

Environmental Impact Assessment Report

To accompany an Application to:

An Bord Pleanála

For

Residential Development

At

Newcastle South & Ballynakelly,

Newcastle, Co. Dublin

On behalf:

Cairn Homes Properties Ltd.

September 2019

Environmental Impact Assessment Report

September 2019

To accompany an Application to:

An Bord Pleanála

For

Residential Development

Within the Administrative Area of

South Dublin County Council

At

**Newcastle South & Ballynakelly,
Newcastle, Co. Dublin**

406 no. Residential Units; 1 no. Childcare Facility; 1 no. Commercial Unit; new Public Park, Greenway and Open Spaces; new Vehicular Access to Main Street; continuation of Newcastle Boulevard; together with all associated Infrastructure and Landscaping Works

On behalf of:

Cairn Homes Properties Ltd.

Prepared by:

Declan Brassil & Co. Ltd

DBFL Consulting Engineers

MOLA

Murray Associates, Landscape Architects

AWN Consulting

Openfield Ecological Services

Irish Archaeological Consultancy Ltd.

TABLE OF CONTENTS

1.	INTRODUCTION	1-1
1.1	Nature & Extent of Development Proposal	1-2
1.2	Need for an Environmental Impact Assessment Report.....	1-3
1.3	Scoping of EIAR	1-3
1.4	Structure & Content of EIAR.....	1-4
1.4.1	Land.....	1-6
1.5	Difficulties in Compiling the Specified Information.....	1-6
1.6	Specialist Contributors	1-6
	APPENDIX 1.A Competency of Experts	1-8
2.	SITE DESCRIPTION & PLANNING HISTORY.....	2-1
2.1	Site Location.....	2-1
2.2	Site Description.....	2-2
2.3	Planning History	2-4
3.	DESCRIPTION OF PROPOSED DEVELOPMENT	3-1
3.1	Characteristics of Proposed Development.....	3-3
3.1.1	Demolition Work	3-3
3.1.2	Size of Proposed Development.....	3-3
3.1.3	Cumulative Impact with other Projects.....	3-11
3.2	Description of Construction.....	3-12
3.2.1	Construction Phase & Land Use Requirements	3-12
3.2.2	Proposed Construction Works	3-14
3.2.3	Duration & Timing.....	3-15
3.3	Operation of the Project.....	3-17
4.	CONSIDERATION OF ALTERNATIVES	4-1
4.1	Rationale for the Proposed Development.....	4-1
4.2	Consideration of Alternatives.....	4-2
4.2.1	Alternative Locations.....	4-2
4.2.2	Alternative Construction	4-3
4.2.3	Alternative Layouts & Designs	4-3
4.2.4	Alternative Mitigation Measures	4-11
4.2.5	“Do Nothing” Alternative.....	4-11
4.3	Conclusion.....	4-11
5.	POPULATION & HUMAN HEALTH	5-1
5.1	Introduction.....	5-1
5.2	Methodology.....	5-1
5.2.1	Study Area.....	5-1

5.2.2	Socio Economic Characteristics	5-2
5.3	Receiving Environment – The Baseline Situation	5-3
5.3.1	Site Location & Context.....	5-3
5.3.2	Population Trends for the Local Area.....	5-3
5.3.3	Population Structure	5-4
5.3.4	Economic Activity	5-6
5.3.5	Existing Social and Community Facilities in Newcastle	5-9
5.3.6	Education Facilities.....	5-9
5.4	Potential Impacts of the Proposed Development.....	5-10
5.4.1	Population.....	5-11
5.4.2	Community & Facilities.....	5-11
5.4.3	Economic Activity and Employment	5-12
5.5	Predicted Impacts on Human Health	5-12
5.5.1	Air Quality	5-12
5.5.2	Noise and Vibration.....	5-13
5.5.3	Water: Hydrology and Hydrogeology.....	5-14
5.5.4	Land, Soil and Geology	5-14
5.5.5	Unplanned Events	5-15
5.4.4	Human Health and Safety	5-16
5.6	Proposed Remedial and Mitigation Measures.....	5-16
5.6.1	Construction Phase Measures.....	5-16
5.6.2	Operation Phase Measures	5-17
5.7	Residual Impact.....	5-17
5.7.1	Construction Phase.....	5-17
5.7.2	Operation Phase	5-17
5.7.3	‘Do Nothing’ Impact – Status Quo	5-17
5.8	Reinstatement.....	5-18
5.9	Interactions.....	5-18
5.9.1	Human Beings / Air Quality and Climate	5-18
5.9.2	Human Beings / Noise and Vibration.....	5-18
5.9.3	Human Beings / Landscape and Visual	5-18
5.10	Difficulties Encountered	5-18
6.	SOIL AND GEOLOGY.....	6-1
6.1	Introduction.....	6-1
6.2	Characteristics of the Proposed Development	6-1
6.3	Receiving Environment.....	6-1
6.3.1	Soils	6-1
6.3.2	Geology.....	6-2
6.4	Assessment Methodology.....	6-3
6.5	Identification of Likely Significant Impacts	6-4

