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East Float, Wirral Waters

Environmental Statement - Statement of Conformity
and Clarification

Peel Land and Property (Ports) Limited

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CONTENTS

1	INTRODUCTION	3
2	METHODOLOGY	5
3	OUTLINE OF CHANGES TO PARAMETER PLANS AND PRINCIPLES	9
4	TRANSPORT	11
5	AIR QUALITY, DUST AND ODOUR	13
6	NOISE AND VIBRATION	16
7	DAYLIGHT, SUNLIGHT AND OVERSHADOWING	20
8	WIND	22
9	TOWNSCAPE AND VISUAL	24
10	ARCHAEOLOGY AND CULTURAL HERITAGE	34
11	DRAINAGE, FLOODING AND WATER RESOURCES	36
12	GROUND CONDITIONS, HYDROGEOLOGY AND CONTAMINATION	39
13	ECOLOGY AND NATURE CONSERVATION	42
14	CONCLUSION	46

Tables

Table 2.1: Example of Summary Table

Table 2.2: Matrix for Determining the Significance of Effects

Table 6.1: Summary of Residual Effects for Transport

Table 5.1: Summary of Residual Effects for Air Quality, Dust and Odour

Table 6.1: Summary of Residual Effects for Noise and Vibration

Table 7.1: Summary of Residual Effects for Daylight, Sunlight and Overshadowing

Table 8.1: Summary of Residual Effects for Wind

Table 9.1: Summary of Residual Effects for Townscape and Visual

Table 10.1: Summary of Residual Effects for Archaeology and Cultural Heritage

Table 11.1: Summary of Residual Effects for Drainage, Flooding and Water Resources

Table 12.1: Summary of Residual Effects for Ground Conditions, Hydrogeology and Contamination

Table 13.1: Summary of Residual Effects for Ecology and Nature Conservation

1 INTRODUCTION

1.1.1 An outline planning application for East Float, Wirral Waters in Birkenhead was submitted to Wirral Metropolitan Borough Council (WMBC) in December 2009 (W/OUT/2009/06509). The application was accompanied by an Environmental Statement (ES). Following the submission of the planning application, a number of key responses to the application were provided or/and a number of meetings took place between WMBC, consultees and the clients planning and technical representatives. These included responses from or meetings with WMBC, Commission for Architecture and the Built Environment (CABE), the Transport Steering Group, Merseyside Environmental Advisory Service (MEAS), English Heritage, Environment Agency and Natural England.

1.1.2 Through responding to the post application comments provided by WMBC and their consultees, a number of minor changes to the parameter plans and principles were made. These were outlined as part of a package of supplementary information submitted to WMBC in June 2010. Part of the package of supplementary information submitted to WMBC included a range of supplementary reports that were completed since December 2009. From an environmental perspective these included the following:

- Ecology and Nature Conservation Assessment (EcIA) including further bat surveys;
- Supplementary Townscape and Visual Material;
- A revised (albeit minor) Flood Risk Assessment (FRA) (Appendix 13.1 Environmental Statement: Volume 3 – Technical Appendices);
- A revised (albeit minor) Chapter 13 – Drainage, Flooding and Water Resources (Environmental Statement: Volume 2 – Text and Figures);
- Extended Screening for Appropriate Assessment;
- Cumulative Impact Assessment (CIA) for Northbank East, East Float and Liverpool Waters; and
- Supplementary Geo-environmental Report.

1.1.3 The package of supplementary information submitted also included a covering letter which outlined the additional environmental assessment undertaken since December 2010 alongside clarification on whether the supplementary documents replaced existing documents or simply provided further supplementary information. The covering letter also confirmed that the amendments to the parameter plans and principles either do not change the information upon which technical and procedural assessment methodologies are based, or if they do, that the revised assessment does not change the significance of the residual effects assessed within the ES, December 2009.

1.1.4 Following the submission of the package of supplementary information in June 2010, a number of clarification issues were raised by the council in relation to changes to parameter plan and principles that have been made and whether such changes have a material effect on the submitted ES. Clarification issues were also sort on the mechanisms for delivery of further supporting technical assessment.

1.1.5 Therefore, this Statement of Conformity and Clarification (SoCC) has been prepared in response to the clarification issues raised by the council.

