PHOTOMONTAGES

For Project No. 6601 GREAT ISLAND GREENLINK

for

Client: ARUP

Date: 17 January 2020

Document Number: Appendix 11.1

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CONTENTS	AMENDMENT RECORD					
This report has	been issued and amended as follows:					
REVISION	DESCRIPTION			DATE	PREPARED BY	CHECKED BY
00	View Location Map and 10 no. of Baseline Photographs			03 December 2018	BP	DBos
01	Selection of 3 preliminary Photomontages			06 March 2019	BP	DBos
02	Added option 2 for comparison			02 April 2019	BP	DBos
03	Added option 3 & 4			05 November 2019	KM	DBos
04	Added Notes Page			17 January 2020	BP	DBos

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Month:	12	03	04	11	01										
Year:	18	19	19	19	20										
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Project Number:	6601	Document Number:	APPENDIX 11.1	Revision:	04
Project Name:	GREAT ISLAND GREENLINK	Document Title:	PHOTOMONTAGES	Date:	17 January 2020

Accurate Visual Representations (AVRs)

for Landscape and Visual Impact Assessment

What are Accurate Visual Representations (AVRs)?

Accurate Visual Representations (AVRs), often referred to as Photomontages, are one of a number of tools used to assist the Visual Impact Assessment process. They demonstrate the likely visual impacts, positive or negative, which proposed developments may have from strategic, selected and representative vantage points.

Typically, but not exclusively, photomontages will be prepared to accompany Visual Impact Assessments from a selection of public vantage points, and with particular attention paid to the more potentially sensitive receptors. Vantage points may typically include:

- protected views and prospects identified in the local Development Plan;
- views from or adjacent to protected structures;
- views from Special Areas of Conservation and Natural Heritage Areas;
- views from public road and pathways;
- views from public open spaces and parks;
- views from adjoining or nearby residences (normally from the roadway at the residence or residences to demonstrate the public impact rather than from a specific residence)

As any one set of photomontages cannot cover every possible vantage point, the final selection should include a representative selection of vantage points from where the range of potential visual effects may be experienced. Depending on the nature of the proposed development and the sensitivity of the receiving environment, these may include vantage points from where visual effects may be profound, significant, moderate, slight or imperceptible, and may be positive, negative or neutral.

In some instances, it may also be appropriate to provide views from sensitive receptors in order to demonstrate that the proposed development will not be visible or impact on the landscape setting – an example might be from a protected structure.

The final selection of relevant vantage points will be determined by the Landscape or Environmental professional, and informed by a process that includes:

- baseline assessment of the receiving landscape environment, both desktop and on site;
- thorough understanding of the physical nature of the proposed development, including mitigation proposals;
- iterative review of the potential visual effects through the use of draft AVRs

How should Accurate Visual Representations (AVRs) be prepared?

In order to prepare AVRs, the consultant must have access to sufficient survey and design information to allow the preparation of accurate AVRs. Depending on the nature and scale of the proposed development, and also the receiving environment, this may include:

- Topographic and/or LiDAR surveys, georeferenced and in digital format, of the proposed development site at a minimum, but may also include surveys of immediately adjoining lands and buildings. In some instances, survey data for the wider landscape setting may also be beneficial, however context mapping will certainly be required;
- Baseline photographs taken with high quality professional cameras and lenses. This normally the use of full-frame digital SLR or mirrorless cameras, in combination with high quality fixed focal length lenses. It is important that the make and model of the camera body and lens used is known, so that images can be post-processed to provide the highest quality baseline image at a later stage. Additional contextual photography, including ground level views, aerial orthographic photography, and aerial views from a drone, is often beneficial at a later stage to assist in identifying existing features between the viewpoint and the proposed development.
- The choice of lens focal length will depend on the project and site specific circumstances. Fixed focal length lenses should always be used in favour of zoom lenses so as they almost always have higher quality optical characteristics. Typically, a 28mm lens will provide sufficient field of view, and assuming the recorded image is of high resolution, the image can also be cropped to provide the 50mm lens equivalent. In open landscape settings, it is often appropriate to take partial or even full panoramas from vantage points. In may also be appropriate to take an additional set of photographs using a 50mm lens.
 - Photography should be taken in clear weather, with good light and visibility.
- The camera must be tripod mounted and accurately levelled. Images must be taken in RAW format. The camera should normally be at a typical eye level above ground, and the actual height recorded. The location of the camera should normally be marked on site so that it can be surveyed, either subsequently or at the same time.
- In order to ensure accuracy of the AVRs, it is essential that the camera location, level and direction of view, relative to the existing site and proposed development, can be determined. The methodology for survey of the camera location depends on the relative distance to the site and proposed development. Typically, when the camera is within 500m of the site, electronic survey with a total station is required, and extended from the site topographic survey. At greater distances, the plan location can be surveyed using GPS as the accuracy of the plan position generally becomes less relevant with increased distance.
- For all views, the total station should be set up at the exact camera location and height, and used to record the horizontal and vertical angles to known (or measurable) features at or near the site, and also to other distinctive features in the wider view. The horizontal and vertical angles provide an accurate mathematical record of actual sightlines to features within the photographs, and can be plotted later to ensure an accurate match between the real world camera view and the digital equivalent in the 3D model.
- Baseline RAW images must be post-processed, incorporating the specific characteristics of the camera body and lens used, so as to provide a baseline image that is free of geometric and other distortions. Post-processing also allows fine tuning of the exposure to ensure optimum clarity of the image.

