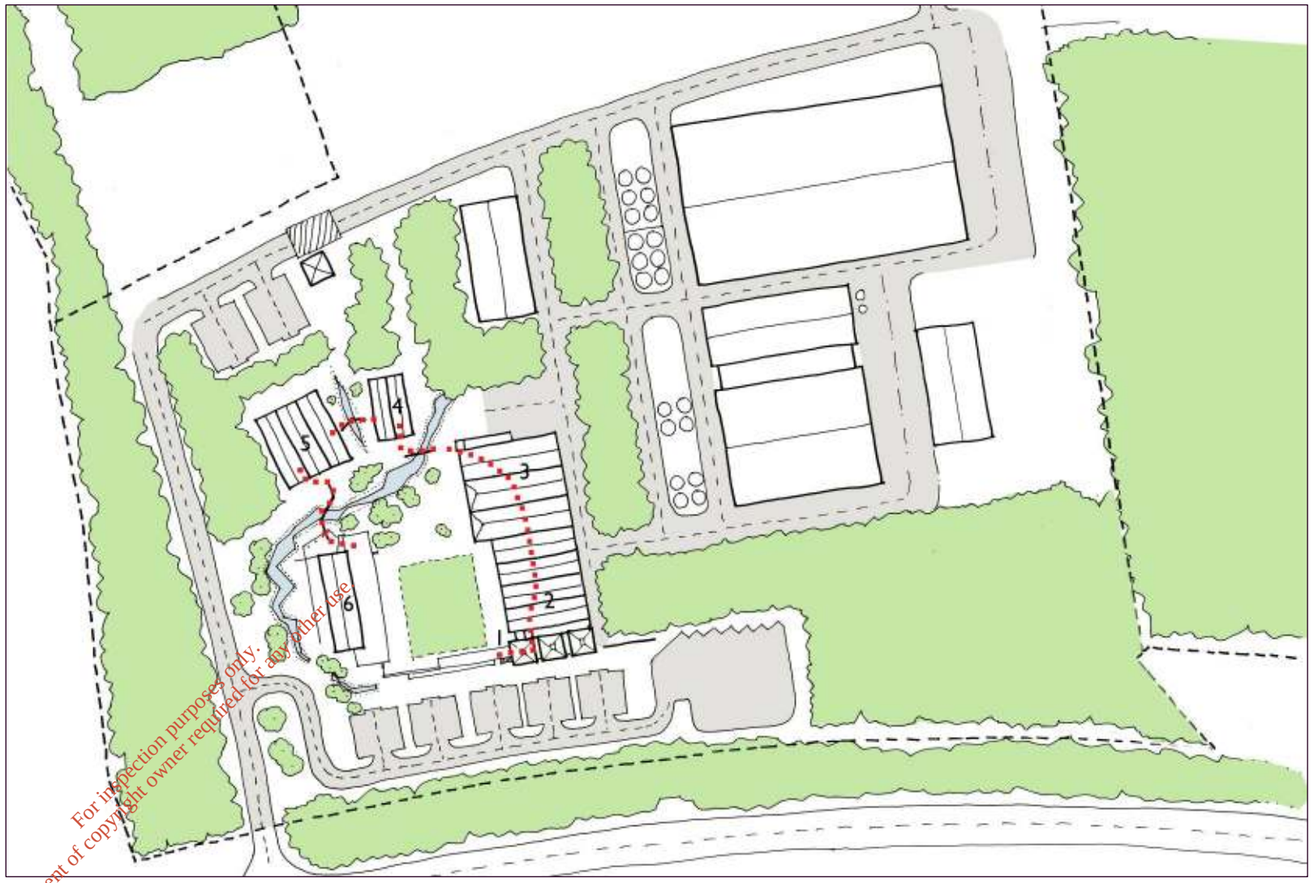
Sketch Option of 3 Sisters (Stone Alternative)



Sketch View from N52 (White Render)

Having established the ideas of Water / The 3 sisters / The distillery as the 'set piece' visitors view point, thoughts turned to the aesthetic for each element.

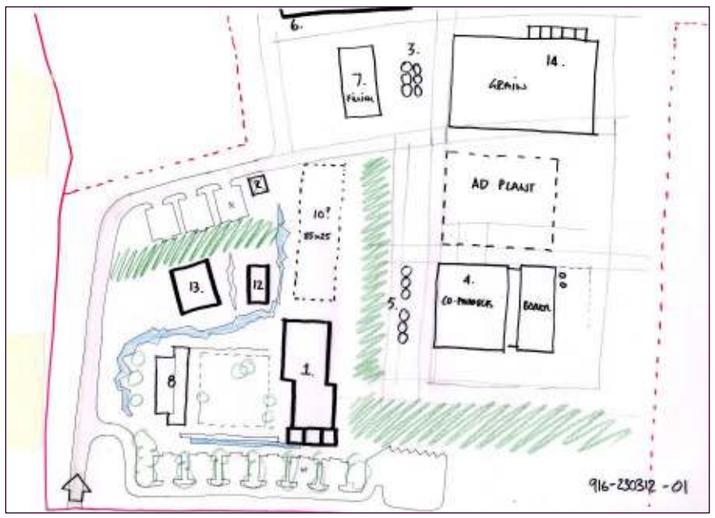
Clearly the 3 sisters would be a traditional icon for the distillery and the proposed visitor centre would be a modern building, stepping away from the current facility in town and pointing towards the distilleries future. This provided a duality across the courtyard, but the inclusion of a traditional Dunnage warehouse, to complete the visitors story, meant the backdrop to the courtyard and indeed the view from the N52 would be traditional.



Concept Design

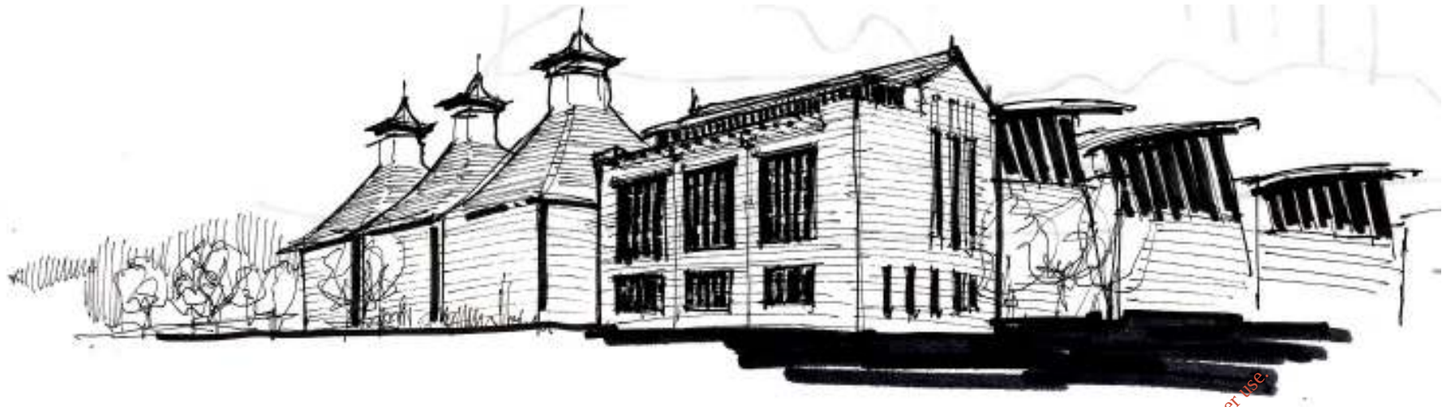
Early Sketch Plan Showing Visitor Route Around Public Area

***Concept Design** - Traffic Plan*



***Concept Design** - Landscape / Water / Expansion Options*

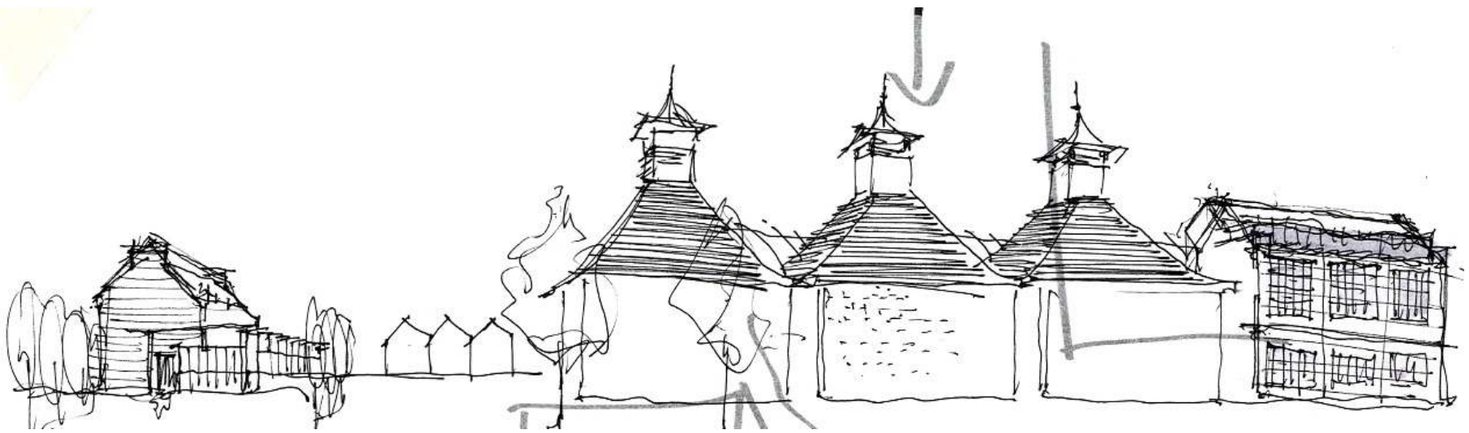
2.7.6 Built Form - Ideas

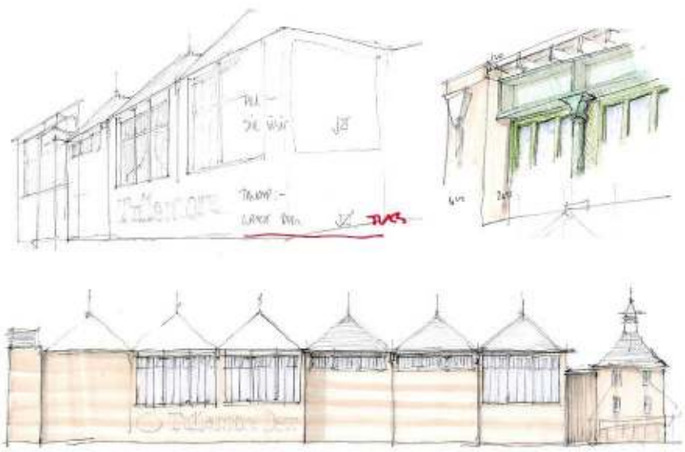


As the Pot + Malt distillery building was intended to be the 'picture postcard' image for the new distillery, it would set the tone for the whole visitor experience and project what the brand would stand for.

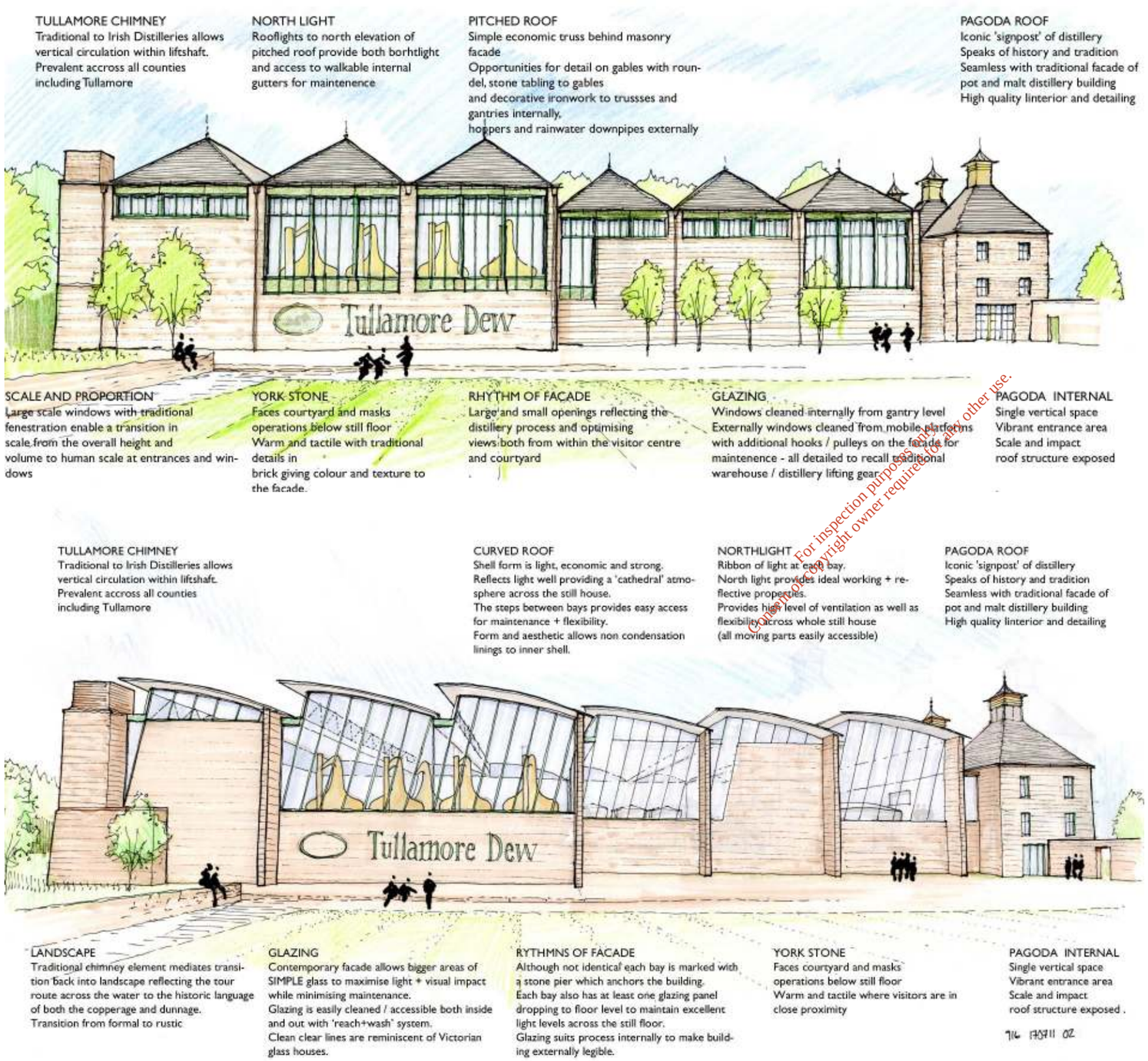
There was always a risk that a contemporary building would date quickly and that it would be prudent to work with traditional and historic forms that closely tied the buildings back to the town.

Concept Design *- Initial sketches fluctuated between traditional and more contemporary elevation designs.*





2.7.7 Traditional vs Contemporary



In the end, it was the preference of the client to progress a more traditional form of distillery building. To ensure that this was not a rash decision, a series of designs were undertaken to allow both types of building to be considered in full.

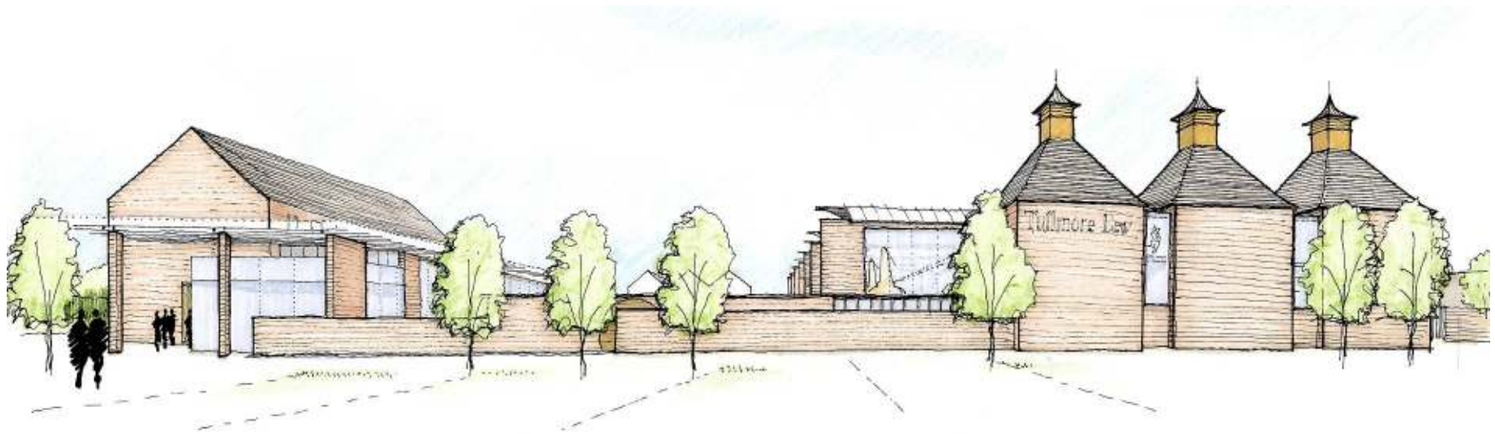
Even with the alternate distillery building designs, the 3 sisters always remained authentically traditional. There are countless poor facsimiles of the malt kiln roof form used in non-distillery buildings each serve to undermined the form. It was key that this building should capitalise on the wealth of experience the client had and produce a 'genuine' building form as the iconic signpost to the facility.

Having considered the precedents from traditional buildings it was clear that opening sizes were closely correlated to function. It was also clear that there was a preference for carefully sequenced smaller windows than bigger ones. Presumably this would have been for security.

2.7.8 Built Form – Contemporary Studies

Concept Designs

Likewise there were many traditional variants drawn for comparison.



2.8 Landscape Design

2.8.1 Introduction

The landscape design for the distillery supports and reinforces the vision of a traditional 'waterside' distillery within a landscape setting, which aims to provide a quality visitor experience through the organisation of buildings and spaces, their character and ambiance and through their material selection, evoking the historical tradition of Tullamore within a forward looking environmental approach. In all respects, the landscape setting, character and detail of the distillery must be special.

The landscape design proposals comprise the following elements:

- The View from the Road
- The Visitor Entrance Sequence
- The Central Courtyard
- The Visitor Circuit
- Wider Site Issues

These elements combine to form an integrated, holistic design approach to the distillery project which establishes a clearly defined, high quality 'public' face with a distinctly separate operating facility.

2.8.2 View from the Road

Views from the N52 Tullamore Bypass represent the 'public' face of the distillery, where the '3 Sisters' traditional pagoda roofscape will act as the distinctive and recognisable feature of the distillery. A landscape amenity buffer comprising of dense blocks of birch trees interspersed with colourful bands of shrub planting frame and focus views from the bypass to the 3 Sisters, balancing the need for visibility of the key building with screening of the associated car parking area. The scale of the blocks and their spacing provides a design legibility when viewed at speed from the bypass. A sequence of pyramidal geometric earthwork features, using excess peat from the site excavations, reflect the characteristic roofscape of the 3 Sisters, and assist in announcing the presence and identity of the distillery. Sown as a wildflower meadow, they will provide a seasonal display to enliven the travel experience along the bypass.

2.8.3 The Visitor Entrance Sequence

From the site entry roundabout, the view towards the visitor entrance into the central courtyard of the distillery is emphasised by flowing bands of low coloured perennial plantings. Beyond this point, the road divides, separating visitors from staff and deliveries. A coach drop off area is provided leading directly to the courtyard entrance, whilst other visitors proceed to a series of informal parking courts, each separated by purple beech hedging and containing informally arranged birch trees.

The entrance sequence for visitors is defined by the two key ingredients of whiskey production – barley and water. Between the main approach path and the parking courts, mixed decorative grasses mimic fields of barley, whilst on the opposite side, water is represented by a sequence of water spout, upper pool, cobble lade, lower pool and waterwheel, which also contributes to the imagery of a traditional waterside distillery. Visual links from the approach path to the central courtyard are provided through narrow slots built into the separating stone wall. A traditional timber sleeper bridge crosses the lade, providing the entrance threshold into the central courtyard area. Sections of open grill within the bridge deck provide views of the lade below, reinforcing the connection with the flowing water below.

2.8.4 The Central Courtyard

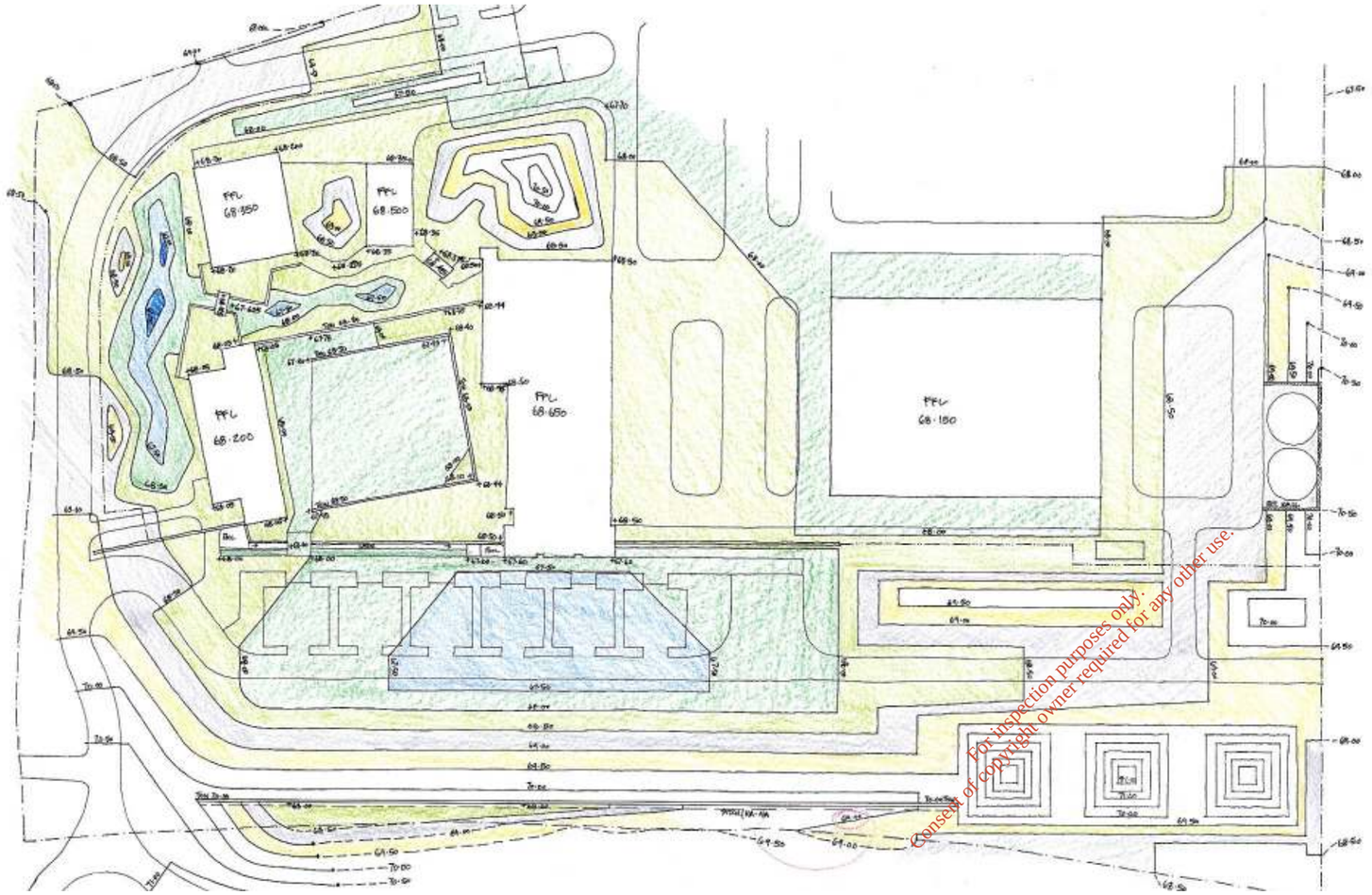
This large-scale open space forms the central heart of the visitor circuit, contained by the key distillery buildings. At its core lies a formal lawn containing two specimen trees and flanked by geometric bands of coloured perennials and ground cover plantings. This planting introduces bold swathes of colour into the space, with further seasonal interest and variety coming from the contrasts of colour, form and textures. The courtyard forms the main frontage and foreground to the distillery building, with the whiskey stills visible within, and forms a main photographic opportunity for visitors. The lawn is capable of accommodating large marquees for special events. Peripheral areas of textured resin bound paving provide visitor access around the space as well as emergency fire access.

2.8.5 The Visitor Circuit

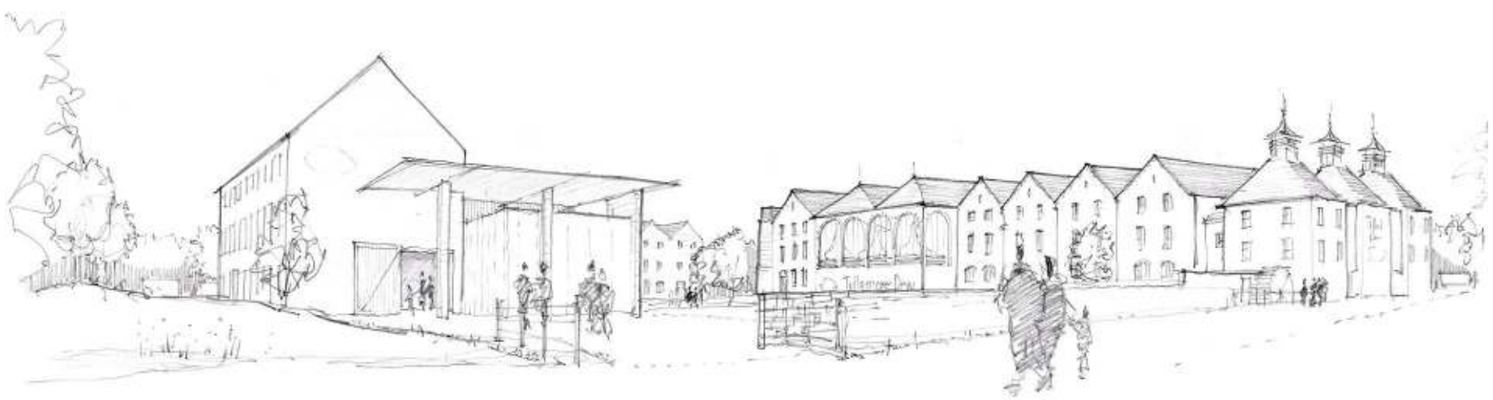
The distillery, cooperage, dunnage and visitor centre buildings and their associated landscape spaces form the key circuit for visitors. This area continues the vision of a 'waterside' distillery, with buildings set amongst 'water channels', where rainwater swales act as both aesthetic and functional features and assist in separating visitors from the operational areas of the distillery. Simple timber sleeper bridges provide access across the swales to link the buildings, and a low traditional riverside 'wharf' forms the space linking the dunnage and visitor centre. A combination of earth mounding and planting acts to visually contain views to the operational areas of the distillery to the north, with planting chosen to provide a variety of seasonal interest and striking colour combinations.

2.8.6 Wider Site Issues

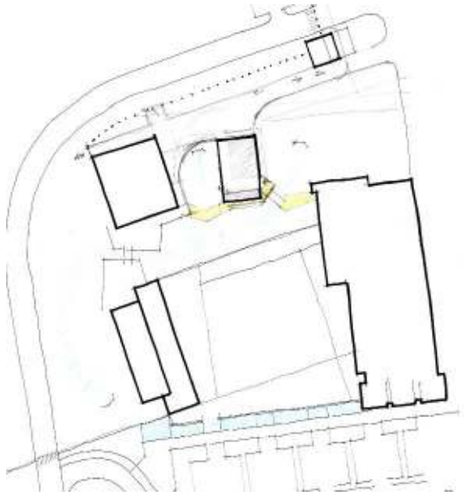
The landscape design issues associated with the wider site focus around the screening of parts of the development from the surrounding area, reinstating the landscape pattern of field hedgerows lost within the eastern part of the site and diversifying the general landscape character through native planting. Poplar avenues, replicating existing tree lines within the surrounding landscape, are used as a fast growing screen to limit views to key parts of the distillery complex, whilst native tree and shrub planting around the boundaries contribute to creating a longer term landscape setting to the development whilst also generally limiting views from the surrounding area. Native hedgerows are provided around the periphery of the development site, linking sections of existing hedgerows fragmented by the development, to reinstate the distinctive field boundary pattern of the east of the site whilst also acting to reconnect wildlife corridors in the area. Areas around the warehouses are treated simply and functionally, with a wildflower meadow sward adding some seasonal interest to this utilitarian area of the development. Mounds of excess excavated peat, sown with a wildflower meadow mix, are deposited along the northern edge of the site, and which will assist in limiting views into the site from this direction.