6.5.1	Construction Phase	6-4
6.5.2	Operational Phase.....	6-5
6.6	'Do Nothing' Scenario	6-5
6.7	Mitigation Measures.....	6-5
6.7.1	Construction Phase	6-5
6.7.2	Operational Phase.....	6-6
6.8	Residual impacts.....	6-7
6.8.1	Construction Phase.....	6-7
6.8.2	Operational Phase.....	6-7
6.8.3	'Do Nothing' Scenario.....	6-7
6.9	Reinstatement.....	6-7
6.10	Interactions Arising.....	6-7
6.10.1	Interactions	6-7
6.10.2	Potential Cumulative Impacts.....	6-9
6.11	Monitoring.....	6-9
6.12	References	6-9
APPENDIX 6.A	Ground Investigation Report.....	6-10
7.	WATER: HYDROGEOLOGY & HYDROLOGY	7-1
7.1	Introduction.....	7-1
7.2	Characteristics of the Proposed Development	7-1
7.2.1	Hydrology	7-1
7.2.2	Hydrogeology.....	7-1
7.2.3	Flood Risk	7-2
7.3	Receiving Environment.....	7-2
7.3.1	Hydrology	7-2
7.3.2	Hydrogeology.....	7-3
7.3.3	Flood Risk	7-4
7.4	Assessment Methodology.....	7-5
7.5	Identification of Likely Significant Impacts	7-6
7.5.1	Construction Phase	7-6
7.5.2	Operational Phase.....	7-6
7.5.3	Risks to Human Health	7-7
7.5.4	Unplanned events	7-7
7.5.5	Potential Cumulative Impacts.....	7-7
7.6	'Do Nothing' Scenario	7-7
7.7	Mitigation Measures.....	7-8
7.7.1	Construction Phase	7-8
7.7.2	Operational Phase.....	7-8
7.8	Residual Impacts.....	7-9
7.8.1	Construction Phase	7-9

7.8.2	Operational Phase.....	7-9
7.9	Interactions Arising.....	7-9
7.9.1	Soil and Geology	7-9
7.9.2	Flora and Fauna	7-9
7.10	Monitoring.....	7-10
7.11	Reinstatement.....	7-10
7.12	References	7-10
APPENDIX 7.A	SD05A-0344 Drainage Layout	7-11
8.	NOISE AND VIBRATION	8-1
8.1	Introduction.....	8-1
8.2	Characteristics of the Proposed Development	8-1
8.3	Receiving Environment.....	8-2
8.3.1	Environmental Noise Survey.....	8-2
8.3.2	Baseline Summary	8-5
8.4	Assessment Methodology.....	8-6
8.4.1	Assessment Criteria.....	8-6
8.5	Identification of Likely Significant Impacts	8-11
8.5.1	Construction Phase - Noise	8-11
8.5.2	Construction Phase - Vibration	8-14
8.5.3	Operational Phase - Noise	8-15
8.6	Do Nothing Scenario	8-16
8.7	Mitigation Measures.....	8-16
8.7.1	Construction Phase	8-16
8.7.2	Operational Phase.....	8-17
8.8	Residual Impacts.....	8-17
8.8.1	Construction Phase	8-17
8.8.2	Operational Phase.....	8-17
8.9	Interactions Arising.....	8-18
8.10	Monitoring.....	8-18
8.10.1	Construction Phase	8-18
8.10.2	Operational Phase.....	8-18
8.11	References	8-18
9.	AIR, DUST AND CLIMATIC FACTORS	9-1
9.1	Introduction.....	9-1
9.2	Study Methodology.....	9-1
9.2.1	Standards and Guidelines.....	9-1
9.2.2	Local Air Quality Assessment	9-3
9.3	Existing Receiving Environment (Baseline)	9-6
9.3.1	Meteorological Data.....	9-6
9.3.2	Trends in Air Quality.....	9-7