Project Number:	6601	Document Number:	APPENDIX 11.1	Revision:	04
Project Name:	GREAT ISLAND GREENLINK	Document Title:	PHOTOMONTAGES	Date:	17 January 2020

- The camera survey information is processed to include locating the camera in the same georeferenced system as the topographic and other survey information, and of the design information. The vertical angle of selected sightlines, to known (or measureable) features on site, are used to calculate the accurate level of the camera relative to such features.
- All of the surveyed sight lines are plotted using the recorded horizontal and vertical angles, and together with the known horizontal field of the view of the baseline image, can be used to accurately establish the direction of view of the 'virtual' camera in the 3D model, and accurate alignment with the corresponding features on or near the site. Additional surveyed reference sightlines are also plotted. All sightlines will be represented in the rendered perspective image, and can be used to accurately overlay the rendered image on the baseline photograph, thereby ensuring a mathematical and verifiable fix between the two.
- Once each camera has been set up in the 3D model, renders can be produced of preliminary, interim and final 3D design information, and overlaid on the baseline images in an accurate manner. Any foreground and intermediate terrain, vegetation or built elements can be identified and 'cut out' from the rendered image so as to establish the rendered design proposals at the correct 'depth' within the scene. In many instances, the use of aerial images and other map sources will be required to confirm whether particular features are between the camera and the proposed development, or beyond the proposed development.
- Once a thorough process is followed, the resulting interim and final AVRs will be geometrically accurate. It is also important to ensure that the 3D digital model of the proposed development accurately reflects the design drawings, including interim and final design changes.

How should Accurate Visual Representations (AVRs) be used?

It is important to understand that Accurate Visual Representations (AVRs), or indeed any static image, cannot exactly replicate what the human eye sees in reality. This is due to a number of factors including:

- the dynamic nature of the human eye compared to the static nature of an AVR;
- the ability of the human eye to focus on a small portion of the overall scene or panorama compared with the fixed field of vision of a printed AVR;
- the limitations of different printed formats in reproducing the clarity and colour that the human eye experiences; and,
 - the relationship between the size of the printed AVR and the angle of 'vision'.

AVRs can be used to in conjunction with other drawings of the site and the proposed development to assist in making informed and professional judgements about the extent to which various elements of the proposals will be visible or not, and also whether such additional elements within the receiving environment will enhance or detract from the landscape character.

It is essential however, that AVRs are also read on site at the location of the baseline photograph and overlaid and compared with the real scene in order to make a qualitative assessment of the impact of proposed development.

When on site, the size of the print and angle of coverage of the photograph will determine the appropriate reading distance. Figure A overleaf demonstrates the relationship between these. A photograph with a horizontal angle of coverage of 57° printed on A3 paper (at 396mm) should be read at a 365mm to 'match' the real scene. Wider or narrower angles of coverage should be read at closer or longer reading distances respectively.

The table below gives guidance for the appropriate reading distance for different angles of coverage for A3, A2 and A1 size prints. The angle of coverage should be noted on each individual AVR print and the appropriate reading distance can be determined from the table above.

