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Sustainable Resource Recovery Facility at Crag Avenue, Clondalkin Industrial Estate, Clondalkin.



ENVIRONMENTAL IMPACT STATEMENT

VOLUME 2 MAIN REPORT



South Dublin
County Council

October 2003



ACKNOWLEDGEMENTS

This Environment Impact Statement has been prepared by RPS-MCOS, their Environmental Sub-Consultants and with the assistance of South Dublin County Council as well as staff members from Reduce Reuse and Recycle Limited.

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TABLE OF CONTENTS

1	INTRODUCTION	1
	1.1 THE PROPOSED DEVELOPMENT	1
	1.2 ENVIRONMENTAL IMPACT ASSESSMENT	1
	1.3 DIFFICULTIES DURING STUDY	4
	1.4 REDUCE RECYCLE & REUSE.....	4
	1.5 PROJECT OVERVIEW.....	5
2	PLANNING POLICY & CONTEXT.....	6
	2.1 INTRODUCTION	6
	2.2 NATIONAL WASTE MANAGEMENT POLICY	6
	2.3 REGIONAL POLICY	9
	2.4 COUNTY DEVELOPMENT PLAN.....	9
	2.5 SUMMARY	10
3	ALTERNATIVES	11
	3.1 INTRODUCTION	11
	3.2 ALTERNATIVES EXAMINED	11
	3.3 DO NOTHING SCENARIO.....	12
4	SITE DESCRIPTION	13
	4.1 LOCATION & CHARACTER OF THE SITE	13
	4.2 HISTORY OF THE SITE.....	13
	4.3 LANDUSE ZONATION	14
5	PROJECT DESCRIPTION	15
	5.1 INTRODUCTION	15
	5.2 DESCRIPTION OF THE EXISTING SITE ACTIVITIES	15
	5.3 PROPOSED DEVELOPMENT	16
	5.4 PROPOSED RECYCLING AND RECOVERY FACILITY	17
	5.5 ADMINISTRATION BUILDING.....	19
	5.6 SITE ENTRANCE AND TRAFFIC CONTROL CENTRE	19
	5.7 EXISTING SITE BUILDINGS AND INFRASTRUCTURE.....	19
	5.8 WASTE QUANTITIES	20
	5.9 WASTE ACCEPTANCE	20
	5.10 WASTE HANDLING	21
	5.11 WASTE PROCESSING.....	21
6	TRAFFIC.....	24
	6.1 INTRODUCTION	24
	6.2 METHODOLOGY	24

6.3	EXISTING ENVIRONMENT	24
6.4	THE PROPOSED DEVELOPEMENT	27
6.5	PREDICTED AND POTENTIAL IMPACTS OF THE PROPOSAL.....	27
6.6	MITIGATION MEASURES.....	28
6.7	RESIDUAL IMPACTS.....	29
7	GEOLOGY AND HYDROGEOLOGY	30
7.1	INTRODUCTION	30
7.2	DESCRIPTION OF THE EXISTING ENVIRONMENT	30
7.3	POTENTIAL IMPACTS AND MITIGATION MEASURES.....	31
8	ECOLOGY	33
8.1	INTRODUCTION	33
8.2	EXISTING ENVIRONMENT	33
8.3	POTENTIAL IMPACTS /MITIGATION.....	34
8.4	RESIDUAL IMPACTS.....	35
9	AIR QUALITY & CLIMATE	36
9.1	INTRODUCTION	36
9.2	METHODOLOGY	36
9.3	EXISTING AIR QUALITY ENVIRONMENT.....	37
9.4	PREDICATED IMPACTS ON AIR QUALITY.....	40
9.5	RESIDUAL IMPACT	44
9.6	CLIMATE	44
10	NOISE & VIBRATION	46
10.1	INTRODUCTION	46
10.2	EXISTING ENVIRONMENT	46
10.3	METHODOLOGY	46
10.4	POTENTIAL IMPACTS.....	48
10.5	MITIGATION.....	50
10.6	RESIDUAL IMPACT	51
11	LANDSCAPE & VISUAL IMPACT.....	53
11.1	INTRODUCTION	53
11.2	METHODOLOGY	53
11.3	EXISTING ENVIRONMENT	54
11.4	POTENTIAL IMPACTS.....	56
11.5	MITIGATION MEASURES.....	57
11.6	RESIDUAL IMPACTS.....	57
12	IMPACT ON HUMAN BEINGS	58
12.1	INTRODUCTION	58
12.2	SOCIAL & ECONOMIC ACTIVITY	58
12.3	DESCRIPTION OF THE EXISTING ENVIRONMENT	58
12.4	POTENTIAL IMPACTS.....	61

12.5	CONSTRUCTION IMPACTS AND MITIGATION	63
12.6	RESIDUAL IMPACTS	63
12.7	NUISANCE CONTROL	64
12.8	LITTER	65
12.9	NOISE	65
12.10	DUST	65
12.11	TRAFFIC	66
12.12	ODOURS	66
12.13	HEALTH & SAFETY	66
12.14	RESIDUAL IMPACTS	67
13	ARCHAEOLOGY & CULTURAL HERITAGE	68
13.1	INTRODUCTION	68
13.2	HISTORY OF CLONDALKIN	68
13.3	SITE DESCRIPTION	68
13.4	POTENTIAL IMPACTS	68
13.5	MITIGATION MEASURES	68
14	NATURAL RESOURCES	69
14.1	INTRODUCTION	69
14.2	ENERGY USAGE	69
14.3	WATER DEMAND AND USAGE	69
14.4	EXCAVATABLE MATERIALS	70
14.5	RESIDUAL IMPACTS	70
15	OTHER IMPACTS AND INTERACTIONS	71
15.1	INTRODUCTION	71
15.2	SIGNIFICANCE OF PREDICTED IMPACTS	71
15.3	INTERACTION OF PREDICTED RESIDUAL IMPACTS	75
16	CONCLUSION	76
16.1	OVERALL CONCLUSION	77

LIST OF TABLES

Table 2.1:	Dublin Region Recycling and Recovery Targets (1999-2004)	9
Table 5.1:	Waste Types and Quantities	20
Table 6.1	Level of Current Traffic Activity	25
Table 6.2:	Average Weekly Schedule for 'Crosbie Transcar Warehousing and Car Delivery'	25
Table 6.3:	Comparing the Existing Site and the Proposed Development	25
Table 9.1:	Baseline Air Quality Monitoring Locations	36
Table 9.3.1:	Average Benzene concentrations at each location	38
Table 9.3.2:	Average Nitrogen Dioxide concentrations at each location	38
Table 9.3.3:	Average Sulphur Dioxide concentrations at each location	39
Table 9.3.4:	Average PM10 concentrations at location A7 as measured by Partisol Analyser.....	39
Table 9.4.2:	Screening Air Quality Assessment-Summary of Predicted Air Quality at James Connolly Park (R1)	42
Table 9.4.3:	Screening Air Quality Assessment-Summary of Predicted Air Quality at Cappaghmore Estate (R2)	42
Table 10.1:	Noise Measurement Locations	47
Table 10.2:	Baseline Noise Survey Results	47
Table 10.3:	Predicted traffic noise values for AM peak hour flows along surrounding routes	49
Table 10.4:	Predicted traffic noise values for PM peak hour flows along surrounding routes	49
Table 10.5:	Classification of predicted noise impacts (EPA 7 DMRB)	49
Table 10.6:	Predicted noise level at nearest noise sensitive location	50
Table 11.1:	Impact Significance Criteria	54
Table 13.4:	Junction assessments for year of opening and the design year	62
Table 15.1:	EPA Classification Criteria	71
Table 15.2:	Summary of Potential Environmental Effects	72
Table 15.3:	Summary of Potential Interactions	75

LIST OF FIGURES

FIGURE 1.1	SITE LOCATION
FIGURE 2.1	WASTE MANAGEMENT HIERARCHY
FIGURE 2.2	IRISH TARGETS FOR RECOVERY OF PACKAGING WASTE 1998-2005
FIGURE 2.3	RRR % PACKAGING WASTE RECOVERY
FIGURE 4.1	LANDUSE
FIGURE 5.1	PHASED DEVELOPMENT
FIGURE 5.2	SITE LAYOUT
FIGURE 5.3	WAREHOUSE DETAIL
FIGURE 5.4	OFFICE DETAIL
FIGURE 5.5	INTERNAL PROCESSES
FIGURE 5.6	FLOW CHART
FIGURE 6.1	MAIN TRAFFIC ROUTES
FIGURE 7.1	SOILS MAP
FIGURE 7.2	BEDROCK GEOLOGY
FIGURE 8.1	WATER QUALITY MONITORING STATIONS
FIGURE 9.1	AIR MONITORING LOCATIONS
FIGURE 10.1	NOISE MONITORING LOCATIONS
FIGURE 11.1	PHOTOMONTAGE
FIGURE 13.1	ARCHAEOLOGY SITES

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1 INTRODUCTION

1.1 THE PROPOSED DEVELOPMENT

Reduce Reuse & Recycle Ltd are one of Ireland's leading waste management companies involved in the collection segregation and recycling of the waste stream. The company operates a licensed recycling facility at Knockmitten Lane, Western Industrial Estate, Dublin 12.

The company are currently applying for planning permission to construct a new improved Sustainable Resource Recovery Facility at Crag Avenue, Clondalkin in County Dublin.

The application site, covering approximately 4.5 hectares, is currently used as a car storage and distribution compound owned by Crosbie Transcar Ltd. The site is located in the townland of Crag Avenue in Clondalkin Industrial Estate. It is currently zoned for Light Industrial Use.

Figure 1.1 gives an outline the location of the site.

The proposed new development will be constructed on a phased basis and when complete will seek to operate at a maximum capacity of 250 000 tonne of waste per annum. This Environmental Impact Statement (EIS) will accompany the Planning Application for the new Sustainable Resource Recovery Facility (SRRF) to be submitted to South Dublin County Council (SDCC). A Waste Licence Application will also be lodge with the Environmental Protection Agency.

1.2 ENVIRONMENTAL IMPACT ASSESSMENT

1.2.1 Requirements for an EIS

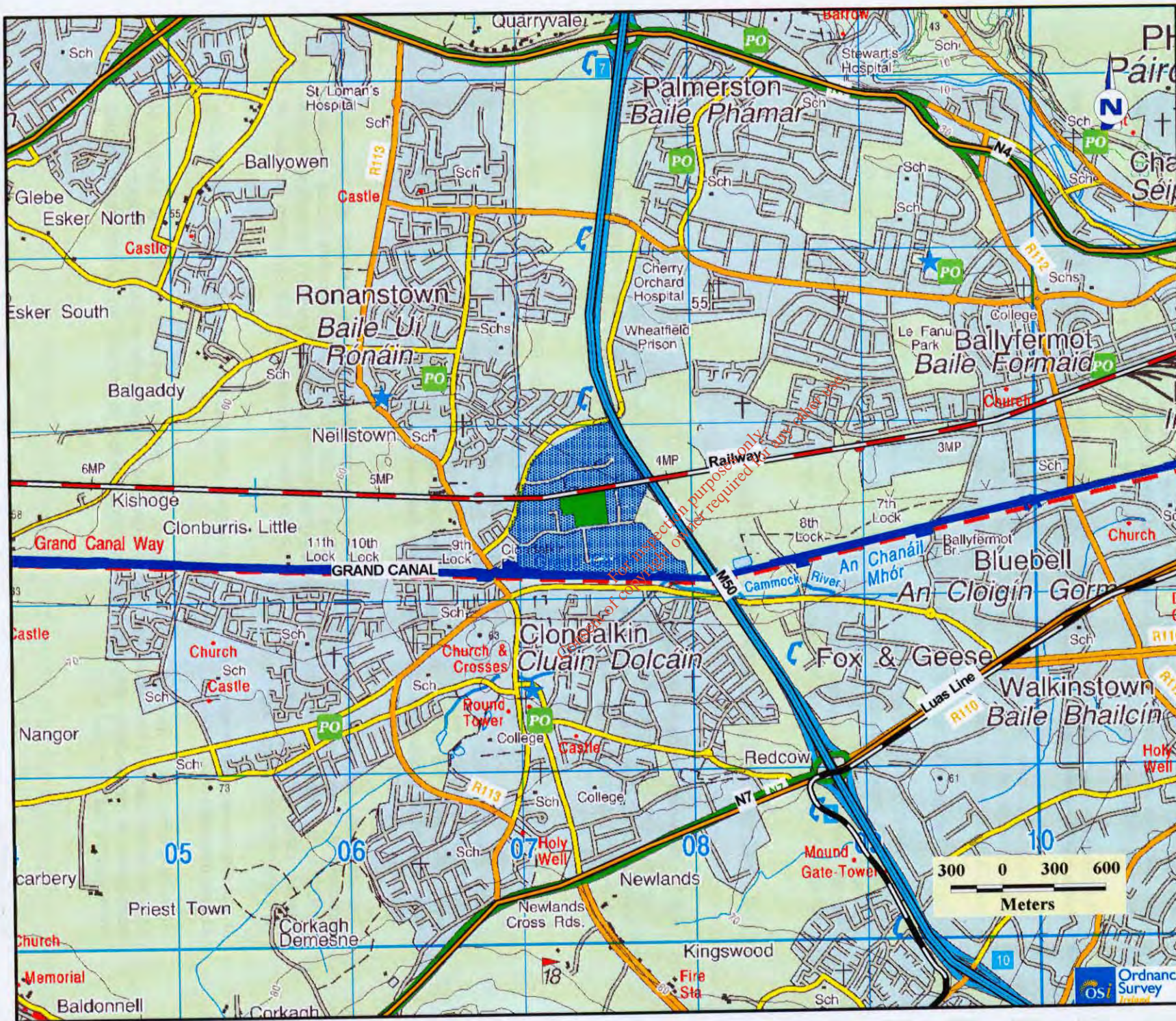
This Environmental Impact Statement has been carried out in accordance with Part II of the First Schedule of the European Communities (Environmental Impact Assessment Regulations 1989) and the Planning & Development Act, 2000 as amended by the Planning & Development Regulations, 2001, (S.I. 600 of 2001).

The Planning & Development Regulations 2001 indicate when an EIS is required. In this regard *Schedule 5* of the Planning & Development Regulations indicate "*infrastructural Projects, (a) industrial estate development projects, where the area would exceed 15 hectares*" require an Environmental Impact Statement (*Schedule 5 part 10 (a)*). Also "*Other Projects: installation for the disposal of waste with an annual intake greater than 25 000 tonnes not included in Part 1 of the Schedule*" also require an EIS (*Schedule 5 Part 11(b)*). Although this development is not disposal of waste per se, RRR Ltd. have decided to prepare an EIS to accompany the planning application which will be submitted to South Dublin County Council.