Concept Design *- Landscape Layout*

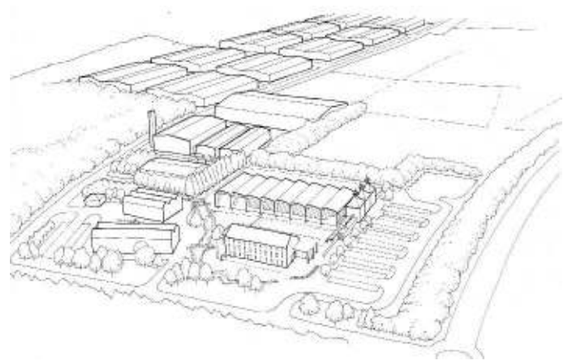


Concept Design *- Sketch Proposal of Landscape Setting*



Sketch Screening Ideas

Visitor Route



Site Overview

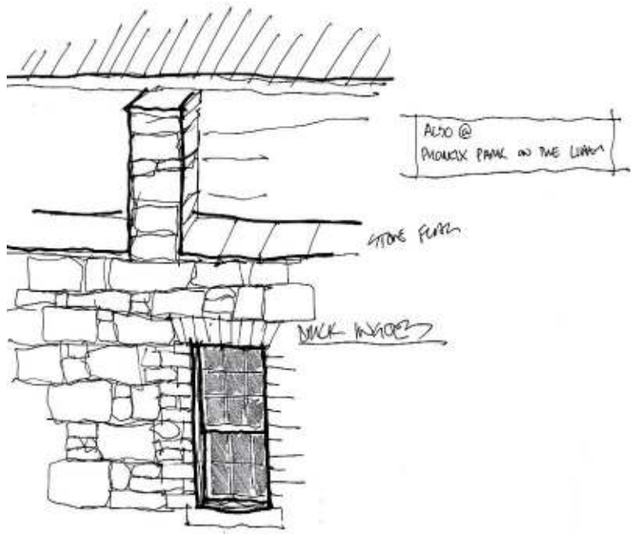
2.9 Design Development

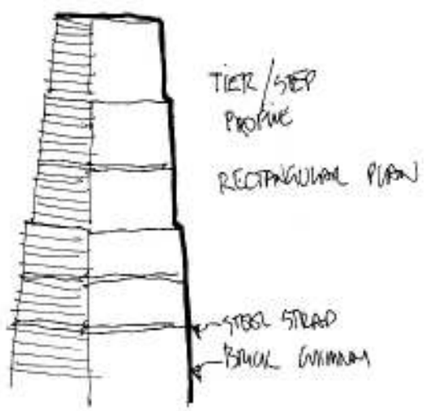
2.9.1 Pot and Malt Distillery

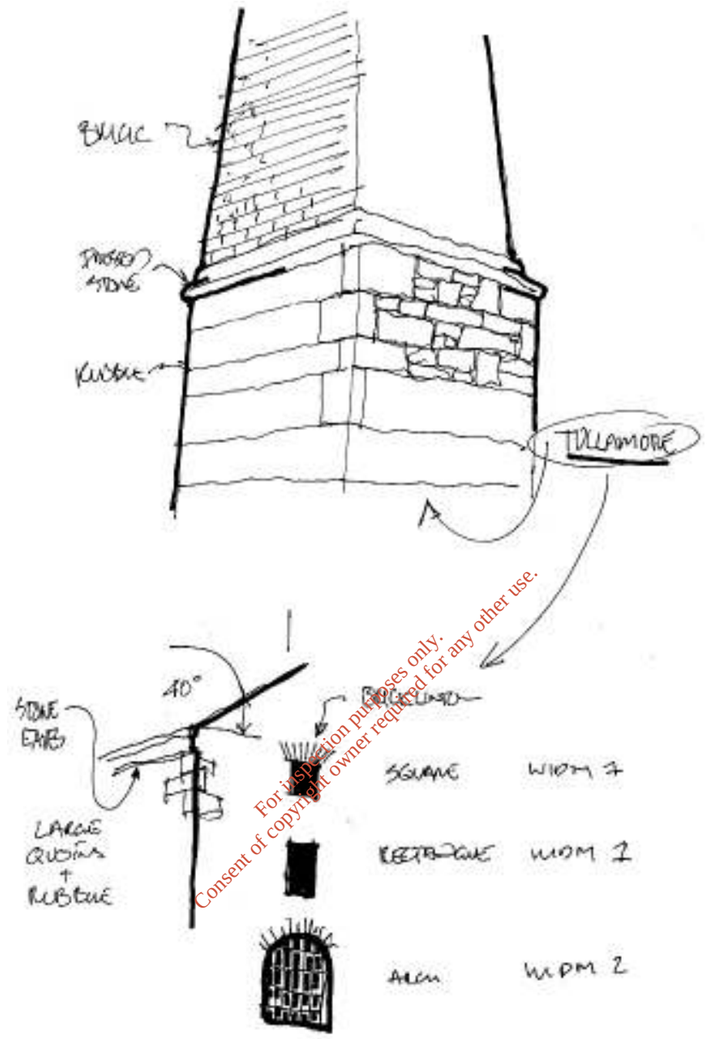
Having established that the building form would be traditional, the Pot+Malt Distillery building becomes the key to design ethos of the whole site.

The building should act as a ‘shop window’ for the distillation process with the stills being the primary attraction. It should be remembered that in the initial phase there will be no visitor centre and therefore no

‘3 sisters’ to act as a beacon. The stillhouse must stand alone initially.







Without the malt kiln it was the traditional chimneys that gave the distillery buildings their distinctive look. What was especially appealing about the historic building canon was that the use of brick implied a specific period in time (when working stone was yet to become economic) that perfectly coincided with the lineage of the brand.

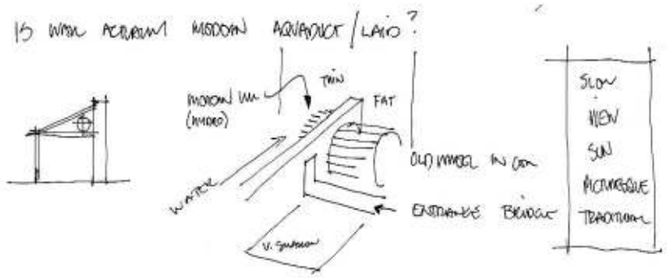
It was also common to find that, as the buildings developed organically over time, both the building form and materials used were refined. As techniques improved and distilleries progressed from industrial blocks to showpieces for their brand.

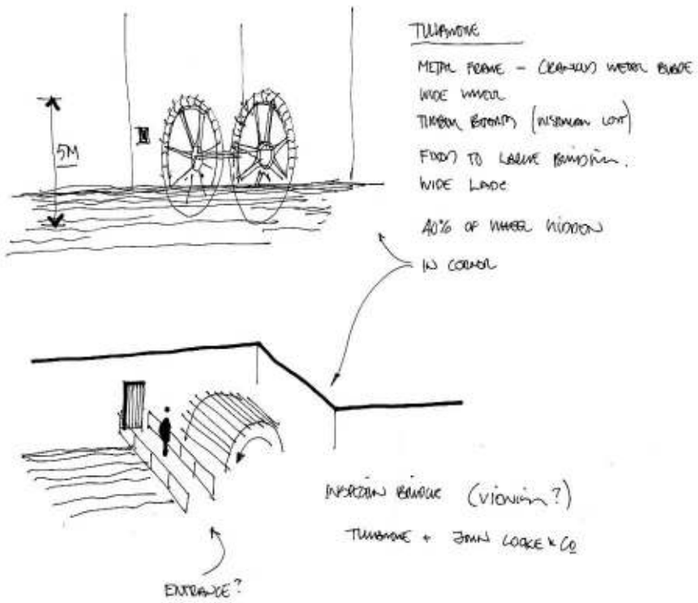
In an echo of this, the base courses of the distillery are rough hewn blocks that are only dressed to the corners, progressing to a finer face as you rise through the building with brickwork used for the traditional lintol and quoin details, but also to bring lustre and detail to large facade.

The facades are carefully structured to give a clue as to the changing processes within, delineate the working floor level high above ground and the rhythms inherent in sequences of vats, repetition of analogue processes, even the geometry dictated by the stills themselves.

In conjunction with the building and at the heart of the whole complex we return again to water.

Without it, there is no whiskey and as part of the conceptual design the visitor can see the source of the water, pass over a new lade entering the courtyard and hear the lifeblood of the industry as the water wheel turns. This theme will be covered fully by the Landscape Architect.





2.9.2 Palette of Materials

2.9.2.1 Slate

As with the distillery process, the ingredients in the building should not be complicated.

Likewise, their disposition should not be contorted but should read as correct, proportioned and well detailed.

Blue black heavy slates. Using a traditional 20'x10' slates will ensure the large roof plates do not look out of place. Careful lead detailing of raised hips and soakers as well as ridges ensure crisp detailing that will be in place for generations.

The proposed slate to be used is Cupa Heavy 3.
www.cupanaturalslate.co.uk

Split to a thickness of 8-10mm. It is specially produced for the Scottish market as an alternative to Ballachulish slate, but is also ideally suited to Ireland's landscape and Atlantic climate. Heavy 3 is suitable for commercial projects (see Lough Erne Golf Resort, Enniskillen).

Cupa Heavy 3, a distinctive blue-black slate with a riven surface, is exceptionally hardwearing, being virtually impervious to the elements, and is ideally suited to Ireland's landscape and Atlantic climate.

Cupa Heavy 3 is regularly specified for projects within conservation areas, national parks, heritage sites and areas of natural beauty.

St Mary's, Carrick-on-Shannon

Cedar Park, Co. Mayo

2.9.2.2 Yorkstone

Utilising the flexibility of this warm and appealing stone in course, finish and block length will provide relief on the larger facades while conveying a progression that mimics the alchemy of the process within.

In conjunction with brick detailing, string courses, a variety of textures to the stone and careful control of detailing, the stone should stay fresh and timeless.

The proposed stone to be used is Stanton Moor Sandstone (Sub Arkose Sandstone), colour: Buff / Fine-medium grain. www.stancliffe.com / Natural-Stone.

A beautiful carboniferous buff yorkstone, which has been used widely across the UK and Ireland for all scale of projects - from major prestigious city centre developments to residential developments and private homes. The stone has been extracted from Dale View Quarry, Matlock for many years. The striking colour of Stanton Moor features a buff base with brown, gold and wild pink variation, adding depth and interest to both traditional and contemporary building designs.

The scheme will have designated course heights but all wall types will exploit random block lengths.

Rough Hewn – Base Courses

Dressed – Main Facade

Ashlar – Visitor Centre

New Yorkstone– Rough / Dressed / Ashlar - Reclaimed Arch window

2.9.2.3 Brick

In conjunction with the superb Yorkstone it was felt that the use of brick for detailing purposes would give the building a more industrial feel, less grandiose and more in keeping with the historical canon that the building is trying to convey.

In almost all traditional Irish distilleries, brick can be seen as the material which is used to solve geometric details that masonry would struggle to achieve so efficiently.

It is also worth noting that as the buildings develop across the site and a tour arrives at the visitor centre, this least industrial building, has a much reduced content of brick.

The proposed brick is an Ibstock Millburn Brown which is a stock brick but has texture and depth of colour that will contrast and with the lighter stone, but also compliment its differing finishes.

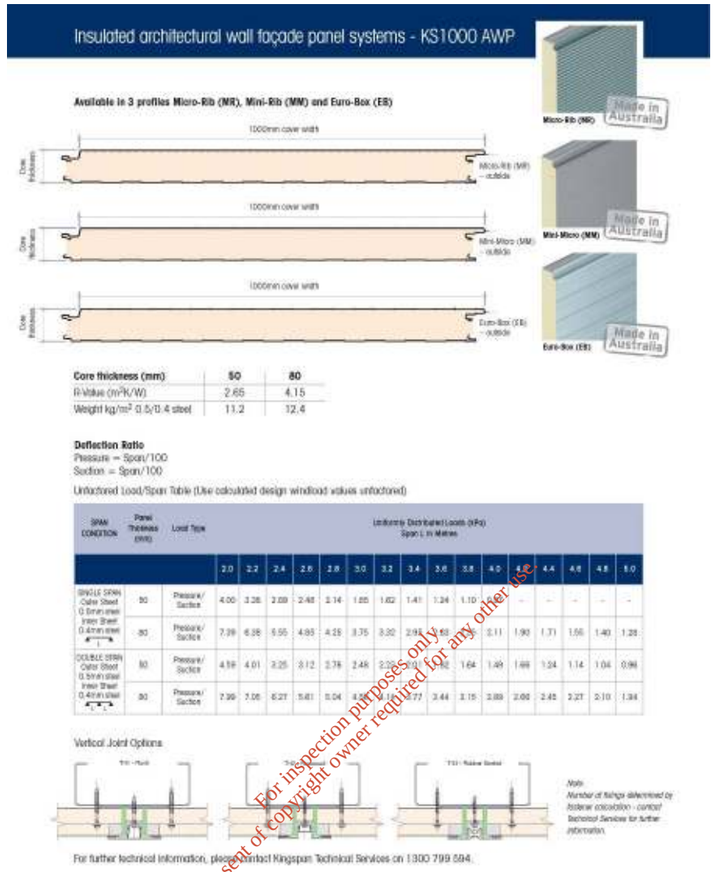
Millburn Brown – Soldier Course

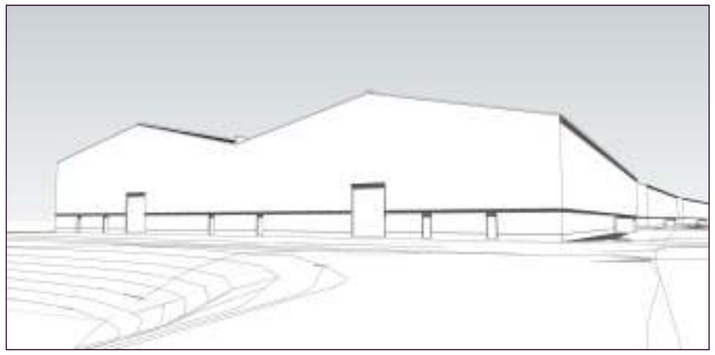
2.9.2.4 Metalwork

The whole whiskey process is dependent on the art that is metalwork. A simple change in a vessels shape alters the final taste and each step of the process relies on a masters hand in its finish.

From the skylights that will illuminate the building, finials, the bespoke rainwater goods, the machined detail of the finished windows, through to the touch of the ironmongery, each element must match the craftsmanship within.

Kingspan Micro-rib KS1000 MR wall panels is a true secret fix system available in either horizontal or vertical applications. A choice of exterior and interior finishes caters for a range of colours and finishes in standard and high humidity environments. Furthermore, Kingspan offer a pre-formed corner service (for horizontal application) which eliminates the need for bulky flashings, which can often compromise the overall finished aesthetic of a building. Panels can span up to 8m without the need for secondary support. Available in 3 profiles Micro-Rib (MR), Mini-Rib (MM) and Euro-Box (EB).





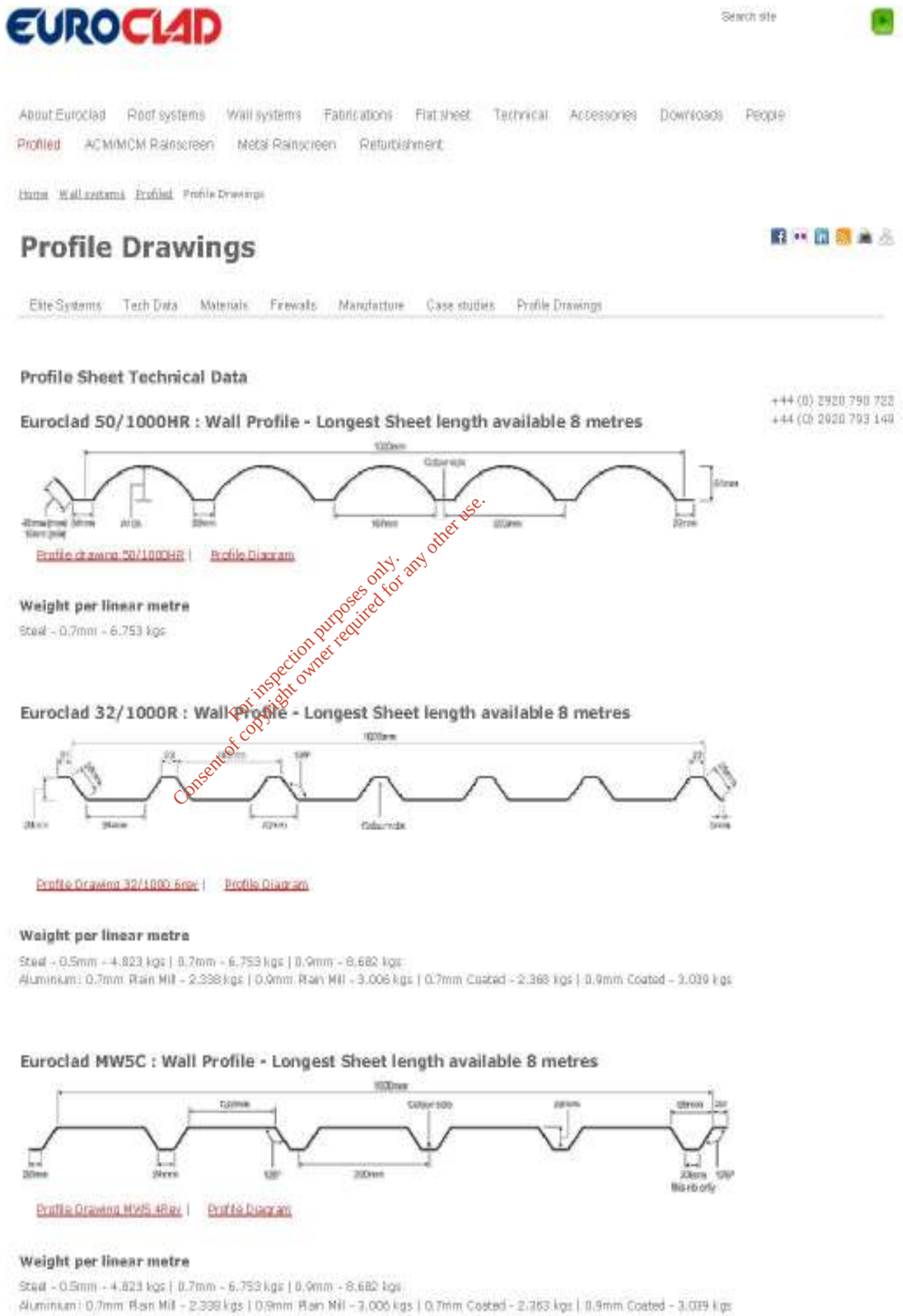
2.9.2.5 Warehouses

The majority of the 'Industrial' buildings across the site are work places where it is key to provide a good environment for employees. In the case of the Warehouses there are no such requirement in terms of either light or heat. In addition, the warehouses require to be of a construction that enhances both their fire rating and security.

To signify the difference between working buildings and warehousing, as well as reflect their different physical properties it is proposed to use a simpler vertical metal profile rather than the wide, flat horizontal units used elsewhere.

Euroclad 32/1000R is a trapezoidal profile sheet which will be plastisol coated for colour and protection.

To prevent damage and to improve the security to these bonded warehouses it is intended to use a blockwork + grey render base course within the construction and visible to a height of 2.4m.



EUROCLAD

Search site

About Euroclad | Roof systems | Wall systems | Fabrications | Flat sheet | Technical | Accessories | Downloads | People

Profiled | ACM/MCM Rainscreen | Metal Rainscreen | Refurbishment

Home | Wall systems | Profiled | Profile Drawings

Profile Drawings

Elite Systems | Tech Data | Materials | Firewalls | Manufacture | Case studies | Profile Drawings

Profile Sheet Technical Data

+44 (0) 2920 790 722
+44 (0) 2920 793 149

Euroclad 50/1000HR : Wall Profile - Longest Sheet length available 8 metres

Profile drawing 50/1000HR | Profile Diagram

Weight per linear metre

Steel - 0.7mm - 6.753 kgs

Euroclad 32/1000R : Wall Profile - Longest Sheet length available 8 metres

Profile Drawing 32/1000.6rw | Profile Diagram

Weight per linear metre

Steel - 0.5mm - 4.823 kgs | 0.7mm - 6.753 kgs | 0.9mm - 8.682 kgs
Aluminium - 0.7mm Plain Mill - 2.338 kgs | 0.9mm Plain Mill - 3.006 kgs | 0.7mm Coated - 2.368 kgs | 0.9mm Coated - 3.039 kgs

Euroclad MW5C : Wall Profile - Longest Sheet length available 8 metres

Profile Drawing MW5.4Rw | Profile Diagram

Weight per linear metre

Steel - 0.5mm - 4.823 kgs | 0.7mm - 6.753 kgs | 0.9mm - 8.682 kgs
Aluminium - 0.7mm Plain Mill - 2.338 kgs | 0.9mm Plain Mill - 3.006 kgs | 0.7mm Coated - 2.363 kgs | 0.9mm Coated - 3.039 kgs

2.9.3 Pot and Malt Distillery

The ground floor of the building is primarily a service under croft that facilitates a clean level platform for the still house to operate. This means the ground floor level will be broken up to accommodate specific areas of production and deal with any bunding requirements necessary.

The aim of dealing with the major service issues at GFL to ensure a single, uniform space for the still house and allow a clear visual reading of the process for visitors, as well as allowing the physical operations of running the distillery to be as efficient as possible.

The visitor route is at still level (First Floor) so all the effort to de-clutter and open up this floor is worthwhile when the route is so easy and the process so legible

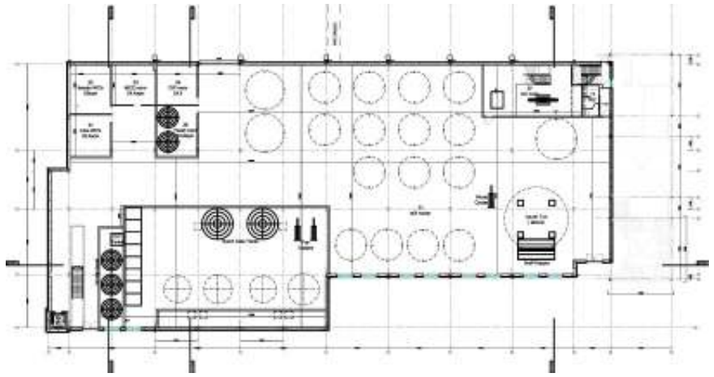
Note that the plan has been stepped to allow the actual stills to be seen from the main road and that projected corner, when complete with all 4 stills, will form the 'picture postcard' shot across the courtyard that was one of the main drivers of the brief.

The internal atmosphere of the still house should be one of modern, efficiency.

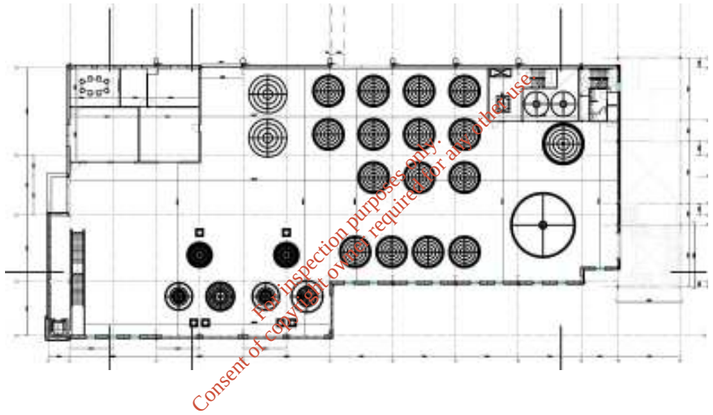
To that end the internal spaces (as dictated by the clean plan) are as simple as possible. Only the necessary high level services are at roof level which opens the volume up as much as possible.

The roof capitalises on this openness, by having as much north light as possible.

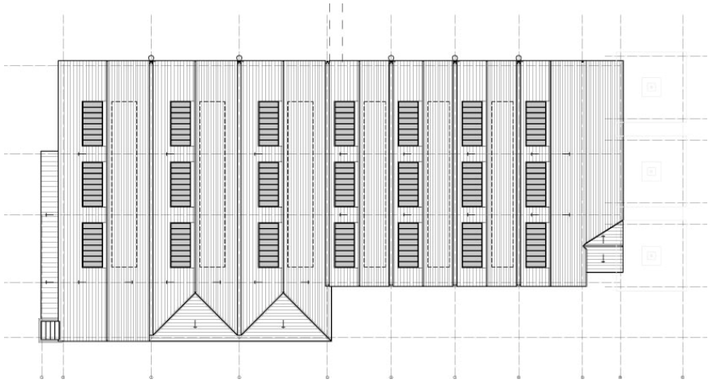
The southern roof slopes are used for photo voltaic cells.



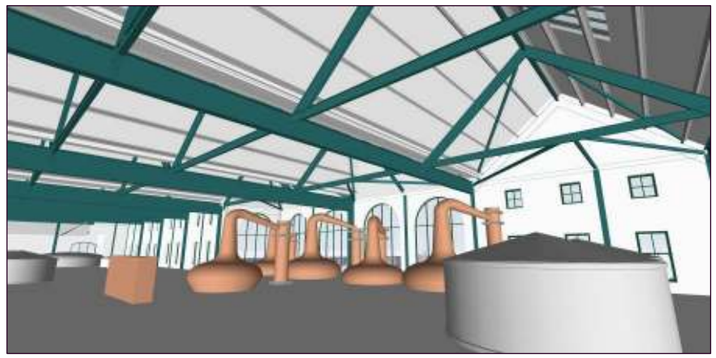
Ground Floor Plan



Still Level



Roof Plan



Internal Sketch View of the Still House – Phase 3

The route through the distillery touches all parts of the process. There are elements where it is unwise to allow visitors immediate access:-

The milling unit is a vertical, self contained process that visitors can view through glazing.

Likewise the laboratory has a viewing screen that does not undermine the work within.

These enclosed spaces are located to the rear of the building as they 'plug into' the industrial elements of the distillery which are all screened with a solid wall to the east.

2.9.4 3 Sisters

The building form is conceived as 3 ‘cubes’ to retain the proportion of the malt kiln units.

Between them it is proposed to introduce glazed ‘slots’.

The slots allow the solid masonry of the kilns to be retained with minimal penetrations by allowing sufficient light into the offices within as well as making the 3 units more individually legible externally.

Finally, these zones form internal transition zones between spaces.

The 3 sisters are used as the ‘ICON’ of the distillery and represent the triple distillation of the process.

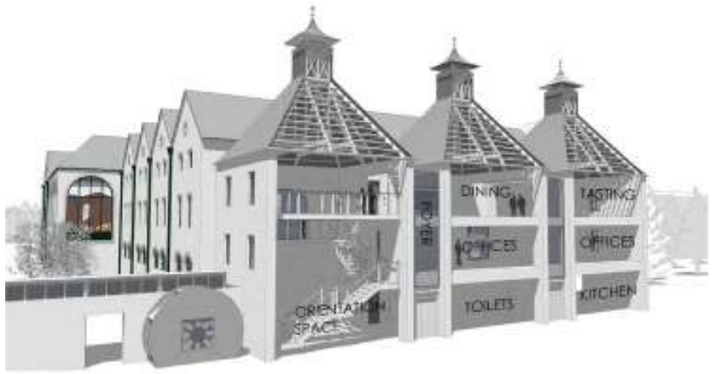
The detailed building design is more related to the internal requirements of the building.

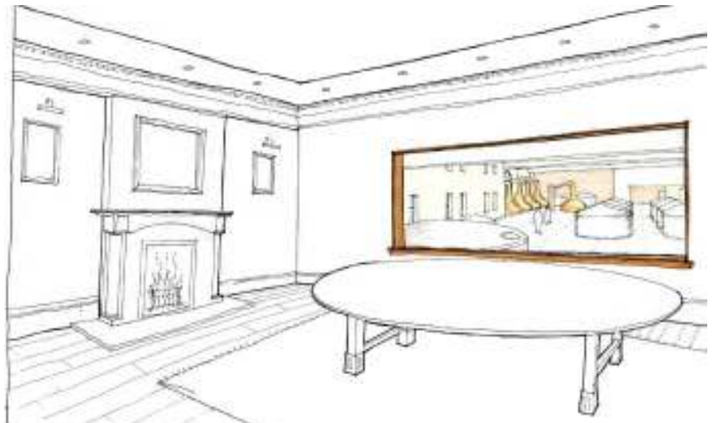
The 3 sisters will become the office and main FM department for the complex when it is expanded in the second phase.