9.3.3	Baseline Air Quality.....	9-7
9.4	Characteristics of the Proposed Development	9-9
9.5	Potential Impact of the Proposed Development	9-9
9.5.1	Construction Phase.....	9-9
9.5.2	Operation Phase	9-14
9.6	Potential Cumulative Impacts	9-15
9.7	'Do Nothing' Impact.....	9-15
9.8	Avoidance, Remedial & Mitigation Measures	9-15
9.8.1	Construction Phase.....	9-15
9.8.2	Operational Phase.....	9-16
9.9	Predicted Impact of the Proposed Development	9-16
9.9.1	Construction Phase.....	9-16
9.9.2	Operational Phase.....	9-17
9.10	Monitoring.....	9-17
9.11	Reinstatement.....	9-17
9.12	Interactions.....	9-18
9.13	Difficulties Encountered in Compiling the Chapter	9-18
9.14	References	9-18
APPENDIX 9.A	Ambient Air Quality Standards	9-21
APPENDIX 9.B	Transport Infrastructure Ireland Significance Criteria	9-24
APPENDIX 9.C	Dust Minimisation Plan.....	9-26
10.	BIODIVERSITY.....	10-1
10.1	Introduction.....	10-1
10.2	Site Visit.....	10-1
10.3	The Existing Receiving Environment.....	10-2
10.3.1	Zone of Impact.....	10-2
10.3.2	Stakeholder Consultation	10-7
10.4	Site Survey	10-8
10.4.1	Flora	10-8
10.4.2	Fauna	10-10
10.5	Overall Evaluation of the Context, Character, Significance and Sensitivity of the Proposed Development Site.....	10-12
10.6	Characteristics of the Proposed Development	10-13
10.7	Potential Effects of the Proposed Development in the Absence of Mitigation.....	10-14
10.7.1	Construction Phase.....	10-14
10.7.2	Operation Phase	10-16
10.8	Cumulative Impacts.....	10-17
10.9	Interactions.....	10-18
10.10	Avoidance, Remedial and Mitigation Measures	10-18
10.11	Mitigation Measures Proposed	10-18

10.12	Predicted Impacts of the Proposed Development	10-20
10.13	References	10-20
	Appendix 10.A Species list	10-23
	Appendix 10.B Bat Survey	10-26
	Appendix 10.C Derogation Licence	10-27
	Appendix 10.D Japanese Knotweed Management Plan	10-28
11.	LANDSCAPE AND VISUAL IMPACT ASSESSMENT	11-1
11.1	Introduction	11-1
11.2	Characteristics of the Proposed Development	11-1
11.3	Receiving Environment	11-3
11.3.1	Site Setting and Character	11-3
11.3.2	Description of Sites	11-4
11.3.3	Existing Hedgerows	11-5
11.3.4	Topography	11-5
11.3.5	Existing Visual Context and Views	11-5
11.3.6	Planning Context	11-6
11.4	Assessment Methodology	11-8
11.4.1	Terminology	11-8
11.4.2	Methodology	11-11
11.5	Sensitivity of the Identified Receptors	11-12
11.5.1	Magnitude and Quality of Change in the Landscape and Visual Environment	11-13
11.5.2	Potential Impact of Proposed Development without Mitigation	11-13
11.5.3	Construction Phase – Potential Landscape and Visual Impact	11-14
11.5.4	Operational Phase – Potential Landscape Impact	11-16
11.5.5	Operational Phase – Potential Visual Impact	11-16
11.6	Mitigation Measures	11-19
11.6.1	Construction Phase	11-19
11.6.2	Operational Stage	11-19
11.7	Residual Impacts	11-21
11.7.1	Construction Phase – Residual Landscape and Visual Impact	11-21
11.7.2	Operational Phase – Residual Landscape Impact	11-21
11.7.3	Residual Visual Impact	11-22
11.8	Do Nothing Scenario	11-22
11.9	Interactions Arising	11-23
11.10	Monitoring	11-23
11.11	Potential Cumulative Impacts	11-24
11.12	References	11-24
APPENDIX 11.A	Viewpoints	11-25
APPENDIX 11.B	Landscape Masterplan	11-29
APPENDIX 11.C	Landscape Maintenance Plan	11-30