The site of the proposed development measures approximately 4.5Ha in size and falls below the threshold of 15 hectares as stipulated in *Schedule 5* of the Planning & Development Act as requiring an EIS to be submitted as part of the planning application process. However, depending on the relevant Local Authority's interpretation of the facility, they may require an EIS under the provision of an "Other Project" as outlined above.

It was also considered prudent that an EIS be prepared given that the Local Authority may request one at their discretion.

Notwithstanding the criteria as set out above, the scoping process identified a number of environmental issues which would need to be examined in detail (refer to Section 2.2 below) it was considered at the scoping stage that it was good practice to compile an Environmental Impact Statement for the proposed facility.



Legend

- Site Location
- Area to provide for industrial and related uses

(Source: Dublin Development Plan)

- M50
- N4
- N7
- Railway
- Luas Line
- Grand Canal

3R's
Reduce, Re-Use, Recycle

Project Sustainable Resource Recovery Facility

Title Location Map

Figure 1.1

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Issue Details

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This EIS has been carried out having regard to all relevant National legislation and EU Directives and is based on the best available information at the time.

1.2.2 Scoping

An Environmental Impact Statement assesses the impacts of any development upon the surrounding environment. It assesses the present environment and predicts the likely impacts of the scheme on that environment during construction and operation of the scheme through detailed desk studies and field trips. The scope of this Environmental Impact study follows the guidelines as laid down by the EPA regarding information to be contained in an EIS and is tailored uniquely to this scheme and the surrounding environment.

The contents and scoping of the EIS were determined following consideration of:

- Detailed consultation with Reduce Reuse & Recycle Ltd.
- Scoping meetings with South Dublin County Council (including traffic, drainage and planning departments).
- Consultation with the environmental organisations such as the EPA, Eastern Regional Fisheries Board, etc.
- Knowledge of the area gained through previous work and site visits.
- The content of Annex III of Directive EC 85/337/EEC; and
- EPA draft guidelines on the *Information to be Contained in Environmental Impact Statements* (2002).

The scoping process for the EIS identified the principle matters of likely concern as:

- Odours
- Traffic
- Noise
- Visual Impacts

Further to this a number of statutory and non-statutory groups were contacted during the scoping process and invited to make submissions or raise comments, which would aid with the information gathering process.

Regular design meetings held with the client as well as site visits and reviews of previous planning documents for the site also aided the EIS compilation.

1.2.3 Content of EIS

The scope and content of this Environmental Impact Statement has been prepared having regard to the information requirements specified in the Second Schedule of the 1989 E.U. Regulations, i.e., effects on human beings, plants, animals, soils, water, air, climate, landscape, the interaction of these elements of the environment, material assets and cultural heritage. The document "*Guidelines on the information to be contained in Environmental Impact Statements*" as published by the EPA (2002) was used as a guide document in the preparation of this EIS.

Obligations on the Planning Authority in the Assessment of Planning Applications

In relation to Part X, Sections 172-177 inclusive of the Planning and Development Act 2000 and Part X, Articles 92-132 of the Planning & Development Regulations 2001 (including Schedule 6 *Information to be Contained in an EIS*), all the relevant requirements have been met within the scope of this report.

1.2.4 Consultation

Statutory Bodies and Non-Governmental Organisations (NGO's)

In accordance with the EPA guidelines on compiling Environmental Impact Statements, consultation forms an integral part of the EIS process.

During the pre-planning stage of this development contact was made with a number of relevant statutory and non-statutory bodies outlining details of the proposed new facility and inviting written submissions from them. Those statutory bodies contacted included the Department of Environment and Local Government (formerly Duchas, the Heritage Service) the Environmental Protection Agency (EPA) and the Central Regional Fisheries Board (CRFB).

Consultation with the Public

Reduce Reuse & Recycle sought comments from the general public by advertising their intention to develop the site. Leaflets advertising the public consultation were also distributed to local businesses in close proximity to the site in the industrial estate. They also produced an information brochure, which was distributed to local elected members of the South Dublin County Council.

Consultation with the public was formally carried out on the 30th September 2003, at the nearby Oakfield Lodge Hotel in Clondalkin. On display were detailed plans of the proposed development and staff from both Reduce Reuse & Recycle Ltd and MCOS were on hand to answer questions as well as provide information about the development.

Prior notification was given in the Clondalkin Echo, the local community newspaper. A brochure outlining the proposals was available together with an opportunity for attendees to make comments. In total nine people attended the consultation and most of those were in favour of the development.

Some of the key issues raised were in relation to the following:

- Escaping odours from the new processing facility
- Increased traffic volumes on Crag Avenue
- Attraction of vermin
- Waste recovery opportunities for nearby enterprises.

Following on from the public consultation a review took into account the comments and submissions made together with environmental, engineering and economic considerations.

A list of those who attended the public consultation, together with various submissions and letters received can be found in **Volume 3, Appendix 1** of this report.



Photograph 1.2: Public Consultation Display

Other Consultations

Consultations with other parties or their representatives, private and public, likely to be affected by the proposed development have been carried out including the following:

- South Dublin County Council, Planning Department
- South Dublin County Council, Water Services
- South Dublin County Council, Parks Department
- South Dublin County Council, Environment Department
- South Dublin County Council, Roads Department
- Bord Gais
- Iarnrod Eireann
- Sustainable Energy Ireland
- Dublin City Council
- Department of the Environment & Local Government
- Eircom
- Eastern Regional Fisheries Board

1.3 DIFFICULTIES DURING STUDY

No particular difficulties were encountered in the completion of the Environmental Impact Statement.

1.4 REDUCE RECYCLE & REUSE

RRR is a leading Irish recycling company with over 30 years experience in the waste management industry and providing a nationwide service to its customers. Waste collection is carried out under a separate name 'Greyhound Recycling & Recovery'. In 2002 RRR was Ireland's most successful recycler of packaging waste according to REPAK, the nationwide packaging waste controllers. The company operates two licensed facilities and holds all necessary waste collection permits for its haulage fleet.

The principal materials collected includes commercial cardboard, paper, plastic and other types of packaging waste. Examples of major clients include the Square Shopping Centre Tallaght, Tesco, Guinness and University College Dublin. Greyhound collects as much recyclable material as possible in a source-separated form. Since it does not have a landfill facility, Greyhound works closely with their clients to channel as much waste as possible away from landfill.

RRR has established itself as a market leader through constant innovation and improvement. This is reflected by achieving the following recognitions:

- **ISO 9002** (being the first waste company to achieve accreditation in March 1998).
- **Environmental Waste Licence** (Number 95-2; operating under the name of Reduce, Reuse and Recycle Limited).
- The company are currently working towards achieving **ISO 14001** environmental standard. The company expects to be awarded the ISO14001 after the final audit in November 2003.
- **2003 Repak Recycler of the year**
- Paper recycler for the **2003 Special Olympics**

Reduce Reuse & Recycle Limited operates the recycling aspect of Greyhound Waste's business. They operate a fully licensed (95-2) waste transfer facility at Knockmitten Lane, Western Industrial Estate, Dublin 12.

1.5 PROJECT OVERVIEW

1.5.1 Location and Setting

Waste Management facilities such as the proposed development at Crag Avenue form an important part of the overall waste management process in Dublin. Such facilities have two roles to play. The main function is to remove recyclable materials from the main waste stream as the first step in the recycling process, resulting in a product which can pass the quality requirements of reprocessing facilities.

The second function is to bulk up non-recyclable waste onto large bulk haulage trailers to reduce the number of vehicles travelling to off-site recovery facilities (e.g. energy recovery plants). The most suitable locations for materials recovery and transfer facilities are in industrial areas within the city with have easy access to the national primary road network.

The Crag Avenue site fits well with this description and is therefore considered a very suitable location for this particular type of activity.

1.5.2 Site Facilities, Main Features

The main features of the proposed new development are as follows:

- New waste recycling and transfer building
- New administrative office building
- Skip storage area
- Truck parking area
- Ancillary features including roads, sewerage and surface water drainage
- Bale storage area
- Improved site entrance
- Landscaping measures

The primary function of new recycling and transfer building will be to segregate greater quantities of waste for recycling purposes. The building will also be used to bulk up the residual waste that is unsuitable (either technically or economically) for recycling. The company intends to take advantage of any new technology that will emerge which could increase recycling and recovery of waste materials.

1.5.3 Infrastructure

Service infrastructure, which will serve the site, will include the following:

- Three phase electricity;
- Telecommunications infrastructure;
- Water mains;
- Stormwater drains; and
- Foul sewerage.

Provisions will be made in the planning application for the improvement of the existing services and for the expansion to bring each of these services to the new buildings at the site.

2 PLANNING POLICY & CONTEXT

2.1 INTRODUCTION

Reduce Reuse & Recycle are proposing to develop a large materials recovery type facility in the environs of South Dublin County Council. The development represents a major investment in waste recovery infrastructure and will provide the springboard in achieving both regional and national packaging waste recycling/recovery targets. The following sections provide a review of the national, regional and local waste management policy in place and how the future development fits into these established strategies and policies.

2.2 NATIONAL WASTE MANAGEMENT POLICY

National Policy with regard to waste management has been outlined by the Department of Environment and Local Government in two statement documents. The first entitled 'Changing Our Ways' was launched in October 1998 with the second policy statement, 'Delivering Change: Preventing and Recycling Waste', launched in March 2002.

2.2.1 Changing Our Ways

This policy seeks to guide the direction of waste management in Ireland away from the current reliance on landfill towards a combination of recycling, energy recovery and residual waste disposal.

The policy document is firmly based on the internationally recognised hierarchy of waste management options stating that meeting this goal is a 'challenge for modern waste management and society as a whole'.

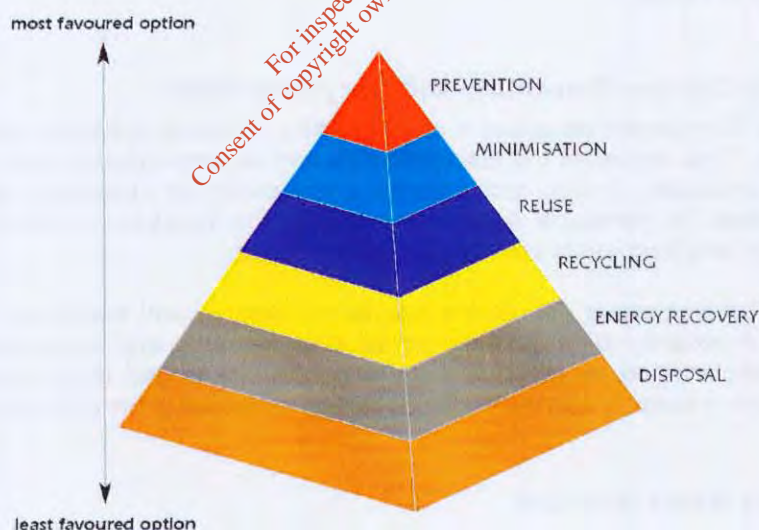


Figure 2.1: Waste Management Hierarchy

National Waste Management Targets

The policy document set down a series of national targets to stem the growth in waste arisings over a 15 year timescale up to 2013. The following summarises the key points:

- Diversion of 50% of overall household waste away from landfill.
- Minimum of 65% reduction in biodegradable waste consigned to landfill.

- Development of waste recovery facilities employing environmentally beneficial technologies, as an alternative to landfill.
- Recycling of 35% of municipal waste.
- Recycling of at least 50% of C & D waste within a 5 year period with a progressive increase to at least 85% over 15 years.

In response to the key targets the RRR proposed development will provide an alternative to landfill for the disposal of waste packaging and mixed commercial waste material. Although the development will not handle or accept household waste it will contribute significantly to achieving national municipal waste recycling targets with potentially over 200,000 tonnes of packaging and plastic material made available for recovery/recycling.

Planning for the Future

In attempting to achieve these targets the policy document highlights the importance for increasing the participation of the private sector in all sectors of waste management. The key document recommendations pertaining to the RRR proposed development are as follows:

- Local authorities should encourage and facilitate private sector involvement in the provision of waste management services, in particular in the development of waste recovery infrastructure, and the establishment and operation of waste recovery facilities especially those requiring high capital investment.
- Private participation can deliver much needed financial investment, specialist expertise of emerging technologies, marketplace 'know-how', and in certain cases operational efficiency and flexibility.

The proposed development fits into the future national plan for waste management as set down in 'Changing Our Ways'. The development represents a large scale financial investment by a private sector business in the waste sector. The facility will provide much needed waste recovery infrastructure and will use state of the art technology to process waste material. The facility will be operated by an expert waste management team with over 30 years experience in the waste management sector in Ireland.

2.2.2 Delivering Change: Preventing and Recycling Waste

In March 2002 the Government advanced a specific policy on waste reduction and recycling entitled 'Delivering Change'. This discusses the responsibilities and recommended actions for preventing and minimizing waste production. It also recommends a framework for increasing recycling levels and expanding the markets for recyclable wastes. In particular the increased diversion of biodegradable waste such as paper and food waste from landfill is a key target.

The proposed RRR development will provide substantial capacity and the scope to do more source separation. More importantly RRR propose to develop research and development facilities and research and develop markets for recycled material on the site as part of the future phases. These moves are very much in keeping with governmental policy as set out in the policy document.

2.2.3 Packaging Waste Directive

This EU Packaging Waste Directive came into force 1994 and was implemented into Irish law by the Waste Management (Packaging) Regulations 1997. The Directive set recovery and recycling targets for Member States and aimed to prevent the production of packaging waste by:

- Reduction;
- Reuse; and
- Recycling and other forms of recovery.

Under the Packaging Directive Ireland's targets were initially set lower than other EU member states (25% recycling by the Year 2001) to allow time for the development of our waste management infrastructure. In order to successfully achieve this target, REPAK, a voluntary packaging compliance

scheme was established by Industry with the approval of the Department of the Environment and Local Government. Ireland successfully exceeded these targets in 2001.

Since 2001 Ireland has been working towards a EU target for 2005 of 50% recovery. It is proposed that this figure will increase to 70% by 2009. Other Member States are currently recovering and recycling up to and above 50% of packaging waste.