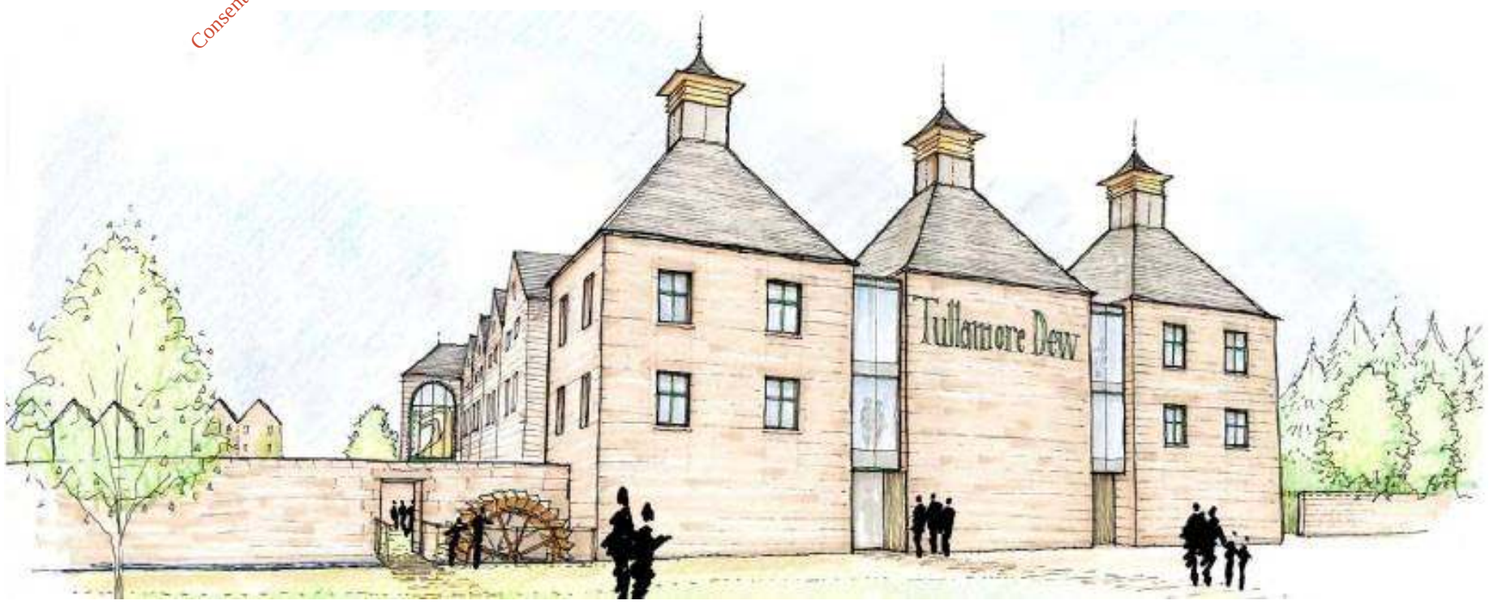
Internally the key is to show the visitors the internal ‘traditional’ timber form and scale of a malt kiln, so the first block will be the entrance space and be open fully to the exposed rafters.

The 3 sisters will also act as a facility for the worldwide business of whiskey.

With this in mind the central bay will have a dining room at the top floor which will have a viewing window across the new still house.







2.9.5 Dunnage

WAREHOUSE-
Exposed piers at upper level
Rubble Walls + brick lintels
Stone Flags to step back dado
Progression of gable windows
Large single course quoins to corners
Circa 40degree pitch
Brick ingoes
Stone Eaves
Large single vertical window with arch head
Composition of principle buildings / sheds / chimneys

The Dunnage will be the most Authentic building on the site.

It is intended to build this building, assuming approval from fire and building authorities, as traditionally as possible.

Slate roof, stone and brick solid masonry walls, small timber windows, timber floors and even earth floors.

Without doubt, this will be the most atmospheric of all the buildings and a real step back in time which, as the last link on the visitors tour, will make a tremendous impression on all those who enters.

2.9.6 Cooperage

In the first phase, there will be some small element of cooperage within the filling store.

As the distillery expands, there will be a need for a dedicated cooperage.

The cooperage will be on the tour in correct production sequence, after the Distillery and before the Dunnage, but will take its external cues from the Dunnage.

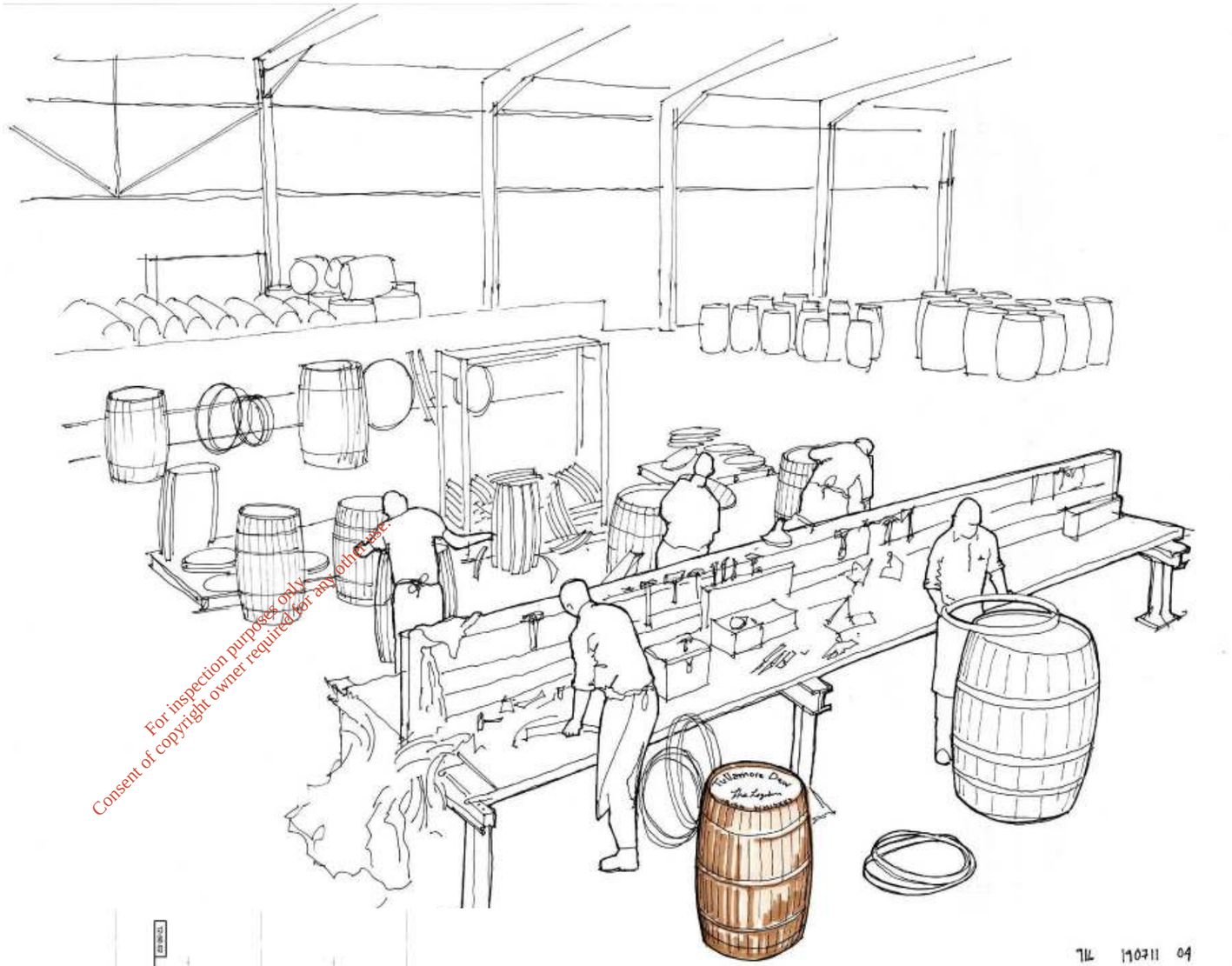
It is hoped that together these two buildings are the least gregarious in appearance and form a backdrop to the courtyard rather than complete with the set piece of the still house.

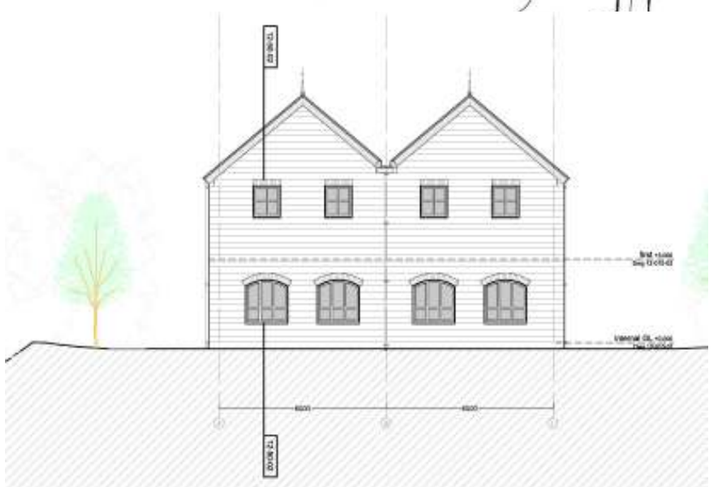
In the initial design it was thought the buildings may even be rendered to be subservient.

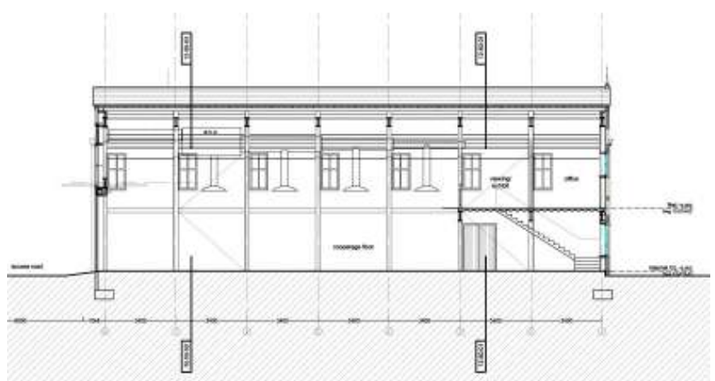
Internally, modern working practices mean that the environment cannot be 19thC.

In principle the cooperage will be a modern ‘shed’ to maximise light, provide all HSE ventilation and service requirements.

In terms of the visitors, its intended that guests enter and are taken to a first floor viewing gallery which allows the whole process to be understood, including some tactile display facilities, while keeping the tour and the process separate.







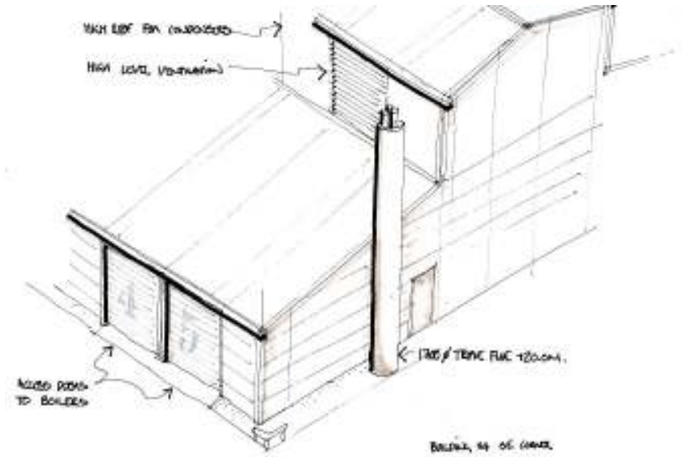
2.9.7 Industrial Buildings

The bulk of the site is effectively an industrial complex with appropriately a more industrial aesthetic. The topography, distance from the main road and careful planting will also mean that these buildings are well screened from the public.

This does not mean that the aesthetic of the buildings is ignored, but the drivers must be efficiency and the environment.

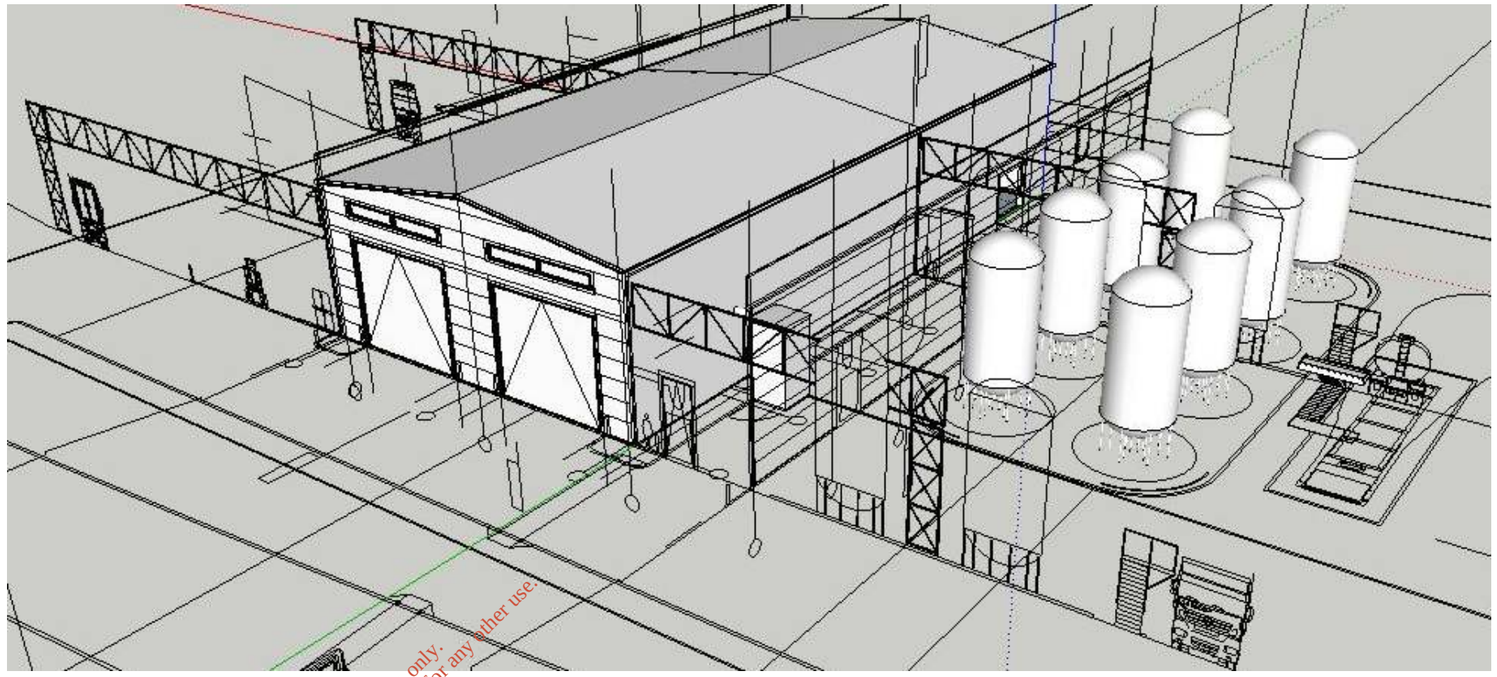
In principle, each building in this category is a metal 'shed' but the design drivers are the complex and varied internal processes within and how they manifest themselves as requirements on the external skin.

Each building process is sketched down and the spatial implications considered.

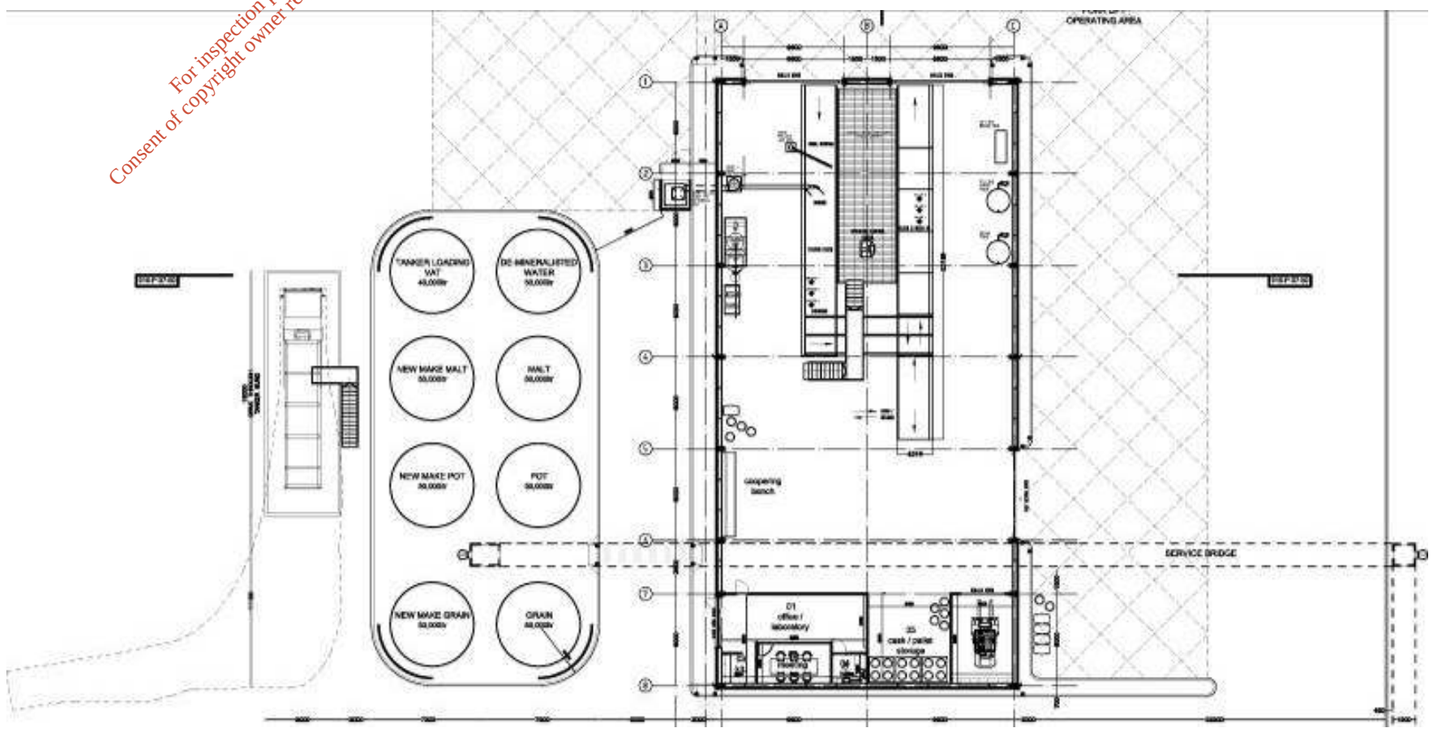


Roof and wall profiled materials and colour are considered to be in mute tones of grey for the process buildings and greens for the warehouse. It is intended that corporate colours are limited to eaves and corner flashings as well as doors and signage. A prescriptive control of colour profile and signage (a design guide) will ensure that continuity and harmony will be maintained even over a long development span.

Careful detailing will ensure un-necessary penetration and 'add-ons' that are so prevalent in industrial buildings are avoided from the outset.



3D Model of Filling Store Building



Filling Store Plan - Including Internal Plant

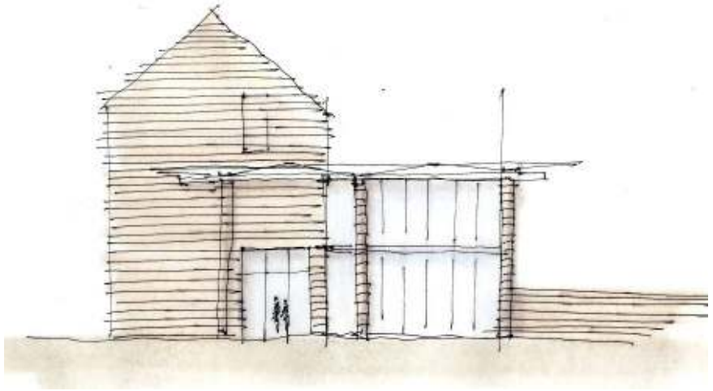
2.9.8 Visitors Centre

The visitor is a building made up of two components:-

A ‘warehouse’ element that will house all the artefacts that are associated with the tour which will be introverted and allow audio visual and interactive displays.

- The warehouse form also gives a solid, secure enclosure to the courtyard.
- A ‘ glazed gallery’ element that embraces the courtyard and provides vistas across the whole complex, at a variety of levels, even opening up and allowing cafe spaces to flow through to the lawn.

The glazed element was intended to form an entrance canopy and signal where visitors should report. The engagement of the two elements allows visitors to enter immediately into the solid stone element. This juxtaposition immediately illustrates that this will be a modern take on an historic story.



Initial layout sketches for Visitor Centre

Sketch Studies of Entrance – Marrying Old and New Elements

2.10 Proposed Design

2.10.1 Phase 1 Aerial

Figure 2.13
Phase 1 (Aerial Photo)

2.10.2 Phase 2 Aerial

Figure 2.14
Phase 2 (Aerial Photo)

2.10.3 Phase 3 Aerial

Figure 2.15
Phase 3 (Aerial Photo)

C - The Construction Phase

It is proposed to develop Tullamore Distillery in three distinct phases, which are linked to different output demands over time. It is intended that infrastructure and buildings required to facilitate the maximum production anticipated will be developed within the ten year period of the planning permission. Final output capacity – in terms of the million litres of alcohol produced per annum - may not be reached until after this construction period has been completed and will be determined by market demands.

2.11 Introduction

2.11.1 Context

This statement relates to the proposal by William Grant and Sons Distillers Limited, to build a new Distillery, in a phased operation, at a site located to the South of the town of Tullamore, on the north side of the N52, in County Offaly, This section provides a description of the nature of the site as it is, and details what will happen during the construction process. The potential impacts of the construction process and any proposed mitigation measures are considered within each relevant discipline of the EIS.

Construction impacts are by their nature short-term. Nonetheless, to minimise any negative impacts from the development process, construction activities will be driven and controlled by a Construction Management Plan. This plan will include the Project Organisation, Construction Health and Safety, Traffic Management, Waste Management, and Controls to provide environmental management to minimise the possibility of occurrences of nuisance from Noise, Vibration, Dust and Dirt. The Construction Management Plan will be submitted to Offaly County Council prior to the commencement of development on site. Impacts which can be anticipated prior to the preparation` of the detailed construction programme and appointment of a contractor are assessed within each relevant discipline and mitigation measures detailed where appropriate. Appendix 12.2 (Air Quality) details the parameters of the dust management plan and appendix 9 provides known details of the waste management plan.

2.11.2 Location of site

The development site extends to an area of around 28.8 hectares (71 acres), situated approximately 2.5km south of Tullamore at National Grid Reference of N332 226. The site is presently utilised predominantly as commercial woodland (Curragh Wood), but there are also areas of agricultural pasture land to the east and north. The southern boundary adjoins the N52, from which an access will be provided to the site.

2.11.3 Proposed Development

The proposed development comprises the clearance of the existing woodland and the construction of a new distillery, built in three phases.

The first phase is intended to be operational in 2014. This phase will involve the clearance of the site, re-grading the ground levels as necessary, the formation of new access roads, hardstanding areas and car parks, the provision of services and drainage and the construction of the main distillery building, the co-products and boiler house building, a filling store, gatehouse, two warehouses and various tanks, silos, cooling towers and associated landscaping.

A pond and pumping station will be formed to provide fire fighting water and a means of attenuation to control the discharge of storm water from the site.

The second phase is intended to commence in 2019 and be completed by 2021. Apart from the two new warehouses, the other new buildings in this phase are within the foot print of the first phase so the clearance and re-grading will be completed within the first phase however, piling operations and service connections will be required. The proposed warehouses included in this phase are located on the agricultural land to the east so this will simply need to be cleared and graded. The building structures included in this phase are the visitor centre, the three sisters, a small warehouse, cooperage, dunnage warehouse, grain distillery and a further two warehouses.

The third phase is intended to commence in 2021 and be completed in 2022. This phase is entirely associated to construction of a further seven warehouses. This will involve the clearance and re-grading with ground levels, the formation of new access roads and service yards, the provision of services and drainage including the construction of a further attenuation pond which will be linked to the original pond.

Drawings showing the proposals within each phase, for storm and foul water drainage and the provision of fire fighting water, are provided within the documentation.

2.12 Physical Considerations of the Site

2.12.1 Site topography

The topography of the development site will impact on the construction process as it will influence the final floor levels and road gradients around the development. The phased nature of the work will also influence the final levels as efforts are made within each phase, to minimise both the importation of material to make up levels and the need to remove material from the site.

The existing ground levels vary by around 10m between the highest and lowest points on the site. Although there are two remote high points, one at the extreme east end of the site and the other at the south west, the size of the whole development site is such that there are no areas where ground slopes which would be perceived as anything other than shallow.

The lowest point is a little west of centre, on the northern boundary. As a result, the ground overall, could be described as having gentle slopes, which fall towards the north boundary. However, the existing shallow gradients mean that, when establishing the levels within the development, some consideration will have to be given to final ground levels in order to achieve gravity drainage of the development.

2.12.2 Land Use

The existing land use can influence the construction process due to any residual influences resulting from such use.

A review of historic Irish Ordnance Survey maps gave no indication of any urban or industrial development on the site which leads us to conclude that the existing uses will be the primary sources of influence. At present, the existing development site is in use as commercial woodland to the western side of the site and as farmland, currently being used as pasture land, to the eastern side of the site. Derelict farm buildings located in the Archaeological test trenching are below a warehouse scheduled for construction in the final phase of the development. The buildings will be demolished and stone is likely to be removed as the proposed floor levels are below the existing ground level. Refer to section 13.5 for further details regarding the architectural heritage of the buildings.

The woodland has conifer trees, commonly Spruce, growing in it. It is anticipated that the area will be cleared of trees, in advance of any of the development works, however tree stumps are likely to be left in place and non-commercially viable timber and branches may also be left on the site. In order to avoid the removal from site of this material, it is anticipated that mechanical plant will be brought to the site to process the timber, to form timber mulch which may be used for weed suppression in planted areas. Any excess timber mulch will be disposed of in accordance with a Waste Management Plan as part of a Construction Management Plan.

The farm land towards the East may have been sprayed with chemical fertilizers etc, in the past, and sheep may have been dipped within the proposed development area. Environmental testing results during site clearance works will confirm if any residual chemicals remain which could affect building or services components. Potential mitigation measures will be detailed in the Construction Management Plan.

2.12.3 Subsoil and Geological Conditions

The nature of the superficials (material between the ground surface and bedrock) and the rock formations below the superficials are the factors most likely to impact on the building foundation design and hence the construction process. Intrusive investigations involving excavating trial pit excavations, undertaking shell and auger and rotary borehole investigations have been carried out on the site. Samples were taken and tested to provide information on the nature and characteristics of the sub-strata material.

On the proposed development site, the surface material was found to be either topsoil or peaty topsoil. The topsoil content of the peaty topsoil quickly reduced with depth leaving entirely peat. The depth of this

surface material varied considerably across the site from around 200 - 3000mm in depth. The least depth of peat was found in the pasture land to the east of the site. The greatest depths of peat occurred in two isolated areas, one at the east end of the most southerly boundary (adjacent to the N52) where the peat depth reaches 3m, and the other, towards the North West of the site, where the peat depth extends to 2.3m.

Peat is generally a very variable and soft material from a construction perspective. It is unsuitable to support building structures, and will be removed from the areas below a buildings footprint, and be replaced by granular or cohesive engineering fill material.

The material found below the topsoil and peat, also varies across the site. Toward the east of the site, silty clays were found which were of stiff consistency, not far below the surface materials. Testing showed that the content of fine material in these clays varied significantly. Moving towards the west, the deposits changed from clays to fine silts and sands, which were found to be in a stiff and medium dense condition. However, further towards the west boundary, the thickness of peat increases, the material below becomes a soft alluvial silt and although some firmer materials were encountered, there was no consistency and the softer deposits were found to extend to around a 6m depth. Stiff sandy gravelly clay was the material generally found at this depth. As a result of these findings, a driven concrete pile is considered to be the most cost effective way to provide support to the building structures.

In order to undertake this work it is necessary to provide a platform of compacted granular material to enable crawler cranes to access pile locations. As this would be a temporary requirement it would be normal to move stone between buildings, then to use the material within the make up below roads or hardstanding areas.

2.12.4 Surface Water Drainage and Ground Water

The presence of water in the ground can have a significant impact on the construction process wherever excavations extend below the natural ground water level. On this site, as stated previously, the ground naturally slopes towards the North of the site and there are open ditches which allow the surface water to move across the site. These ditches have been traced beyond the North boundary of the site and are found to extend to the Southern edge of Tullamore.

The peat, at and below the surface, will, because of its open texture, allow water to pass into it and through it. The nature of the material below is relatively impermeable so ground water within the peat will generally be contained, and it will flow out during heavy rain and will evaporate in high temperatures.

As part of the intrusive site investigation, stand pipes were installed to allow sampling and monitoring of ground water levels. The monitoring points are located to the western side of the proposed development site and at the most recent inspection it was found that the ground water levels varied from 1.2m to 3.8m below the existing ground level.

However, excavations, to remove peat, related to drainage and service installations, and to reduce levels, are likely to encounter ground water which could be in significant volumes. Provision will have to be made to allow for pumping as well as for the possible provision of temporary bunded settlement ponds to allow any solids to settle out before clear waters are discharged into an agreed water course. These proposals will be detailed further in the Construction Management Plan.

At the east end of the Southern boundary, adjacent to the N52, a culvert crosses below the road, which falls from south to north. The discharge from this culvert flows in an open ditch extending north into the site. It is intended that the flow from this ditch will be culverted below the proposed development to discharge back into existing ditches which extend towards the north boundary of the existing woodland.

2.13 Construction Process

2.13.1 General

The proposed development includes the construction of 10 buildings, 11 warehouses and various silos and storage tanks, built in three phases. The initial phase includes 4 buildings and 2 warehouses and the silos and storage tanks, followed by 6 buildings and 2 warehouses and a concluding phase of 7 warehouses. Drawings showing the buildings in each phase are provided at the end of this section.

The buildings generally have steel frames as the primary support structure, with varying forms of cladding and roofing to suit the aesthetic and functional requirements of the client and the Building Regulations.

The feature buildings will have random rubble York Stone finish to the external walls and a heavy duty slate finish on the roofs. The visitor centre will include areas of curtain wall in addition to the finishes noted above.