1.1.6 WSP have been closely involved with the project team since the submission of the planning application in December 2009 and have been providing on-going advice on the environmental implications of changes proposed.

1.1.7 Whilst WSP are confident that the changes to parameter plans and principles will not change the residual effects presented within the ES, December 2009, the SoCC aims to clarify the following:

- Provide an overview of any additional analysis and assessment undertaken since the submission of the planning application in December 2009;
- Document the evaluation of the changes to parameter plans and principles (on a topic by topic basis). This will include a description of the information upon which the assessments have been made (if necessary), any changes to the magnitude of change of sensitivity of the receptors (as a result of the changes) and reasoning as to why the assessment/s still remain robust and valid;

- Conformation of any changes in residual effects (on a topic by topic basis) and re-presenting each of the significant effects identified during the ES, December 2009 or supplementary information provided in June 2010 alongside their residual effect, both before and after the changes to parameter plans and principles; and
- Outline of further analysis and evaluation required in the future.

1.1.8 WSP have considered that by presenting the methodology upon which the conclusions have been determined, the process is transparent to all parties and the reasons why the ES, December 2009 remains valid and robust is clearly understood.

1.1.9 The SoCC has been considered as supplementary information to be read in conjunction with the submitted planning application documents and the supplementary package of information submitted in June 2010.

1.1.10 The ES, 2009 was based on a series of development principles, some of which were used to inform the technical assessment/s. The parameter plans also outlined spatial elements which were fixed and other spatial elements which may vary as the scheme design progresses through the design process and towards future detailed reserved matters submissions. All technical assessments within the EIA sought to assess the most significant effect i.e. the 'worst case'.

1.1.11 However, where the maximum scenario was likely to result in effects that are beyond worst case, to an extent that the effects presented are not considered likely, some specific assessments were based on a 'working masterplan', (as now renamed, previously the 'illustrative masterplan'). For further information, please see **Chapter 3 – Outline to Changes in Parameter Plans and Principles**.

1.1.12 There have been no changes to the schedule of accommodation as detailed within the ES, December 2009. This outlined the maximum quantum of uses across the Site and the maximum total quantum across each of the Quarters. These schedules were used to inform the transport modelling and the associated traffic data. The traffic data was used to assess some of the effects relating to transport, air quality, dust, noise and vibration. The maximum scenario was modelled and the maximum scenario was tested.

1.1.13 As WSP have been involved with the development of the parameter plans and principles, we have ensured that sufficient information has been provided to enable the environmental effects of the Proposed Development to be adequately assessed.

2 METHODOLOGY

2.1.1 As outlined above, WSP have been closely involved with the project team since the submission of the planning application in December 2009 and have been providing on-going advice on the implications of any changes proposed.

2.1.2 The SoCC presents clarifications on the elements outlined above on a topic by topic basis. The following topics have been included within the SoCC:

- Transport;
- Air Quality, Dust and Odour;
- Noise and Vibration;
- Daylight, Sunlight and Overshadowing;
- Wind;
- Townscape and Visual;
- Archaeology and Cultural Heritage;
- Drainage, Flooding and Water Resources;
- Ground Conditions, Hydrogeology and Contamination; and
- Ecology and Nature Conservation

2.1.3 Each of the above topic areas provide the necessary clarification under the following structure:

- Additional analysis and assessment undertaken since December 2010;
- Evaluation of changes in parameter plans and principles and associated significant effects;
- Conformation of changes in residual effects; and
- Further analysis and assessment.

Further information on the process adopted is outlined below.

2.2 ADDITIONAL ANALYSIS AND ASSESSMENT UNDERTAKEN SINCE JANUARY 2010

2.2.1 A range of supplementary environmental deliverables have been completed since the planning application was submitted in December 2009. Where these (or parts of these) are considered relevant to the technical topic area, they have been listed, alongside a short summary of why they were undertaken and their key outcomes (where necessary).

2.3 EVALUATION OF CHANGES IN PARAMETER PLANS AND PRINCIPLES AND ASSOCIATED SIGNIFICANT EFFECTS

2.3.1 The changes to the parameter plans and principles are documented in three key documents as outlined below:

- Schedule of Amendments to Principles and Parameters, June 2010, as submitted as part of the package of supplementary information, June 2010;
- East Float, Parameters and principles matrix, audit trial matrix, July 2010; and
- East Float, Parameters and principles matrix, refreshed matrix, July 2010.