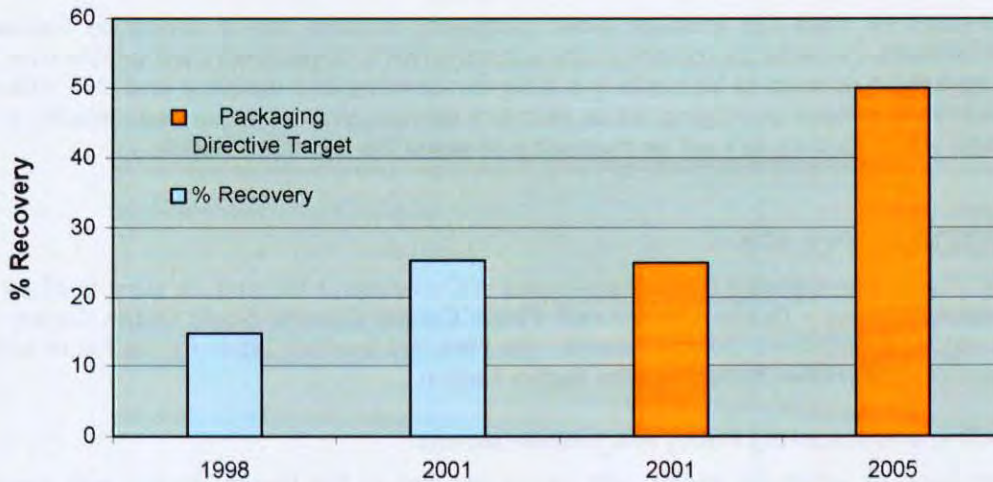


Figure 2.2: Irish Targets for Recovery of Packaging Waste 1998-2005

RRR are approved collectors under the REPAK collection scheme since November 2000 and are the country's leading recyclers of packaging material. In 2002 they were Repak's largest recycler of packaging waste in Ireland, recycling over 45,000 tonnes of material at their existing facilities. This figure amounted to approximately 20% of the total national packaging waste for 2002. RRR received the Repak 2003 Recycler of the Year award.

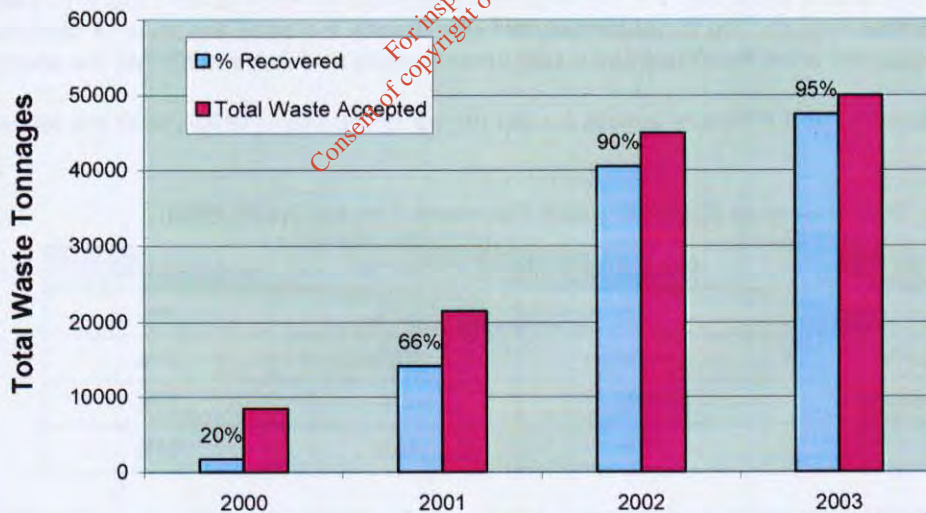


Figure 2.3: RRR % Packaging Waste Recovered (2000-2003)

2.2.4 New Legislative Developments

In March 2003 the new Waste Management (Packaging) Regulations 2003 came into effect and superseded the 1997 Waste Management (Packaging) Regulations. These new Regulations came into effect following a review of the effectiveness of the 1997 Regulations in achieving the EU Targets. An overview on the main impacts of the new regulations on major packaging producers is given below:

- Specified Packaging i.e. glass, aluminium, steel, paper, fibreboard, wood and plastic sheeting must be segregated into waste type and sent for recovery or returned to supplier by all Producers. This means that producers can no longer dispose of these materials.
- Other Packaging i.e. other plastics and composites can be disposed of through landfilling.
- There is also a stipulation that will ensure that deliberate contamination of the specified packaging waste is not permitted.

The new regulations state that specified waste packaging streams can no longer be disposed of at landfill but be made available for recovery. The proposed RRR development will enable over 200,000 tonnes of packaging material to be made available for recycling and recovery and help Ireland reach and maintain its long-term packaging waste recovery targets. Without expanded capacity to accept, sort, and bale waste packaging it will be impossible to reach the Directive Targets.

2.3 REGIONAL POLICY

The Dublin Waste Management Plan was adopted in December 1998 and January 1999 by the four Dublin Local Authorities – Dublin City Council, Fingal County Council, South Dublin County Council, and Dun Laoghaire Rathdown County Council. The Plan laid the foundation for the future sustainable management of solid wastes throughout the Dublin Region.

Key Recycling and Recovery Policy Recommendations

- The provision of additional sorting and baling facilities in the Dublin Region with the resultant waste made available for recycling and recovery.
- The provision of recycling facilities/treatment for dealing with priority wastes and harmful household wastes.
- The Plan recommends the extension of both commercial and industrial recycling facilities within the Region.
- The Dublin Waste Management Plan also encourages private sector involvement in the implementation of waste provision and facilities in the region.

It is clear from the above point that the development proposed by RRR is very much in keeping with waste policy for the Region. The development will significantly increase the level of commercial and industrial recycling and bring much-needed waste infrastructure and investment into the sector.

In relation to recycling and recovery targets for the period of the Plan (1999-2004) the following were set:

Table 2.1: Dublin Region Recycling and Recovery Targets (1999-2004)

Source	Recycling	Thermal	Landfill
Households	60%	39%	1%
Commerce/Industry	41%	37%	22%
Construction/Demolition	82%	0%	18%
Total	59%	25%	16%

Significantly the waste recycling and recovery targets set for municipal waste are substantially higher than the targets of 'Changing Our Ways'. Since waste collection in the private sector is primarily undertaken by private companies the Dublin Waste Management Plan requires private collectors to expand and improve the sorting and recycling capacity for commercial waste.

2.4 COUNTY DEVELOPMENT PLAN

The current South Dublin County Development Plan (1998) states that it is the *policy of the Council to promote the increased re-use and recycling of materials from all waste streams*. Furthermore the Plan states that the Council *will co-operate with other relevant agencies, both public and private, and local community interests as appropriate, in following the hierarchy of waste management*.

The key function of the proposed development is to separate out recyclable materials from the general waste stream and make it available for re-use/recycling. RRR intend to deliver the residual fraction of the waste processed within the proposed facility to energy recovery facilities which is in keeping with an integrated waste management approach.

2.5 SUMMARY

To summarise the proposed development fulfils the objectives of local, Regional, National and EU Policy in relation to waste management and in particular the provision of waste infrastructure in achieving waste recycling/recovery targets.

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3 ALTERNATIVES

3.1 INTRODUCTION

The nature of the proposed facility can be termed as "light industry" and therefore should ideally be located in an accommodating setting that will reflect this. The most important criteria in locating the waste management centre were:

- Proximity to waste arising;
- Suitable zonation;
- Good access;
- Good separation from residential areas;
- Scope for further expansion/development;
- Access to recycling markets, and disposal facilities.

A number of alternative options were explored and assessed by the company before opting for the chosen site. These are outlined below.

The existing facility was originally licensed by the EPA in December 2000 to accept 14 000 tonnes per annum of commercial and industrial waste and a further 3,000 tonne per annum commercial and domestic waste.

Due to the quick increase of tonnage of recyclable material being processed at the facility (8 500tpa in 2000, 21 500 tpa 2001, 45 000 tpa in 2002) RRR Ltd applied for a new licence review in November 2001 for a throughput of 350 000tpa. In July 2003 a new licence was issued by the EPA for 83 000tpa at the existing recycling facility at Knockmitten Lane.

However the new throughput is not enough to satisfy projected company growth. As a result it was necessary to search for a new site to facilitate the increased demand.

3.2 ALTERNATIVES EXAMINED

The existing RRR waste transfer station primarily serves commerce and industry in the Dublin region. Its location in an industrial estate on the edge of the city is well positioned for this purpose. However, the existing facility is operating below capacity due to restrictions imposed by the current waste licence.

A planning application was then lodged on behalf of RRR Ltd. for an extension to their existing facility at Knockmitten lane which sought to increase the recovery capacity of their operations. However, despite been granted permission by South Dublin County Council, the decision was subsequently overturned by Bord Pleanála. It was then decided to seek an alternative and much bigger suitable site to expand the company's operations.

3.2.1 Alternative Locations

Alternative sites to facilitate the waste market demand were sought in the greater Dublin area. This site selection process began in 2001. Sites examined included a 9.5-acre site belonging to DFDS Transport at Turnpike Lane in Dublin 12. This site was consequently ruled out due to the close proximity to residents.

RRR Ltd. sought further sites in appropriately zoned areas. This process identified the Crosbie Transcar site as being particularly suitable.

In 2003 RRR Ltd. purchased the 4.5 Ha Crosbie site at Crag Avenue, Clondalkin Industrial Estate, Dublin 22. This site was deemed favourable as it had a number of favourable attributes, including:

- Proposed site within lands zoned for industrial uses;
- Close to M50 and N7, N4 as well as direct access to city centre and ports;
- Good separation from residential areas (approximately 400m);
- Site does not interfere or encroach on any scientific or archaeological designations e.g. NHA's SPA's etc.;
- Proximity to city and main road and transport networks ;
- Existing services and infrastructure which could be retained;
- Good entrance to the site;
- Extensive site with the possibility to expand.

3.3 DO NOTHING SCENARIO

An alternative to the current proposal is to carrying on with operations at the existing site ("do nothing" option). Should Reduce Reuse & Recycle Ltd not examine the possibility of developing a new waste management centre the existing facility at Knockmitten Lane would reach saturation within two years and a huge fraction of recyclables would have to be sent directly to landfill due to a lack of capacity in the processing facility. This in turn would have a negative impact on the environment.

Current waste management policy aims to diverge away from traditional landfill towards more sustainable waste management practices. Without development of sorting and recovery facilities such as the one proposed here, it is impossible to make progress in this regard and to meet recycling targets.

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4 SITE DESCRIPTION

4.1 LOCATION & CHARACTER OF THE SITE

The site of the proposed development is located on Crag Avenue in Clondalkin Industrial Estate, Dublin 22, north of Clondalkin village. The estate is bounded to the west by the M50 Motorway, to the south by the Grand Canal, to the east by Cloverhill Road and to the north by the Dublin-Kildare railway line and Cloverhill Industrial Estate, an industrial estate managed by the IDA.

Clondalkin Industrial Estate is accessed from Cloverhill Road, via Newlands Road/Naas Road to the south. Crag Avenue traverses the site which is located between Crag Avenue to the south and the railway line (Dublin to Maynooth) to the north with direct access from Crag Avenue. There also exists a second access on to the site from the western end. This too allows access from the main road.

Clondalkin Industrial Estate is characterised by light industrial and industrial type uses including stationary businesses, furniture, light engineering, specialist builder providers and storage and removal companies. There are a number of large landholdings, including Eircom Logistics, Clondalkin Business Centre, Roadstone Roof Tiles, BOC Gas and a number of headquarters including PJ Hegarty building contractors, Crampton Building Contractors and Golden Vale.

Cloverhill Road is characterised by residential development between the railway and the Royal Canal, while to the north of the rail it is predominantly industrial development.

The site measures 4.5Ha (11.07acres) and is presently utilised as a car storage and distribution compound. Generally speaking boundaries to the existing site are a mix of palisade type fencing set on concrete block walls of various heights. The entrance is of an understated brick wall construction with low walls and railings fronting the remainder of the site.

Warehouse developments surround the site to the east, south and west. On the eastern side, some of the warehouse/office developments are 6 or 7 meters in height. On the northern boundary a hedgerow of variable height (1.5 to 4.0m average) and security fence defines the site and rail boundary. The boundary between the rail line and Clondalkin Commercial Park (further north) is a mature tree-lined hedgerow between 5 and 6 meters in height.

There are no residential buildings or areas on Crag Avenue. The site lies within the local authority jurisdiction of south Dublin County Council.

Figure 4.1 shows the names and locations of local businesses and enterprises in the vicinity of the proposed development. (The data collected at the time of the survey was considered to be up-to-date, however due to the current nature of commercial business some of the companies indicated on the figure may have since closed, relocated etc).

4.2 HISTORY OF THE SITE

The site has been in use as a bonded car compound since obtaining planning permission for at least the past ten years. Prior to this it is understood that the site was utilised by Roadstone Ireland as a stone/rubble processing facility for the manufacture and storage of building blocks etc.

There are currently a number of buildings on the site including a workshop and office, a security hut and ESB substation, a tall lighting tower as well as the existing perimeter wall and fence and security system. Most of the site is concrete underfoot with remaining areas containing screed/gravel.



Label	Business Name	Label	Business Name
1	Clondalkin Auto Clinic	76	F C Imaging Ltd
2	Ladbrokes	77	MRT Cargo Ltd
3	Capital Brake & Clutch Specialist	78	Cover Up Ltd
4	Koni	79	TS Sales Ltd
5	Davenham	80	Specialists Tooling Supplies
6	An Post-Clondalkin Delivery Office	81	Falcon Conservatories
7	JDB Design Ltd	82	Binoti Ltd
8	Woodloe-Steel Fabrications	83	Fork Truck Serv (Irl) Ltd
9	Irish Resin System Limited	84	Stonemerchant
10	Concrete Protective & Repair System Limited	85	Toyota Industrial Equipment
11	Ingplant	86	Eircom-Logistics Dept
12	Disused warehouse	87	Roadstone
13	Business Furniture Limited	88	Turbo Dynamics Ltd
14	Plumb It	89	Primatel, Office Furniture Manufacturers
15	IC & T Suppliers Ltd	90	The Label Centre
16	M & J Electronic Security	91	Dan Natina
17	Nova Services Solution	92	Irish Industrial Co Ltd
18	Crumlin Blind Co. Ltd	93	Tech Fasteners
19	Elegant Kitchens & Bedrooms	94	Reynolds Tankers Ltd
20	Tower	95	P J Hegarty, Building Contractors
21	Pop's Deli	96	Willich
22	XYZ	97	CCF Branigan
23	Slate Eng Co	98	Privatal
24	Calidore	99	Clondalkin Community Recycling Initiative
25	Complete Office Ltd	100	Doddergrove Co Ltd
26	Engineering Machinery (Irl) Ltd	101	BOC Gas
27	C & K Installation Ltd	102	K N Network Services
28	VTE	103	Extra Space
29	Bert Craft Ltd	103	Extra Space
30	The Mining Co of Irl	104	To Let
31	Metal Processors Ltd	105	The Food Service People
32	Serigraf Ltd	106	For Sale/To Let
33	Window & Roofing Concepts Ltd	107	3 Rock
34	M & E Plan Hire Ltd	108	Cappaquin Chickens
35	CAB Freight Services	109	J & A Commercials
36	J & S Autoparts Distributor	110	ISS
37	SIESTA Bedding	111	G & T Crampton Ltd, Building Contractors
38	Clondalkin Home Comforts	112	Zomax Ltd
39	Broderick Bros	113	Sercom Solutions
40	Fleet & Trailer Parts Ltd	114	Vacant Building
41	Prior Engineering Ltd	115	Everbrite Europe Ltd
42	Sign Language Irl Ltd	116	Vacant Building
43	Golden Vale	117	Alfa-Laval (Ireland) Ltd
44	Transway	118	Lufthansa
45	Top Mark Foods Ltd	119	Marchmont Packaging Ltd
46	Transcar		
47	South Dublin County Council		
48	State Electrical Ltd		
49	Chain & Ropa Suppliers Ltd		
49	Chain & Rope Suppliers Ltd		
50	Ryle Print Group		
51	Holstec Ltd		
52	To Let		
53	Cable Craft		
54	3 Rock Signs		
55	PFM		
56	EPC Ltd		
57	Rivet & Fastener Systems		
58	Jenali Meats		
59	Waterway House		
60	National Dairy Refrigeration		
61	A & A Engineering Ltd		
62	The Gannon Group		
63	C A		
64	Diagnostic Solutions Ltd		
66	CCEC, Hardware Wholesale Distributors		
66	Tanson Refrigeration		
67	I/C Rurdex Ltd		
68	J R Labels		
69	SMS		
70	Easy Access Ltd		
71	Gemini Stationery		
72	Forever Living Products		
73	Wholesale Kitchen Co		
74	Van Equipment Ltd		
75	Spring Plant Hire		



Project **Sustainable Resource Recovery Facility**

Title **Landuse/Local Businesses in the Vicinity of the Proposed Development**

Figure 4.1

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Issue Details			
Drawn:	S K	Project No.	MDE0163
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4.3 LANDUSE ZONATION

The site of the proposed development is situated within the administrative boundary of South Dublin County Council, and the relevant development plan is the South Dublin County Development Plan 1998. The site is zoned **Objective E** "to provide for industrial and related uses".