The processing and storage buildings will have composite insulated cladding to the walls and roofs supported on steel secondary and primary elements. The warehousing will have masonry walls with profiled metal wall sheeting above the masonry and corrugated roof sheeting.

The site will operate at normal hours for construction works, defined as being between 07:00hrs and 19:00hrs Monday to Friday and between 7:30hrs and 13:00hrs on Saturday. In circumstances where additional or alternative working hours are required, including Sundays and Bank Holidays, these shall be agreed in writing, in advance with the Planning Department.

The number of construction workers on site will vary between the phases and stages of construction. The estimated average and peak of construction workers required for each phase is:-

Phase 1, - Average = 28 per day; Peak = 58 per day

Phase 2, - Average = 18 per day; Peak = 42 per day

Phase 3, - Average = 20 per day; Peak = 38 per day

2.13.2 Floors and substructures

The building foundations will be provided by reinforced concrete beams spanning between concrete pile caps. The ground floors of the buildings and warehouses will be constructed of reinforced concrete slabs, similarly supported. Upper floors will generally be of concrete construction supported on steel beams. In some areas, feature timber floors may be adopted.

2.13.3 Services

Incoming services to the site are likely to comprise overhead power supplies to a substation within the site. Water is being piped from a remote source. Distribution of these primary services will be underground within the site.

A new sewer connection is to be provided which enters the site on the Western boundary. New pipework will be provided to connect buildings to this new outfall.

Surface water will be collected in open ditches and underground pipework which discharges into an attenuation pond. The pond level will be set so that fire fighting water is continuously stored on site, and peak rainfall flows are stored and subsequently discharged at a rate equivalent to the current greenfield rate.

Liquids produced as part of the distillery operations will be piped along over head bridge structures between buildings, as necessary for the process.

2.13.4 Bulk Materials

Bulk materials are required as part of the processes being undertaken on the site. Such materials will be stored in bulk on the site. This will be in the steel storage tanks and silos between the Co-products and distillery buildings. The materials will be piped from these containers to the required locations for processing.

2.14 Description of Construction

The woodland will be cleared of the commercially valuable timber before any other construction works are commenced.

2.14.1 Access to the Site - Construction Traffic - Site Security

The permanent access to the site will take the form of a new roundabout on the N52. This is to be situated adjacent to the west boundary of the site. It is preferred that the roundabout is formed in advance of the start of the construction works, however if the roundabout is not completed before the distillery construction starts, then a temporary access road, which follows the line of the permanent access, will be formed, with a junction to the N52 at the eastern edge of the proposed roundabout. Appropriate traffic management arrangements, would be required, and these would be agreed, in advance, with the Local and National Authorities. The temporary arrangements could involve the provision of temporary road widening and the creation of a temporary priority junction (construction access only).

The following table indicates an estimate of likely construction vehicle movements.

Table 2.3 *- Peak daily number of vehicles*

	Peak daily number of return vehicle journeys to site		
	PHASE 1	PHASE 2	PHASE 3
HGV	29	7	9
Light vehicles/cars	40	28	26

Within the access road, a new security barrier will be provided to control traffic flows in and out of the site. This barrier will be linked to boundary fencing around the site. It is anticipated that the permanent development boundary fence will be erected at this stage in construction, supplemented by temporary Heras panel fencing at the boundary between Phases 1 and 3, and elsewhere as necessary to enclose and secure the site.

2.14.2 Site Establishment

Site Establishment comprises the welfare and administrative facilities required by the contractor to properly manage and control the construction activities

It is anticipated that the area where the Visitor Car Park is to be formed and the area to the east from that, will provide a location for the Site Offices and Car Parking for site staff and operatives during phases 1 and 2, however for phase 3, whilst the car parking is likely to remain outwith the working distillery ground, a new area within the phase 3 site will have to be set aside for the site establishment. It is likely that, due to the limited space available, the compound and offices will have to be re-located onto a new service yard between the new warehouses, as the works proceed.

A drawing showing a site establishment arrangement for the construction of phases 1 and 2 is provided in Figure 2.16.

All excess excavated materials generated by the formation of the site establishment area will be retained on site.

Temporary service connections will be required for power, water, drainage and communications. It is anticipated that Offaly County Council will provide the permanent drain connection to the site, in advance of the start of the construction works

2.14.3 Site Clearance

The first operations to be undertaken will be the clearance of all excess timber and tree stumps. This work will be undertaken using diesel powered, all terrain excavators, and dumpers. This material will be processed on site with diesel or petrol powered plant to create a mulch to be used for weed suppression in planted areas, excess material will be disposed of in accordance with the Waste Management Plan.

2.14.4 Earthworks

All of the earthworks will be undertaken by diesel powered, standard, excavation, earth moving and grading plant and equipment. It is likely, because of the soft nature of the surface materials, that tracked machinery will be most suited to the works.

It may also be necessary, in some areas, to utilize plastic Geogrid mesh e.g. Tensar combined with crushed granular material, e.g. crushed demolition material, to provide a suitable surface to allow the movement of vehicle and plant.

After the site has been cleared of timber, stumps and vegetation, the remaining topsoil and peat will be stripped out from the areas required in each phase, and retained in mounded earth forms within the designated areas indicated on the plans. Detailed consideration of the potential impact of peat slippage was taken into account in designing the structure of the mounds to mitigate any risk, as discussed in the Chapter 7 (Soils & Geology) and Chapter 10 (Ecology). The topsoil and peat mounds shall be engineered to ensure long term stability. The mounds will have side slopes of around 1 vertical to 4 horizontal and, with the maximum height proposed as four metres, the width of the slopes will be up to 16m wide. The material within the side slopes will be stabilised as determined necessary using geotechnical testing of the material properties. The stabilisation will be achieved by mixing the topsoil and peat with other soils or by the established techniques of lime and cement stabilisation of peat which control moisture content and demonstrably increase the shear strength of the materials. The face of the slopes and mounds will be topped with a growing medium to the landscape architect's specifications to allow subsequent planting and vegetation. This detailed construction design will ensure that there is a zero to imperceptible risk of any peat slippage.

Other general excavations and filling operations will then be undertaken to form platform levels, for the new buildings and hard standing areas. Where existing materials are softer in nature, soil improvements will be made in a similar way to the sloping faces of the peat, except that, in this case only cement or lime will be used. This process is something akin to concrete mixing, but with the mixing plant on site. It will utilise excavated soils to be mixed with cement or lime to allow the material to be re-used, along with crushed stone or demolition material, as a base below roads and hard standing areas.

2.14.5 Servicing provision.

At or around this time underground service routes will be formed using excavation plant, and ducts or pipework will be installed as required. Storm water and foul sewers will also be installed including all manholes and inspection chambers. The water attenuation pond will be formed. All excavated material will be retained on site.

2.14.6 Building Sub-Structures

It is envisaged that all the building structures, including the ground floor slabs, will be founded on driven, precast concrete piles, which will extend into the stiff clay material which is generally found at a depth of around 6m. The plant and equipment used in this operation requires a working platform of compacted stone to be in place to facilitate access to pile locations. This is a temporary requirement and such stone will be re-located as the works proceed.

The piles will be driven by standard crawler cranes with pile driving attachments. The piles will be impact driven, through repeatedly dropping a weight onto the top of the precast pile. Monitoring of vibration effects from this operation is recommended and monitoring proposals will be detailed in the Construction Management Plan.

On completion of the piling, pile caps will be formed then reinforced concrete ground beams and isolated pad foundations will be cast to support the columns of the steel frame buildings, external and load bearing wall lines as well as bases for storage tanks.

2.14.7 Access Roads, Car Parks and Hard Standing Areas

As noted above access roads will be formed utilising soil improvement, along with stone, incorporating a geogrid mesh if necessary. Surface finishing layers will not be laid until the latter part of the construction process. Earth moving, soil mixing, grading compacting and surfacing plant and machinery will be utilised.

External hard standing areas will generally be formed in concrete, where appropriate, or in asphalt. External paving around visitor car park /

central courtyard will comprise natural stone and resin based paving. All types of surface will be formed on a base of crushed stone hardcore.

2.14.8 Buildings

Concrete floor slabs, will be reinforced and of sufficient depth to span between broadened pile heads. Floor slabs within buildings are likely to be constructed after the building structure is completed sufficiently to protect the new concrete and floor finishes from the possible effects of adverse weather.

All the building structures will be formed with a steel frame to which various forms of cladding and roofing are applied. This and subsequent plant installations will all involve the use of cranes, telescopic load handlers and access platforms to facilitate the works.

In feature buildings the external wall finish is either stone or brick, however, insulation and internal lining materials will also be required. The building of the outer leaf of the external walls to feature buildings will require the erection of scaffolds to provide access and safe working platforms.

Where there are suspended upper floors, they will be formed as composite slabs with permanent steel shutter/reinforcement. These floors will be formed at the same time as the frame construction.

For process buildings the walls and roofs will be composite insulated panels which span between steel components. For this type of construction, scaffold to walls, is generally not required because the panels span horizontally between columns and have air tight and impervious joints.

In a similar way to the wall finishes, the roof finishes of the feature buildings will require an access scaffold, rather that a simpler roof edge protection which will be required for the process buildings.

Some of the feature buildings are to be built incorporating timber structural components. It is envisaged that these materials will be brought to site, prefabricated and ready for installation and that site works, will be kept to a minimum.

It is anticipated that, some large components required in the distillery operations will be sited within the building structures as the works proceed.

2.14.9 Servicing Provision

The public utilities and Offaly County Council will bring power, communications and drainage to the site. Water will be piped from a separate source for use by the distillery.

Once on site, most of these services will be distributed within underground ducts or pipes, however the operations of the distillery itself will involve the distribution of significant quantities of different liquids and gases. This will include the provision of heating, hot and cold water for use in various non process buildings.

The distribution pipework required, will be provided above ground, on steel framed pipe bridges between the various buildings, as necessary.

2.14.10 Landscaping

The proposed floor levels for the development were prepared with a view to achieving a balance between the cut and fill of material on site, however the volume of peat in the ground below the development site, has resulted in an excess of excavated material. To avoid having to dispose of the excess material off site, artificial mounds are to be formed utilising this material. The mounds themselves and their sloping faces will be formed to ensure long term stability.

The landscaping proposals for the remainder of the development will also involve the distribution of excess material and material which is unsuitable as engineering fill, to form the levels and profiles required by the Landscape Architects.

All of these works will involve the use of diesel powered excavation, earth moving and grading plant and equipment.

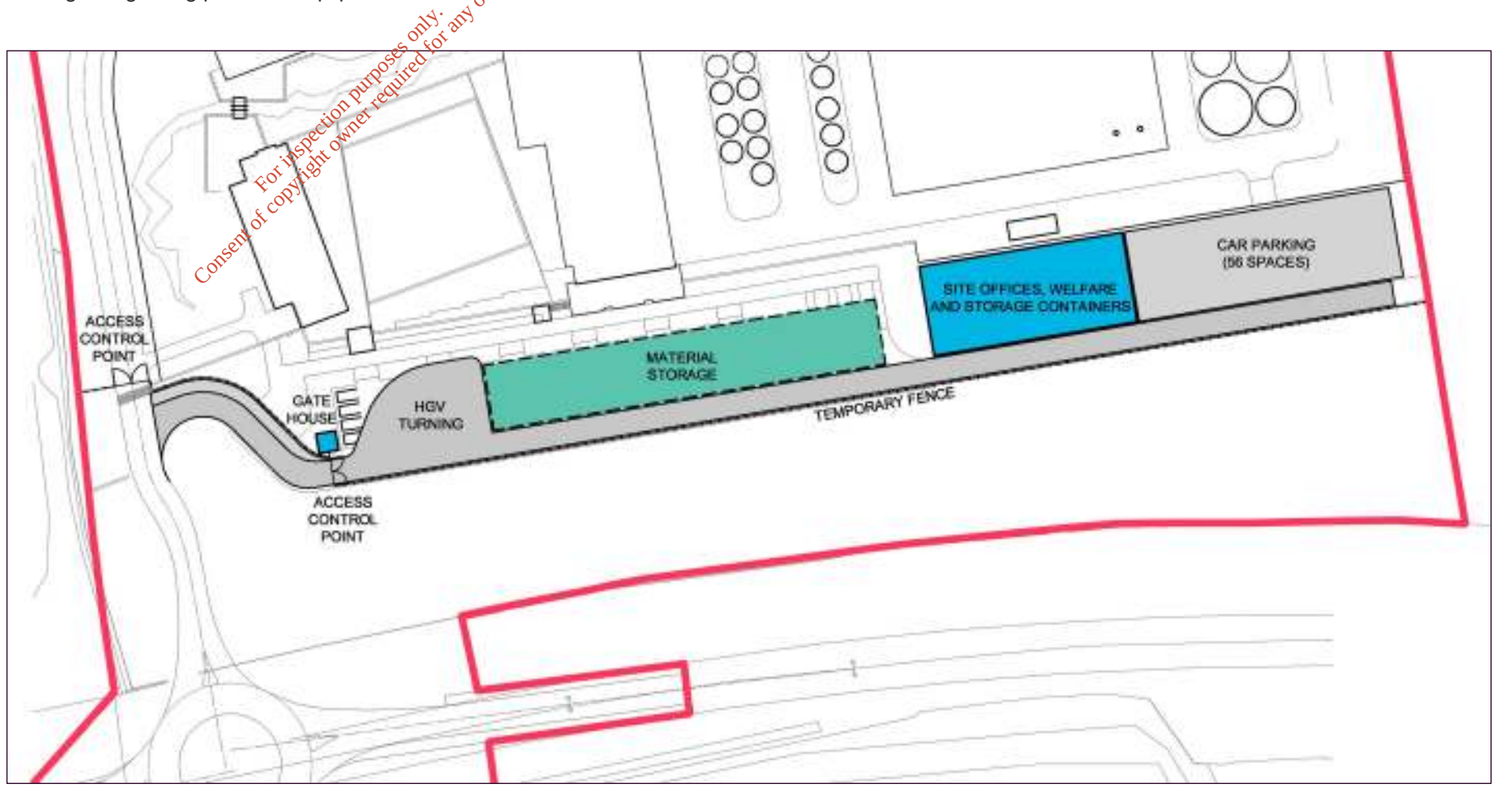


Figure 2.16 *- Site Establishment*

2.14.11 Waste Management

All of the works associated with the construction of the distillery will be undertaken with a full waste management plan in place. This will involve the use of designated, segregated waste skips to allow the recycling of all possible waste material.

D - The Operational Phase

Subject to planning, it is projected that phase 1 of the proposed distillery will become operational in the summer of 2014. The distillery will be developed in three distinct development phases, which have been described in section B of this chapter. Phase 3 of the building development is for the provision of warehousing only. The 3rd phase of development phase will not impact on the output capacity of the distillery but will facilitate more space for maturation of the increased output delivered during phase 2 a & b.

Operational output will increase over time and full output may not be achieved until some time after the building programme has been completed – Phase 2b is therefore a description of the increase in infrastructure requirements and outputs only. In terms of operation each phase can be described as follows:

▪ **Phase 1**	Pot & Malt production only, with a maximum output of 1.84 mla per annum
▪ **Phase 2(a)**	Pot & Malt production only, with a maximum output of 3.69 mla per annum
▪ **Phase 2(b)**	Pot, Malt and Grain production, with a maximum output of 11.94 mla per annum. Development of a visitors centre with projected annual visitors of 40,000 per annum.
▪ **Phase 3**	**Warehouses only** (No change in operational output – therefore this phase is not detailed in infrastructure and outputs table 2.4).

The majority of staff will work from 9am to 5:30pm. Process operation staff will work on a shift basis ensuring that the distillery remains operational 24 hours per day, 7 days per week.

There is normally four weeks' shut-down throughout the year to undertake maintenance of plant on site. The exact dates of shut down vary but are generally two weeks in the summer months and two weeks around the Christmas period.

The requirements for raw materials and infrastructure services will be linked to production output, as will traffic flows and the number of employees required. Table 2.4 provides details of the requirements to facilitate the projected output for each phase of the project. As previously noted, phase 3 will not involve any increase in production output, therefore the infrastructural requirements and outputs will be the same as for phase 2b.

The potential impacts and proposed mitigation measures of the operational phase are discussed within each discipline of this EIS. A description of the process plant required to facilitate the operational phase is provided in Chapter 11 (Noise & Vibration).

Table 2.4 - *Phased Raw Material, Infrastructure Requirements and Outputs*

		Operational Phase		
		Phase 1 – July 2014	Phase 2a – 2019 +	Phase 2b – & 2025 +
Output	Product (alcohol)	1.84 mla	3.68 mla	11.94 mla
	Co-products: - Pot Ale Syrup - Draff - Spent Grains	 1257 Tonnes 4770 Tonnes	 2514 Tonnes 9539 Tonnes	 2514 Tonnes 9539 Tonnes 11280 tonnes
Raw Materials	Barley+Malt Wheat	4750 Tonnes	9500 Tonnes	9500 Tonnes 21000 Tonnes
	Raw Water	75,000 m³ pa	100,000 m³ pa	250,000 m³ pa
	Potable Water	2 m³ per hour	3 m³ per hour	7 m³ per hour
	Casks	15,000	30,000	90,000
Services	Gas	20,500 mW pa	40,000 mW pa	65,000 mW pa
	Electricity	2,304 mW pa	3,840 mW pa	12,000 mW pa
	Effluent	20,000 m³ pa 900 PE	40,000 m³ pa 1,800 PE	150,000 m³ pa 4,000 PE
Employees	Management	1	2	2
	Operations	13	19	35
	Site Services	5	5	7
	Visitors Centre low season high season	 0 0	 0 0	 13 25
Traffic	Private cars (employees)	21	26	69
	HGV Cereals	250 pa	500 pa	1200 pa
	Tanker – Product	300 pa	600 pa	1500 pa
	HGV – Co-product	225 pa	450 pa	1000 pa
	HGV – other deliveries	<50 pa	<50 pa	<100 pa
	Visitor Centre - Services	 0	 0	 <1,000 pa
	Visitors Private Car Coach	0	0	(40,000 pa) 20,000 pa 20,000 pa
	Night Traffic	1-2 operators	1-2 operators	3-4 operators

3 Planning Context

3.1 Introduction

This section outlines the economic and planning policy context of the proposal by William Grant & Sons to develop a new pot still and malt whiskey distillery in Tullamore.

The proposed development is examined in the context of the policies and objectives of the documents below, which address policy guidance in relation to economic and planning policy at national, regional and local levels.

3.2 Relevant National Policies, Objectives and Guidance

3.2.1 National Spatial Strategy

The National Spatial Strategy 2002-2020 (NSS) was published in November 2002 as a twenty year coherent national planning framework for Ireland. The stated aims of the NSS were to achieve a better balance of social, economic and physical development across Ireland.

In order to drive development in the regions, the NSS envisages that areas of sufficient scale and critical mass will be built up through a network of gateways and hubs. While the National Development Plan 2000-2006 identified Dublin, Cork, Limerick/Shannon, Galway and Waterford as existing gateways, the NSS designated four new national level gateways and nine strategically located, medium-sized hubs which will support and be supported by the gateways and will link out to wider rural areas. The aims of the NSS were integrated into the National Development Plan 2007 – 2013.

Figure 3.1 provides a diagrammatic summary of the strategy for the Midland's Region. Tullamore, along with the other Midland towns of Athlone and Mullingar, is part of one of the new national level linked gateways. A linked gateway is one in which two or more strong towns work in partnership to promote economic and social development in their region.

The selection of Tullamore, Athlone and Mullingar is attributed to the towns' complementary infrastructure, substantial capacity for development in services terms and strategic location on east-west road, rail, energy and communications links.

Section 5.2.3 of the NSS recognises the importance of agriculture, food production and related industries to the Irish economy and the key role they play in providing for vibrant and diversified rural communities.

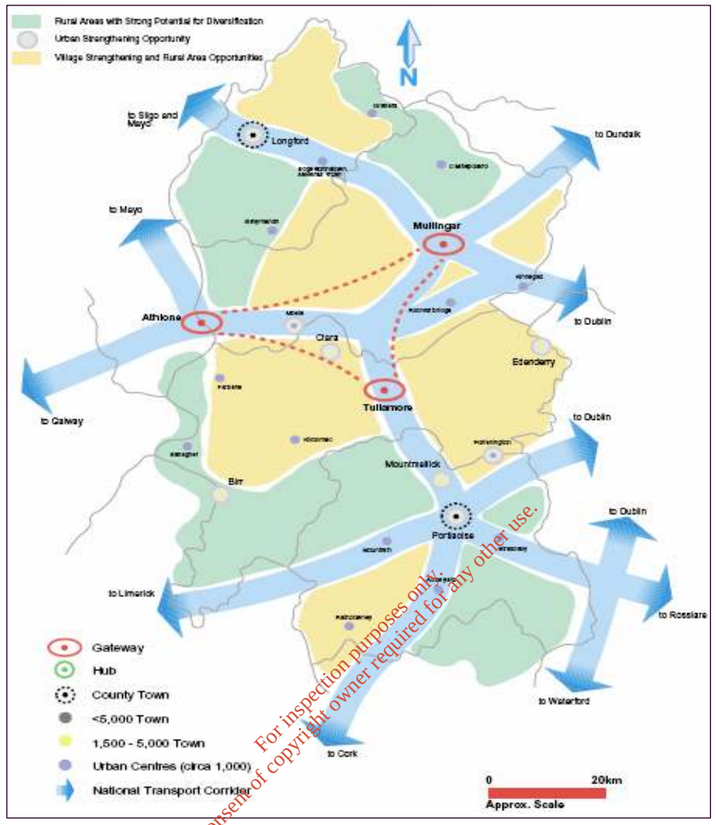


***Figure 3.1** - National Spatial Strategy – Midlands Region*

3.2.2 National Development Plan 2007-2013

The National Development Plan 2007-2013 (NDP) sets out a programme of integrated investments that will underpin the country's ability to grow in a manner that is economically, socially and environmentally sustainable.

The NDP recognises that food and drink is one of Ireland's most important indigenous sectors, having provided 50,000 jobs directly and accounted for 8.6% of GDP in 2005. The NDP also highlights that food and drink exports of over €8 billion in 2006 represented a very significant source of foreign earnings.

The Food Industry Sub Programme of the NDP involves an investment of €289 million in capital infrastructure and marketing. The NDP indicates that this programme will include the promotion and market development of the agri-food sector in Continental EU and Asian Markets.

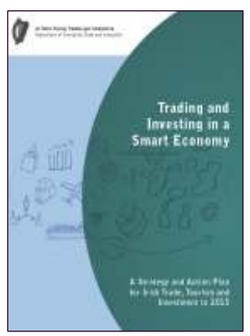
3.2.3 Building Ireland's Smart Economy: A Framework for Sustainable Economic Renewal 2009- 2014

Building Ireland's Smart Economy: A Framework for Sustainable Economic Renewal was published in December 2008. The document sets out a framework aimed at addressing the current economic challenges and building a 'Smart Economy' with a thriving enterprise sector, high-quality employment, secure energy supplies, an attractive environment, and first-class infrastructure'.

One of the key actions of the document is to develop a range of measures to build on the strengths in the agriculture, fisheries and food sectors and exploit the potential of an export-led, natural resources based agri-food sector. Section 1.9 of *Building Ireland's Smart Economy* highlights that the *"indigenous, export orientated sector, agri-food currently accounts for over 30% of net flows into the economy from primary and manufacturing output and has tremendous potential to contribute to the reinvigoration of the economy"*.

The document outlines that the Government remains strongly committed to continued substantial support for the sector to meet the challenges and avail of the opportunities arising from on-going changes in the international economic climate and that Bord Bia will continue to promote and market Irish foodstuffs.

3.2.4 Trading and Investing in a Smart Economy: A Strategy and Action Plan for Irish Trade, Tourism and Investment to 2015



Trading and Investing in a Smart Economy outlines the way in which the priorities and targets in *Building Ireland's Smart Economy* (see Section 3.2.3, this chapter) will be achieved.

The strategy identifies the important role of the food sector and the beverage subsector in the recovery of the Irish economy with the strongest growth potential in dairy, prepared foods, beef and alcoholic beverages.

In terms of exports, the strategy aims to create over 300,000 new jobs directly and indirectly associated with more general enterprises in manufacturing, tourism and internationally trading services.

Food and drink is pinpointed as Ireland's largest indigenous sector and the strategy focuses on building on this to achieve strong export led growth to 2015. Accordingly, it seeks to increase indigenous food and drink exports to countries outside the UK and to Asia by 6% and 2.7% respectively. The industry is therefore well placed to benefit from investment as the strategy recommends that 20% of new greenfield projects are targeted to come from high-growth and emerging economies.

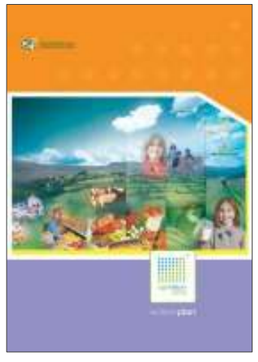
Environmental sustainability is highlighted as a core theme globally, which provides *"a good opportunity to take a lead and build the image of Ireland as the sustainable food island".*

3.2.5 Action Plan for Jobs 2012

The *Action Plan for Jobs 2012* aims to raise total employment from 1.8 million to 1.9 million by 2016 and by a further 100,000 by 2020. It is a working document which means subsequent action plans are to be provided annually until these goals are realised.

The plan has seven principle aims which include 'assisting indigenous business to grow' and 'exploiting sectoral opportunities'. The latter includes the manufacturing, agri-food and tourism sectors which are highlighted for their potential to support job creation.

The plan acknowledges the strength of the agri-food sector while focusing on opportunities for growth and expansion, with particular reference to dairy, meat, seafood and drink production.



The potential for increased whiskey production is referred to specifically: *"International market demand for whiskey is increasing providing a significant opportunity for increased Irish production and marketing by the multinational companies who have invested in Irish whiskey".*

In employment terms, the plan aims for a net increase of 7,500 people in food and beverage companies while expanding the indirect employment impact. It also plans to improve exports and value added by over 40%.

Under Objective 7.4.4, Enterprise Ireland pledges to *"Work closely with the industry to develop their plans to deal with the increasing supply of raw material projected in Food Harvest 2020 and support the development of increased scale and value added processing."*

3.2.6 Agri Vision 2015 Action Plan

The *Agri Vision 2015 Action Plan* was published in 2007 by the Department of Agriculture and Food. It sets out the action required to ensure that farming and the food, drinks and wood industries continue to play a vital role in the sustainable development of the country.

The plan recognises that the food and drinks industry is one of Ireland's largest indigenous manufacturing sectors, employing approximately 50,000 in direct jobs. Overall the agri-food sector accounts for 9% of GDP and total employment, 18% of industrial jobs and a 20% of the net flow of foreign earnings associated with exports. The food and drinks sector accounts for 62% of exports and 40% of employment in indigenous industry.

Among the policies and actions outlined in the Action Plan is the Department's commitment to work with Bord Bia to *"facilitate, support and promote a target of doubling the value of food and drink exports to the Far East over three years".*

3.2.7 Department of Agriculture, Fisheries and Food, 2020 Strategy

In February 2010 the Minister for Agriculture, Fisheries and Food, Brendan Smith, launched an initiative to draw up a long-term strategy for the agri-food, forestry and fisheries sectors (see Section 3.2.8, this chapter, for the resultant *Food Harvest 2020*). In order to facilitate and target the consideration of key issues, a series of discussion and background papers were prepared and published by the Department including a discussion document entitled *An Innovative and Sustainable Food and Drinks Industry.*

The 2010 discussion paper highlights that the *"alcoholic beverage sector, incorporating distilled spirits and spirit-based liqueurs, provides employment – directly or indirectly - for over 20,000 people and accounts for raw material purchases (cream, cereals etc) of over €170 million". It also identifies that "Ireland supplies over 90% of the world's cream liqueur market while total exports of alcoholic beverages are worth over €1.2 billion".*

The 2010 discussion paper recognises that Bord Bia has identified potential to increase export revenues within the alcoholic beverage industry. It also notes that the *"Irish whiskey sector is a key driver of growth within the industry and is likely to continue to gain market share in the medium term".*

The Department's *Annual Review and Outlook for Agriculture Fisheries and Food 2010/2011* noted that there has been a small rise in employment in the beverage industry over the last year, compared with a slight decrease in employment in the food industry.

3.2.8 Food Harvest 2020

Food Harvest 2020 was published in July 2010 and was steered by the Department of Agriculture, Fisheries and Food in association with Bord Bia, Enterprise Ireland, Teagasc and other public and private stakeholders from the agri-food sector.

The strategy acknowledges that agri-food, fisheries and forestry combined comprises Ireland's largest indigenous industry, employing over 150,000 people.

Food Harvest 2020 sets out a tripartite vision based on smart, green growth. It encourages:

- Smart actions such as enhancing levels of productivity and competitiveness. Specific reference is made to the processing and manufacturing sector with a focus on developing opportunities in lean manufacturing and innovation;
- The promotion of Ireland's 'green' ethos by highlighting Ireland's extensive, low-input, grass-based production systems. It further recommends the development of a 'Brand Ireland' concept to promote environmentally friendly approach of Irish producers; and
- Efficient, sustainable production that delivers significant growth benefiting primary producers, processors and the food-manufacturing sector. This is cited as "the compelling vision of the report".