		Size of Print							
Angle of Vision	Focal Length	A3 (396mm)	A2 (570mm)	A1 (816mm)					
40°	50mm	550mm	790mm	1,130mm					
57°	33mm	365mm	525mm	750mm					
66°	28mm	300mm	430mm	620mm					
73°	24mm	265mm	380mm	545mm					

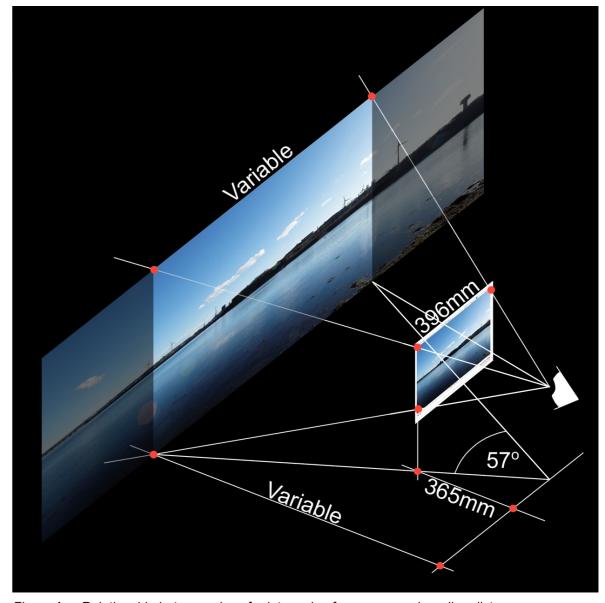


Figure A: Relationship between size of print, angle of coverage and reading distance

Project Name: GREAT ISLAND GREENLINK PHOTOMONTAGES Date: 17 January 2020 Document Title:

Document Number: APPENDIX 11.1

Project Number:

6601

Figure: 11.0 Rev: 00
View Location Map

Revision:

04

BSM Brady Shipman Martin.
Built.
Est. 1968 Environment.

Project Number: 6601 Document Number: APPENDIX 11.1 Revision: 04 Project Name: GREAT ISLAND GREENLINK PHOTOMONTAGES 17 January 2020 Date: Document Title:



Brady Shipman Martin. Built. Environment. As Exisiting Est. 1968



Figure: 11.1.2 Rev: 00
View 1 from Kilmokea/Newtown, Co. Wexford
As Proposed (Alternative 1) with Cumulative building

BSM Brady Shipman Martin.
Built.
1968 Est.
1968 Environment.



Figure: 11.1.3 Rev: 00
View 1 from Kilmokea/Newtown, Co. Wexford
As Proposed (Alternative 2) with Cumulative building

BSM Brady Shipman Martin.

Built.
Est.
1968 Environment.



Figure: 11.2.1 Rev: 00
View 2 from Local road, Ballydock, Co. Wexford

BSM Brady Shipman Martin. Built. Environment. As Exisiting Est. 1968



< 73.7° / 24mm < 65.5° / 28mm < 54.4

< 54.4° / 35mm

ANGLE OF VISION / LENS FOCAL LENGTH

70mm / 28.8° >

50mm / 39.6° >

35mm / 54.4° >

28mm / 65.5° >

65.5° > 24mm / 73.7° >

Figure: 11.2.2 Rev: 00
View 2 from Local road, Ballydock, Co. Wexford
As Proposed (Alternative 1) with Cumulative building





< 73.7° / 24mm < 65.5° / 28mm < 54.4° / 35mm

ANGLE OF VISION / LENS FOCAL LENGTH

70mm / 28.8° > 50

50mm / 39.6° >

35mm / 54.4° >

28mm / 65.5° >

24mm / 73.7° >

Figure: 11.2.3 Rev: 00
View 2 from Local road, Ballydock, Co. Wexford
As Proposed (Alternative 2) with Cumulative building