A Waste Transfer Station is defined in the County Development Plan as "a structure or land usually enclosed and screened and which is used for the temporary storage of waste materials pending transfer to a final disposal facility, or for re-use". The definition includes a baling station, recycling facility, civic amenity facility, materials recovery facility and materials recycling facility. The proposed Sustainable Resource Recovery Facility, which focuses mainly on materials recovery, falls into this category.

From the county development plan it would appear that a Refuse Transfer Station is permitted in principle in Objective E land use zoning. This zoning objective appears to be the only location where a refuse transfer station is permitted in principle in the county.

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5 PROJECT DESCRIPTION

5.1 INTRODUCTION

The proposed Sustainable Resource Recovery Facility outlined in this EIS will comprise the following components:

- The redevelopment of an existing light industrial site (4.5 ha in size) to incorporate a new 4,909 m² warehouse recovery facility, a two storey office block, a traffic control centre, entrance and exit weighbridges and security control barriers.
- The redevelopment will retain all existing buildings on the site including the existing offices, garages/workshops, security tower, ESB substation and paint shop forming part of the planning application and future on-site development.
- The proposed development will significantly modify and improve the existing site layout. The site entrance will be widened and altered in order to improve sightlines and turning movements. The surface water drainage will be upgraded on-site and will also include an underground tank for the storage and re-use of rainwater.
- A pedestrian entrance will be put in place along the southern boundary fence adjacent to the new office development. This will ensure that pedestrians/staff can enter the site separately to heavy goods vehicles (HGV's) and staff cars.
- A number of green building systems will be put in place including a small wind turbine and solar panels to provide office power. Rainwater will be collected and used for washing and cleaning purposes.
- The proposed site will be thoroughly landscaped with trees, ivy, flower beds and planting which will significantly enhance the visual appearance of the site.

A full site description of the proposed development and future operations are detailed in the following sections.

5.2 DESCRIPTION OF THE EXISTING SITE ACTIVITIES

The site is located approximately 2 Km north of Clondalkin Village at Crag Avenue, Clondalkin Industrial Estate and falls under the remit of South Dublin County Council. The site is 4.5 hectares in size and the majority of the size is covered in concrete paving with small gravel areas and hardcore. The site is bounded to the north by the main Dublin to Limerick Railway line, to the west by the M50 and to the south by the Grand Canal.

The industrial estate was constructed in the early 1970's and is in reasonable condition with wide internal access roads although a number of pavement failures are evident throughout the estate. The estate has a broad mix of light industries and a number of larger landholdings, full details of which are provided in the Socio- Economic chapter.

The site is presently owned and operated by Crosbie Transcar who is a leading car distributor. The existing facility receives vehicles from Dublin Port, stores them on-site for a period of time and then distributes them nationwide to retail garages. On average the site holds about 2,000 vehicles on site although this number can vary substantially depending on the time of year. There is one main building which comprises offices/garage/office buildings and a second building which functions as a paint workshop. There is also a wash bay and dewaxing area which is licensed and monitored by South Dublin County Council. The site also has a second entrance along the western boundary of the site. The site is zoned as light industrial by the South Dublin County Development Plan 1998.

5.3 PROPOSED DEVELOPMENT

5.3.1 Scale of Development

Reduce Reuse Recycle Ltd plan to develop the site in a number of phases in line with continued company growth. It is hoped there will be three phases of development in total although the timescale for the each phase is not yet known, as it will depend significantly on market growth. Details of the future development phases are detailed in section 5.3.2.

This EIS relates to Phase 1 of the site development which includes the modification of the site layout and the construction a two-storey office block, a materials recovery facility, the improved site entrance as well as the retention all of the existing site buildings. Phase 1 of the development aims to accept up to 250,000 tonnes of commercial waste per annum and when operational Phase 1 will incorporate about 70% of the total site area with the remaining 30% set aside for future expansion.

5.3.2 Phased Development

Reduced Reuse and Recycle Ltd (RRR) plan to develop the site in a phased approach in line with future business growth and national increases in commercial and packaging recycling. As stated this EIS focuses on Phase 1 of the development which will grow over the next five years. A visual outline of the phased development for the site is shown overleaf on **Figure 5.1**.

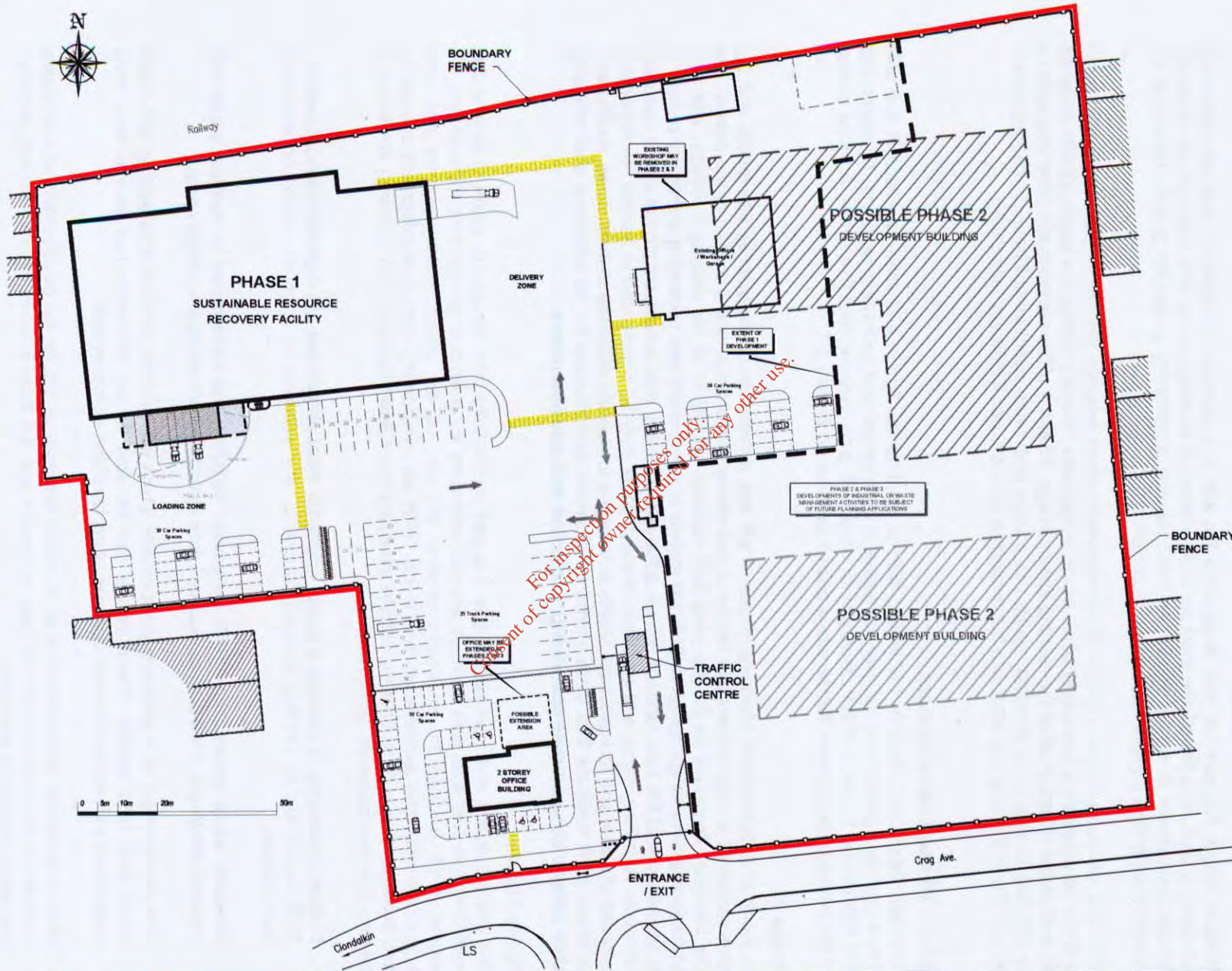
Phase 1

In terms of infrastructural changes, Phase 1 will see a redesign of the existing site layout and the construction of a large warehouse facility, a two-storey office block, and a traffic control centre. The site boundary fence will be for the most part retained, as will all of the existing buildings. The new waste facility aims to accept up to 250,000 tonnes of commercial and packaging waste per annum. It is envisaged that the total tonnage will be achieved gradually over a five-year period as the business develops. A delivery ramp and additional loading gates may be constructed to handle the increasing volumes of waste and to enable the facility to continue to operate efficiently at peak times. As Phase 1 develops RRR estimate that there will be employment opportunities for 60 additional staff including office personnel, warehouse operatives, mechanical staff and fleet drivers.

Future Phases

The waste industry and marketplace has changed significantly over the last 10 years in Ireland and continued improvements and changes are still necessary for Ireland to comply with National and EU targets. RRR propose to continually develop the site as the waste business grows and new technologies become available on the market. RRR are considering various development options for their business although to date no definite decisions have been finalised. The following are some of the possible developments under review:

- Further processing of packaging waste - currently most recyclables are exported for reprocessing. RRR would like to develop capacity to create new products or materials based on emerging technologies.
- Residual waste processing – RRR maximises recycling but some mixed or residual waste still requires treatment. RRR plan to recover future materials from residual waste streams.
- The development of a pelletiser plant on-site which will process cardboard/packaging and wood waste into solid pellets. These pellets can be sold as an alternative fuel source and more importantly will reduce the level of waste being landfilled or incinerated.
- RRR propose the development of an in-house research centre for the development of new waste processing and recovery technologies to ensure that the most environmentally efficient practices are being carried out at the site.



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No.	Date	By	Amendment
A01	Oct03	RH	Issue for Approval

SUSTAINABLE RESOURCE RECOVERY FACILITY

PHASING OF DEVELOPMENT

Issue Details		Office Use Only	
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Checked:	VP	Job No:	msd0163
Approved:	CB	Drawing No:	
Scale:	1:1000	Rev:	
Date:	Oct03		

FIG 5.1 A01

- The increased use of sustainable energy technologies such as Combined Heat and Power (CHP), solar and wind energy as alternative ways of meeting the heat and energy requirement for future phases.

In summary the site offers the potential for RRR to develop future sustainable systems for commercial waste using new leading edge technologies. As detailed proposals emerge this will enable future planning applications to be progressed.

5.3.3 Site Layout and Infrastructure

RRR propose to modify the existing site layout to meet their on-site requirements. An outline schematic of the proposed layout for the site is detailed in **Figure 5.2**. Detailed photomontages of the future development have also been prepared showing the scale of the buildings and future landscape proposals, and can be seen in **Volume 3, Appendix 2** of this report.

The key layout changes and improvements are as follows:

- Revised site entrance – the existing site entrance consists of a long narrow entrance which restricts traffic entering/leaving the site to just one lane. RRR propose to significantly improve this existing arrangement. The entrance to the site will be widened to allow traffic flow, in particular HGV's, to pass in both directions. The revised entrance design will also include removing part of the boundary fence in order to improve sightlines for vehicles entering/exiting the site. The boundary fencing in front of the new site office and around the site entrance will also be upgraded.
- Traffic Control Centre – the new site layout will include a traffic management and security control point which will control the movement of vehicles on and off the site. The traffic control centre will consist of a simple single storey type building, entrance and exit weighbridges and security barriers.
- Office Block Area – this area will comprise a new two-storey office block development for administration, sales and management. The area will be accessed via a slip entrance off the main site entrance and will have up to 55 parking spaces and a bicycle stand. A second entrance point for pedestrians only will provide a safe easy access for staff to the main office building.
- Office Building – The office building will cater for up to 30- 40 staff members and will consist of a reception area, open plan office space, staff canteen and toilets. A 13m high wind turbine which will be positioned close to the office and will be used to generate energy to operate lighting in the office building. This is a small scale unit and given the industrial location it is not expected to have any impacts such as associated with large wind farms.
- Recycling Facility – this building will be the main operational building of the Phase1 development. The building will house all waste processing operations on site including delivery, separation, baling and storage. Access to the building will be through one of the eight doors along the eastern face of the building. The main loading area will be towards the southwestern corner of the building with a canopy covering the docking areas. As the waste quantities accepted on site increase it is also planned to construct a ramp into the building as an additional delivery option. The building will be approximately 90m in length and 50m in width.
- Site Layout - in general the new site layout has been designed to facilitate ease of movement for vehicles, in particular refuse vehicles, around the site. A one-way system for HGV's will be in operation around the resource recovery facility. Clear signage on-site will control and direct vehicles moving on sight. In addition the layout attempts to keep staff car movements separate to the HGV's on site with staff car parking located close to office buildings and staff quarters. Pedestrian walkways will be clearly marked on site to minimise the potential for accidents on site.

5.4 PROPOSED RECYCLING AND RECOVERY FACILITY

The proposed recycling and recovery facility will be situated to the northwestern corner of the site as shown on **Figure 5.2**. The building will be approximately 90 metres long and 50 metres wide with an

approximate area of 4,909 m². The building structure will comprise two steel portal type structures with the apex height being 15.6m from the ground level which will provide a clear internal working height of 12m required for internal waste processing. The building will house and contain all of the proposed waste operations on site.