2.3.2 Further information on the changes in parameter plans and principles is outlined in **Chapter 3 – Outline of Changes in Parameter Plan and Principles**.

2.3.3 Each of the technical specialists involved with the technical assessments documented within the ES, December 2009 have reviewed the above documents and outlined those significant effects assessed that may be considered to result in any change, regardless of the unlikely change in the significance of the residual effect.

2.3.4 A summary of this evaluation process has been documented with particular attention to:

- Changes in parameter plans and principles upon which the technical assessment/s are based;
- Movement of principles from the parameter plans and principles assessed within the ES, December 2009 to the 'working masterplan', June 2010. The change in location of such principles within the planning application package is important as the ES is based upon a series of parameter plans and principles and not a 'working materplan' (although there are exceptions to this rule which are outlined below). Where a particular principle that was relied upon within the ES, December 2009 has moved to the working draft masterplan, this has been clearly outlined along with a brief evaluation of the importance of this on the overall assessment;
- Where a particular assessment was based on the 'working masterplan', December 2009, the reason why the assessment was based on this 'working masterplan' has been clarified. If required, a qualitative assessment has been undertaken to provide evaluation of whether the changes in the 'working masterplan' since December 2009 have a change in the findings of the ES presented in December 2009; and
- Provision of reasoning as to why the assessment/s still remains robust and valid.

2.4 CONFORMATION OF CHANGES IN RESIDUAL EFFECTS

2.4.1 For each of the topics outlined above a summary table has been provided. Each summary table outlines the residual effects documented within the ES, December 2009, the residual effect as a result of the changes in parameter plans and principles, as outlined in **Chapter 3 – Outline of Changes in Parameter Plan and Principles** and whether there is any change. An example is provided below in **Table 2.1** below.

Table 2.1: Example of Summary Table

Effect Assessed	Residual Effect presented in ES, 2009	Residual Effect as a result of the changes in parameter plans and principles	Conformation of change
<i>Site Preparation, Earthworks and Construction Phase</i>			
Increase in HGV movements on the local highway network	Negligible	Negligible	NO CHANGE
<i>Operational Phase</i>			
Reduction in capacity of the highway network	Minor	Minor	NO CHANGE

2.5 OUTLINE OF FURTHER ANALYSIS AND EVALUATION REQUIRED IN THE FUTURE

2.5.1 Throughout the Environmental Impact Assessment (EIA) process, it has been made clear that there is a framework for further analysis and assessment as the design process progresses towards future detailed reserved matters submissions. This two stage process has been adopted due to the significant timescales upon which this scale of development will be built out in a phased manner.

2.5.2 This section provides an overview of additional analysis and assessment that may be required at the subsequent reserved matters submissions.

2.5.3 It should be noted that future reserved matters submissions will include a reconciliation masterplan for the relevant quarters. This masterplan will be an evolution of the 'working masterplan' that has been developed from a design perspective and technically tested as appropriate. Should a change in parameter (or principle) create a change (negative) in the significance of any of the effects presented within the ES, December 2009 or create new

potentially significant environmental effects, then this may trigger the need for a new planning application supported by further technical assessment/s. The emphasis will be on whether any unassessed significant negative impacts may arise which have not been assessed at the outline stage. Where this is not the case, it is envisaged that there will be a degree of limited flexibility over the parameters and principles to allow them to respond to the evolving masterplan.

2.5.4 There is also a clear differentiation to be drawn between further detailed assessment which is routine/standard for an outline application, which has already been outlined within the ES, December 2009 and the ongoing assessment and analysis of the 'working masterplan' to ensure that any changes to the effects presented in the ES, December 2009 are understood throughout the process of the evolving masterplan and that mitigation options are tested.

2.6 DETERMINING MAGNITUDE OF CHANGE AND SENSITIVITY OF RECEPTORS

2.6.1 As outlined above, the changes in parameter plans and principles has considered the changes in the magnitude of change (from the baseline conditions), the sensitivity of the affected environment/receptors and (in terms of determining residual effects) the extent to which mitigation and enhancement measures will reduce or reverse negative effects.