< 73.7° / 24mm

< 65.5° / 28mm

< 54.4° / 35mm

< 39.6° / 50mm

< 28.8° / 70mm

ANGLE OF VISION / LENS FOCAL LENGTH

70mm / 28.8° >

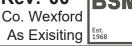
50mm / 39.6° >

35mm / 54.4° >

28mm / 65.5° >

24mm / 73.7° >

Figure: 11.3.1 Rev: 00
View 3 from Horeswood Church, Campile (R733), Co. Wexford





< 73.7° / 24mm

< 65.5° / 28mm

< 54.4° / 35mm

< 39.6° / 50mm

< 28.8° / 70mm

ANGLE OF VISION / LENS FOCAL LENGTH

70mm / 28.8° >

50mm / 39.6° >

35mm / 54.4° >

28mm / 65.5° >

24mm / 73.7° >

Figure: 11.3.2 Rev: 00
View 3 from Horeswood Church, Campile (R733), Co. Wexford As Proposed (Alternative 1) with Cumulative building [5st 1968]



BSM Brady Shipman Martin. Built. Environment.



< 73.7° / 24mm

< 65.5° / 28mm

< 54.4° / 35mm

< 39.6° / 50mm

< 28.8° / 70mm

ANGLE OF VISION / LENS FOCAL LENGTH

70mm / 28.8° >

50mm / 39.6° >

35mm / 54.4° >

28mm / 65.5° >

24mm / 73.7° >





As Exisiting Est. 1968



Figure: 11.4.2 Rev: 00
View 4 from Sliabh Coillte Viewpoint, JFK Arboretum, Co. Wexford
As Proposed (Alternative 1) with Cumulative building

BSM Brady Shipman Martin.

Built.
Est. 1968 Environment.



Figure: 11.4.3 Rev: 00
View 4 from Sliabh Coillte Viewpoint, JFK Arboretum, Co. Wexford
As Proposed (Alternative 2) with Cumulative building

Document Number: APPENDIX 11.1 Project Number: 6601 Revision: 04 17 January 2020 GREAT ISLAND GREENLINK PHOTOMONTAGES Project Name: Date: Document Title:



< 73.7° / 24mm

< 65.5° / 28mm

< 54.4° / 35mm

< 39.6° / 50mm

< 28.8° / 70mm

ANGLE OF VISION / LENS FOCAL LENGTH

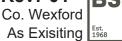
70mm / 28.8° >

50mm / 39.6° >

35mm / 54.4° >

28mm / 65.5° >

24mm / 73.7° >





< 73.7° / 24mm

< 65.5° / 28mm

< 54.4° / 35mm

< 39.6° / 50mm

< 28.8° / 70mm

ANGLE OF VISION / LENS FOCAL LENGTH

70mm / 28.8° >

50mm / 39.6° >

35mm / 54.4° >

28mm / 65.5° >

24mm / 73.7° >

Figure: 11.5.2 Rev: 00
View 5 from entrance to Dunbrody Abbey/R733, Co. Wexford

Brady Shipman
Martin.
Built. As Proposed (Alternative 1) with Cumulative building [5st. 1968]

Built. Environment.



< 73.7° / 24mm

< 65.5° / 28mm

< 54.4° / 35mm

< 39.6° / 50mm

< 28.8° / 70mm

ANGLE OF VISION / LENS FOCAL LENGTH

70mm / 28.8° >

50mm / 39.6° >

35mm / 54.4° >

28mm / 65.5° >

24mm / 73.7° >

Figure: 11.5.3 Rev: 00
View 5 from entrance to Dunbrody Abbey/R733, Co. Wexford

Brady Shipman
Martin.
Built. As Proposed (Alternative 2) with Cumulative building [5st. 1968]



Built. Environment.

Project Number: 6601 Document Number: APPENDIX 11.1 Revision: 04 Project Name: GREAT ISLAND GREENLINK PHOTOMONTAGES Date: 17 January 2020 Document Title:



< 73.7° / 24mm < 65.5° / 28mm < 54.4° / 35mm < 39.6° / 50mm < 28.8° / 70mm

ANGLE OF VISION / LENS FOCAL LENGTH

70mm / 28.8° >

50mm / 39.6° >

35mm / 54.4° >

28mm / 65.5° >

24mm / 73.7° >

As Exisiting Est. 1968

Brady Shipman Martin. Built. Environment.