5.4.1 Building Access

Delivery Zones

The building has been designed with a maximum number of access points to facilitate delivery and loading of waste to and from the building. Four main areas dealing with separate waste streams enable clean packaging waste to be handled separately. Along the eastern face of the building there are 8 delivery doors allowing several vehicles to off-load at any one time.

Each door into the building will be 8m high and 3.6m wide and numbered to facilitate delivery movements on site. RRR plan to direct all delivery vehicles to a particular delivery door depending on the type of waste on board. All delivery vehicles will be fully inside the building before offloading to reduce the potential of odours and litter escaping. The delivery doors will be fast activating type doors which can be opened and closed rapidly to contain any nuisance loads delivered to the site. For further details on the waste operations, refer to section 5.11.

Loading Zones

Following waste processing the various types of waste e.g. baled packaging waste, baled plastics, organic materials, and other residues will be collected from the site.

The main vehicle-loading zone will take place along the southern face of the facility. Initially two loading bays will be in operation a level access door and a dock-leveler loading zone. Baled packaging and plastic waste will be loaded by forklift on to collection vehicles for export. A canopy to facilitate loading in wet conditions will cover the loading area. RRR plan to increase the number of loading access doors to four if required to accommodate loading operations maximum waste tonnages.

Collection vehicles will also collect organic and residual waste at the northern face of the building in a covered annex of the building.

The western elevation of the building will have two loading access points through which forklift trucks will be able to load collection vehicles during busy periods. Additional access points along this side of the building will be installed if required as operations increase.

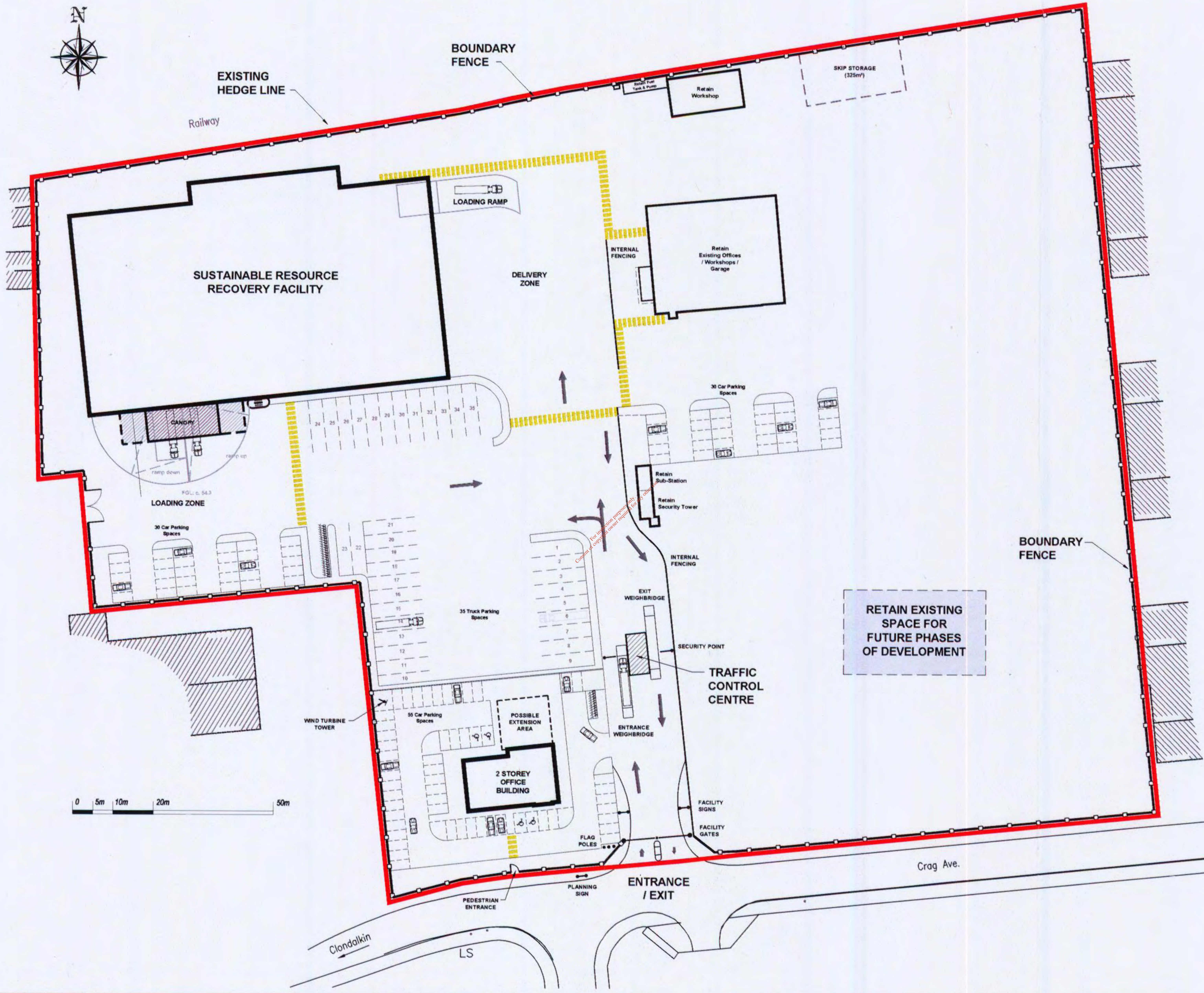
Staff Access/Accommodation

Staff access doors will located on all sides of the building to enable ease of movement for operatives. Pedestrian routes will be marked for staff from the staff building to the facility and from the office building to the facility. Staff will be required to use the walkways around the site to reduce the likelihood of accidents occurring on-site. A toilet and wash area will also be included for operatives working in the facility.

5.4.2 Design Features

The proposed facility will be a state of the art purpose built waste processing facility. It will be a simple warehouse type building with a steel portal frame structure and a two-tone cladding facade. **Figure 5.3** shows an illustration of the main recovery facility. The building will be large enough to house all internal waste operations including the mechanical grab, which can have an arm length of about 10m. This ensures that all waste operations can be carried out in a controlled environment with typical nuisances should as leachate generation, scavenging birds and vermin eliminated.

In an effort to incorporate sustainable features into the facility design all roof rainwater will be collected and channelled to the eastern end of the building. The water will drain into a main collector pipe, via a system of drainpipes, and will be conveyed to an underground collection tank. The tank will store the



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No.	Date	By	Amendments
AD1	Oct03	RH	Issue for Approval

SUSTAINABLE RESOURCE RECOVERY FACILITY

SITE LAYOUT

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Approved:	CB	Drawing No.:	FIG 5.2
Scale:	1:1000	Rev.:	A01
Date:	Oct03		



Figure 5.3 WAREHOUSE DETAIL



collected rainwater for reuse. Tappings from the tank will pump the water to the main facility for cleaning purposes or to the vehicle wash area in the existing office building.

The building will feature an odour mist system which will spray perfumed air into the building to reduce the generation of potential nuisance odours or dust. The prevailing wind direction is also a key factor in attempting to control odour problems which at the proposed location is generally from the southwest. The design of the building will minimise openings along the southern face will minimise the effects of wind blown through the building.

5.5 ADMINISTRATION BUILDING

A new two-storey office block development will be constructed to the front of the site by the southern boundary of the site alongside Crag Avenue. The building will cater for initially 30 administration, sales and management staff and will be the reception area for all customers/visitors to the site. The office building will be approximately 600m² in size and will be open plan in design. An illustration of the office building is shown on **Figure 5.4**.

A slip entrance off the main site entrance will lead vehicles into the main office block area. The area will have provision for 55 car parking spaces including 5 disabled spaces and a bicycle rack for staff and customers. The area will be landscaped throughout with lime and cherry trees and green beech whips.

The building facade will be primarily made up of cladding material and glass windows with timber panelling featured as part of the southern and eastern elevations. All of the glass windows along the southern face of the building will have a *brise soleil* of photovoltaic panels. The panels will harness solar energy which will be fed into a battery bank within the building. The battery bank will provide sufficient energy to meet the certain energy requirements for the building such as lighting, kitchen appliances etc. The battery bank reserve will be supplement by wind energy harness from a wind turbine on site which will be located close to the proposed office block. The turbine will be 2.5m in diameter and with a total tower height of 13m. The location of the tower is indicated on **Figure 5.2 Site Layout**.

5.6 SITE ENTRANCE AND TRAFFIC CONTROL CENTRE

RRR plan to redesign the entrance to the site in order to improve access and prevent queuing outside on Crag Avenue. The site entrance will be widened sufficiently to allow a two-way traffic flow system for waste vehicles into and out of the site. The boundary fence will also be set back to improve sightlines along Crag Avenue for vehicles leaving the site.

Waste vehicles and HGV's entering the main facility will check-in at the on-site traffic control centre. The control centre will be set back a distance of ~40m from the facility gates to prevent queuing of vehicles etc. The control centre will be made up of a control cabin, an entrance and exit weighbridge and barrier controlled entrance and exit lanes for staff vehicles. Traffic staff will control the access of all vehicles to the site and will be the central security point for the facility.

The control cabin will be elevated on a concrete plinth to facilitate communication between staff and vehicle drivers. The cabin will be approximately 60 sq.m in area and will cater for 3 staff members.

5.7 EXISTING SITE BUILDINGS AND INFRASTRUCTURE

As part of the site development, RRR propose to retain all of the existing buildings on site.

The main building on the existing Crosbie Transcar site functions as a typical office/workshop type building. It is made up of a large maintenance garage, a cleaning bay and a dewaxing bay. There are also several small offices and a reception area within the building. Two portakabins have been attached to the main building to supplement the office space in the building. RRR plan to retain the existing building and it will function as both staff quarters for facility operatives and as a maintenance garage for vehicles. The cleaning bay area will be retained and reused as a truck wash area for waste



Figure 5.4 OFFICE DETAIL PHOTO



vehicles. During the construction of the new facility and office block RRR plan to operate out of this building for an interim period.

The workshop building located along the northern boundary of the site will be retained and used similarly by RRR. There is also an elevated security/look out building, an electric sub-station and a second entrance to the site along the western boundary of the site. All of these infrastructure will be retained as part of the proposed development. The site boundary fence will be retained in its existing condition along the northern and eastern boundary. At this stage it is planned to upgrade part of the southern and western boundary fences along the new office development. RRR plan to improve the entire site boundary fence in stages as the site develops.

5.8 WASTE QUANTITIES

The proposed facility plans to accept up to 250,000 of commercial and industrial waste per annum. Commercial waste mainly packaging waste i.e. cardboard and plastics will comprise about 85% of the total waste intake at the site. The remaining 15% will comprise mainly of commercial waste and to a lesser extent C&D waste, WEEE, wood etc. The following table provides an outline of the expected types and quantities of waste to be accepted at the site:

Table 5.1: Waste Types and Quantities

Waste Type	% Quantity	Tonnes Per Annum	
Commercial, Packaging & Industrial Waste	95%	237,500	
Additional Waste Streams	5%		
C/D Waste		3,000	
WEEE		3,000	
Wood		1,500	
Glass		1,500	
Metal		3,000	12,500
Total		250,000	

The above figures have been estimated from a breakdown of the typical waste quantities accepted at the RRR operation at Knockmitten Lane and projected growth.

5.9 WASTE ACCEPTANCE

Staff members operating in the traffic control cabin will log all waste loads arriving at the site. The following information will be recorded for the site records:

- Description of the waste including waste types, composition, form and relevant EWC codes etc.;
- The origin of the waste including all customer details;
- The weight of the waste load;

This information will be collated and inputted into a site database which will be relevant for environmental reporting and inspections by the EPA etc.

All waste loads arriving to the site will be tipped out inside the main facility building and inspected prior to processing is undertaken. If staff members are satisfied that the load is not contaminated the material will be processed as required. Any loads considered to be suspect will be removed to a quarantine bay for further inspection by staff and will arrange for the load to be returned to the customer if they are not satisfied. Similar controls will be put on all recyclables/residues leaving the site.

5.10 WASTE HANDLING

Cardboard and Packaging Waste

Source separated packaging waste will be moved from the main tipping floor onto the relevant conveyor belt to be processed and baled. This material is generally dry and clean and requires minimum handling and processing. Nuisance odours should not be an issue due to the nature of the material.

Mixed Commercial and industrial Waste

This type of material will be a mix of packaging waste, recyclables, and organic matter. RRR will operate a waste processing operation within the facility to separate out each recoverable fraction, refer to Section 5.11 Waste Processing. The organic fraction of the mixed waste can typically generate nuisance odours and attract nuisance birds, flies and vermin. This potential nuisance should generally not be an issue at the new facility for the following reasons:

- All of the waste processing will be carried out within the facility which will reduce odour development and eliminate the potential for leachate generation.
- Mixed waste loads arriving at the facility will not be allowed to stand generating odours and attracting flies. The material will be moved through the waste processing system soon after the material has been tipped.
- A perfumed mist system will be in operation in the facility to reduce potential odours.
- The organic fraction will be separated out of from the mix waste and collected in a trailer which will be parked in a covered annex building adjacent to the facility. When full this trailer will be moved off-site for further recovery. Typically 1-2 trailers will be filled on a daily basis.

Additional Waste Streams

Smaller quantities of additional waste streams such as glass, C&D waste, wood, and metal will be accepted at the site. This material will be stockpiled in storage bays in the facility prior to removal off-site for further recovery.

Similarly smaller quantities of WEEE will be accepted at the site and will be partially disassembled with the metal and plastic fraction separated out for recovery.

Any wastes such as oil, fluorescent tubes, batteries etc will be placed in appropriately designed storage bays.