The strategy contains 215 recommendations and establishes specific growth targets for 2020 to increase:

- The value of primary output by €1.5 billion;
- Value-added outputs by €3 billion; and
- Exports to €12 billion, representing growth of 42% from the period 2007-09.

A sector by sector review which includes cereals acknowledges that almost one third of the grain produced in Ireland is a valuable raw material for the brewing, distilling and flour milling industries and that retention of an indigenous malting barley industry is important for the sector.

Section 2.1 of *Food Harvest 2020* recognises the strength of the alcoholic beverage sector whereby "*major investment in marketing has increased the international market penetration of Irish spirits to over 100 countries and created a cadre of key brands with worldwide recognition".*

3.2.9 Food Harvest 2020: Milestones for Success

Milestones for Success was published this year and represents the first annual progress report of *Food Harvest 2020*. Simon Coveney, who was appointed Minister for Agriculture, Food and the Marine in the interim, notes that the agri-food sector is "one of the few sectors that can realistically lead Ireland's economic recovery".

The report documents a pattern of growth in the agri-food sector; exports were up by 11% and 13% in 2010 and the first five months of 2011 respectively.

The report highlights the particularly strong performance of drinks exports in 2010 as there was an overall increase of 8%. Whiskey performed the strongest with an increase of 23%, followed by beer at 16% and cream liqueurs at 10%.

The Minister notes that 91% of the 215 initiatives of *Food Harvest 2020* have commenced. This includes an initiative by Enterprise Ireland in association with Bord Bia, Teagasc and Bord Iascaigh Mhara to establish global sectoral teams to drive export growth agendas in seven value added sectors including beverages.

Milestones for Success outlines specific targets for the period 2013-2015:

- Attain an agri-food export target of €8,500m;
- Increase value added in the beverages industry by €300m;
- Implement a private label development programme focused on increasing sales of Irish food and drink to Continental Europe's retail sector; and
- Build greater capacity in product development in the drinks industry.

3.2.10 Bord Bia Export Performance and Prospects: Irish Food, Drink and Horticulture 2011-2012

Bord Bia's *Export Performance and Prospects* report details strong growth in Irish food and drinks exports in 2011.

The report estimates that the value of exports increased by 12% in 2011 to reach €8.85 billion. This equates to a rise of almost €1bn on 2009 levels.

The industry also demonstrated strong growth relative to other sectors; Food and drink exports grew at three times the rate of total merchandise exports for the first nine months of 2011 accounting for 25% of the rise in export revenue.

The report highlights that the Irish food and drinks industry has been successful in extending its reach beyond the traditional UK market as a greater proportion of exports are now destined for other European and international markets.

Beverages, dairy and pigmeat are described as key sectors having recorded higher output. Overall, beverages exports are estimated to have grown by 6% in 2011 to reach €1.22bn. As was documented in *Food Harvest 2020: Milestones for Success,* the strongest growth in the value of exports is attributed to whiskey, which continued to show strong double digit growth. Cream liqueurs, beer and cider showed more modest increases. Bord Bia forecasts largely positive prospects for beverage exports in 2012 with further good growth anticipated in whiskey exports.

3.3 Relevant Regional Policy Guidance

3.3.1 The Regional Planning Guidelines for the Midland Region 2010-2022

The *Regional Planning Guidelines for the Midland Region 2010-2022* (MRPGs) were adopted in July 2010 with the objective of providing a long term strategic planning framework for the development of counties Offaly, Laois, Westmeath and Longford. Regional Planning Guidelines act as the bridge between national objectives and local plans.

The MRPGs divide the region into five Development Areas, as shown in Figure 3.2. The Central Development Area (CDA) comprises parts of counties Offaly and Westmeath including the linked gateway towns of Athlone, Tullamore and Mullingar. The CDA is described as having the strongest and most defined urban and village network and as a primary driver of economic growth in the region. The most notable objectives for the CDA are as follows:

- CDA P1 - The linked gateway should address the need to plan for a population increase of around 37,102 people with 5,928 to be distributed to the remainder of the CDA area by 2022.
- CDA P4 - Support the development of the Strategic Development Zone within the CDA to generate employment and foster innovation for the linked gateway and the wider region.
- P5 - Ensure that the availability of appropriate land for employment is allied to development needs […].

The MRPGs set out population projections for the region, the linked gateway and the principal towns for 2016 and 2020. This is referred to in Offaly County Development Plan's settlement strategy and therefore is discussed in greater detail in section 3.4.1 of this chapter.

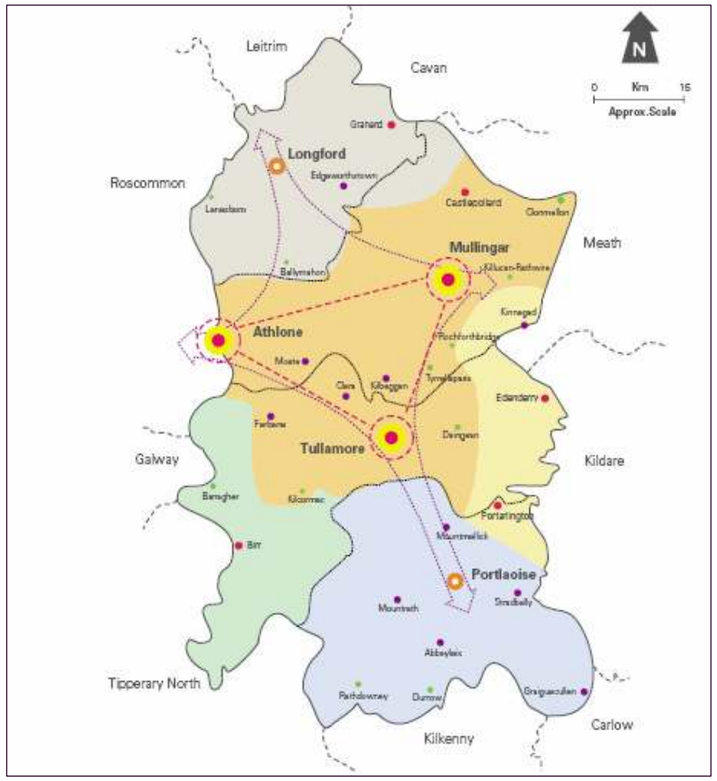


Figure 3.2 – *The Midland Regional Planning Guidelines Development Areas. The Central Development Area is in orange.*

The MRPGs refer to the importance of the food and drinks industry in terms of employment at national, regional and local scales. Regionally the food sector is cited as the largest agency-supported [1] employer accounting for more than a fifth of all agency-supported jobs. In addition the sector has demonstrated strong employment growth of almost 48% in the last decade.

The MRPGs refer to the food and drink sector among other important indigenous enterprise bases stating that, "*[in order] to remain competitive in today's challenging economic conditions the agri-food industry needs to increase its value added, diversify its markets and increase productivity".* Furthermore, the potential for growth is facilitated by "the existing knowledge and skills base, and the established suppliers and support industries which provide a strong foundation for further development".

The need to shift growth toward export lead production in the next decade is outlined in Section 3.4 of the MRPGs, *"The food and tourism*

[1] According to the *Forfas Regional Competitiveness Agenda for the Midlands 2009* 'agency-supported firms' are so-called because they are clients of the enterprise agencies: IDA Ireland, Enterprise Ireland and Shannon Development.

sectors are among a "suite of assets that provide a platform for growth: for attracting investment, stimulating entrepreneurship and enabling companies based in Ireland to grow and target international market".

The RPGs set out the following relevant objectives:

- EDP.3 - Actively encourage the sustainable development of the region's sectoral opportunities including Food, Tourism, Retail and the Rural Economy through measures including the following:
  - Identification of suitable lands where appropriate […] to cater for the growth of the above mentioned sectors.
  - Facilitate the provision of the necessary infrastructure for the development of the lands identified for the sectoral opportunities.
- EDP.4 - Priority is to be given to targeting the development of activities which capitalize on existing and emerging strengths in each of the linked gateway towns in addition to promoting the development of all sectors within the linked gateway and principal towns throughout the region. This objective specifically identifies Consumer Foods as a unique strength of Tullamore.
- NDA.P3 - Build upon existing strong businesses in the food sector. The development of the rural economy in key areas such as tourism, agri-food and green enterprise requires targeted investment in regional infrastructure.

3.3.2 Strategic Development Framework for the Midland's Gateway: Developing a World Class Knowledge-Based Competitive Gateway

The *Strategic Development Framework for the Midland's Gateway* (SDF), December 2006 builds on the designation of Tullamore, Mullingar and Athlone as a linked gateway in the *National Spatial Strategy*. It sets out a long term economic and planning strategy for guiding future development and the provision of strategic infrastructure in the Midland's Gateway.

The SDF identifies significant economic challenges facing the Midland's Gateway including:

- The absence of a critical mass of population;
- The low share of tourism activity;
- The absence of a strong, identifiable 'brand' for the Gateway; and
- Extremely low levels of value-added and productivity in the existing manufacturing base in the region.

The final point is acknowledged as "[in many ways] the most urgent and important challenge for the Midlands". This is based on analysis which demonstrated that labour productivity in the manufacturing sector was 73% lower on average across manufacturing units in the Midlands than across the State as a whole.

Corresponding recommendations have since been integrated into the *Regional Planning Guidelines for the Midland's Region 2010-2022* and are therefore discussed under Section 3.3.1 (this chapter).

3.4 Local Policy Guidance

3.4.1 Offaly County Development Plan 2009-2015

Offaly County Development Plan 2009-2015 (OCDP) governs the functional area of the county excluding the town council areas of Tullamore and Birr, which are guided by separate planning authorities and statutory development plans. Notwithstanding that, plans produced by the aforementioned town councils must be consistent with the overall context, policies and objectives of OCDP.

3.4.1.1 Population / Settlement Policy

In February 2012 an amendment to OCDP allowed for the inclusion of a Core Strategy, a requirement under the Planning and Development (Amendment) Act 2010. This variation brought growth projections in line with the more up-to-date projections of the *Midland's Regional Planning Guidelines 2010- 2022* (see Table 3.1).

Population				Projected Growth			
Area	2006	2011	% Change 2006-2011	2016	2020	% Change 2011-2016	% Change 2011-2016
Tullamore Linked Gateway	12,927	14,409	11.5	20,207	24,575	40.2	70.6
County Offaly	70,868	76,687	8.2	82,114	86,771	7.1	13

Table 3.1 - *Projected and Actual Population Growth 2006-2020*

OCDP reinforces Tullamore's role as the key driver of growth in the county placing it in 'Tier 1' of the settlement hierarchy above 'Large Towns', 'Medium Towns', 'Local Service Towns', 'Villages', 'Sraids' and 'Open Countryside'. The plan states, *"Tullamore will continue as the largest settlement within Offaly, providing the most employment and sustaining a large portion of the population of the county and the Council's strategy is to ensure this."* A comparison of the projected growth figures in Table 3.1 from 2011-2020 for the county and Tullamore clearly demonstrates the objective to strategically prioritise the development of the latter.

3.4.1.2 Employment

OCDP acknowledges the need to provide a strong employment base and alternatives to long distance commuting. While advocating the need for balanced development in the county, it also recognises the importance of Tullamore as part of the Midland's Linked Gateway:

- P06-04 - It is Council policy to strengthen and channel development into Tullamore, the primary driver for economic development within the county, a role identified as part of the Midland's Linked Gateway as set out in the NSS and the MRPG.

OCDP states that priority areas for investment may address the following: infrastructure, enterprise and employment, agriculture and food, tourism, culture and sport and social inclusion.

Policy 06-01 states that the Council seeks to "diversify the local economy", while objective 06-01 further states,

> *"It is an objective of the Council to facilitate the development of the Midland's Linked Gateway [...] This will include measures to seek to reserve lands within Tullamore which will make provisions for potential national and regionally significant activities and to attract specialist large-scale enterprise development within the county."*

3.4.1.3 Seveso

Policy 12-11 requires applicants for new development which may pose a major accident risk to demonstrate that the following considerations are taken into account:

- Prevention of major accidents involving dangerous substances;
- Public health and safeguarding of public health; and
- Protection of the environment.

3.4.1.4 Tourism

OCDP recognises the important contribution of tourism development to the local economy. Offaly LEADER, in conjunction with the Inter-Agency Group of Offaly County Development Board formulated *A Tourism Strategy for County Offaly* in 2006. This identified eight tourist 'products' for the county including Tullamore and Birr Towns.

OCDP states that Offaly County Council will seek to strengthen the tourism role of Tullamore and stipulates that,

> *"It is Council policy to encourage tourism related developments inside existing settlements where the scale and size of the proposed development is appropriate and in keeping with the character of the settlement" [P17-10].*

3.4.1.5 Agriculture and Food

OCDP acknowledges that the agri-food sector *"continues to be one of the most important and dynamic indigenous manufacturing elements in the Irish economy"* and recognises its future potential. Accordingly, the Council endeavours to support the sector and facilitate its development where appropriate.

3.4.1.6 Visual Amenity/ Landscape

OCDP sets outs policies and objectives for the protection and enhancement of the county's landscape. Offaly's landscape is characterised according to its sensitivity to development, whether low, moderate or high. A forested section of the site is designated 'moderately sensitive' however the majority remains of 'low sensitivity'.

The impact of the proposed development on the surrounding landscape is discussed in detail in Chapter 5, Landscape and Visual Impact.

3.4.2 Tullamore Town and Environs Development Plan 2010-2016

Local planning policy is contained in the *Tullamore Town and Environs Development Plan 2010-2016* (TTEDP), the main aim of which is,

> *"To set out a framework for the physical development of the Linked Gateway town of Tullamore and its Environs, so that growth may take place in a sensitive, co-ordinated and orderly manner, while at the same time conserving the town's character and intrinsic heritage value"* .

3.4.2.1 Midland's Linked Gateway Town

The TTEDP places particular emphasis on the importance of co-operation between local authorities in Offaly and Westmeath in building on the success of the Midland's Linked Gateway. The authorities recognise that generating self-sustaining growth is one of the key challenges facing the region and propose the following measures accordingly:

- Build up a strong critical mass of population;
- Assist the move towards a highly productive and diversified economic base with strong representation from the value added sectors; and
- Improve the physical infrastructure of the towns in the Linked Gateway in preparation for their accelerated development.

3.4.2.2 Strategic Goals

On a local level, the TTEDP outlines strategic objectives for Tullamore in the context of its status as a Tier 1 settlement within the county and as a driver for development within the region. Relevant goals in terms of growth, zoning, employment and tourism are as follows:

- To strengthen the ability of Tullamore to facilitate the sustainable development of the town and environs area to meet economic, social and demographic growth requirements of Tullamore Town in accordance with the provisions of the NSS and MRPGs by the provision of adequate zoned land in an orderly manner.
- To ensure that sufficient and suitably located land is allocated to satisfy the requirements of a multitude of functions in the town which in turn, would be attractive and flexible to accommodate the requirements of a wide range of operators ranging from local level to international level.
- To encourage the development of Tullamore in a sequential manner and in accordance with the planning framework identified in the plan. This would provide for the sequential expansion of the town from central areas into the environs areas in a coherent manner which will facilitate complete integration between the town and environs (see Tullamore Southern Environs paragraph below).
- To maintain and further enhance the role of Tullamore as an important centre of socioeconomic activity in the Midland Linked Gateway and as the main administrative centre of County Offaly.
- To facilitate the provision of sufficient and adequate employment opportunities to cater for the needs of the population of the town and its hinterland and to attract new population.
- To facilitate the development and promotion of Tullamore as a tourism destination and base.

The Employment, Economy & Enterprise Chapter of the TTEDP identifies the following aim:

> *"To build on Tullamore's current economic strengths, recognise its challenges and strive to improve same, therefore ensuring that its people will have access to a range of quality employment opportunities in the town's catchment area, "bringing people and jobs closer together".*

The chapter also details a range of policies and objectives to achieve this aim, to most relevant to this proposal are:

TTEP 06-03: There is a positive presumption to employment creation and it is the Council's policy to distribute and channel employment sources into suitably zoned and serviced lands already identified in Tullamore for industrial, manufacturing, commercial, technological and service needs of the town and the Midland's Region over the plan period within the bounds of proper planning and sustainable development.

TTEP 06-03: To facilitate the appropriate use of Council owned lands in Clonminch for a high quality business park and / or for industrial development provided that such proposals demonstrate:

- Compatibility with existing development in the area,
- A quality of design and layout suitable for location in Business / Employment zoned lands rather than in industrial zoned lands.

3.4.2.3 Tullamore Southern Environs

The site lies in Tullamore Southern Environs, one of four masterplan areas in the TTEDP and, at 322 hectares, it is the largest of the masterplan areas. It is bounded by the Tullamore Bypass to the south.

Tullamore Southern Environs is divided into four nodes: Charleville Node; Spollanstown Node; Eastern Node; and Enterprise Node. The subject site is part of the latter (see Figure 3.3).

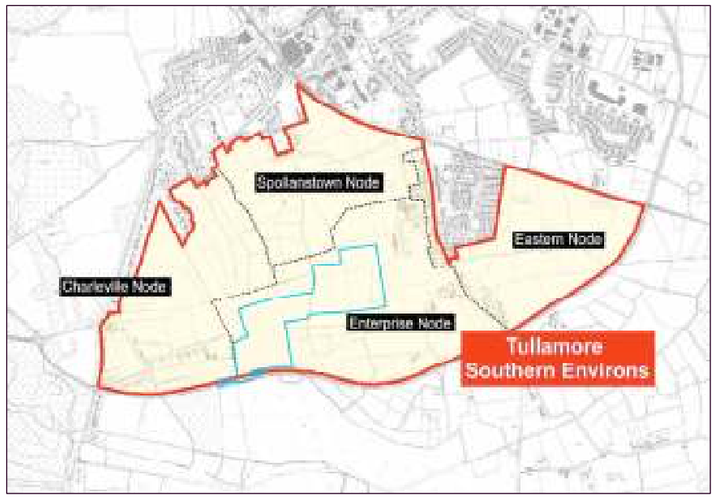


Figure 3.3 *– Tullamore Southern Environs Nodes*

The TTEDP sets out a phased programme of development for the four masterplan areas. Four sections of Tullamore Southern Environs are earmarked for development in Phase 1: Spollanstown Node; Enterprise Node; and the northern portions of the Eastern Node and Charleville Node (see Figure 3.4). The plan prioritises the development of the Enterprise Node (and hence the subject site) in stating,

> *"[Given] the promotion of employment generation it is foreseen that the Enterprise Node would be developed at any stage, in an incremental manner and as the need for such land is required".*

Figure 3.4 *– Phase 1 of Tullamore Southern Environs Masterplan Area which includes the subject site.*

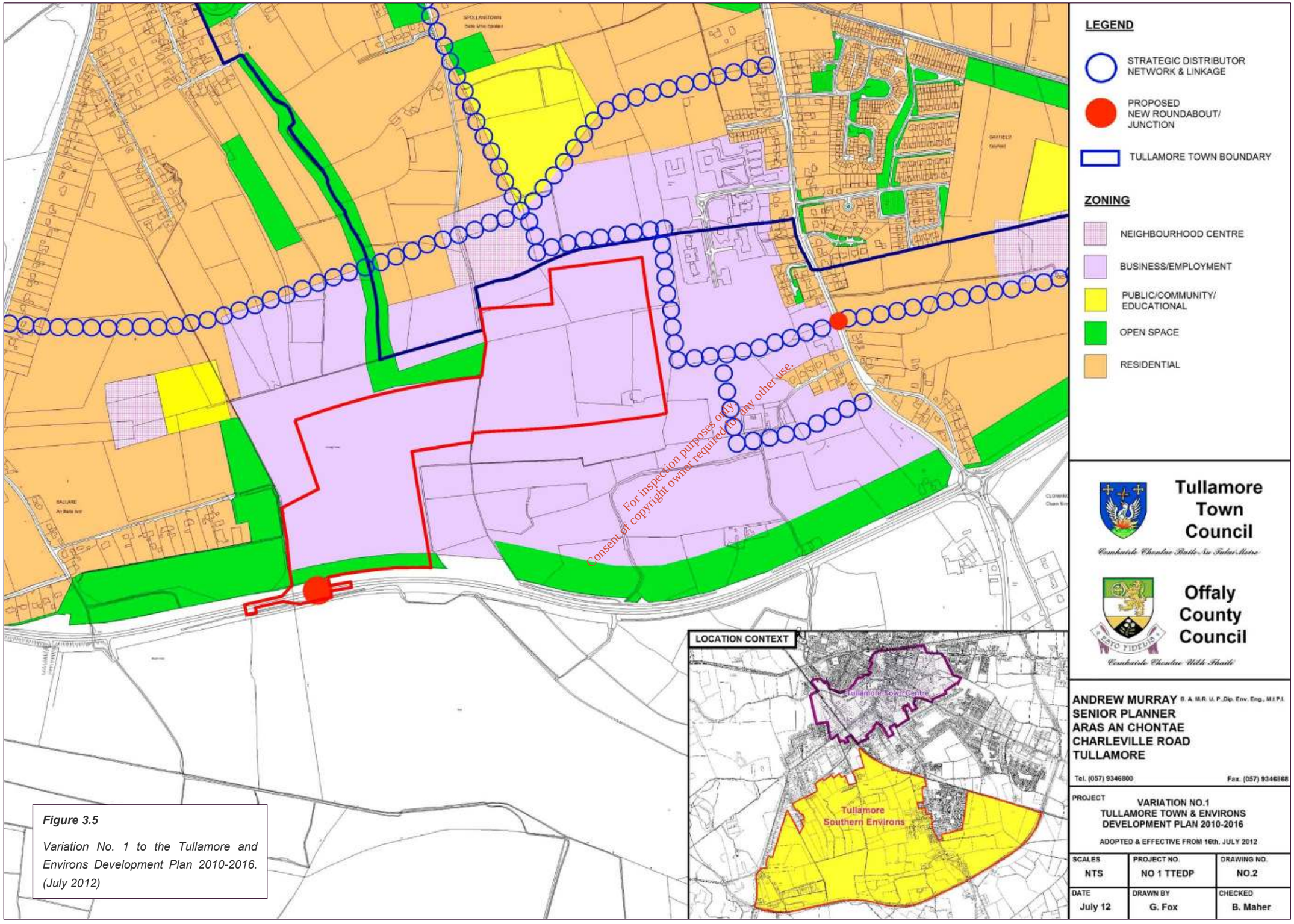


Figure 3.5

Variation No. 1 to the Tullamore and Environs Development Plan 2010-2016. (July 2012)

3.4.2.4 Zoning Objectives

The subject site is zoned Business and Employment, with the provision of a landscape buffer along the route of the bypass (see Figure 3.5). The zoning map indicates the provision of a roundabout access from the bypass to the west of the business / employment zoning. Objective ET4 notes that:

> *"Development on lands adjoining the landscaped buffer should address and be responsive to it by means of building design, orientation, public realm design and treatment and the use of other appropriate boundary treatments."*

Variation No.1 of the TTEDP, July 2012, amended the written statement and zoning map to include general industrial uses under the Business and Employment zoning objective, which allowed for such a use in the Southern Environs' masterplan area

Section 15.9 of the TTEDP features a zoning matrix which gives a general guide to the Council's policy toward development uses within land use zones. This matrix indicates that proposals for general industrial use within Business / Employment zoned areas are *"open for consideration"*

TTEO 06-06 sets an objective:

> *To facilitate the appropriate use of Council owned lands in Clonminch for a high quality business park and / or for industrial development provided that such proposals demonstrate:*
>
> - *Compatibility with existing development in the area,*
> - *A quality of design and layout suitable for location in Business / Employment zoned lands rather than in industrial zoned lands,*
> - *Significant investment in design, treatment of public realm and landscaping,*
> - *Consideration of the appropriate future development of adjacent areas as per their land use zonings and measures to prevent significant negative effects on adjacent land use zonings (i.e. mitigation measures) on residential lands adjacent to Business/ Employment lands."*

The future development of the Enterprise Node is to be governed by a masterplan. A separate report accompanies the planning application detailing how the proposed distillery development conforms to all the relevant objectives of the TTEDP and any future masterplan for the node. Potential impacts of the development on the planning objectives for adjacent lands are considered in Chapter 14, Human Environment.

In terms of policy on the Major Accidents Directive (known as Seveso II Directive) the Councils have committed to consult with the HSA to ensure that they are satisfied with the proposed development and that:

> *"In the case of an upper tier (Seveso) establishment being developed, the Councils will take an active role in the development and coordination of an external emergency plan for the site."*

Issues related to Seveso II regulations are discussed further in Chapter 13, Material Assets and Chapter 14, Human Environment.

3.4.3 IPPC Licence

The purpose of an IPPC licence is to prevent or reduce emissions to air, water and land, reduce waste and use resources efficiently. The First Schedule of the Environmental Protection Agency Acts 1992-2007 lists the activities which require an Integrated Pollution Prevention Control Licence. Food and Drink production is referred to Under Class 7, whereby an IPPC licence is required for:

> *"Distilling in installations where the production capacity exceeds the equivalent of 1,500 tonnes per year measured as pure alcohol..."*

The proposed development will produce 1,450 tonnes of pure alcohol in phase 1. When fully operational the development will produce 9,408 tonnes of pure alcohol. The projected output of Phase 1 will therefore require an IPPC licence and accordingly an application to the Environmental Protection Agency (EPA) will be made. The EPA is a statutory consultee in respect of the proposed development and will be consulted during the planning application process and a copy of the EIS must be submitted to the EPA with the IPPC application.

3.5 Conclusion

The proposed development is classified as an industrial development within the food and beverage industry, with associated tourism related development.

The national and regional economic policy context is strongly supportive of the expansion of both the food and beverage industry and the tourism industry. In particular the food and beverage industry is seen as a sector that can contribute significantly to Ireland's economic recovery.

Irish whiskey in itself is recognised as a key driver of growth, likely to continue to gain market share in the medium term. The Department of Agriculture, Food and the Marine has set a specific target in its *Milestones for Success (2013-2015)* to build greater capacity in product development in the drinks industry. At present there are only three larger distilleries located in Ireland: Bushmills in Co. Antrim; Cooley Distillery in Co Louth and Midleton Distillery in Co. Cork. The proposed distillery development at Tullamore would make a considerable contribution to the objective of building capacity in the Irish whiskey industry.

The *Action Plan for Jobs 2012* aims to increase employment in food and beverage industries by 7,500 by 2016, while also expanding indirect employment impact. Again, the proposed distillery development will support this objective through direct and indirect employment, see Chapter 14, Human Environment for further discussion of economic impacts.

In terms of planning policy, the *National Spatial Strategy* and *Midlands Regional Planning Guidelines* (RPGs) support the growth of employment related industries within the linked gateway towns of Athlone, Tullamore and Mullingar. The RPGs recognise the importance of the agri-food industry noting the need to diversity its markets and increase productivity with specific objectives aimed at supporting the growth of the sector through sustainable development on suitable lands.

At a local level, Offaly County Council's policy is to support the continued development of Tullamore as the largest settlement within Offaly, providing the most employment and sustaining a large portion of the population. Strategic Support for employment growth is highlighted further in the TTEDP, which aims to build on current economic strengths of Tullamore. In the *Offaly County Development Plan* there is a specific objective to seek to reserve lands within Tullamore which will make provision for potential national and regionally significant activities and to attract specialist large-scale enterprise development within the county. The proposed distillery at Tullamore is a large scale enterprise of international significance and therefore meets and surpasses the Council's objectives.

The proposal is also consistent with the Council's objectives to encourage tourism related development and promote the agri-food sector.

Site specific planning policy is set out within the *Tullamore and Environs Local Area Plan.* The planning policy is supportive of the proposed distillery development within the site, subject to appropriate safeguards in terms of design and landscaping and its relationship to existing and potential future development in adjacent lands. Design and landscape issues have been carefully considered in the development of the proposed scheme and are discussed in detail in Chapter 2, Project Description, and Chapter 5, Landscape and Visual Impact.

The proposed development will help to achieve the strategic goals established for Tullamore to promote strong and sustainable economic growth; it is located on appropriately zoned lands and is in line with phasing proposals for the development of Tullamore town. Significantly the proposal will facilitate the objective of developing employment and provide a strong brand and attraction for promoting Tullamore as a tourism destination and base in the Midlands.

4 Alternatives Considered

4.1 Introduction

William Grant & Sons purchased the Tullamore Dew Brand in 2010. As previously noted the spirit is currently produced under contract at a number of Irish distilleries before being blended and bottled in William Grant & Sons' facility at Clonmel. Since investing in the brand it has been the intention of William Grant & Sons to establish its own distillery within Ireland to consolidate and develop existing market growth in Irish whiskey and specifically the Tullamore Dew brand.

Tullamore Dew originated and was first distilled in the town of Tullamore. It is a firm belief of William Grant & Sons that great international brands need a strong provenance, to provide a firm basis for a marketing strategy to grow the brand in global markets. Tullamore Dew carries the name of the town where it originated and such is the importance of having the distillery based in Tullamore it was considered a key factor in establishing credibility of the brand worldwide. Nonetheless, both from a sustainable development and commercial basis it was recognised that alternative sites elsewhere in Ireland may offer other advantages which, in exceptional circumstances, could outweigh the significant marketing benefit of locating the production facility within Tullamore.