12.	MATERIAL ASSETS: TRAFFIC	12-1
12.1	Introduction.....	12-1
12.2	Characteristics of the Proposed Development	12-1
12.2.1	Residential Development.....	12-1
12.2.2	Road Infrastructure	12-3
12.2.3	Pedestrian & Cycle Infrastructure	12-3
12.3.4	Vehicle Access	12-3
12.3.5	Pedestrian / Cycle Access and Permeability	12-4
12.3.6	Vehicle Parking.....	12-5
12.3.7	Cycle Parking.....	12-7
12.3	Receiving Environment.....	12-8
12.3.1	Land Use.....	12-8
12.3.2	Location	12-8
12.3.3	Local Amenities	12-9
12.3.4	Existing Transport Infrastructure	12-10
12.3.5	Proposed Transport Infrastructure	12-13
12.3.6	Road Safety Review	12-18
12.4	Assessment Methodology.....	12-20
12.4.1	Current Transport Modal Split	12-20
12.4.2	Traffic Surveys.....	12-21
12.4.3	Trip Generation	12-22
12.4.4	Trip Distribution & Assignment	12-25
12.4.5	Redistribution of Network Traffic Flows.....	12-25
12.4.6	Traffic Growth	12-26
12.5	Identification of Likely Significant Impacts	12-27
12.5.1	Assessment Scope.....	12-27
12.5.2	Network Impact.....	12-28
12.5.3	Network Analysis – Proposed Phase 1 Development	12-31
12.5.4	Network Analysis – Cumulative Impact	12-37
12.6	Do Nothing Scenario	12-42
12.6.1	Overview.....	12-42
12.6.2	Network Analysis	12-43
12.7	Mitigation Measures.....	12-45
12.7.1	Construction Stage	12-45
12.7.2	Operational Stage	12-45
12.8	Residual Impacts.....	12-46
12.8.1	Construction Stage	12-46
12.8.2	Operational Stage	12-46
12.9	Interactions Arising.....	12-46
12.9.1	Noise and Vibration.....	12-46
12.10	Monitoring.....	12-47
12.11	References	12-47

APPENDIX 12.A	Traffic Flow Diagrams	12-48
APPENDIX 12.B	TRICS Output Data	12-49
APPENDIX 12.C	TRANSYT Output Files.....	12-50
APPENDIX 12.D	ARCADY Output Files	12-51
APPENDIX 12.E	PICADY Output Files	12-52
13.	MATERIAL ASSETS: WATER SUPPLY, DRAINAGE & UTILITIES	13-1
13.1	Introduction.....	13-1
13.2	Characteristics of the Proposed Development	13-1
13.2.1	Surface Water Drainage.....	13-1
13.2.2	Foul Drainage.....	13-2
13.2.3	Water Supply.....	13-3
13.2.4	Power	13-3
13.2.5	Gas.....	13-3
13.2.6	Telecommunications	13-4
13.3	Receiving Environment.....	13-4
13.3.1	Surface Water Drainage	13-4
13.3.2	Foul Drainage	13-4
13.3.3	Water Supply	13-5
13.3.4	Power	13-5
13.3.5	Gas.....	13-5
13.3.6	Telecommunications	13-5
13.4	Assessment Methodology.....	13-5
13.5	Identification of Likely Significant Impacts	13-6
13.5.1	Construction Phase	13-6
13.5.2	Operational Phase.....	13-6
13.5.3	Human Health	13-7
13.5.4	Unplanned Events	13-7
13.5.5	Potential Cumulative Impacts.....	13-8
13.6	'Do Nothing' Scenario	13-8
13.7	Mitigation Measures.....	13-8
13.7.1	Construction Phase	13-8
13.7.2	Operational Phase.....	13-9
13.8	Residual Impacts.....	13-9
13.8.1	Construction Phase	13-9
13.8.2	Operational Phase.....	13-9
13.9	Interactions Arising.....	13-9
13.9.1	Soils and Geology.....	13-9
13.10	Monitoring.....	13-10
13.11	Reinstatement.....	13-10
13.12	References.....	13-10