< 73.7° / 24mm

< 65.5° / 28mm

< 54.4° / 35mm

< 39.6° / 50mm

< 28.8° / 70mm

ANGLE OF VISION / LENS FOCAL LENGTH

70mm / 28.8° >

50mm / 39.6° >

35mm / 54.4° >

28mm / 65.5° >

5° > 24mm / 73.7° >

Figure: 11.6.2 Rev: 00
View 6 from from north nave, Dunbrody Abbey, Co. Wexford
As Proposed (Alternative 1) with Cumulative building





< 73.7° / 24mm

< 65.5° / 28mm

< 54.4° / 35mm

< 39.6° / 50mm

< 28.8° / 70mm

ANGLE OF VISION / LENS FOCAL LENGTH

70mm / 28.8° >

50mm / 39.6° >

35mm / 54.4° >

28mm / 65.5° >

24mm / 73.7° >

Figure: 11.6.3



< 73.7° / 24mm

< 65.5° / 28mm

< 54.4° / 35mm

< 39.6° / 50mm

< 28.8° / 70mm

ANGLE OF VISION / LENS FOCAL LENGTH

70mm / 28.8° >

50mm / 39.6° >

35mm / 54.4° >

28mm / 65.5° >

24mm / 73.7° >

Figure: 11.7.1 Rev: 00
View 7 from Nook Bay, Co. Wexford

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< 73.7° / 24mm < 65.5° / 28mm < 54.4° / 35mm

< 39.6° / 50mm

< 28.8° / 70mm

ANGLE OF VISION / LENS FOCAL LENGTH

70mm / 28.8° >

50mm / 39.6° >

35mm / 54.4° >

28mm / 65.5° >

24mm / 73.7° >

Figure: 11.7.2

e: 11.7.2 Rev: 00
View 7 from Nook Bay, Co. Wexford

Brady Shipman
Martin.
Built. As Proposed (Alternative 1) with Cumulative building [5st 1968]





< 73.7° / 24mm < 65.5° / 28mm

< 54.4° / 35mm

< 39.6° / 50mm

< 28.8° / 70mm

ANGLE OF VISION / LENS FOCAL LENGTH

70mm / 28.8° >

50mm / 39.6° >

35mm / 54.4° >

28mm / 65.5° >

24mm / 73.7° >

Figure: 11.7.3

e: 11.7.3 Rev: 00 View 7 from Nook Bay, Co. Wexford BSM Brady Shipman Martin.

Built. As Proposed (Alternative 2) with Cumulative building [5st 1968]





As Exisiting Est. 1968



BSM Brady Shipman Martin.

Built.
Est. 1968
Environment.



BSM Brady Shipman Martin.
Built.
Est. 1968
Environment.



< 73.7° / 24mm

< 65.5° / 28mm

< 54.4° / 35mm

< 39.6° / 50mm

< 28.8° / 70mm

ANGLE OF VISION / LENS FOCAL LENGTH

70mm / 28.8° >

50mm / 39.6° >

35mm / 54.4° >

28mm / 65.5° >

24mm / 73.7° >

BSM Brady Shipman Martin. Built. Environment.



< 73.7° / 24mm

< 65.5° / 28mm

< 54.4° / 35mm

< 39.6° / 50mm

< 28.8° / 70mm

ANGLE OF VISION / LENS FOCAL LENGTH

70mm / 28.8° >

50mm / 39.6° >

35mm / 54.4° >

28mm / 65.5° >

24mm / 73.7° >





< 73.7° / 24mm

< 65.5° / 28mm

< 54.4° / 35mm

< 39.6° / 50mm

< 28.8° / 70mm

ANGLE OF VISION / LENS FOCAL LENGTH

70mm / 28.8° >

50mm / 39.6° >

35mm / 54.4° >

28mm / 65.5° >

24mm / 73.7° >

Project Number: 6601 Document Number: APPENDIX 11.1 Revision: 04 GREAT ISLAND GREENLINK Project Name: PHOTOMONTAGES Date: 17 January 2020 Document Title:



Figure: 11.10.1 Rev: 00
View 10 from local road, Ballinlaw, Co. Kilkenny

As Exisiting Est. 1968

BSM Brady Shipman Martin. Built. Environment.



Figure: 11.10.2 R

View 10 from local road, Ballinlaw, Co. Kilkenny
As Proposed (Alternative 1) with Cumulative building





Figure: 11.10.3 Re

Figure: 11.10.3 Rev: 00
View 10 from local road, Ballinlaw, Co. Kilkenny
As Proposed (Alternative 2) with Cumulative building