The company undertook an extensive and detailed search for potential sites within the east and south of Ireland. The site selection process was based on assessing potential sites against key criteria. In the first instance it was considered important from a logistical perspective that the chosen sites would be within reasonable distance from the existing bottling plant facility at Clonmel and ideally also close to international connections to the companies headquarters in Scotland and export markets. It was also considered that it would be beneficial to have a location relatively close to the Tullamore Dew Heritage Centre to support marketing campaigns for the product. As a consequence an initial review was carried out on lands available within the Greater Dublin area. The search area was extended to include sites in the south and south west, as it was considered that this area was relatively close to Clonmel, had airline connections through Cork airport to Scotland and international export markets and also had good potential to develop a strong tourism link to the proposed facility.

Within Tullamore a clear candidate site was identified at Clonminch. This site was appraised against the other shortlisted sites and was ultimately identified as the preferred site.

After Clonminch, Tullamore was identified as the preferred site, a number of alternative layouts and designs were considered to identify the most appropriate use of the site to accommodate the proposed development.

There alternatives are discussed in chapter 2, Project Description, Section B – Design Statement.

Figure 4.1
Site Selection Search

4.2 Methodology & Site Selection Criteria

The methodology used to identify potential sites was to review statutory planning policy documents (County Development Plans, Local Area Plans and Town Development Plans) and to consult with key local authority and development agency personnel.

Based on preliminary discussions with planning officials and assessment of planning policy documents, it was considered that there are sufficient appropriately zoned lands available to provide a range of viable site options. It would be difficult to progress a proposal on unzoned lands in the current context, where there is a good supply of zoned lands. Accordingly, speculative or unzoned sites were not assessed.

The initial screening process was based on identifying appropriately zoned lands of reasonable size. Appropriate zoning was considered to be industrial, commercial or employment uses.

Sites with major constraints or planning risks were immediately eliminated and only those considered to have potential were assessed in more detail.

Table 4.1 provides a list of the sites reviewed, but eliminated on one, or more, of the following grounds:

- Major infrastructure constraints, in terms of lack of access to water, sewage or the transport network;
- Development already on, or permitted on the site, which would limited the development potential of the site;
- Planning objectives or planning history which provided a risk to the potential of permission being granted for the development (for example specific zoning objectives for the development of a business or science park, or environmental sensitivities);
- Complex ownership patterns, likely to complicate acquisition of the site;
- Conflicting or competing uses in the locality; and
- Size of the site was below the desired threshold.

In all 57 potential sites were reviewed, 41 eliminated and the remaining 16 considered in more detail.

During the initial screening process 10 areas in the Greater Dublin area and 6 areas in the south area of Ireland were considered to offer potential to accommodate the strategic production and distillation facility, these are as listed and indicated on Figure 4.2 (Greater Dublin Area) and Figure 4.3 (South Area).

4.2.1 Greater Dublin Area (10 sites):

- Grange Castle (three sites; two in private ownership and one IDA owned) - South County Dublin Council
- Swords (Turvey) - Fingal County Council
- Mulhuddart (Damastown) - Fingal County Council
- Drogheda Business Park - Meath County Council
- Dundalk (Mullagharlin) - Louth County Council
- Arklow - Wicklow County Council
- Ardee (two sites) - Louth County Council

The sites are identified on Figure 4.2.

4.2.2 South Area (6 sites):

- Little Island 1 (stand alone zoning) - Cork County Council
- Little Island 2 (former golf course) - Cork County Council
- Mitchelstown - Cork County Council;
- Belview, Waterford, Kilkenny County Council
- Askeaton, Limerick County Council
- Ballingarrane, Clonmel, South Tipperary County Council

The sites are identified on Figure 4.3

Each of these sites was assessed against the following criteria:

- The size of the site must be approximately 24 hectares (60 acres);
- The site should be close to a town of a reasonable size (within approximately 24km);
- Distance from related facilities at Clonmel and Tullamore;
- In the Dublin area the site should be within ca.80km north/ south and ca.40km east of the city;
- Site should be easily accessible and serviceable;
- Ideally the site should be in a coastal location, to give the option of a marine outfall;
- Minimise the cost of land purchase and development contributions;
- Supportive planning status;
- Land ownership pattern which would avoid complex site acquisition issues.

Following a review of each of the individual sites, the sites were put into a matrix which summarised the key assessment criteria and identified the main pros and cons of each. This process allowed an overview of all the potential sites. Based on a qualitative assessment, the most favourable sites were then appraised against the site identified at Clonminch, Tullamore on the basis of a more structured scoring matrix.

Table 4.1 - Sites eliminated following Initial Review

	County	Site	Approximate Acres
1	Cork	Charleville	59
2	Cork	Midleton	74
3	Fingal	Balbriggan	74
4	Fingal	Donabate	74
5	Fingal	Swords	67
6	Fingal	Swords	49
7	Fingal	Swords	131
8	Fingal	Swords	86
9	Fingal	Cloghran	94
10	Fingal	Santry	74
11	Fingal	Santry	148
12	Fingal	Corduff	247
13	Kerry	Tarbet	450
14	Kildare	Naas Environs	148
15	Kildare	Naas Environs	124
16	Kildare	Naas Environs	99
17	Kildare	Naas Environs	49
18	Kildare	Celbridge / Leixlip	136
19	Kildare	Leixlip	124
20	Louth	Ardee	148
21	Louth	Dunleer	49
22	Louth	Drogheda	148
23	Louth	Drogheda	49
24	Louth	Drogheda	148
25	Louth	Dunboyne	124
26	Meath	Dunboyne	124
27	Meath	Dunboyne	82
28	Meath	Dunboyne	57
29	Meath	Ashbourne	198
30	Meath	S Envs of Drogheda	119
31	Meath	S Envs of Drogheda	57
32	Meath	Trim	141
33	Meath	Navan	86
34	Meath	Navan	49
35	Waterford	Dungarvan	101
36	Waterford	Kilmeaden	64
37	Wexford	Enniscourthy	62
38	Wexford	Rosslare Harbour	99
39	Wicklow	Bray	62
40	Wicklow	Arklow	173
41	Wicklow	Greystones	69

Figure 4.2 - *Greater Dublin Area Sites*

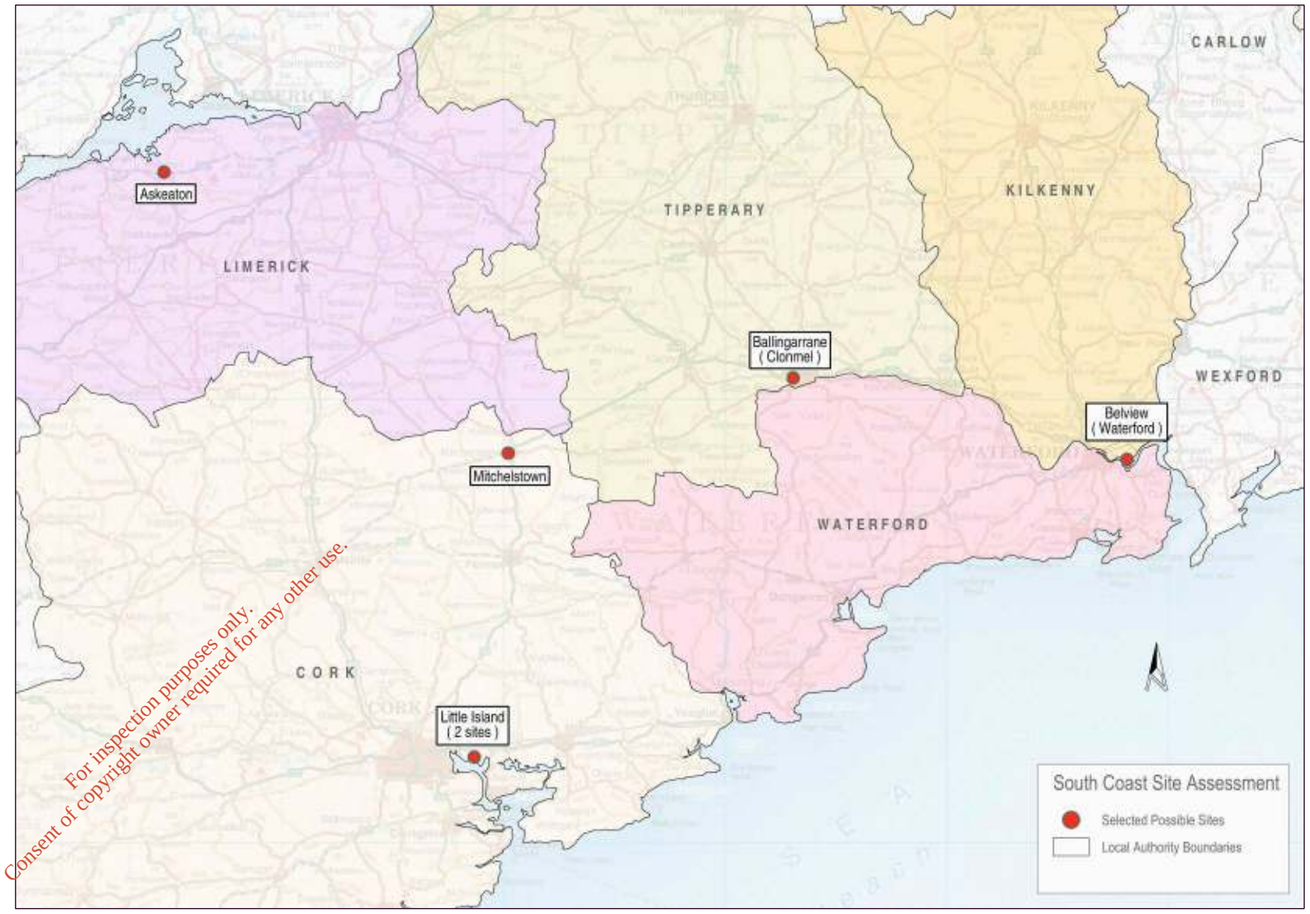


Figure 4.3 - *South / South West Sites*

4.3 Site 1 – Clonminch, Tullamore Town

In terms of identifying potential sites within Tullamore town and its environs an appraisal of the zoned land within the area was undertaken, based on Tullamore Town and Environs Development Plan 2010 – 2016. Discussions were also held with Offaly County Council's Planning Department to determine its view of the most suitable site.

As a midland's location, the option of a marine outfall was precluded and therefore it was important that any site could be easily serviceable, with capacity to accommodate effluent disposal from the proposed facility.

Appraisal of the development plan and consultation with the County Council identified a clear candidate site at Clonminch, within the southern environs of the town. The preliminary characteristics of the site were noted as:

- A potential development area in the range of 24-40 hectares (60-100 acres) to facilitate a range of layout options;
- Site within very close proximity to the town and associated Tullamore Dew Heritage Centre;
- High profile site, given proximity to the new by-pass but with limited existing sensitive development in the immediate vicinity;
- Excellent access could potentially be provided from the Tullamore by-pass;
- The site could be relatively easily serviced by Offaly County Council and critically sufficient water could be provided to facilitate projected production demand;
- The lands were in the ownership of Offaly County Council and Coillte, therefore site acquisition likely to be reasonably straightforward;
- There was no adjacent development which would limit the development potential of the site.
- The site had no identified ecological or heritage constraints;
- The site could be located starting at the western edge of the Enterprise Node in a self contained location – without impacting on the potential to deliver other planning policy objectives for the adjacent lands.

There were some inconsistencies between the proposed development and the detailed zoning objectives for the site in terms of provision of open space and access corridors. Also the business and employment zoning did not allow for consideration of 'general industry'. Nonetheless, it was noted that slight reconfiguration of the zoning objective through a variation procedure could ensure that the zoning objectives were achieved, while at the same time accommodating the proposed development. As the proposed development was consistent with the broad strategic objectives for the land and the planning authority was supportive in principle, it was decided to proceed with an application if a variation of the development plan was approved.

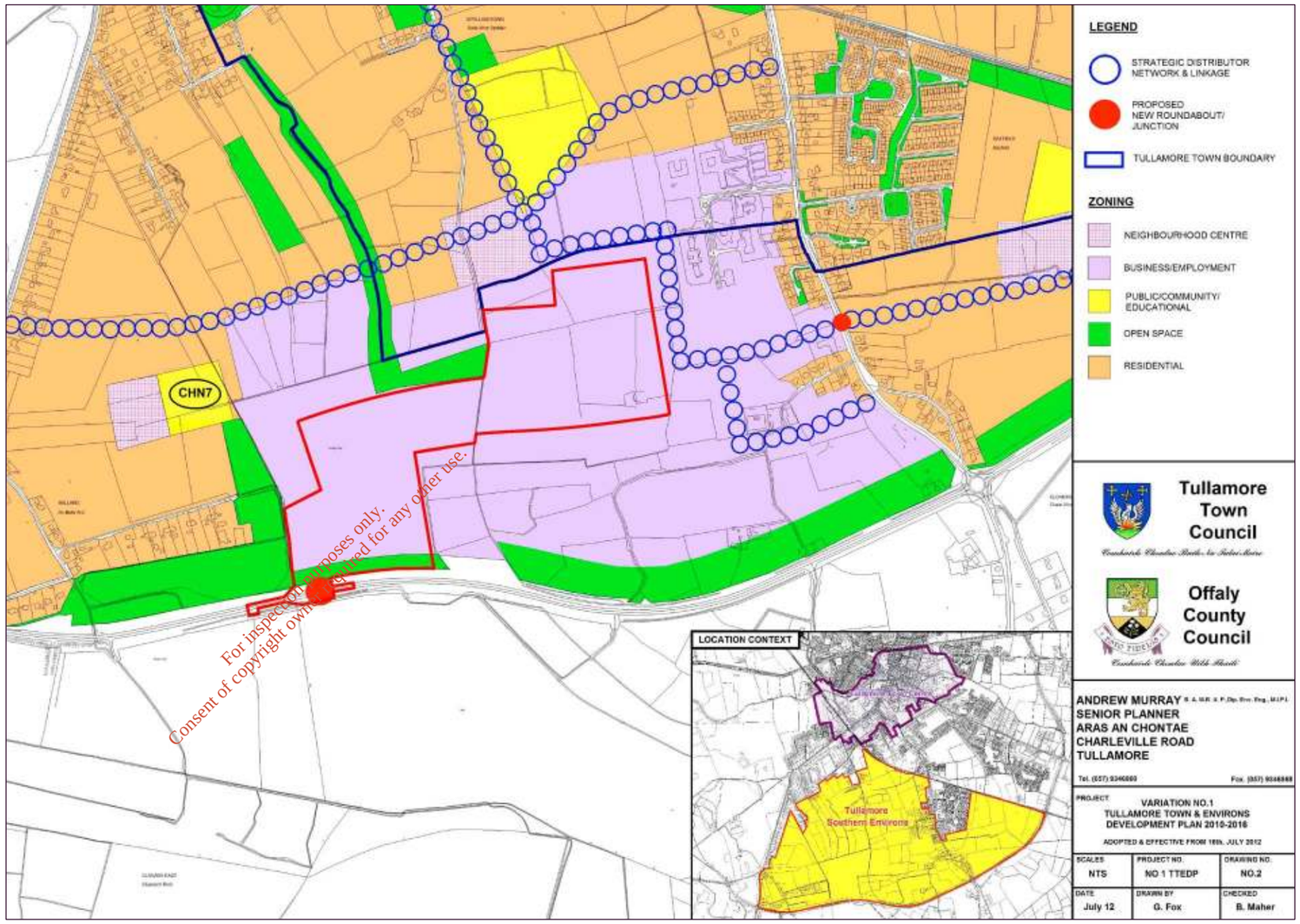


Figure 4.4 *- Tullamore Town and Environs Development Plan 2010-2016.*

4.4 Site 2 - Grange Castle

4.4.1 Location & Context

Grange Castle is situated 14 kilometres to the west of Dublin City Centre and comprises a mix of uses including Baldonnel Aerodrome, a golf course and a business park. The area already has a concentration of large multi-nationals [including food/ drinks producers] such as Microsoft, Wyeth Medica Ireland, ARYZTA [formerly IAWS] and Takeda.

There are three potential sites available within the area which could be considered individually or as a combination depending on land requirements and availability etc. Two of the available landholdings are situated to the south of the existing Grange Castle Business Park and consist of 39 hectares (98 acres) of lands jointly owned by the IDA / South Dublin County Council **(Option 1)** and two privately owned landholdings including lands referred to as "Profile Park" measuring ca. 49ha (123 acres) **(Option 2)**. A further 50 acre site is available immediately to the west of the IDA lands **(Option 3).** Access to the area will be from the existing road network but there is a longer term objective to access the area off the new Nangor Road, the final stage of which has been approved by South Dublin County Council and will link directly with the Outer Ring Road. The eastern part of the overall lands [i.e. the "Profile Park Lands"] is already serviced and the remainder of the lands can be readily serviced through the Grange Castle Business Park.

Figure 4.5 *- Aerial view of Grange Castle site*

4.4.2 Planning Policy & Zoning Provision

All sites are currently zoned for enterprise use in the *South Dublin County Development Plan 2010-2016*, where it is and objective: *"To facilitate opportunities for Manufacturing, Research and Development facilities, light industry and employment and enterprise related uses in industrial areas and business parks".*

All three sites are situated within the "inner zone limit" of Baldonnel Airport, where building heights are restricted to 20m above ground level. Permission was granted on the "Profile" site for a business park and it was intended to provide approx. 250,000 m² on completion, comprising business, employment and retail uses within these lands alone. However due to the downturn in the economy, only the initial infrastructure works were commenced and the development has not progressed beyond this.

4.4.3 Issues

Overall the Grange Castle area has significant advantages, particularly in relation to infrastructure and existing planning/ zoning provisions. The main issues relating to this site include permitted uses; proximity to Baldonnel Airport and land/ infrastructure costs. A move away from the permitted/ intended business, employment and retail uses could require a change in strategy for the area and could have implications in relation to land costs. The proximity of a Seveso site to Baldonnel Airport may also raise security/ safety issues which should be investigated in greater detail.

4.4.4 Indicative Costs

The General Development Contributions Scheme for South Dublin County Council is €111 per m² for Industrial/Commercial classes of development. Developments for which either public piped sewerage services or water services are unavailable will be exempted from the contribution amount attributable to the water and drainage class of public infrastructure and facilities (€4.04 per m²);

Open storage/ hard surface commercial space development, other than car parking, shall be liable for development contribution at one third of the total commercial rate. Enterprise zoned land close to Dublin City is likely to have a high land purchase cost.

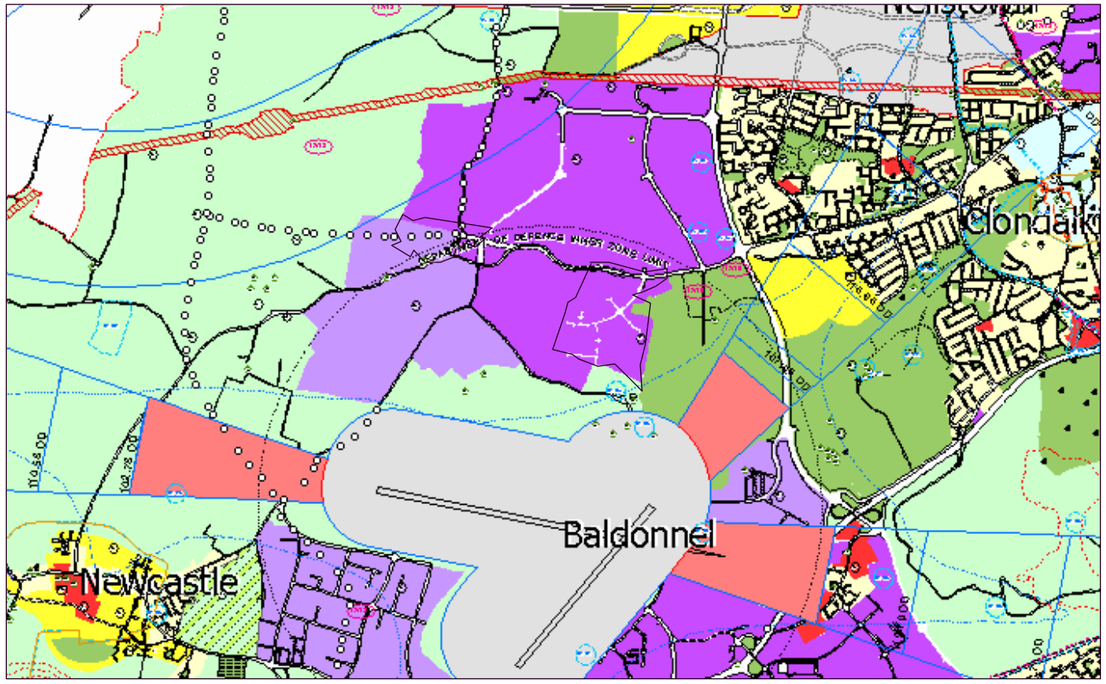


Figure 4.6 *- Extract from South Dublin County Council Development Plan 2010-2016*

4.5 Site 3 - Swords (Turvey – Donabate)

4.5.1 Location & Context

This site which measures approximately 29ha (74 acres), is located to the west of the town of Donabate (population: 5,499) in County Dublin. It falls within the jurisdiction of Fingal County Council. The site is approximately 4km from Swords (which has a rapidly growing population of 33,998, and is the third largest town in Ireland), 8km from Dublin Airport and 16km from Dublin City Centre. The site is adjacent to the N1 national road and less than 0.5km from the M1 Dublin – Belfast motorway.

4.5.2 Planning Policy & Zoning Provision

The lands are zoned for enterprise and employment use in the *Fingal County Development Plan 2011 – 2017* with the following objective: "Provide opportunities for general enterprise and employment".

The lands to the north, including a portion of the subject site are identified as being at risk of flooding.

4.5.3 Issues

There are issues in relation to the extent and physical capacity of the site to facilitate a large industrial/ warehousing use, particularly as there are likely to be parts of the site that may be undevelopable due to flood risk. Furthermore the site does not have a high profile and lacks frontage onto a major road.

4.5.4 Indicative Costs

The General Development Contributions Scheme for Fingal Council is €111 per m² for Industrial/ Commercial classes of development. Developments for which public piped sewerage services are unavailable will be exempted from half of the contribution amount attributable to the Water & Drainage class of public infrastructure and facilities. Where no piped water service is available the appropriate contribution will not apply (€38.74 per m²).

Given the relatively close proximity to Dublin and the airport, land purchase costs are likely to be medium/high.

Figure 4.7 *- Aerial view of Turvey – Donabate site*

Figure 4.8 *- Extract from Fingal County Development Plan 2011-2017*

4.6 Site 4 - Mulhuddart – Damastown

4.6.1 Location & Context

This site which measures approximately 19ha (49 acres) is located 1km to the north of Mulhuddart, which is an outer suburb of Dublin City within the administrative area of Fingal County Council. It is 3.5km from Blanchardstown [population of over 90,000] and situated approximately 15 km from the city centre via the N3 national primary route and 5 km from the M50, the Dublin City orbital motorway

4.6.2 Planning Policy & Zoning Provision

Based on the provisions of the current development plan for the area, these lands are currently unzoned. However based on our discussions with officials in Fingal County Council, the planning authority is currently in the process of zoning the site for employment uses and it is expected that this process will be completed in the next few weeks.

4.6.3 Issues

Apart from the zoning issue, which we assume will be finalised in the next few weeks, the main issue with the site relates to its capacity to accommodate a large industrial facility given its configuration and relatively small area. There are also a number of incompatible uses within close proximity to the site including the residential areas to the east and north of the site.

4.6.4 Indicative Costs

Based on our discussions with Fingal County Council it is suggested that the guide price per acre for these lands would be in the region of €150,000, but this is negotiable based on such issues as employment generation, infrastructure costs and other considerations.

The General Development Contributions Scheme for Fingal Council is €111 per m² for Industrial/ Commercial classes of development. Developments for which public piped sewerage services are unavailable will be exempted from half of the contribution amount attributable to the Water & Drainage class of public infrastructure and facilities. Where no piped water service is available the appropriate contribution will not apply (€38.74 per m²).

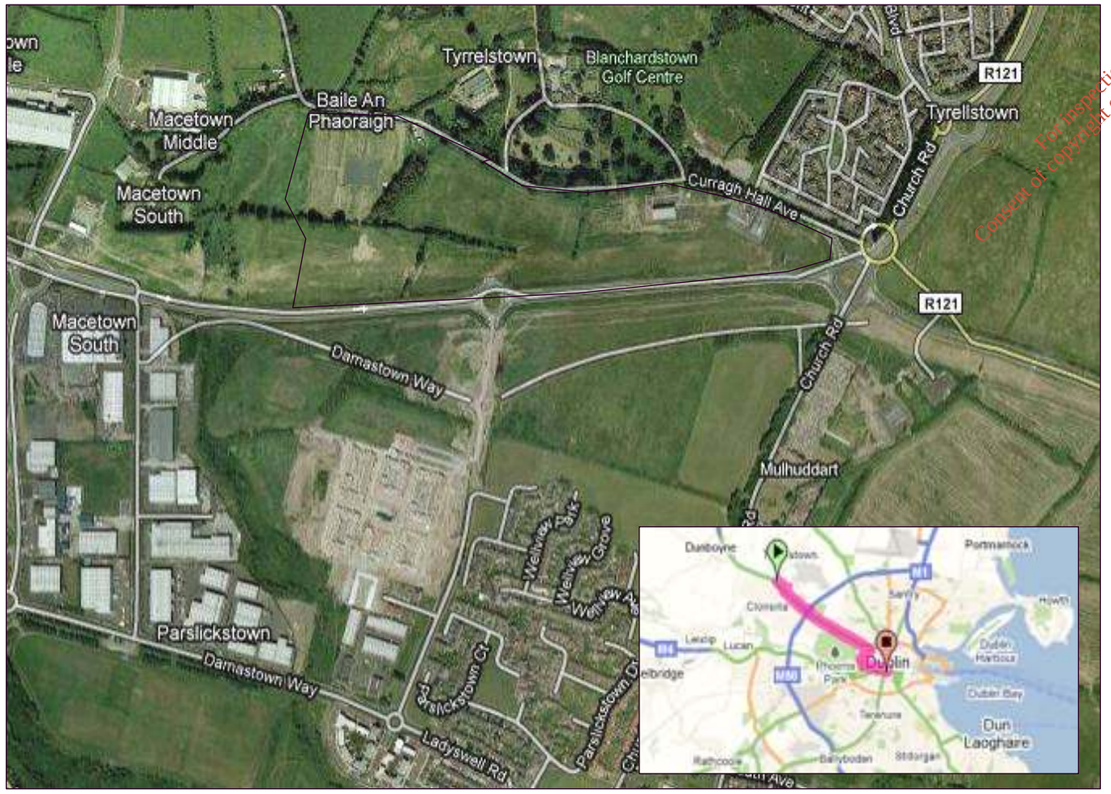


Figure 4.9 *- Aerial View of Mulhuddart – Damastown site.*

Figure 4.10 *- Extract from Fingal County Development Plan 2011 – 2017*

4.7 Site 5 - Drogheda

4.7.1 Location & Context

This 64 acre site is owned by the IDA and forms part of Drogheda Business Park. It is located in the southern environs of Drogheda, which has a population of 35,090. Drogheda is on the border of two counties: Louth and Meath; this site falls within County Meath. It is approximately 30km south of the border with Northern Ireland and 56km north of Dublin City. The site is adjacent to the M1 Motorway linking Dublin and Belfast. The site has already been partially serviced and developed by the IDA. To date the park has been mainly designed to include advanced office facilities and advanced technology buildings of high standard to suit both manufacturing and internationally traded services sectors.

4.7.2 Planning Policy & Zoning Provision

The site is situated in the environs of the town and adjoining the boundary of Drogheda Borough Council but within the administrative area of Meath County Council. The lands are zoned for employment uses in the *Local Area Plan for the Southern Environs of Drogheda 2009-2015.*

4.7.3 Issues

Despite some development within the Business Park, there are ample undeveloped areas available for future development. The main issues which needed to be explored further in relation to these lands included infrastructure/ land costs and proximity to residential and other potentially incompatible uses, which could restrict the use/ development potential of the site. However it was decided that the site did not offer sufficient potential to research further.

4.7.4 Indicative Costs

Based on our discussions with the IDA it was suggested that the guide price per acre for the IDA Drogheda Business & Technology Park is €137,596.

The General Development Contributions Scheme for Meath County Council is €65.70 per m² for Retail/ Retail Warehousing/ Commercial Property (incl. General Office) and €23.50 per m² for Industrial Manufacturing/ Warehousing/ Port Warehousing Property and €18.75 per m² for open storage/ hard surface commercial.