APPENDIX 13.A	Irish Water Plans	13-11
APPENDIX 13.B	ESB Network Plans	13-12
APPENDIX 13.C	Gas Networks Ireland Plans	13-13
APPENDIX 13.D	Eir & Virgin Media Plans.....	13-14
APPENDIX 13.E	Irish Water Pre-Connection Enquiry Feedback Letter	13-15
14.	CULTURAL HERITAGE: ARCHAEOLOGY & ARCHITECTURAL HERITAGE	14-1
14.1	Introduction.....	14-1
14.1.1	General.....	14-1
14.1.2	Definitions.....	14-3
14.1.3	Impact Definitions.....	14-3
14.1.4	Consultation.....	14-4
14.2	Characteristics of the Proposed Development	14-4
14.3	Receiving Environment.....	14-5
14.3.1	Archaeological and Historical Background	14-5
14.3.2	Prehistoric Period	14-5
14.3.3	Early Medieval Period (AD 500–1100).....	14-7
14.3.4	Medieval Period (AD 1100–1600).....	14-8
14.3.5	Post-Medieval Period (AD 1600-1800)	14-9
14.3.6	Geophysical Survey.....	14-10
14.3.7	Summary of Archaeological Test Trenching	14-11
14.3.8	Summary of Previous Archaeological Fieldwork	14-13
14.3.9	Cartographic Evidence.....	14-15
14.3.10	Aerial Photographic Analysis.....	14-18
14.3.11	South Dublin County Development Plan 2016-2022	14-19
14.3.12	National Inventory of Architectural Heritage.....	14-21
14.3.13	Place Name Analysis.....	14-22
14.3.14	Townlands.....	14-23
14.3.15	Cultural Heritage Sites.....	14-24
14.3.16	Field Inspection	14-24
14.3.17	Conclusions	14-27
14.4	Assessment Methodology.....	14-28
14.4.1	Study Methodology.....	14-28
14.4.2	Paper Survey	14-28
14.4.3	Field Inspection	14-31
14.4.4	Geophysical Survey.....	14-31
14.4.5	Archaeological Testing	14-31
14.5	Identification of Likely Significant Impacts	14-32
14.5.1	Archaeology	14-32
14.5.2	Architecture	14-32
14.5.3	Cultural Heritage.....	14-32

14.6	Do Nothing Scenario	14-32
14.7	Mitigation Measures.....	14-32
14.7.1	Archaeology	14-32
14.7.2	Architecture	14-33
14.7.3	Cultural Heritage.....	14-33
14.8	Residual Impacts.....	14-33
14.9	Interactions Arising.....	14-33
14.10	Monitoring.....	14-33
14.11	References	14-33
	Cartographic Sources	14-35
	Electronic Sources.....	14-36
Appendix 14.A	RMP Sites within the Surrounding Area.....	14-37
APPENDIX 14.B	RPS/NIAH Sites within the Surrounding Area.....	14-42
APPENDIX 14.C	Stray Finds within the Surrounding Area	14-52
APPENDIX 14.D	Legislation Protecting the Archaeological Resource.....	14-53
APPENDIX 14.E	Legislation Framework Protecting the Archaeological Resource.....	14-56
APPENDIX 14.F	Impact Assessment & the Cultural Heritage Resource	14-61
APPENDIX 14.G	Mitigation Measures & the Cultural Heritage Resource	14-63
APPENDIX 14.H	Geophysical Report.....	14-65
APPENDIX 14.I	Archaeological Testing Report.....	14-66
15	INTERACTIONS	15-1
15.1	Introduction.....	15-1
15.2	Description of Interactions and Interrelationships and its Significance	15-3
15.2.1	Population & Human Health	15-4
15.2.2	Soil and Geology	15-5
15.2.3	Water	15-7
15.2.4	Noise and Vibration.....	15-7
15.2.5	Air and Climate.....	15-8
15.2.6	Biodiversity.....	15-9
15.2.7	Landscape and Visual Impact.....	15-9
15.2.8	Material Assets (Utilities)	15-10
15.2.9	Material Assets (Traffic)	15-10
15.2.10	Cultural Heritage.....	15-11
15.3	Conclusion.....	15-11
16	SUMMARY OF MITIGATION MEASURES.....	16-1
16.1	Population & Human Health.....	16-1
16.2	Soils & Geology.....	16-1
16.3	Water: Hydrogeology & Hydrology.....	16-2
16.4	Noise & Vibration.....	16-3
16.5	Air, Dust & Climatic Factors	16-4

16.6	Biodiversity	16-5
16.7	Landscape & Visual Impact Assessment	16-7
16.8	Material Assets: Traffic & Transport.....	16-8
16.9	Water: Water Supply, Drainage & Utilities	16-9
16.10	Archaeology & Cultural Heritage	16-10