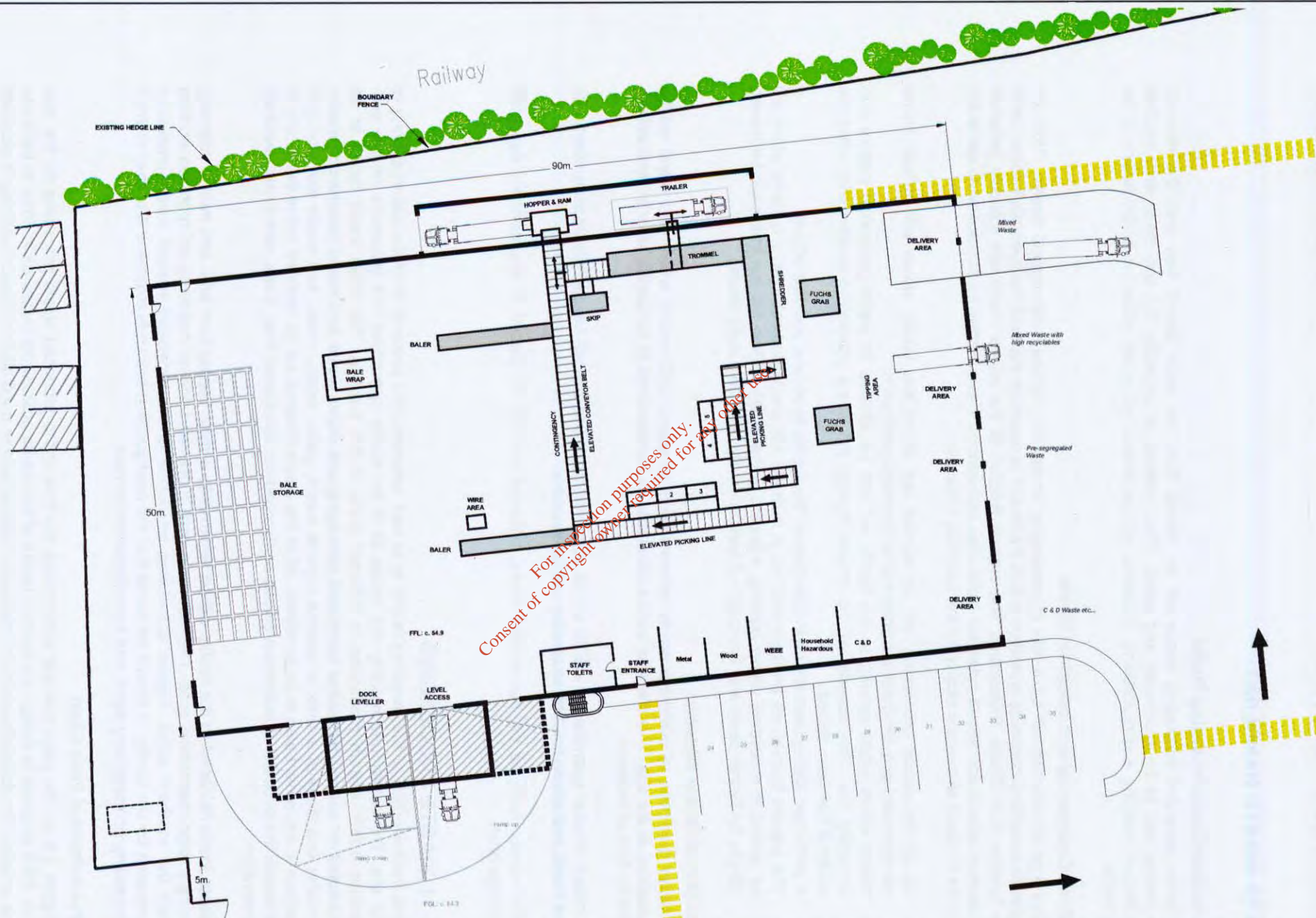
5.11 WASTE PROCESSING

The main function of the recycling facility is to sort, separate and process all of the waste arriving to the site. The warehouse building will house all of the waste operations and processes on site with various waste stream processed in different parts of the building. The main waste types to be accepted on site will be source separated packaging and paper waste and mixed commercial waste. Smaller quantities of source separated organic waste, glass, wood, metal, and waste electrical and electronic equipment also to be accepted. All of the waste streams will be handled inside the facility to eliminate the potential of nuisances on-site such as odour, windblown litter, birds, vermin and leachate generation.

Waste loads delivered to the facility will be tipped onto a main tipping floor area and moved internally using a large mechanical grab. The moveable grab is operated and controlled by an operative working from the machine cabin. Figure 5.5 shows an outline of the proposed internal waste processes proposed for the facility. It should be noted that the configuration shown is indicative and may change depending on machinery sizes, and operational techniques.

Waste Process Flow Chart

Figure 5.6 on the page overleaf summarises the flow of the proposed waste processes for the new site. RRR propose to design the internal layout of the waste processing machines in order to minimise the potential for double handling of the same material and to maximise the space and height provided



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No.	Date	By	Amendment
A01	Oct03	RH	Issue for Approval

SUSTAINABLE RESOURCE RECOVERY FACILITY

RECOVERY FACILITY FLOOR PLAN

Issue Details		Office Use Only	
Drawn	RBH	File Ref	msd016.3FGA015.5.dwg
Checked	VJP	Job No.	msd0163
Approved	CB	Drawing No.	
Scale	NTS		
Date	Oct'03		

FIG 5.5 A01

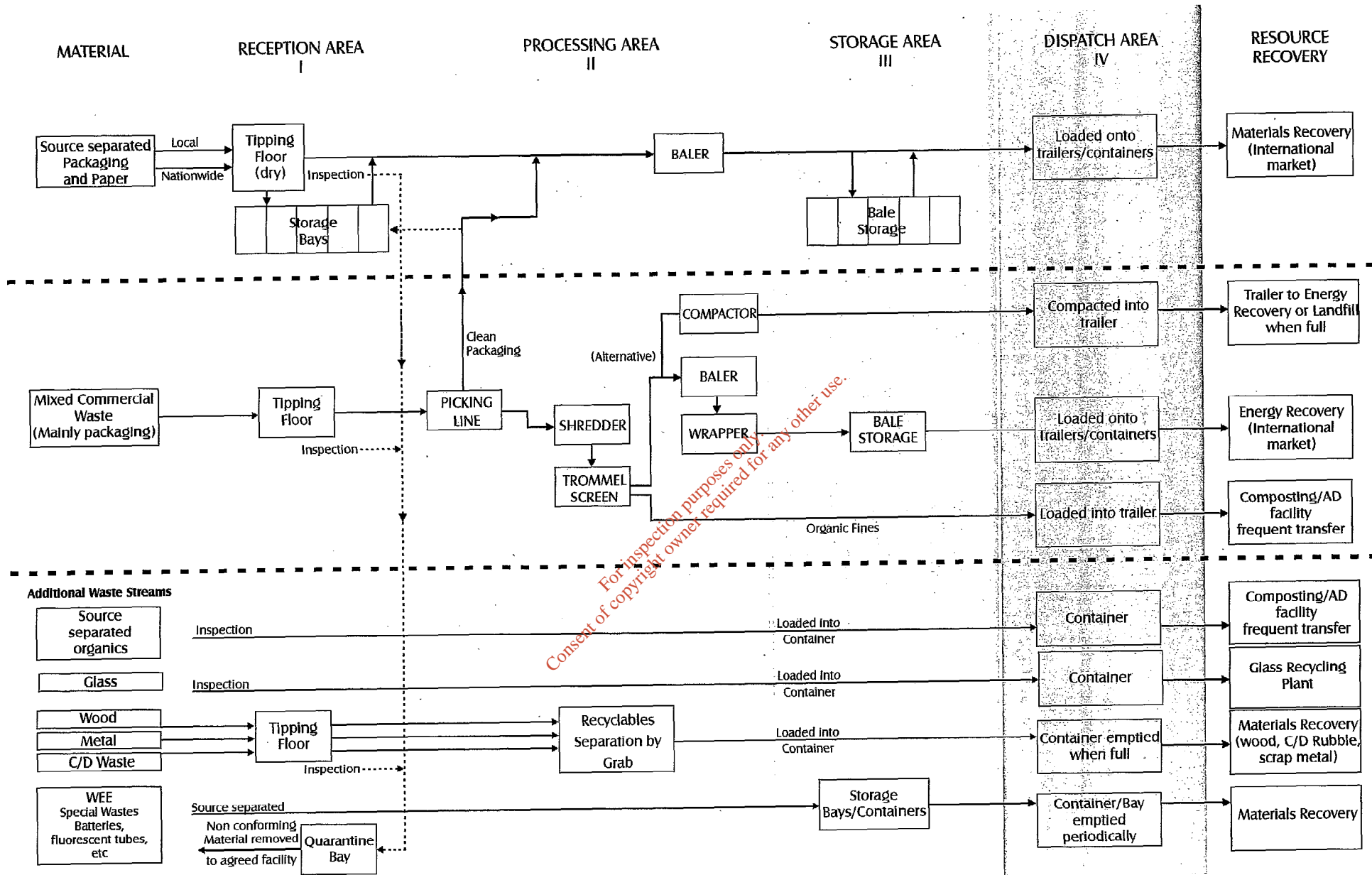


Figure 5.6 PROCESS FLOW CHART



by the building space. The configuration of the internal processes will be flexible so as it can adapt to meet future needs as required.

Source Separated Packaging Waste

Source separated packaging waste will constitute the majority of the waste delivered to the site and will require very little additional processing. The waste will be tipped onto the floor from where the grab will pick-up the waste and drop it onto a conveyor belt. (Some waste will arrive as smaller bales which will be offloaded and opened). The belt will feed the material into a waste baler which will compact the material into rectangular bales. The bales will be wire wrapped to keep them together and then moved using a forklift to the back of the building for storage. The bales will be collected and shipped abroad for recovery.

Mixed Commercial and Industrial Waste

This waste stream requires a higher level of process in order to separate out the various types of materials. After tipping the material will again be moved onto a conveyor belt using the mechanical grab. The belt will carry the material pass a picking line from which dry packaging material will be picked by manual operatives and dropped into a storage bay. This material will be moved internally and baled with the source-separated waste. The remaining material (which may include organic material) will continue on the belt and onto the mechanical shredder. The shredder will cut up the material and feed it into the trommel machine. This machine is made up a large screen which will separate out the finer organic particles from the residual mixed waste. The residual mixed waste will be moved from the trommel to a second baler. The second baler will again compact the waste into rectangular bales which will be wrapped in a plastic film to ensure the bales remain in tact. These bales will be stored in the facility and eventually exported for recovery.

The separated organic fraction of the waste will be fed from the trommel into a parked trailer in the covered annex building. After filling the trailer the material will be moved off-site and further processed at a compost facility.

If the residual mixed waste contains very little packaging type material RRR will divert it from the trommel to a hopper and ram compactor which will compact and load the waste directly into a waste trailer. This material will be sent to a reprocessor manufacturing fuel for energy recovery facilities.

Additional Waste Streams

Smaller quantities of glass, wood, plastics, metal, construction and demolition waste (C&D), household hazardous wastes and waste electronic and electrical equipment (WEEE) will also be accepted at the facility. These materials are generally source separated and after off loading will be moved into separate storage bays within the facility. The materials will be stored for a period and removed off-site for recovery when a significant quantity of material has built up the facility. The following summarises the likely recovery options for the various waste streams:

- Glass will be collected, stored and transferred to a glass recycling plant for recovery.
- Wood will be separated, stored and transferred to a green waste facility for recovery.
- Metal will be separated stored in the facility and transferred to a scrap metal plant for recovery.
- Small amounts of C&D waste will be accepted at the site from time to time and will again be stored within the facility before being moved off-site to a licensed recovery plant.
- Similarly small quantities of WEEE such as computer hardware will be accepted at the site. This plastic and metal material will be stripped off and recovered separately with the residual components exported abroad for recovery.
- Certain grades of paper and plastic will also be separated out from the general mixed waste quantities on-site and when substantial quantities have been collected the plastic will be baled and made available for recovery.

- Smaller quantities of household hazardous wastes (e.g. fluorescent tubes, waste oil, waste batteries) will also be accepted at the site, stored and made available for recovery.

It should be noted that all additional waste streams will be handled internally within the main facility thus eliminating the possibility of windblown litter, vermin and leachate generation.

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6 TRAFFIC

6.1 INTRODUCTION

RPS-MCOS carried out a Traffic Impact Assessment for the proposed Waste Transfer/Recycling facility on Crag Avenue on the outskirts of Clondalkin. The proposed development will be developed over a three to five year period and is expected to have a peak capacity of 250 000 tonnes of waste per year. The information provided in the TIA will be used to support a planning application to South Dublin County Council for a new state of the art Sustainable Resource Recovery Facility. The findings of this assessment are summarised below.

A complete copy of the Traffic Impact Assessment is included in **Volume 3, Appendix 3** of this report.

6.2 METHODOLOGY

This section of the Environmental Impact Statement will examine the transportation impacts of the proposed development. It has been compiled in accordance with the Institution of Highways and Transportation Guidelines for Traffic Impact Assessments (September 1994).

This report will deal with the issues of:

- Site Location;
- Existing Traffic levels;
- Future traffic levels without development;
- Impact of development traffic on the surrounding road network;
- Pedestrian/cyclist accommodation;
- Public transport accessibility;
- Mitigation measures required.

6.3 EXISTING ENVIRONMENT

6.3.1 Site Location

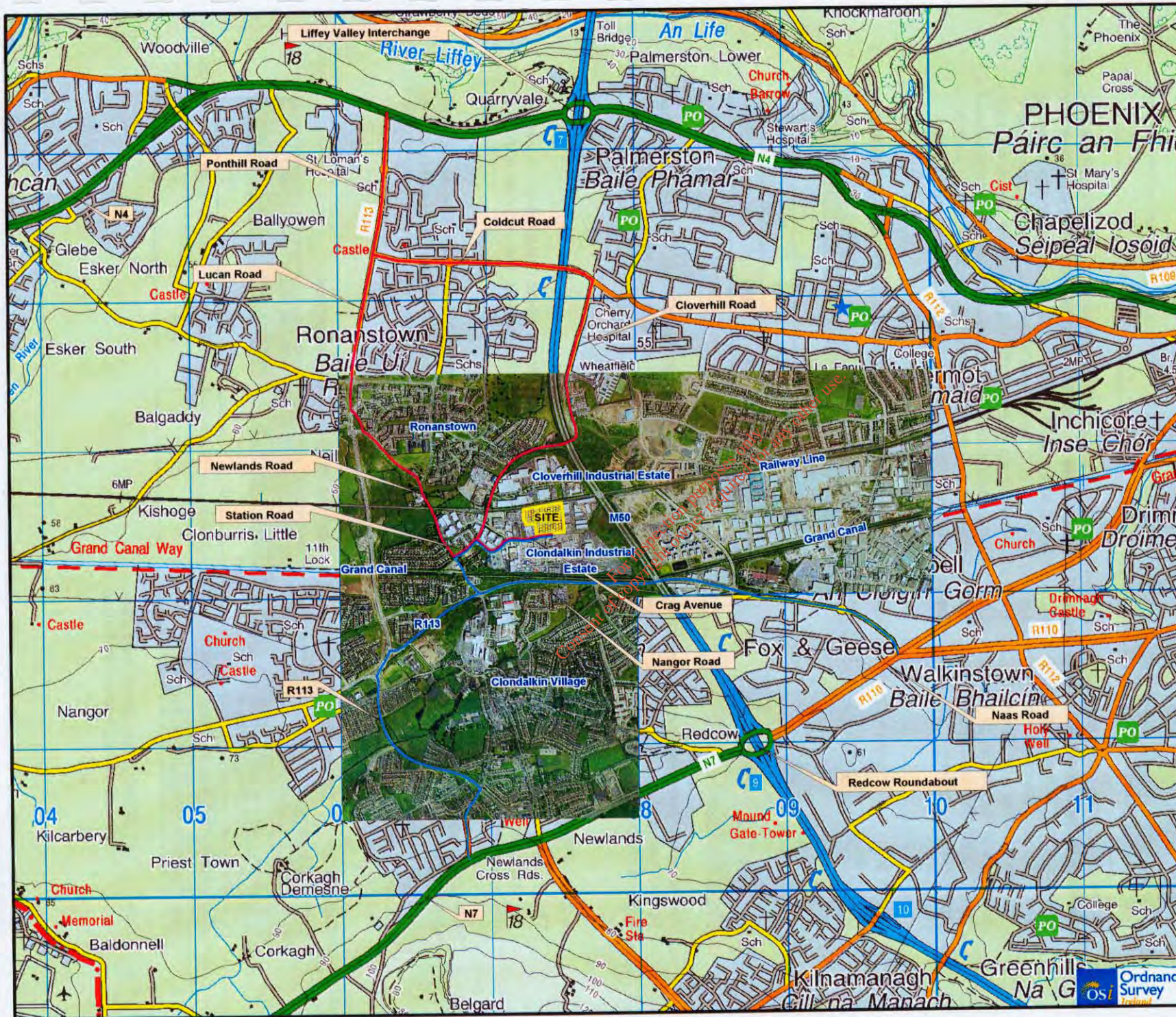
The proposed site is situated towards the end of Crag Avenue in Clondalkin industrial estate, a cul-de-sac road. The site entrance is located just off Crag Avenue. The entrance to the estate is off Station Road, approximately 1.4kms north of Clondalkin town. The roads in the industrial estate are wide but have a small amount of pavement failure.