Magnitude of Change

2.6.2 Any changes to the magnitude (scale) of change in for each impact has been identified and predicted as a deviation from the established baseline conditions and in relation to the magnitude of change considered within the ES, December 2009. The scale used (high, medium, low, and negligible) is shown in **Table 2.2** below.

Sensitivity of Receptors

2.6.3 Any change in the sensitivity of the receptors / receiving environment to change as a result of the changes in parameter plans and principles has been determined using professional judgement. The scale used (high, medium, low, and negligible) is also shown in **Table 2.2**.

Assessing Impact Significance

2.6.4 Any change in the significance of effects has been assessed using appropriate national and international standards or limits (WHO Limits, EU Quality Standards etc). Where no such standards exist, the assessments in each individual subject area describe the professional judgements (assumptions and value systems) that underpin the attribution of significance. Each impact has been assessed against the change of magnitude and the sensitivity of the receptor as shown in **Table 2.2**.

Table 2.2: Matrix for Determining the Significance of Effects

		Sensitivity of Receptor/Receiving Environment to Change/Effect			
		High	Medium	Low	Negligible
Magnitude of Change/Effect	High	Major	Moderate to Major	Minor to Moderate	Negligible
	Medium	Moderate to Major	Moderate	Minor	Negligible
	Low	Minor to Moderate	Minor	Negligible to Minor	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible

2.6.5 The terms as used within the table have been defined below:

- **Major positive or negative effect:** - where the development would cause significant improvement (or deterioration) to the existing environment.
- **Moderate positive or negative effect:** - where the development would cause noticeable improvement (or deterioration) to the existing environment.
- **Minor positive or negative effect:** - where the development would cause perceptible improvement (or deterioration) to the existing environment.

- **Negligible:** - no discernible improvement or deterioration to the existing environment.

Cumulative Impacts

2.6.6 The ES, December 2009 provided an assessment of impact interactions and in combination interactions associated with East Float and Northbank East. As part of the supplementary information submitted in June 2010, a Cumulative Impact Assessment (CIA) was completed. This considered the combination interactions associated with East Float, Northbank East and Liverpool Waters.

2.6.7 It has been considered that as both assessments are based upon residual effects and the changes to the parameter plans and principles do not change the residual effects for East Float, that both the Cumulative Impacts within the ES, December 2009 and the supplementary CIA remain valid.

3 OUTLINE OF CHANGES TO PARAMETER PLANS AND PRINCIPLES

3.1 INTRODUCTION

3.1.1 As outlined within Chapter 2 of the ES – The Approach to EIA, Volume 2 – Text and Figures, December 2009, the EIA has been based upon a series of fixed parameter plans for the ‘*City Structure*’ and a series of urban quarters. In addition to the parameter plans submitted in December 2009, a series of development principles were also outlined, some of which were used to inform the assessment/s. The parameter plans also outlined spatial elements which were fixed and other spatial elements which may vary as the scheme design progresses through the design process and towards future detailed reserved matters submissions. The degree to which those elements will be subject to variation was outlined within the parameter plans and development principles and they were referred to as ‘tolerances’. All technical assessments within the EIA sought to assess the ‘tolerance’ considered to incur the most significant effect i.e. the ‘worst case’.

3.1.2 The parameter plans submitted in December 2009 provide a range of heights to allow flexibility in the height of future buildings/zones. Therefore, to provide certainty to the assessment, maximum heights were assessed.

3.1.3 The effects on the Proposed Development on wind, daylight, sunlight and overshadowing were informed by the massing of the ‘working masterplan’ (as now renamed, previously the ‘illustrative masterplan’), which was considered as ‘a likely case scenario’. The reason for this is that in terms of massing, assessing a minimum and maximum scenario is likely to result in effects that are beyond worst case, to an extent that the effects presented are not considered likely.

3.1.4 A schedule of accommodation as detailed within Chapter 4 of the ES - Consideration of Alternatives and Description of the Proposed Development, Volume 2 - Text and Figures, December 2009 outlines the maximum quantum of uses across the Site and the maximum total quantum across each of the Quarters. These schedules were used to inform the transport modelling and the associated traffic data. The traffic data was used to assess some of the effects relating to transport, air quality, dust, noise and vibration. The maximum scenario was modelled and the maximum scenario was tested. There have been no changes to the total quantum of development or the quantum of development for each quarter.