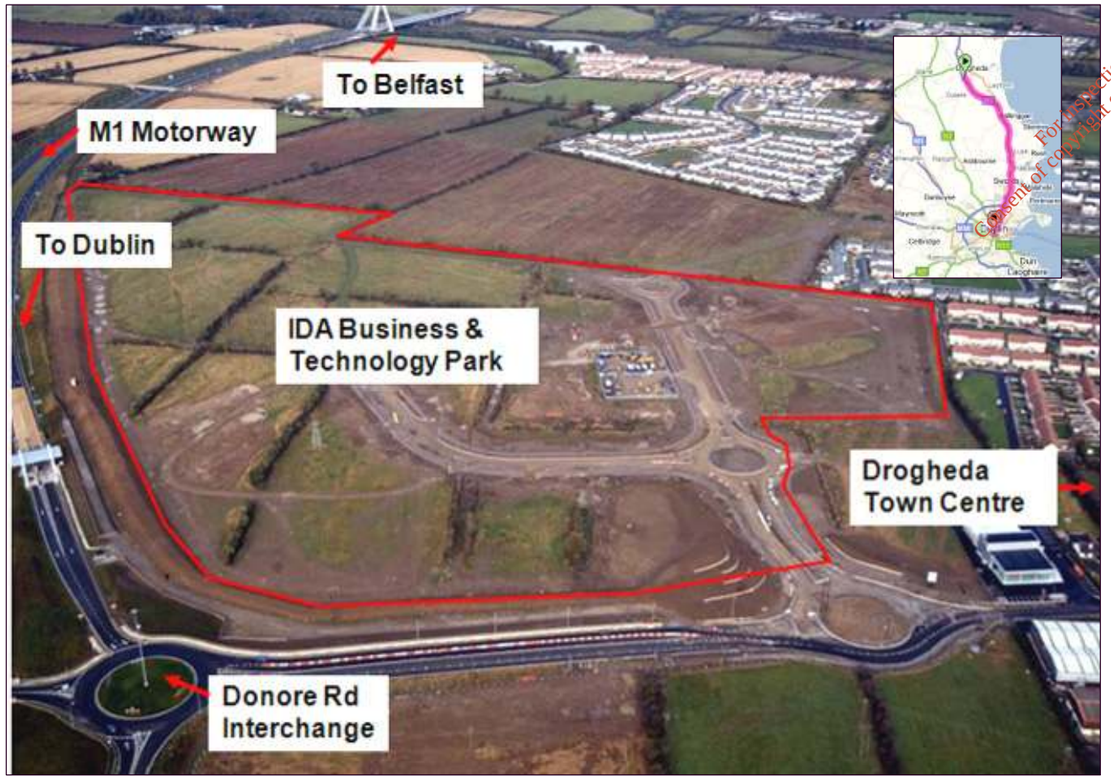


Figure 4.11 *- Aerial view of Drogheda Site*

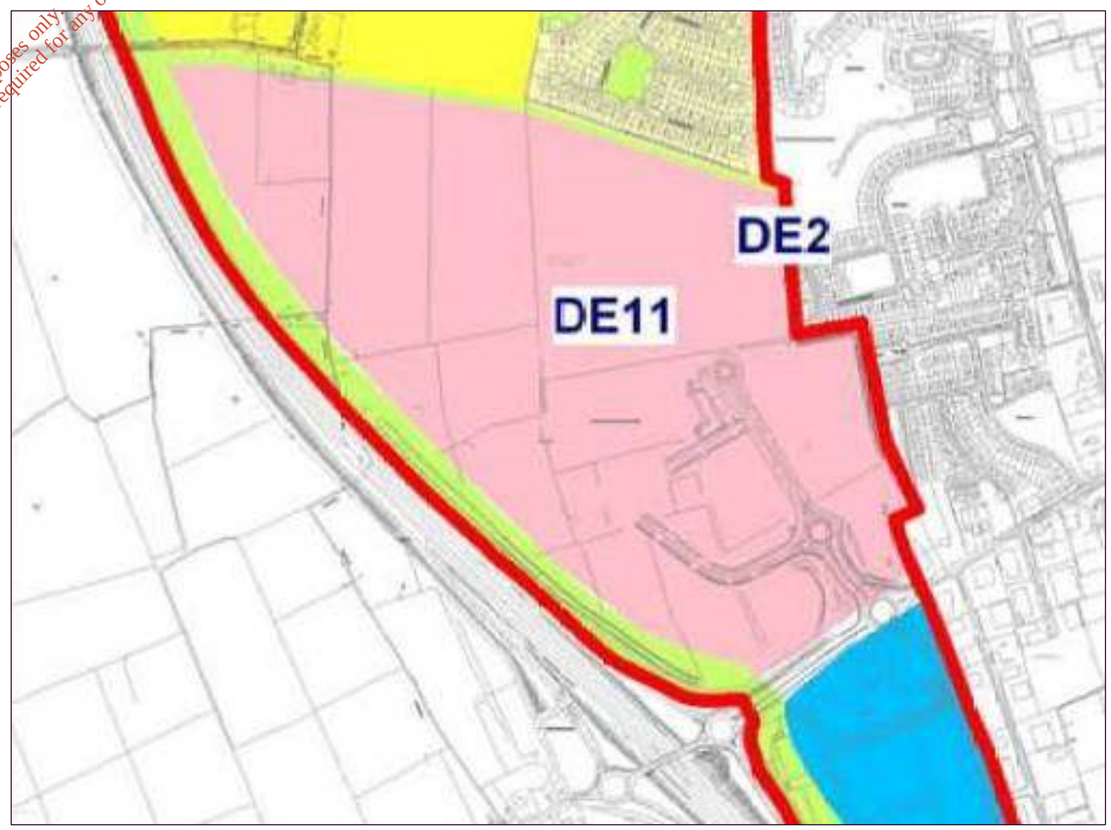


Figure 4.12 **-** *Extract from South Environs Map of Drogheda LAP 2009-15*

4.8 Site 6 - Dundalk

4.8.1 Location & Context

This site which measures approximately 44ha (111 acres) is located at Mullagharlin to the south of Dundalk Town in County Louth. Dundalk town is the seventh largest town in Ireland with a population of 29,037. It is approximately 84km north of Dublin. The site is situated adjacent to the recently completed M1 motorway connecting Dublin and Belfast and adjoining a major interchange with the motorway.

The lands are owned by the IDA and are considered as a strategic land bank, selected mainly as a location for the establishment of a Science and Technology Park.

4.8.2 Planning Policy & Zoning Provision

A Framework Plan has been prepared for the area comprising approximately 182ha (450 acres) including the site subject of this appraisal. In the Framework Plan it is stated that due to the strategic location of the IDA lands it is envisaged that this area would develop as "a commercial, industrial, research and development employment zone" to facilitate "a range of building forms varying from large building envelopes required by biopharmaceutical companies to smaller clusters of incubator units."

IDA Ireland has received planning permission from Louth County Council to facilitate the potential establishment of two major BioPharma facilities and related high quality office developments on this park.

4.8.3 Issues

This area has been identified by the IDA as a strategic employment zone and there has been significant investment in infrastructure for the area. To date the main focus has been on the pharmaceutical sector; however the zoning and objectives for the area provide a degree of flexibility to allow other industrial/ manufacturing uses. There is a planning risk related to the strategic objective to develop a Science & Technology Park on the lands.

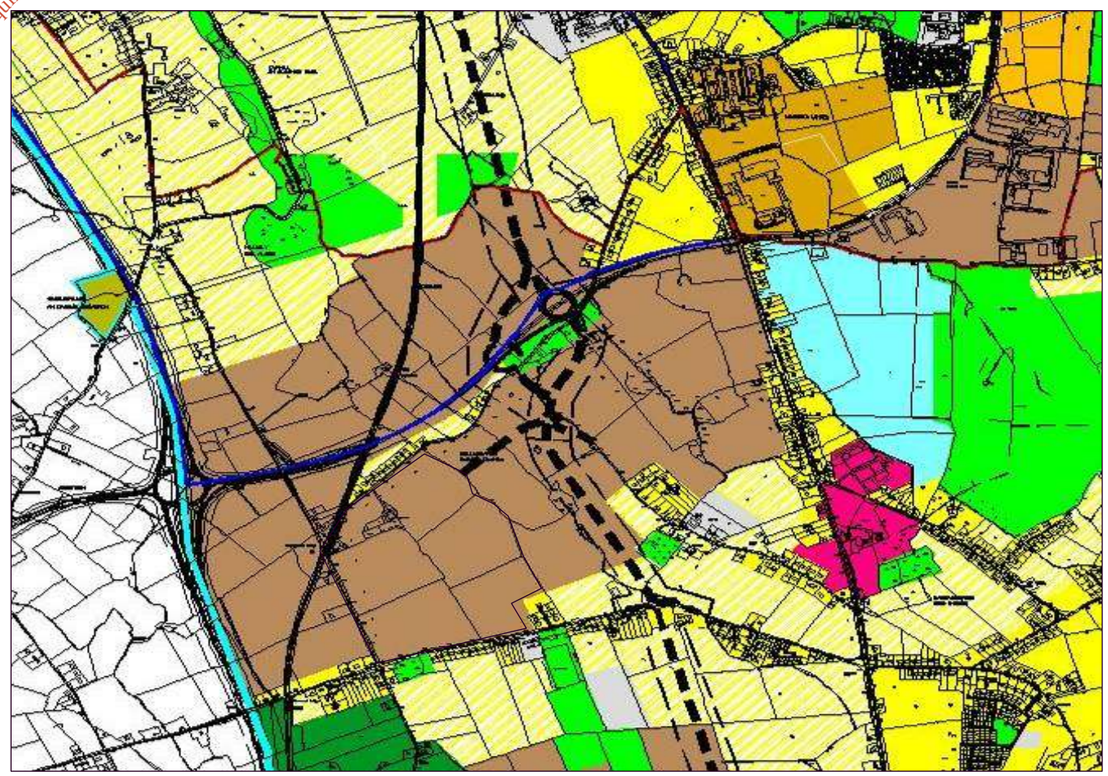
4.8.4 Indicative Costs

The IDA has not given an indication of a guide price for these lands, however other IDA owned/ supported sites in the Louth area have generally indicated a price of between €100,000 and €150,000 per acre.

The General Development Contributions Scheme for Louth County Council is €80.28 per m² for Industrial/ Manufacturing/ Retail Warehousing/ Commercial/ Agricultural Store (Commercial) and €54.04 for Warehousing/Open Storage. A 50% reduction applies to Manufacturing/ Internationally tradable/ financial services supported and certified by IDA and or Enterprise Ireland or businesses grant aided by the Louth County Enterprise Board or other recognised local development agencies.

Figure 4.13 *- Aerial view of Dundalk Site.*

Figure 4.14
Extract from Dundalk & Environs Development Plan 2009 - 2015



4.9 Site 7 - Arklow

4.9.1 Location & Context

These lands are located to the south west of Arklow Town in County Wicklow, approximately 84km south of Dublin on the N11 national primary route. The lands are situated adjacent to the recently completed Arklow by-pass and the area has extensive frontage onto this road. Arklow Town has a population of 11,712.

The overall area measures over 199ha (494 acres) and includes a number of different landowners. The most appropriate lands are located to the west of the overall area and consist of approximately 33ha (83 acres) – zoned for a mix of employment and tourism uses.

4.9.2 Planning Policy & Zoning Provision

The lands to the west of the overall area are zoned for a mix of employment and tourism uses with approximately 23ha (57 acres) zoned for "E1 employment", which provides for a range of uses, including industrial and warehousing. An adjoining 10ha (26 acres) of lands are zoned for tourism use with the objective to provide for development including tourist accommodation.

4.9.3 Issues

The site is in a prominent location with good access to the road network.

Of the sites selected in the Greater Dublin area, this site is situated furthest from Dublin. The existing and permitted uses already established, along with multiple ownerships, may make it difficult to acquire a site of sufficient size to facilitate a large strategic site at a reasonable cost.

Apart from the recently completed motorway, the area might also need significant further investment in the infrastructure for the area.

4.9.4 Indicative Costs

The General Development Contributions Scheme for Wicklow County Council for Industrial/ Commercial Development ranges from €46-€70 per m² depending on the level of urbanisation of the development location. The contribution for Open Storage/ Hard Surfaced Commercial is €12 per m².

The site is relatively far from Dublin and needs investment in terms of infrastructure provision. The land costs are therefore likely to be in the medium range.

***Figure 4.17 - Legend** (Arklow Town and Environs Dev. Plan 2011 – 2017)*

***Figure 4.15 -** Aerial Photo of Arklow Site*

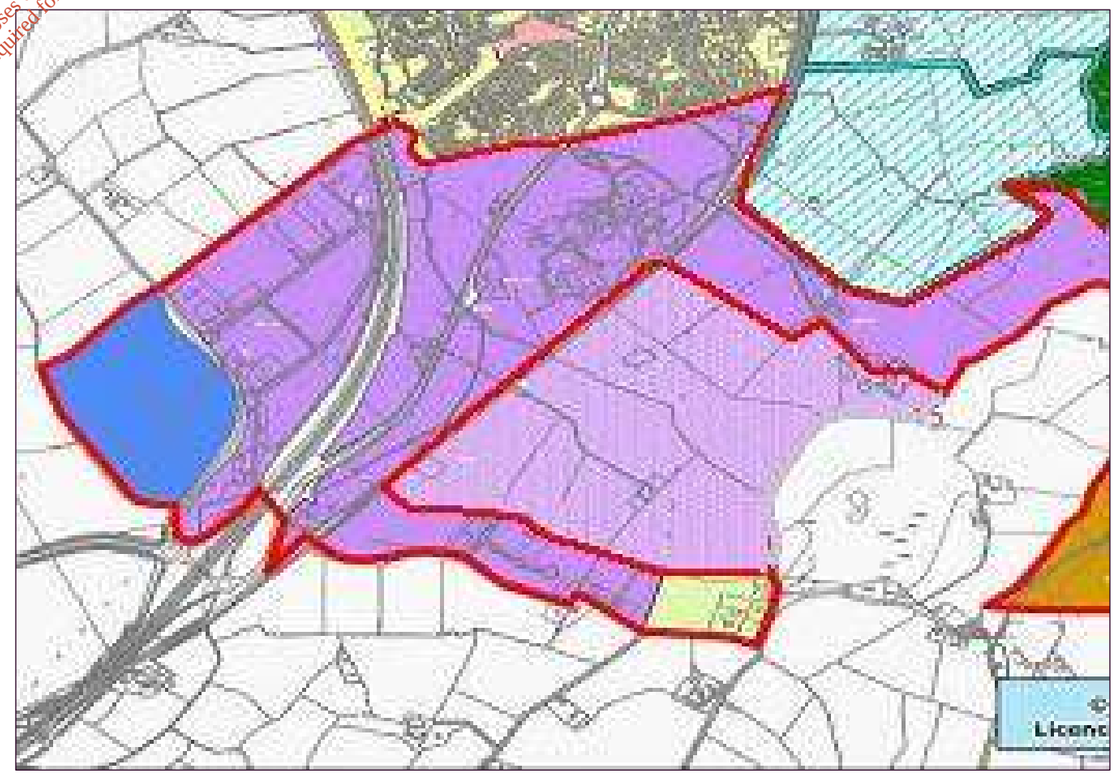


***Figure 4.16 -** Extract from Arklow Town and Environs Development Plan 2011 - 2017*

4.10 Site 8 - Ardee

4.10.1 Location & Context

This large site of approximately 54ha (135 acres) is located to the northeast of Ardee Town in County Louth. The N2, N52, and N33 national roads serve Ardee Town which is approximately 20km from Dundalk and Drogheda and 60km from Dublin City. It is approximately 20km from the border with Northern Ireland. It currently has a population of about 5000.

4.10.2 Planning Policy & Zoning Provision

The lands are zoned for a mix of employment and tourism uses with approximately 23ha (57 acres) zoned "E1 employment" which provides for a range of uses, including industrial and warehousing. An adjoining ca. 10ha (25 acres) of lands are zoned tourism with the objective to provide for related development, including tourist accommodation.

4.10.3 Issues

The site is situated a significant distance from Dublin although it is situated just 10 km from the M1 motorway. The lands are privately owned and no guide to the cost of the land is currently available. Based on the information made available from the IDA, it is stated that the lands are serviced, however this area would need to be investigated further to ascertain the exact nature of the infrastructure available in the area.

4.10.4 Indicative Costs

The General Development Contributions Scheme for Louth County Council is €80.28 per m² for Industrial/ Manufacturing/ Retail Warehousing/ Commercial/ Agricultural Store (Commercial) and €54.04 for Warehousing/ Open Storage. A 50% reduction applies to Manufacturing/ Internationally tradable/ financial services supported and certified by IDA and or Enterprise Ireland or businesses grant aided by the Louth County Enterprise Board or other recognised local development agencies.

Figure 4.18 *- Aerial Photo of Ardee Site*

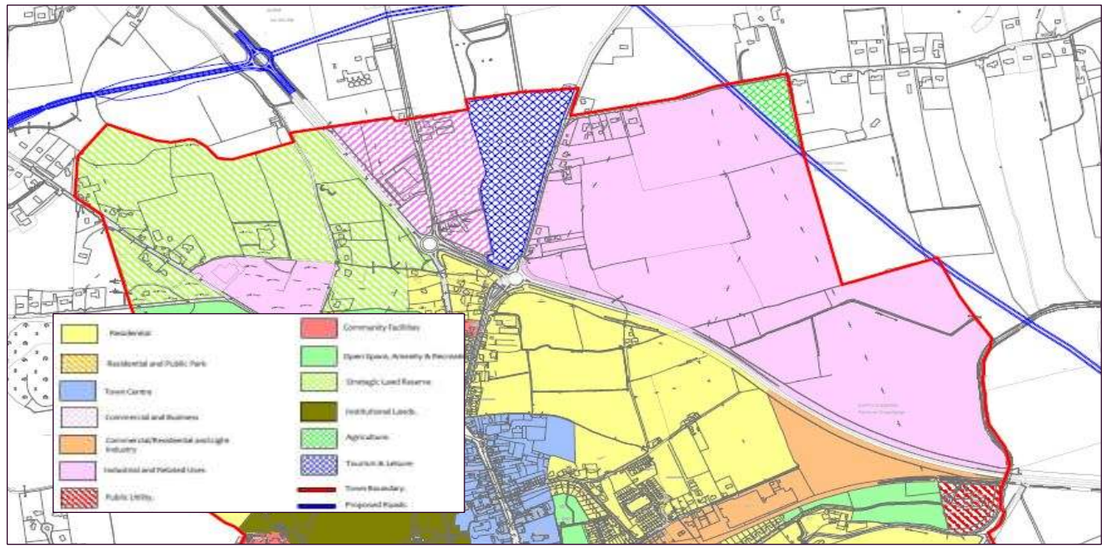


Figure 4.19 *- Extract from Ardee Local Area Plan 2010 - 2016*

4.11 Site 9 - Little Island, Co Cork (Option 1a + Option 1b)

4.11.1 Location & Context

Little Island is located within the environs of Cork City which has a population of 120,000. Little Island is the largest employment centre in Metropolitan Cork with a resident population of just 1,500 and almost 6,000 employed. It is located 95km from Clonmel and 198km from Tullamore.

Little Island is identified in the 2009 Cork County Development Plan as one of the four strategic locations for new industrial development. It already has a number of large-scale manufacturing industries together with a mixture of small to medium sized industrial parks and a large office park (Eastgate). The area has direct access to the national road network and is served by the Midleton-Blarney Suburban Rail Service.

While Cork City and County has a strong tourism profile, Little Island itself has an industrial character, which would not naturally lend itself to a tourism related visitor centre

4.11.2 Planning Policy & Zoning

The policy in successive development plans has been to reserve one of the industrial zones at Little Island for large-scale 'stand-alone' industry. In the current 2005 Local Area Plan an area of 63ha (158 acres) was reserved for this purpose. As the 'stand-alone' zone is in multiple-ownership it has remained undeveloped due to problems assembling a large enough site to satisfy the planners. This restriction will be relaxed when the new Local Area Plan is adopted in July 2011. The land which is currently available amounts to 23ha (58 acres) (shown as Option 1a). Additional lands to the east are likely to become available from the National Asset Management Agency.

There is also a disused golf course (shown as Option 1b) which comprises 44ha (109 acres) and is currently zoned Open Space. This land will be rezoned for mixed use (X-01) when the new Local Area Plan is adopted in July 2011.

Figure 4.20 - Aerial view of Little Island Sites

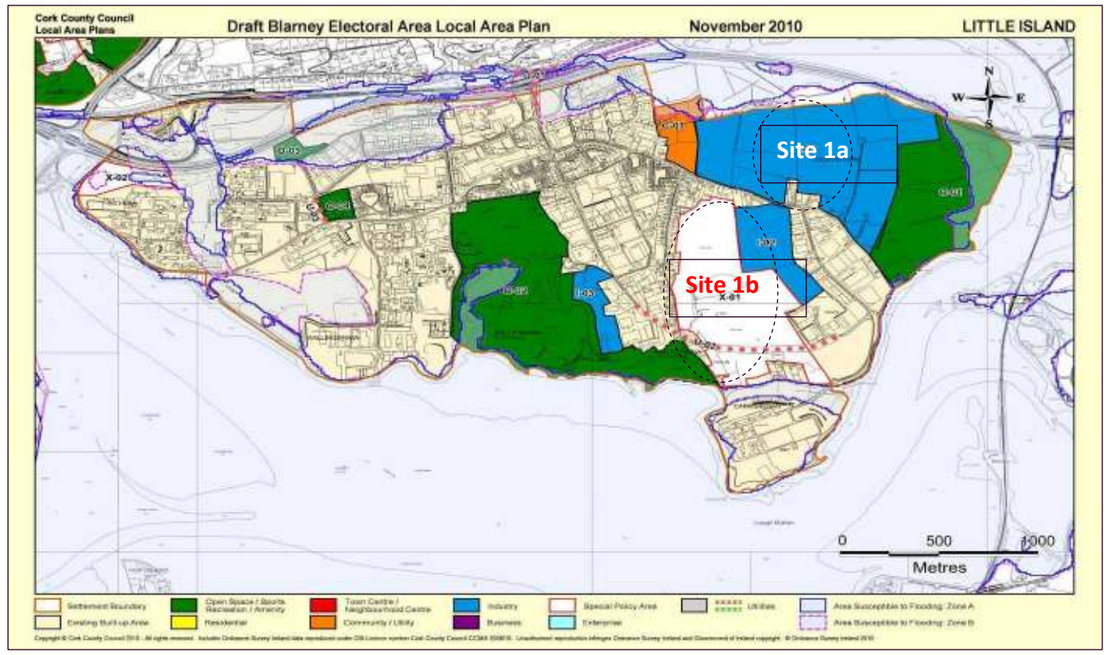


Figure 4.21 - Zoning Map for Little Island – Draft Blarney Local Area Plan 2010

4.11.3 Issues – Option 1a

The planning issues with regard to Option 1a are (i) the subdivision of a zone which is currently reserved for a large stand-alone industry and (ii) the visual impact of the structures on the national route. While the subdivision issue will be addressed by the change in the zoning objective in the new local area plan, the visual impact could constrain the layout and design. Further constraints are the sloping nature of the ground and the high level of peak traffic congestion in Little Island.

4.11.4 Issues – Option 1b

The draft zoning objective for Option 1b requires a masterplan for the overall site which will include provision for a link road through the site, a hotel and some public open space.

It is important that adequate provision is made for public amenity as there are likely to be local objections to the loss of the golf course.

The site is adjacent to the Carrigrennan Waste Water Treatment Plant which serves Cork City and Environs and this may be a further constraint to developing any tourism element to the facility. A further constraint is the high level of peak traffic congestion associated with Little Island.

4.11.5 Indicative Costs

Due to the proximity to the City there was strong speculative demand for development land at Little Island during the peak of the market. It is difficult to get any indication of current land costs from the current owners but the 'hope value' is likely to remain at a higher level than in more rural or small town locations.

Development contributions for Industrial/ Commercial development in County Cork are currently €59.18 per m2.

Figure 4.22 *- View of Option 1 from the N25*

Figure 4.23 *- View of Option 2 from the entrance to the former golf course*

4.12 Site 10 - Mitchelstown, Co. Cork

4.12.1 Location & Context

Mitchelstown is a market town located just off the Cork-Dublin motorway. The strategy in the 2009 County Development Plan (CDP) and the 2005 Local Area Plan (LAP) is to promote Mitchelstown as a key employment centre. The population target for 2020 is 5,346, which represents an increase of 60% on the 2006 population level of 3,365.

Mitchelstown is 49km from Clonmel and 152km from Tullamore

Mitchelstown has a long tradition as a food processing centre based on the dairy sector. As a result there is a large area of land which is zoned and serviced for the process industry. This includes an area of 36ha (91 acres) at Kildorrery North which is owned by Dairygold and intended to facilitate further expansion of the industry.

4.12.2 Planning Policy & Zoning

In the 2005 Local Area Plan the land at Kildorrery North was partly industrial and partly green belt. The development boundary has been redrawn as a result of the completion of the Mitchelstown Bypass. The new local area plan to be adopted in July 2011 will show the entire property within the development boundary and zoned for a mix of Industry (I-01) and Business (B-01) use.

4.12.3 Issues

Provision has been made for direct access to the site from a roundabout on the bypass and the site is adjacent to the Dublin – Cork motorway, with no general traffic congestion problems.

The Council's waste water treatment plant has spare capacity of ca. 7,000 population equivalents and the proposals to upgrade the public water supply scheme are at an advanced stage. There is also a separate water supply for the Dairygold complex which has ample spare capacity. The site has frontage to the river for disposal of storm water.

Mitchelstown is a heritage town associated with the food processing industry. The sale of the site would, however, require negotiation with Dairygold, which may be complex as the company has recently been undertaking a number of expansion proposals.

4.12.4 Indicative Costs

Land costs are likely to be in the region of €150,000 per acre. Development contributions for Industrial/ Commercial development in County Cork are currently €59.18 per m2.

Figure 4.24 *- Mitchelstown Site location*

Figure 4.26 *- View of site from roundabout on the bypass*

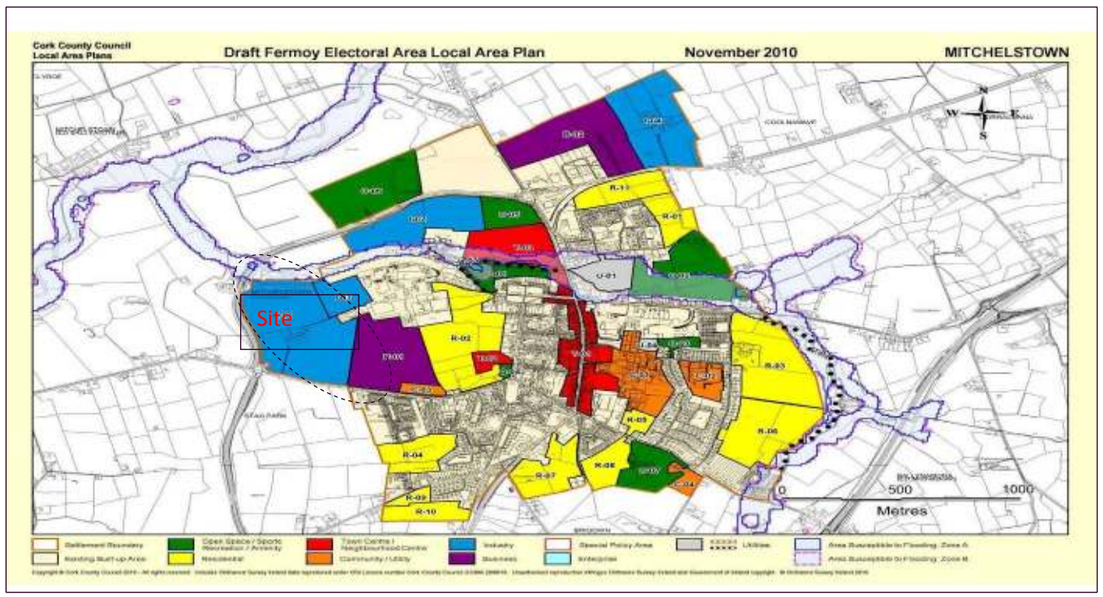


Figure 4.25 *- Zoning Map for Mitchelstown Draft Fermoy Local Area Plan 2011*

4.13 Site 11 - Belview, Waterford, Co. Kilkenny

4.13.1 Location & Context

This IDA Strategic site is located in South Kilkenny only 2.4km from Waterford City on the Belview Port Road. The port has excellent road connections to the National Road Network via the N29 and N25 routes. The site at Belview is 52km from Clonmel and 144km from Tullamore.

Waterford City is the capital of the South East Region and a designated gateway location for economic development under the National Spatial Strategy for Ireland. The city is strategically located on the North-South Corridor Euroroute 30, with Dublin and Shannon Airport /Limerick within a 2.5 hour drive. Cork is a 1.5 hr drive from the city. Waterford is on the national rail route with direct daily services to and from Dublin.

The population of Waterford City is 49,213 people (Census 2011) and there is a population of 363,000 people within a 40 mile radius of the city. Waterford Institute of Technology (WIT) is one of the largest Institutes of Technology and leading higher education providers in Ireland with over 10,500 students.

Multinational companies operating in Waterford include Bausch & Lomb, Genzyme, Hasbro, GlaxoSmithKline, Teva Pharmaceutical, AOL and Honeywell International.

The site at Belview comprises ca. 54ha (135 acres) of fully serviced land suitable for large-scale utility intensive industry, with substantial capacity in terms of water supply and waste water treatment. The IDA currently has 27ha (67 acres) of lands available for sale.

4.13.2 Planning Policy & Zoning

The Kilkenny County Development Plan 2008-2014 identifies Belview as one of four key locations for future employment in Waterford City and states that the Port at Belview is a strategic national, regional and county asset with good road and rail links.