The site is located north of the N7 Naas Road and west of the M50 motorway. The site can be accessed from the M50 at the Liffey Valley interchange, approximately 2.5kms from the proposed development or at the Red Cow Roundabout, approximately 3kms from the proposed development.


Figure 6.1 shows the main northerly and southerly routes leading to and from the site.

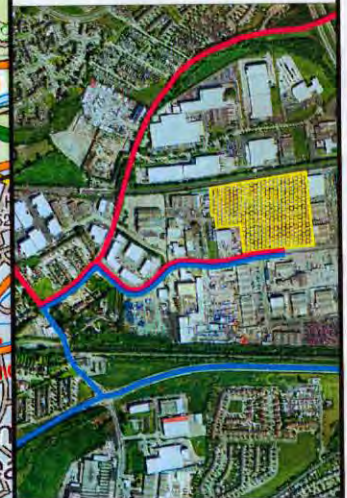
6.3.2 Existing Situation

At present "Crosbie Transcar, Warehousing and Car Delivery" occupy the site. They store thousands of cars that are shipped into Ireland via Dublin Port and these vehicles are subsequently distributed around the country to various motor dealerships. The business operates 24 hours a day, 7 days a week, although there are very few movements to/from the site on Sundays. A large number of heavy good vehicles, particularly the articulates car transporter type vehicles, which are 15m long, frequent the site. Many of these vehicles are making deliveries from Dublin Port. Peak time depends on ferry arrivals at the docks and can be variable. The first quarter of the year would be its busiest period and during the summer the level of activity is generally significantly lower.



Legend

-  Northern Approach Routes
-  Southern Approach Routes
-  Site Location



Project **Sustainable Resource Recovery Facility**

Title **Preferred Approach Routes**

Figure 6.1



Issue Details		
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Checked: J.McM	File Ref.	
Approved: C.B	MDE0163M0014A02	
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Date: 12.11.2003	M0014	A02

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Table 6.1 Level of Current Traffic Activity

Quarter	% Trade
Quarter 1 (Jan – Mar)	100%
Quarter 2 (April – June)	75%
Quarter 3 (July Sept)	50%
Quarter 4 (Oct – Dec)	75%

A 24-hour traffic count was carried out at the entrance to the existing site over a period of one week, starting on 16th June 2003. The purpose of the count was to establish information on the existing traffic flow patterns. The average peak times were found to be quite variable. On the Monday and Tuesday the AM peak was established to be between 03.00 - 04.00, while on Wednesday, Thursday and Friday the peak period was between 12.00 – 13.00. An analysis of the traffic count data for the three main junctions in the vicinity of the site including Crag Avenue/Station Road, Station Road/Newlands Road and Cloverhill Road/Coldcut Road, would indicate that the peak AM and PM periods are 7am-8am and 4pm-5pm respectively. The weekly schedule of movements at the existing site is summarised below in Table 6.2.

Table 6.2: Average Weekly Schedule for 'Crosbie Transcar Warehousing and Car Delivery'

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Car movements (No. of Veh.)	80	230	292	295	173	22	11
HGV movements (No. of Veh.)	84	99	63	100	55	31	15
Total Movements (No. of Veh.)	164	329	355	325	228	53	26
% HGVs	51	30	18	31	24	58	58

As previously noted, the summer months represent the quietest period for 'Crosbie Transcar Warehousing and Car Delivery', and vehicular movements can be up to twice as high during their busiest period. The figures recorded for the existing site traffic in the TIA are, therefore, conservative.

6.3.3 Traffic Comparison

The existing site and the proposed development have a similar number of traffic movements. However the proposed development, when fully operational, will generate an increase in the number of heavy goods vehicles.

A PCU (passenger car unit) value of 2.0 was used for the heavy goods vehicles that will be associated with the proposed development and a value of 2.5 was used for the articulated car transporters at the existing development. The heavy goods vehicles that currently access the site vary in length. The delivery fleet vehicles are typically 8m long while the removal fleet vehicles vary in length from 12-15m. A direct comparison of PCUs per day is provided in Table 6.3 below.

Table 6.3: Comparing the Existing Site and the Proposed Development

	Existing Site (Quarter 2)	Existing Site (Quarter 1)	Proposed Development	Net Increase/Decrease
Total No. of Car Movements (PCUs)	200	267	120	-147
Total No. of HGV Movements (PCUs)	203	270	568	+298
Total No. of Movements (PCUs)	406	537	688	+151

Note: - = indicates a decrease in traffic flow
+ = indicates an increase in traffic flow

The increase in the number of PCUs represents 6 additional movements per hour, which is not significant.

6.3.4 Existing Road Network

The proposed development site is located in Clondalkin industrial estate off Station Road. Station Road is a main street in between two regional roads, the R113 (Newlands Rd) and the R833 (Coldcut Rd). Cloverhill Road and Newlands Road both narrow significantly at the respective humpback bridges over the Arrow Service Railway line. As a result of these restrictions, a section of each of these roads over the bridge is signalised to only allow one way traffic flow at a time. The road widens again to accommodate two-way traffic flow at a distance of approximately 100m past the bridges. After a distance of 100m and the road widens again to accommodate two-way traffic. There is a weight restriction of weight restriction of 3 tonnes exists on Kennelsfort Road through Clondalkin and Ballyfermot Villages.

6.3.5 Future Road Networks

The regional transportation strategy resulting from the Dublin Transportation Initiative (DTI) will have a significant impact on Clondalkin. The proposal includes a light rail transit (LUAS) route running from Dublin City Centre to Tallaght via the Naas Road. The station and the "park and ride" facilities for Clondalkin will be located at the M50 junction with the Naas Road. A Quality Bus Corridor serving south Clondalkin is currently under construction.

The Dublin Port Tunnel, which is due to open 2005, is a key element of the National Development Plan's strategy to deliver a more efficient and safer transport system in Dublin City. Its' primary purpose is to provide a high quality access route to Dublin Port, as well as relieving traffic congestion in many areas of the city. The scheme follows a broad north south path in its route from Santry to Dublin Port. The route of the scheme commences on the M1 Dublin –Belfast Motorway at Coolock Lane Interchange. The total travel time from the M50 at the N1 will be approximately six to seven minutes. The scheme will result in the removal of heavy goods vehicles through traffic from the city centre and residential areas.

The second overbridge at the M50 Toll Plaza was officially opened in September 2003. The opening of the scheme is a very positive development in the overall plan to upgrade the M50 Motorway. This should result in alleviating the long queues being experienced by road users.

The Outer Ring Road (ORR) forms an integral transport objective of the 1998 "South Dublin County Council Development Plan". SDCC propose to link the Galway Road N4 (National Primary Route) to the Tallaght By-Pass (N81) via a grade-separated interchange on the Naas Road (N7). An existing section of the scheme has already been completed from the Galway Road to the Balgaddy Roundabout in recent years.

The part of the scheme, which connects the Ballydowd interchange southwards to the N7 at Kingswood is currently under construction. This scheme will particularly improve infrastructure links between the towns of Lucan, Clondalkin and Tallaght, within the South Dublin County area. The scheme will connect with the Nangor Road at a roundabout junction. The road link is considered essential to service ongoing and proposed residential and industrial development of the South Dublin County Area.

At present Irish Rail is in the process of applying for a Rail Order for the Kildare Route Project. This will involve the addition of a track to the two existing tracks from Heuston to the Cherry Orchard area (Arrow Service) and the addition of two tracks from there to beyond Hazelhatch (past Clondalkin Rail Station). As part of this scheme, many of the bridges over the railway lines from Heuston Station to Hazelhatch Station will need to be widened. This will include the widening of the narrow hump back Bridge on Cloverhill and on Newlands Road, thus allowing two way flows over them.

Adamstown is located to the west of the proposed development site. The area has been designated by South Dublin County Council as a Strategic Development Zone. The development will accomadate

between 8,000 and 10,000 dwelling units with a significant element of commercial development. The provision of infrastructure and community facilities and amenities is phased.

The development has been approved by An Bord Pleanála subject to the provision of infrastructure. It will be a high rise density development, and will have a population similar to the towns of Ennis and Tralee. It is a condition of the planning permission that the N4 be extended to 3 lanes of traffic in either direction prior to the opening of the development. It is intended that the ORR will service a significant area of land at Adamstown that has been zoned for residential development.

6.4 THE PROPOSED DEVELOPEMENT

The proposed site is 4.5Ha in size, with its site entrance located on Crag Avenue in Clondalkin industrial estate. This is approximately 1.4 kilometres north of Clondalkin village.

The proposed new facility is expected to have an ultimate capacity of 250,000 tonnes per annum, an average of 1000 tonne per day. The proposed development will be open 24 hours, 7 days a week. The development proposes to operate most of its deliveries at off peak times to accommodate itself and local traffic. Approximately 60-70% of the incoming waste is expected to arrive from the direction of either the M50 Motorway or the N4 National Primary Route. A significant portion of outgoing traffic will have a destination of Dublin Port, via either the N4 to the Quays or the M50 Motorway.

The year of opening of the development is expected to be 2005. It is anticipated that significant quantities of packaging and commercial waste will be made available for recovery. The development traffic figures were established by undertaking a traffic count of the number of heavy goods vehicles over a period of a week (16/06/03 – 22/06/03) of vehicles entering and leaving the existing Waste Facility in Knockmitten Industrial Estate, off Nangor Road. Cars were not included in the traffic count.

At present the existing Knockmitten facility accepts approximately 50,000 tonnes of waste per annum. The proposed development at Clondalkin Industrial Estate will be designed to cater for up to 250,000 tonnes of waste per annum. In order to estimate the development traffic flow these figures were factored up accordingly.

Approximately 60 to 70% of the incoming waste comes from the Dublin area, either from the M50 or the N4. 80% of outgoing traffic will be headed to Dublin Port, either by the N4 or the M50. In September 2003 a second overbridge on the M50 beside the toll plaza will be opened, this will reduce traffic congestion at the toll plaza. Once the Dublin Port tunnel is finished in 2006 it will encourage further usage of the M50 ring road and then the Dublin Port Tunnel straight into the port.

6.5 PREDICTED AND POTENTIAL IMPACTS OF THE PROPOSAL

In terms of the overall impact of the proposed development on the road network, there will be an increase of 6 PCU movements per day. This is not considered to be significant and the traffic can be accommodated satisfactorily within the road network. Traffic assessments have been undertaken at a number of major junctions, the results of which are summarised in the following paragraphs. Both the PICADY (Priority Intersection Capacity And Delay) and LINSIG computer software packages were used to undertake the capacity analyses.

The RFC (Ratio of Flow to Capacity) demonstrates how the junction will operate in terms of capacity. A junction with an RFC of 0.850 is considered to be at capacity. A junction with a value below 0.850 is considered to be within capacity.

A full copy of the Traffic Impact Assessment can be found in **Volume 3, Appendix 3** of this report.

6.5.1 "T" Junction Between Station Road and Crag Avenue

The "T" junction was analysed using the "Picady" program. The results indicate that the "T" junction works with similar efficiency with and without the proposed development the year of opening 2006. The results are within the acceptable levels as described in the paragraph above.

6.5.2 "T" Junction Between Station Road and Newlands Road

The "T" junction was analysed using the computer package "Picady". It currently operates as a priority junction with signalised pedestrian crossings across Station Road and Newlands Road (north). The junction operates above capacity at the AM and PM peak at present and at the Year of Opening 2006.

It is clear that the junction will encounter capacity problems with or without the proposed development in place. At present the situation is exacerbated by the signalised one-way flow at the humpback bridge on Newlands Road, as traffic is delayed at the bridge.

There would be no benefit in improving the junction in isolation of improvements to the narrow humpback bridge on Newlands road, as this acts as the main capacity constraint.

6.5.3 Signalised Junction Between Coldcut Road and Cloverhill Road

The junction was analysed using the "Linsig" program. A cycle time of 120 seconds was used and the analysis was carried out for the year of opening and the design year with and without the proposed development in place.

The signalised junction will operate satisfactorily and will have sufficient capacity to facilitate demand for the year of opening of the new development.

A degree of additional capacity could be got by creating a left turn flare on the Cloverhill Road arm of the junction.

6.5.4 Development Access

The proposed new development will be accessed from Crag Avenue via the existing site entrance. The existing site entrance will require some upgrading and modification in order to facilitate the needs of the new facility. MCOS would propose to widen the entrance into the development to accommodate two-way flows and to improve the sightlines by moving back the boundary fencing adjacent to the entrance.

Crag Avenue is a cul-de-sac so all approaching site traffic will arrive from the west side. There is no through traffic on the road, hence the entrance will, in effect, operate as an internal road network.

6.5.5 The Do Nothing Scenario

It is anticipated that if the proposed development did not go ahead (i.e. do nothing scenario) the future capacity problem with the "T" junction between Station Road and Newlands Road would still remain an issue.

6.6 MITIGATION MEASURES

The layout and design of the access and the internal roads and car park has been designed for ease of access and egress and to minimise the likelihood of accidents.

Careful consideration has been afforded to the needs of pedestrians and cyclists, the more vulnerable road users. The proposed layout incorporates a separate pedestrian/cyclist entrance to the facility and sheltered bike racks for bicycles. Pedestrian walkways will be clearly marked throughout the site to ensure staff/visitors and vehicles can move around the site safely.