3.1.5 The changes to the parameter plans and principles are documented in three key documents as outlined below:

- Schedule of Amendments to Principles and Parameters, June 2010, as submitted as part of the package of supplementary information;
- East Float, Parameters and principles matrix, audit trial matrix, July 2010; and
- East Float, Parameters and principles matrix, refreshed matrix, July 2010.

3.1.6 The final set of parameter plans and principles are included in Chapter 8 of the Design and Access Statement, July 2010.

3.2 SUMMARY OF KEY CHANGES IN PARAMETER PLANS AND PRINCIPLES

3.2.1 A summary of the key changes in parameter plans and principles is provided below.

Parameter plans

- SkyCity north parcel: Extension of development parcel and indicative plot line to the western edge;
- Marina View and Four Bridges: Changes to parcel to reflect ‘point tower’;
- Northbank West: Further indicative development plots;
- Northbank West southern development parcel: Minimum parameters added;

- SkyCity north parcel: maximum at eastern extent remains 226m. Applies to single tower with remainder reduced to 150m maximum;
- SkyCity north parcel: maximum at western extent has decreased from 126m to 125m;
- SkyCity south parcel: maximum at western extent has decreased from 84m to 80m;
- SkyCity south parcel: maximum at eastern extent has decreased from 42m to 41m;
- Marina View: tower width reduced and height reduced from 120m to 110m;
- Upper Four Bridges height increased from 16m to 18m; and
- Removal of access points (although there will be the same number of access points and further detail will be provided in the 'working masterplan').

Additional Design Principles with Potentially Significant Environmental Effects

- The provision of wetlands within SkyCity will relate to the building locations and number of blocks, as opposed to a wetlands areas separating each of the blocks. The minimum size of any wetland will be 34m and there will be 3 wetland areas within the northern parcels of SkyCity and 3 terraces with a minimum of 18m in width.
- Within the SkyCity parcels, there may be 8, 9, 10, 11 or 12 individual plots to accommodate larger building bases which may be required; and
- Within the SkyCity parcels, individual heights will be able to oscillate within the overall height parameters. On SkyCity north, any oscillation will need to occur below a straight line drawn on the photomontage/model between the 125m and 150m height parameters. On SkyCity south, the oscillation can occur both above and below the straight line drawn between 80m and 41m, provided the cityscape strategy and spiral effect (as set out within the Design and Access Statement) are achieved. In effect, there maybe a possibility of a height up to 150m closer to the western edge of the northern parcel.

4 TRANSPORT

4.1 ADDITIONAL ANALYSIS AND ASSESSMENT UNDERTAKEN SINCE DECEMBER 2010

4.1.1 Following submission of the planning application in December 2009 the Transport Steering Group (TSG) set up to deliver the optimum transport strategy for Wirral Waters has met on a regular basis to discuss the East Float outline planning application. The outcome of those discussions has resulted in the undertaking of additional technical work including the production of the following documents:

- East Float Highway Network Improvements Technical Note (March 2010);
- East Float - Sensitivity Test of Manual Addition of East Float Trips on M53;
- East Float - Cumulative Impact of 2030 East Float and Liverpool Waters on M53;
- Liverpool Waters Cumulative Impact on the Wirral Local Highway Network;
- Public Transport Cumulative Assessment with Liverpool Waters Note (June 2010);
- Revised Transport Assessment (June 2010);
- East Float Highway Network Improvements Technical Note (June 2010); and
- East Float Highway Network Improvements – Potential Trigger Points (July 2010).

4.1.2 The above documents, and through the TSG discussions, have assisted Wirral Council officers, Merseytravel, and the Highways Agency to reach a view that subject to appropriate conditions and obligations to deliver required transport interventions the East Float OPP can be granted.

4.1.3 The Cumulative Assessment work with Liverpool Waters has also concluded that there are no over-riding transport matters that would prevent progress of the East Float OPP, although it is noted that a planning application for Liverpool Waters has not been submitted.

4.2 EVALUATION OF CHANGES IN PARAMETER PLANS AND PRINCIPLES AND ASSOCIATED SIGNIFICANT EFFECTS

4.2.1 The Transport Impact Assessment for East Float has been based on a working development trajectory, which is unaffected by the changes in parameter plans and principles. There will therefore be no material changes to the transport impacts of the proposals.