The Plan seeks to strengthen the role and status of the port nationally and regionally in line with the NSS by supporting and promoting a balanced multi-modal freight transport policy that safeguards the importance of rail transport as a means of access to the port.

Policy ED11 supports the development of the national role of the Port at Belview and the Belview industrial zone.

Policy ED12 states that a local area plan will be prepared for the Environs of Waterford City within County Kilkenny including the port at Belview and the Belview Industrial zone, continuing a policy of partnership with the local community.

Policy ED13 seeks to ensure that sufficient and suitable land is zoned for port and industrial development at Belview in accordance with its strategic role nationally and within the Southeast Region. Such land will normally be protected from inappropriate development which would prejudice its long term strategic development.

4.13.3 Issues

The site is fully serviced but there is some uncertainty surrounding the Council's commitment to prepare a local area plan. There is good access to the port as well as to the national road network.

Waterford is a heritage city associated with the prestigious 'Waterford Glass' brand and adjoins a major tourist route.

The site is owned by the IDA and therefore negotiations for its purchase would be relatively straightforward. Preliminary discussions with the IDA indicated that they would welcome interest in the site from an industry involved in food production. The amount of land available for sale was at the lower end of the preferred site size. There is a planning risk that a port related or more employment intensive activity would be preferred.

4.13.4 Indicative Costs

The IDA advised that land has recently sold in the area for €147,500 per acre and that this would be their guide price for the site.

Development Contributions are

- €37/ m² for Commercial/ Industrial – Roads and Recreation and Water, (where wastewater is treated fully on-site); or
- €45/ m² for Commercial/ Industrial – Roads and Recreation and Water and Wastewater (where wastewater links to the public system)

Figure 4.27

Aerial view of Belview Site

4.14 Site 12 - Askeaton, Co. Limerick

4.14.1 Location & Context

Askeaton is a medieval village (pop. 979) with an abbey and an historic Norman castle, located 32km east of Limerick. It is 106km from Clonmel and 144km from Tullamore. A 223 acre strategic industrial park has been established by the Shannon Development Agency to the west of the village between the main road and the Shannon Estuary.

The industrial park has direct access from the N69 National Secondary Route.

4.14.2 Planning Policy & Zoning

The site is not covered by a local area plan but is specifically zoned as a strategic site in the Limerick County Plan. Objective ED O4 seeks

> *"to ensure that the 90.4 hectare site at Askeaton, which is owned by Shannon Development, is safeguarded for the accommodation of large establishments of regional importance".*

The Senior Planner has confirmed that the proposed distillery would comply with this zoning objective.

Figure 4.28

Aerial view of Askeaton Site

4.14.3 Issues

The site is zoned and is generally level, the north-west boundary of the site adjoins the foreshore of the Shannon Estuary.

Planning permission was previously granted for site development works including a marine outfall. Shannon Development is investigating the option of establishing a Combined Heat and Power Plant (CHP plant) on the site, which could result in savings in running costs.

Although access is directly from the national secondary route, the road network is relatively poor as far as the junction with the N18 at Limerick City, 26.9km to the east.

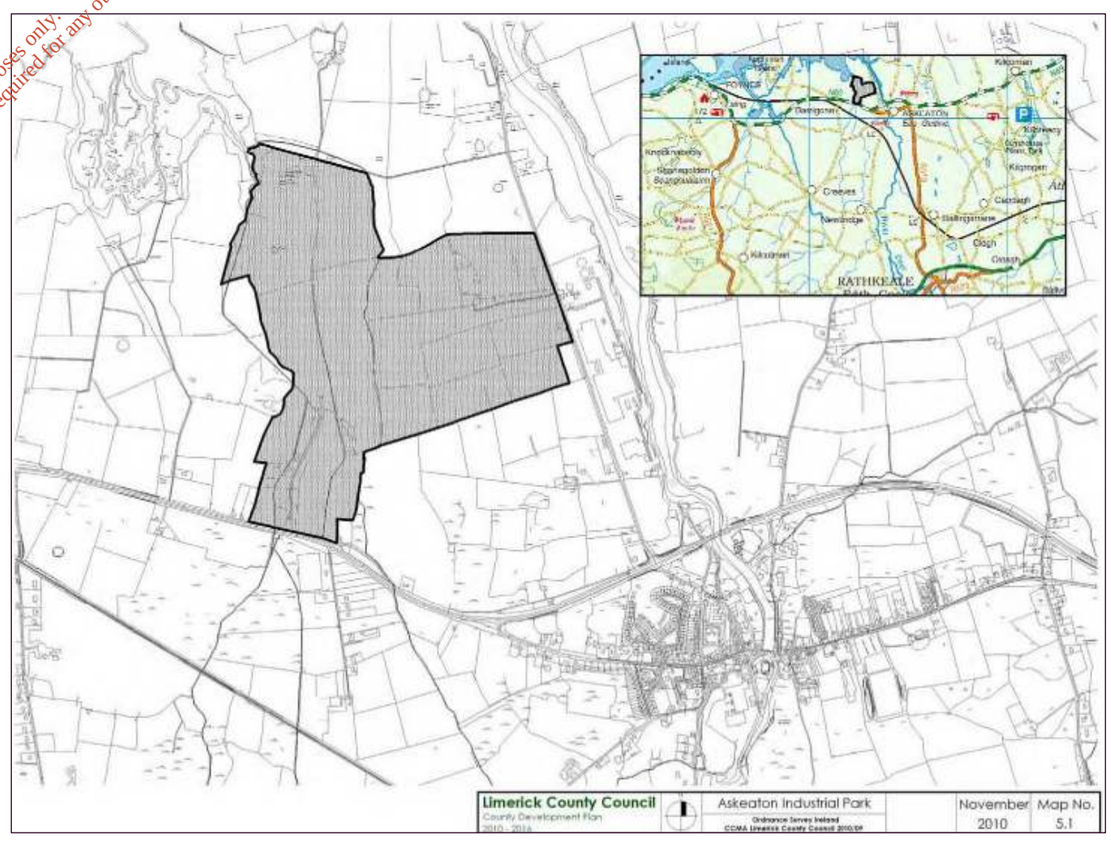
The location is rural, with no major settlements between Limerick and Listowel.

4.14.4 Indicative Costs

Shannon Development was looking for €150,000 per acre at the peak of the market but they expect that a current valuation would be much lower. Development contributions for Industrial/ Commercial development in County Limerick are currently €25.71 per m2.

Figure 4.29

Zoning Map for Askeaton in the Limerick County Plan 2010 -2016



4.15 Site 13 - Ballingarrane, Clonmel, Co. Tipperary South Riding

4.15.1 Location & Context

Clonmel is an historic market town with a population of 19,000. It is located on the N24 Limerick-Waterford national primary route and within 16km of the Dublin-Cork motorway. The town has a long tradition in the food and drink sector and in modern times has attracted international pharmaceutical firms such as Abbott Vascular, Boston Scientific and Merck Sharp and Dohme. The site is within the town of Clonmel and 136km from Tullamore.

There are three industrial/ enterprise zones with capacity for further expansion:

Moangariff Industrial Zone on the Waterford road to the east which accommodates the Bulmers-Magners plant

Cashel Road Industrial Zone to the north which accommodates a mix of industrial and enterprise uses including Abbott Vascular

Ballingarrane Enterprise Zone to the west which is fully serviced but currently vacant.

The preferred site is Ballingarrane where there is a large land bank owned by the County Council with direct access from a new junction on the N24. It is an attractive demesne landscape on the main approach road to the town. As the other zones are already partially developed it is unlikely that sufficient land for development and buffer areas would be available.

4.15.2 Planning Policy & Zoning

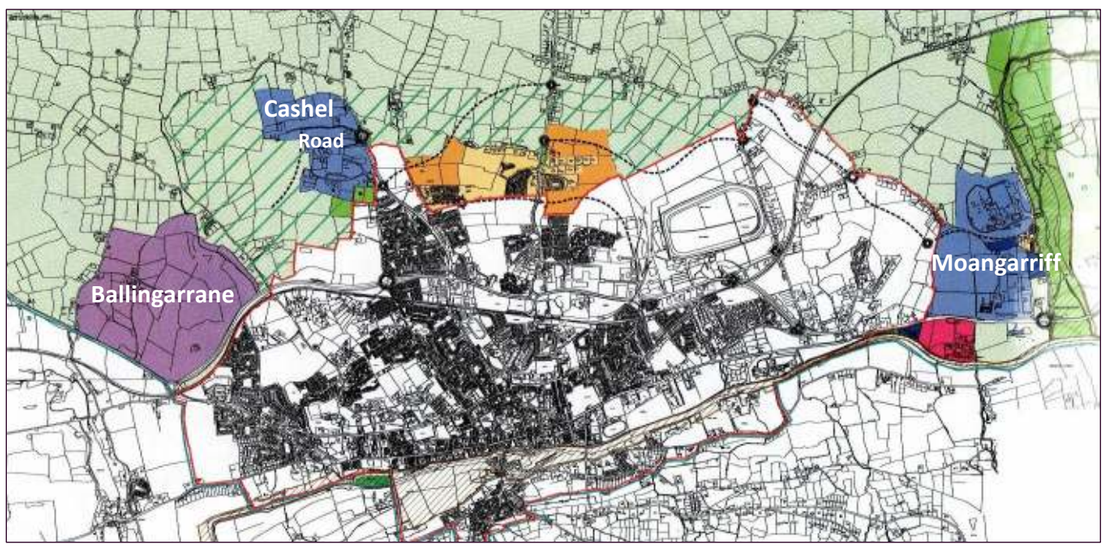
Moangariff and Cashel Road are zoned 'Industry' with the objective "to provide for industrial and related uses". Ballingarrane is zoned 'Enterprise' with the objective "to provide for technological, research & development, educational & scientific uses".

The initial indications were that the Council's Senior Planner would prefer to create a cluster of food processing activities at Moangariff near Bulmers-Magners and that the land at Ballingarrane would be reserved for science and technology uses

A subsequent meeting with the County Manager and the Directors of Service confirmed that a food processing activity at Ballingarrane would be favourably considered and could be granted without invoking the material contravention procedure. The Ballingarrane zone is large (121ha/ 300 acres) and the science and technology objective will be achieved by the allocation of the lands along the N24 frontage to the Tipperary Institute and the Industrial Development Authority. The balance of the lands would therefore be available for more general industrial use.

Figure 4.30
Aerial view of Ballingarrane Enterprise Zone, potential site outlined in red.

Figure 4.31
Location of Industrial / Enterprise Zones Clonmel and Environs Development Plan 2008



4.15.3 Issues

There are no constraints on land availability as the Council has no commitments on a block of ca. 80ha (200 acres) towards the northern end of the zone. A site along the northern boundary would have the benefit of a buffer area of agricultural land outside the zone boundary.

The land is already fully serviced and the Council has confirmed that there is adequate capacity in the town treatment plant to take the final effluent from the proposed distillery. A distributor road has been built to provide direct access from the roundabout on the N24.

There are two constraints affecting the selection of a site within the 80ha available:

- As Ballingarrane House is a protected structure, industrial development will have to be set back from the house and the associated gardens and parkland.
- The eastern boundary of the zone is formed by stream with steep side slopes.

Ballingarrane House and the adjoining stable yard and outbuildings are available for use as offices and/or as a visitor centre associated with the project. If the house was being acquired the Council's preference would be to transfer the adjacent gardens and parkland to ensure that the protected structure and its attendant grounds would remain in a single ownership. A tourist attraction would provide a suitable use for the house and gardens and would integrate with the Council's promotion of Clonmel as a heritage town, associated with the beverage trade.

The County Council has offered the parcel of land which is outlined in green on the map and in red on the aerial photo (Figure 4.32). The offer includes the curtilage of Ballingarrane House and ca. 24ha (60 acres) of developable land.

4.15.4 Indicative Costs

Land suitable for industrial development would be available for ca. €100,000 per acre. The house and outbuildings would be available for ca. €1m which is the amount already spent by the Council on renovating the property. The gardens and parkland would be transferred with the house at agricultural value.

Development contributions are currently €46.65 per m^2 for commercial use and €55.55 per m2 for industrial use. However there is a 30% reduction for employment generation and a 50% reduction where the floorspace is within a protected structure.

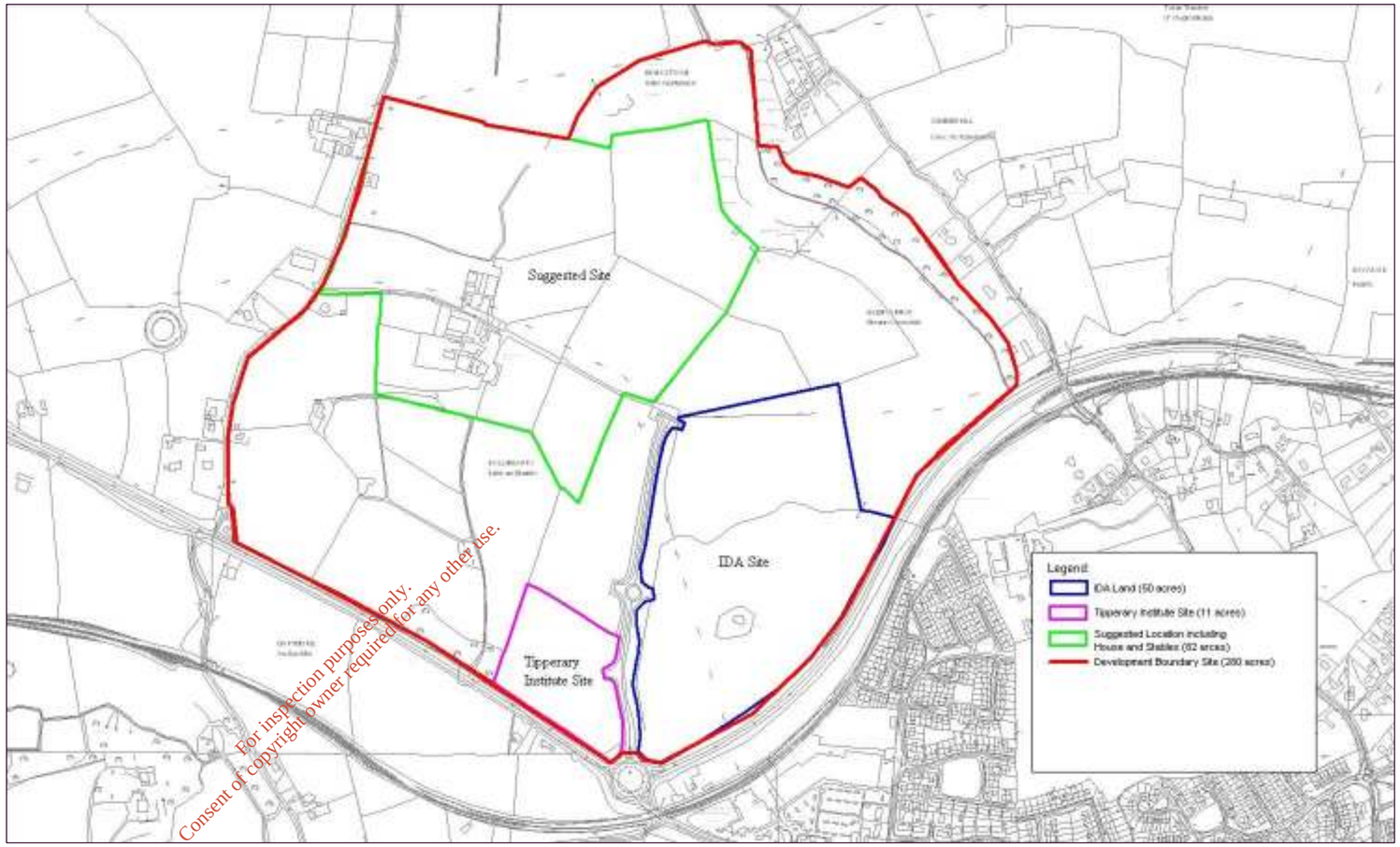


Figure 4.32 *- Location of Land Proposed by County Council as suitable.*

Figure 4.33 *- Entrance to Ballingarrane Zone*

Figure 4.34 *- Entrance to Ballingarrane* House

4.16 Site Selection

4.16.1 Appraisal of Final Shortlisted Sites

A process of appraising the shortlisted sites was carried out for both the Greater Dublin Area and the Southern Area. The sites were qualitatively appraised in the format of a matrix – as indicated in Table 4.2 Greater Dublin Area and Table 4.3, Southern Area.

Through the site selection shortlisting process five sites were identified as being worthy of further assessment against the Tullamore site to identify the preferred development site:

- Askeaton
- Ballingarrane
- Arklow
- Ardee
- Dundalk

To appraise the sites against each other a more quantitative matrix scoring system was developed, to quantify the following key selection criteria:

- Planning Status
- Serviceability
- Marketing
- Logistics
- Site Size
- Development Cost
- Constraints

Each criterion was scored out of 5, with a negative score of up to -5 for known constraints.

Having carried out the scoring appraisal the site at Clonminch, Tullamore was identified as being the most favourable site to accommodate the proposed development.

All the sites scored relatively well, with little between the Askeaton, Arklow and Ardee options. Nonetheless the positive profile link to Tullamore Town is a considerable marketing advantage and the alternative sites could not offer significant alternative advantages to outweigh this benefit. It was therefore decided to proceed with appraising potential layout options, to undertake pre-planning consultations and to carry out a detailed environmental impact appraisal of the site at Clonminch, Tullamore.

Table 4.2 - Greater Dublin Area – Matrix Assessment of Sites

Site No.	Site	Site Size (ha/acres)	Location	Accessibility	Land Costs	Contributions € per m²	Planning Status	Ownership	Pros	Cons	Assessment
2a	Grange Castle – Option 1	39/98	14km west of Dublin City Centre	National Primary Road; Port within 20 km; International Airport accessible	Medium to High	€111 per m²	Enterprise Zone	Public: IDA & South Dublin Co Co	Large site in public ownership with good infrastructure	Seveso Issue in relation to nearby Airport	These sites are high planning risk due proximity to airport. Expensive to develop and likely to be premium land costs.
2b	Grange Castle – Option 2	49/123			Medium to High		Enterprise Zone	Commercial landowner	Large site with good infrastructure	Seveso Issue in relation to nearby Airport	
2c	Grange Castle – Option 3	20/50			Medium to High		Enterprise Zone	Commercial landowner	Good infrastructure	Seveso Issue in relation to nearby Airport; Relatively small site	
3	Swords: Turvey – Donabate	29/74	4km from Swords; 8km from Dublin Airport; 16km from Dublin City	National Primary Road; Motorway within ½ km; International Airport accessible	Medium to High	€111 per m²	Enterprise & Employment	Unknown	Zoned Land with reasonable access to transport network	Lands to north at risk of flooding, may constrain potential of site; Lacks frontage onto major road.	Risks and constraints outweigh advantages
4	Mulhuddart – Damastown	19/49	3.5km from Blanchardstown,15 km from Dublin City	National Primary Road; 5 km from Motorway; International Airport accessible	Medium to High	€111	Proposed Employment Zoning	Unknown		Relatively small site; Potential incompatible uses adjacent including residential areas to the east and north of the site	Limited potential
5	Drogheda	25/64	Southern Environs of Drogheda, 56km north of Dublin City	Adjacent to M1 Motorway with good access	Medium	€65.70	Employment Uses	IDA	Public Owned Land; Partially serviced and appropriately zoned; Potential lower costs.	Potentially incompatible uses adjacent, including residential areas	High planning risk due to adjacent uses.
6	Dundalk	44/111	South of Dundalk; 84km north of Dublin	Adjacent to M1 Motorway with good access	Medium to High	€80.28	Commercial, Industrial, Research & Employment	IDA	Public Owned Land; Well serviced; Potential lower cost	Distance from Dublin & Clonmel	Some potential – appraise against alternative options
7	Arklow	33/83	SW of Arklow; 84 km south of Dublin	Adjacent to Arklow By-pass with good access to primary road network	Medium to High	€46-€70``` (?)	Employment & Tourism	Multiple commercial landowners	Prominent location with good access to primary road network.	Distance from Dublin; Existing & permitted uses on site & multiple landownership	High planning risk due to uses on site. May be complex to acquire.
8	Ardee	54/135	NE of Ardee; 60km north of Dublin	National Primary Road; 10km from Motorway	Medium to High	€80.28	Employment & Tourism	Commercial landowner	Large site of appropriately zoned land	Distance from Dublin	Some potential – appraise against alternative options.

Table 4.3 *- South Ireland – Matrix Assessment of Sites*

Site No.	Site	Site Size (hectares/acres)	Location	Accessibility	Land Cost	Contributions € per m²	Planning Status	Ownership	Pros	Cons	Assessment
9 A	Little Island A	23/58	Within environs of Cork City (pop 120,000) 95km from Clonmel 198km from Tullamore	Rail; National Primary Road; 5km from motorway; 8km from container port	Medium to High	59.18	Industrial Zone	Separate farming & commercial landowners	Prominent site on approach to Cork City	Multiple ownership; Relatively high land costs; Sloping ground; Peak traffic congestion	Risks and constraints outweigh advantages
9 B	Little Island B	44/109	Within environs of Cork City (pop 120,000) 95km from Clonmel 198km from Tullamore	Rail; National Primary Road; 5km from motorway; 8km from container port	Medium to High	59.18	Mixed Use Zone Requires Masterplan	Single commercial landowner	Harbourside location close to Cork City; Former golf course	Possible delay in agreeing masterplan; Proximity to sewage treatment plant; Peak traffic congestion	Risks and constraints outweigh advantages
10	Mitchelstown	36/91	Within town of Mitchelstown (pop. 3,400) 49km from Clonmel 152km from Tullamore	National Primary Road; 3 km from motorway; 48km from port (Cork)	Medium	59.18	Industry & Business Zone	Single commercial landowner - Dairygold	Heritage town associated with food processing; Adjacent to Dublin - Cork motorway; No traffic congestion	Requires agreement with major food enterprise	Site anticipated for expansion of existing industry – acquisition likely to be complex
11	Belview	26/66 – 54/135	Within environs of city of Waterford (pop. 50,000) 52km from Clonmel 144km from Tullamore	Rail; National Primary Road; 11km from motorway; Adjoins Belview Port	Medium	45.00	Established IDA site	Public ownership (IDA)	Heritage city associated with prestige brand; Adjoins major port; Adjoins major tourist route	IDA may prefer a port-related or more employment-intensive activity	Indication that IDA may prefer alternative use for site suggest complex acquisition
12	Askeaton	90/223	Adjoins village of Askeaton (pop. 1,000) 32km from Limerick (pop. 52,500) 106km from Clonmel 144km from Tullamore	National Secondary Road; 40km from motorway; 10.5km from Foynes Port	Low	25.71	Strategic zone with non-statutory masterplan	Public ownership (Shannon Development)	Close to medieval village; Outfall to Shannon Estuary; Proposal for CHP plant; Lowest cost	Rural location; Relatively poor road network	Some potential and cost effective. Appraise against alternative options
13	Ballingarrane	24/60 -40/ 100	Within town of Clonmel (pop. 19,000) 136km from Tullamore	National Primary Road; 10.5km from motorway; 53km from port (Belview)	Low to Medium	38.89	Enterprise Zone	Public ownership (County Council)	Heritage town associated with beverage trade; Strong Council support; Visually attractive site; Potential for visitor centre	Sensitive site due to proximity to Ballingarrane House and Gardens	Some potential and significant benefit of co-location with bottling plant. Appraise against alternative options

4.17 Site Selection – Scoring of Shortlisted Sites

Table 4.4 - *Quantitative Assessment of 5 Shortlisted Sites*

Criteria	Tullamore		Askeaton		Ballingarrane		Arklow		Ardee		Dundalk	
	Score	Comment	Score	Comment	Score	Comment	Score	Comment	Score	Comment	Score	Comment
Planning Status	**4**	**Broadly consistent. Variation required.**	**5**	**Appropriately zoned**	**5**	**Appropriately Zoned**	**5**	**Appropriately Zoned**	**5**	**Appropriately Zoned**	3	Appropriately Zoned but potential conflict with primary objective for Science Park
Serviceability	**5**	**All services can be provided**	**5**	**All services can be provided**	**5**	**All services can be provided**	**5**	**All services can be provided**	**5**	**All services can be provided**	5	All Services can be provided
Marketing	**5**	**Positive Profile link to Tullamore Town**	**1**	**Location would not offer marketing advantage**	**1**	**Location would not offer marketing advantage**	**1**	**Location would not offer marketing advantage**	**1**	**Location would not offer marketing advantage**	1	Location would not offer marketing advantage
Logistics	**3**	**Good access to national road network. Reasonable access to international markets & other sites.**	**2**	**Somewhat distant from Tullamore & Clonmel sites. Relatively poor road network.**	**4**	**Co-location with Bottling plant is beneficial. Reasonable access to international markets & other sites.**	**2**	**Somewhat distant from Dublin and existing sites in Tullamore & Clonmel**	**2**	**Somewhat distant from Dublin and existing sites in Tullamore & Clonmel**	2	Somewhat distant from Dublin and existing sites in Tullamore & Clonmel
Site Size	**5**	**Large Site**	**5**	**Large Site**	**5**	**Good sized site**	**4**	**Good sized site**	**5**	**Large site**	5	Large Site
Development Cost	**4**	**Some peat soils which may require removal / piling construction. Reasonable site acquisition costs & development contributions**	**5**	**Low development contributions & site acquisition costs**	**5**	**Low to medium land cost & development contributions**	**3**	**Medium to high land cost with medium development contributions**	**2**	**Medium to high land cost with relative high development contributions.**	4	Medium to High land cost, medium range development contributions
Constraints	**-1**	**Peat lands in an area of site.**	**-3**	**Rural location & relatively poor road network**	**-2**	**Potential sensitivity due to Ballingarrane House & Gardens**	**-3**	**Multiple commercial landowners likely to complicate site acquisition**	**0**	**No significant known additional constraints.**	0	No significant known additional constraints
Total	25		20		23		17		20		20	

4.18 Alternative Site Layouts

As noted in section 4.1, after Clonminch, Tullamore was identified as the preferred site, a number of alternative layouts and designs were considered to identify the most appropriate use of the site to accommodate the proposed development. There alternatives are discussed in chapter 2, Project Description, Section B – Design Statement.

4.19 Alternative Processes

Whiskey production is a highly traditional industry and the production process is critical to product quality and market success. As such, the use of raw materials and major processing operations are defined in the Technical file for Irish Whiskey as follows:

Irish whiskey is a spirit distilled on the Island of Ireland, including Northern Ireland, from a mash of malted cereals with or without whole grains of other cereals and which has been:

(a) saccharified by the diastase of malt contained therein, with or without other natural diastases;

(b) fermented by the action of yeast;

(c) distilled at an alcoholic strength of less than 94.8% by volume in such a way that the distillate has an aroma and taste derived from the materials used;

(d) subject to the maturation of the final distillate for at least three years in wooden casks, such as oak.

The distillate, to which only water and plain caramel colouring may be added, retains its colour, aroma and taste derived from the production process referred to in points (a) to (d).

The 6th century, is believed to be when the technique used to create "Eau de Vie" was brought to Ireland. The principles of creating this liquid led to Irish Whiskey as we now know it has not changed over the years. This long and proud heritage has led to the creation of products, whose characteristics are renowned around the world. These qualities, characteristics and reputation are directly attributable to its geographical origin and method of production.

As a result of the constraints in the production process the character of Irish Whiskey has, and will continue to be, protected for many years.

Therefore, although the production process cannot be altered, considerable strides have been made in recent years to improve the efficiency of these processes. New process equipment is being designed to maximise environmental sustainability in line with best available technology.

Specifically the following design features / processes have been incorporated into the proposed development:

- **Hot water recovery**

  The heat input required for the distillation process can be partially recovered via the cooling water supply to the condensers. Cold water is utilised in the condensers to condense the alcoholic vapour into liquid distillate. During the action of condensation, heat taken out of the alcoholic vapour is transferred over to the cooling water and hot water is produced. This hot water can then be utilised in other areas of the process, saving on energy required to increase the water temperature from ambient to that which can be used in the process.

- **Flash steam recovery**

  Steam shall be used to heat the liquid in the stills into a vapour which will in turn be condensed into a liquid as it gives up its energy. This liquid steam condensate still has a high level of heat energy which can be further captured by transferring the residual heat energy to a cooler liquid, thus preheating the liquid, which will be further utilised in the distillery. The preheating will again reduce the energy required to make hot water for the process.

- **Thermal vapour recompression for energy recovery in distillation**

  As well as hot water recovered from the condensers, further recovery of heat can be captured through the use of steam ejectors. A steam ejector uses motive steam through a diverging and converging nozzle to produce a drop in pressure, similar to a vortex. This drop in pressure turns the hot water into steam which in turn can be reused with the motive steam to heat the distillation. This reduces the amount of steam required for distillation by up to a third.

- **Latest boiler technology to maximise efficiency**

  The latest technological advances in industrial boiler design shall be implemented in order to produce steam at the highest efficiency. This will include current best practice in boiler water treatment, boiler water preheating utilising waste exhaust heat recovered through a flue economiser, and fully automatic fuel mapping control of combustion to maximise efficiency.

- **Water conservation measures**

  Water supplied to site shall be stored in large tanks with the capacity to capture recovered water at various points of production. Water that has been used for cooling purposes, once the captured heat has been utilised, will be further cooled via onsite technologies and reused in the process where applicable.