The signalised junction between Coldcut Road and Cloverhill Road is 80% saturated at the Year of Opening. A degree of additional capacity could be created by provision of a left turn flare on Cloverhill Road to accommodate 5 additional PCUs. However, this would be subject to further investigation by SDCC, in terms of land acquisition and overall feasibility.

The implementation of a number of strategic road improvement schemes including the Dublin Port Tunnel, the second Westlink Bridge, the Outer Ring Road, the widening of the humpback bridges and

the widening of the N4 to 3 lanes in either direction will result in significant improvements for traffic patterns in Clondalkin in the future.

6.7 RESIDUAL IMPACTS

From the Traffic Impact Assessment it can be concluded that the proposed development can be introduced into the area with little disruption to the existing levels of traffic. It will replace the car distribution business and the number of additional vehicles will not be significant. The majority of vehicles associated with the development will be much smaller than those associated with the current site use.

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7 GEOLOGY AND HYDROGEOLOGY

7.1 INTRODUCTION

RPS-MCOS carried out an impact assessment of the Geology & Hydrogeology of the proposed development at Crag Avenue, Clondalkin, Co. Dublin in June 2003.

This chapter includes a description of the existing environment along with identification of the potential significant impacts and a series of mitigation measures proposed to minimise these impacts.

The assessment includes a desk study and a summary of the available and relevant data on the area:

- Geology of Kildare Wicklow Sheet 16 Geological Survey of Ireland (GSI) Scale 1:100 000 (1994).
- Teagasc Soils Map (1993).
- Geotechnical & Environmental Services Ltd. Ground Investigation (2003).

A ground investigation and subsequent laboratory testing was undertaken in June 2003. This encompassed the construction of three boreholes on the site and the installation of standpipes.

The Geological and Hydrogeological impact assessment was carried out in accordance with the Environmental Protection Agency's guidelines on the "*Information to be contained in Environmental Impact Statements*" and by the Institute of Geologists of Ireland guidelines "*Geology in Environmental Impact Statements*" (IGI 2002).

7.2 DESCRIPTION OF THE EXISTING ENVIRONMENT

7.2.1 Regional Geology

According to the Geological Survey of Ireland Sheet 16 "Geology of Kildare – Wicklow" 1:100,000 map the site is underlain by the Calp Limestone formation. This formation is described as dark grey to black basinal Limestone and Shale and ranges in age from Chadian to Brigantian (Lower Carboniferous). The Belgard Quarry, south of Clondalkin, the largest quarry in the Dublin area has been developed in these basinal Calp Limestones.

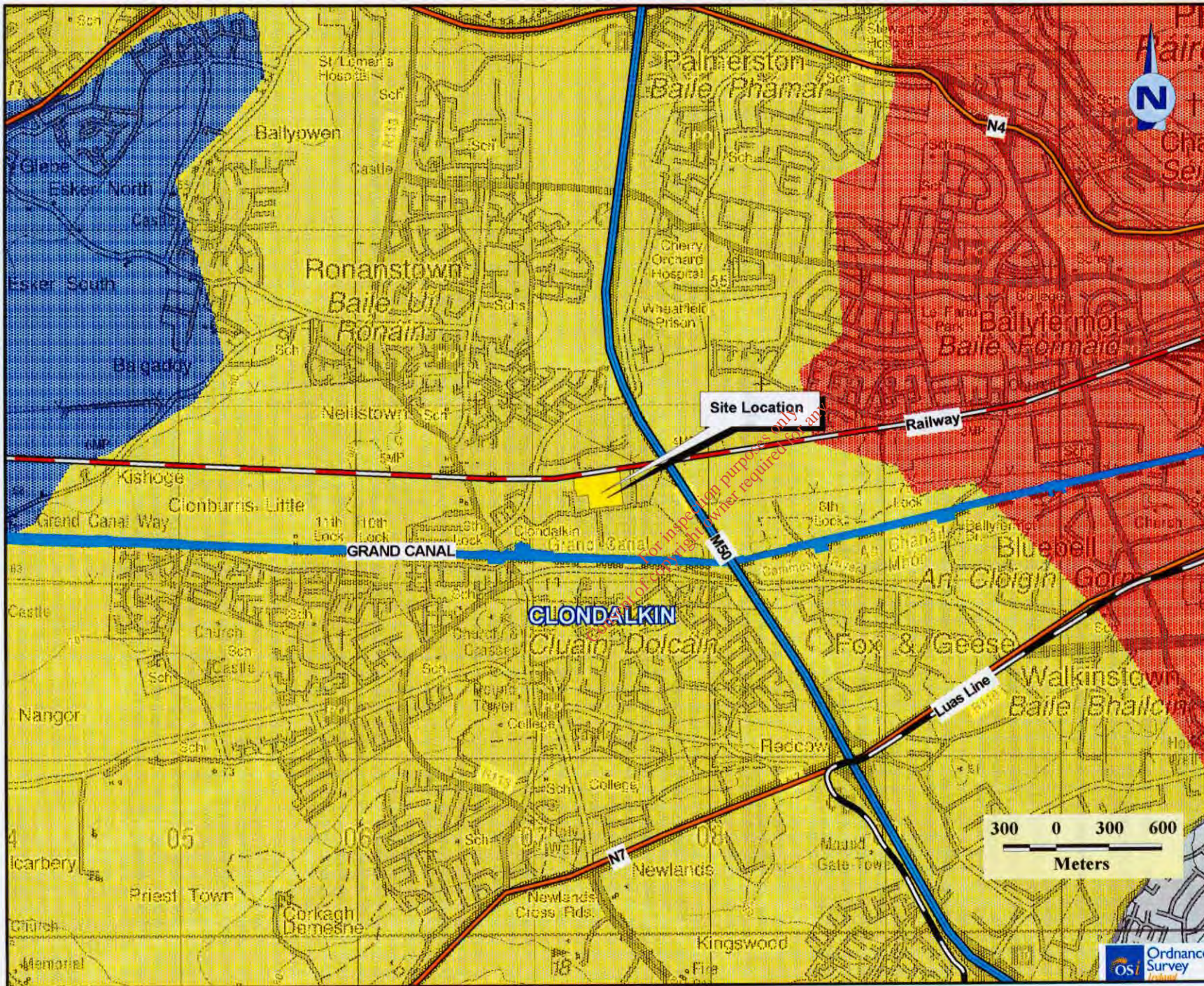
Figure 7.1 and Figure 7.2 overleaf show the Soil type and the Bedrock Geology respectively for the region.

7.2.2 Regional Hydrogeology

Permeability of the Lower Carboniferous Limestones is a function of the lithology, extent of dolomitisation, faulting/fracturing and degree of karstification. The Calp is defined as being very variable but dominated by low permeability, fine grained and argillaceous limestones and shales. There are more permeable strata within the unit that are thought to be responsible for the higher than expected yields that are encountered in different parts of the outcrop area.

7.2.3 Site Geology

A preliminary ground investigation was undertaken in June 2003 incorporating three cable percussive boreholes with standard penetration tests (SPT) to determine in-situ characteristics of the superficial deposits. Laboratory testing was carried out on selected samples recovered from the exploratory holes. The tests included moisture content, particle size distribution (PSD) and Atterberg limits for classification purposes and pH values to determine chemical composition.



Legend

Soil Type

- Glays
- Urban or Lake
- Grey Brown Podzolics
- M50
- N4
- N7
- Railway
- Luas Line
- Grand Canal

3R's
Reduce, Reuse, Recycle

Project Sustainable Resource Recovery Facility

Title Soil Types

Figure 7.1

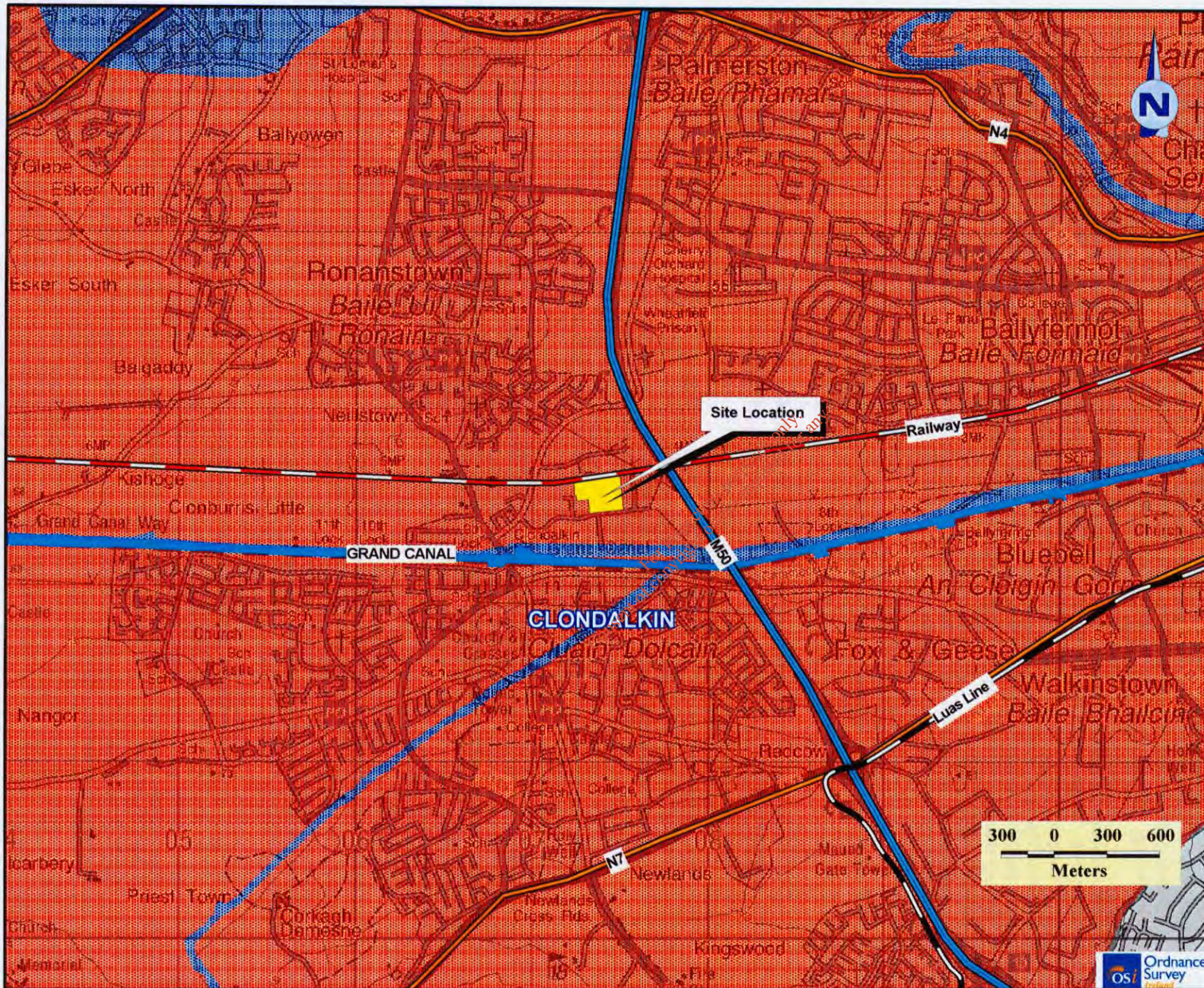
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Ordnance Survey



Legend

Bedrock Geology

- Calcareous shale, limestone conglomerate
- Dark-grey to black limestone & shale

- M50
- N4
- N7
- Railway
- Luas Line
- Grand Canal



Project **Sustainable Resource Recovery Facility**

Title **Bedrock Geology**
Source: GSI

Figure **7.2**

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Dun Laoghaire
Co. Dublin
Phone: 01 - 2028910
Fax No: 01 - 2007079
rpsinfo@rpsgroup.ie

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Notes

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BH1 located to the west of the site encountered made ground to 1.7mbgl overlying stiff gravelly clay and dense gravel, which in turn was underlain by shale and weathered limestone at 2.35mbgl. BH2 and BH3 located to the east of the site encountered made ground to 0.4-0.6mbgl overlying firm to stiff gravelly clay, which in turn was underlain by shale and weathered limestone at 2.4mbgl.

7.2.4 Site Hydrogeology

Groundwater was encountered in BH1 at 1.95mbgl in stiff gravelly clay and 3mbgl in weathered limestone. Groundwater was encountered in BH2 at 2.45mbgl in weathered limestone and BH3 remained dry during drilling to 3mbgl. Standpipes were installed in all three boreholes for further monitoring. The standing water level recorded in the boreholes ranged between 1.6m and 2.0m.

Groundwater samples were taken and sent to the laboratory for analysis for a standard suite of quality indicators. These results can be found in **Volume 3, Appendix 4** of this report. A provisional aquifer classification was obtained from the GSI of "LI" (Bedrock which is moderately productive only in local zones). The results obtained from groundwater sample analysis indicate that most parameters were well inside the EC Drinking Water Regulations (2000) although some parameters e.g. alkalinity were slightly elevated. There was also some variance in a few parameters between each sample. The results are consistent with the local landuse and did not demonstrate concerns for the proposed development. The boreholes will be retained as monitoring points in so far as possible. It is not expected that groundwater in this area is used for drinking purposes within the industrial estate.

7.3 POTENTIAL IMPACTS AND MITIGATION MEASURES

7.3.1 Construction Impacts and Mitigation Measures

Potential impacts on the geology and hydrogeology during the construction phase of the project are detailed below:

- Contamination of soil and groundwater by leakages and spillages.
- Compaction of soils will occur as a result of construction traffic.
- Blasting for excavation purposes is not anticipated.
- If it is necessary to excavate to below groundwater level, temporary dewatering techniques may need to be employed and this may impact on the local groundwater table.
- Excavation to the groundwater table will have the effect of increasing the vulnerability of the groundwater table to extremely high.

The following mitigation measures should be taken into account:

- Care to be taken while managing construction vehicles to ensure no spillages/leakages escape into the ground.
- Record any local abstractions of the groundwater and monitor during any temporary dewatering on site.
- Due care to be taken if excavations are to go to the groundwater table to ensure that no spillages/leakages escape into the exposed groundwater.

7.3.2 Residual Impacts and Mitigation Measures

Potential residual impacts on the geology and hydrogeology of the project are detailed below:

- Contamination of soil and groundwater from sensitive activities of the project such as in the vicinity of the tipping areas and handling of waste from around the site including the offices and workshops.
- Compaction of soil and the potential for settlement should be nominal due to the nature of the sub-surface conditions.
- Due consideration to be given to the type of backfill material used should excavation proceed to depths at or below the standing water table.

The following mitigation measures should be taken into account.

- All wet wastes which might arise should only be handled on impermeable surfaces to avoid the possibility of groundwater contamination.
- When considering suitable backfill in areas of excavation the material should have permeability equal to or lower than the surrounding material to ensure low vulnerability of the underlying groundwater.

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