4.2.2 The additional assessment work undertaken has concluded that highway improvements will be necessary at the Gorsey Lane/Tunnels Approaches grade separated junction, including signalisation. This will provide mitigation for potential traffic impacts at this location but will not affect the ES, December 2009 summarising transport residual effects.

4.3 CONFORMATION OF CHANGES IN RESIDUAL EFFECTS

4.3.1 **Table 4.1** provides a summary of the residual effects documented within the ES 2009, the residual effect as a result of the changes in parameter plans and principles, as outlined in **Chapter 3 – Outline of Changes in Parameter Plan and Principles** and whether there is any change.

Effect Assessed	Residual Effect presented in ES, 2009	Residual Effect as a result of the changes in parameter plans and principles	Conformation of change
<i>Site Preparation, Earthworks and Construction Phase</i>			
Increase in HGV movements on the local highway network	Negligible	Negligible	NO CHANGE

Disruption to public transport accessibility	Negligible	Negligible	NO CHANGE
Changes to pedestrian and cyclist routes	Negligible	Negligible	NO CHANGE
<i>Operational Phase</i>			
Reduction in capacity of the highway network	Minor Negative to Positive	Minor Negative to Positive	NO CHANGE
Changes in public transport accessibility	Moderate to Major Positive	Moderate to Major Positive	NO CHANGE
Changes to pedestrian and cyclist routes	Major Positive	Major Positive	NO CHANGE

4.4 FURTHER ANALYSIS AND ASSESSMENT

4.4.1 Given the timescales for the progress of East Float, a transport strategy is required that can be adaptive to change as the project develops. Mechanisms are set out in the Revised Transport Assessment and Draft Memorandum of Understanding between key transport stakeholders for updating the strategic transport assessment work, and monitoring and review so that any updates can be made based on the best available information. This includes detailed Transport Assessments to be produced for each major reserved matters planning application, which will deal with the detail of the phasing of the particular element of the development and provide a rolling evolution of the strategic transport assessment. The reserved matters applications and accompanying TAs will deal with access matters in detail.

5 AIR QUALITY, DUST AND ODOUR

5.1 ADDITIONAL ANALYSIS AND ASSESSMENT UNDERTAKEN SINCE DECEMBER 2010

5.1.1 Since submission of the planning application in December 2009 there have been no requests for additional assessment of air quality, dust and odour by WMBC or other statutory and non-statutory consultees and therefore no further works for this topic area has been undertaken.

5.2 EVALUATION OF CHANGES IN PARAMETER PLANS AND PRINCIPLES AND ASSOCIATED SIGNIFICANT EFFECTS

5.2.1 A review of the definitive list of changes in parameter plans and principles as outlined within section 3.1.4 has been undertaken. This review has included consideration to whether the changes in parameter plans and principles would give rise to a change in the significance of the residual effects outlined within the ES, December 2009.

Site Preparation, Earthworks and Construction Phase

Increase in dust and nuisance to existing and proposed sensitive receptors

5.2.2 The potential for dust and nuisance to occur at existing sensitive receptors during the construction phase was assessed based on the nature of construction activities, the location and proximity of sensitive receptors to the site and construction haul routes and the prevailing wind direction.

5.2.3 It is understood that there are no changes to the proposed construction methods and phasing of the Proposed Development and also no changes to the red line boundary.

5.2.4 The potential for dust generation as a result of construction phase was based on the assumption that dust may be generated anywhere within the red line boundary and therefore minor changes to the orientation, scale and massing of the Proposed Development will not alter the previous assessment. Additionally, as the red line boundary has not changed the distance to sensitive receptors will not change from that previously assessed. Accordingly, the identified residual effect remains unchanged.

Increase in PM₁₀ and potential health related effects to existing and proposed sensitive receptors

5.2.5 The potential for the Proposed Development to generate PM₁₀ and potential health effects at existing receptors during the construction phase was, similarly to dust, assessed with consideration to the nature of construction activities, the location and proximity of sensitive receptors to the site and construction haul routes and the prevailing wind direction.

5.2.6 As described above the construction methods, phasing and red line boundary have not changed and the assessment therefore remains unaffected. Accordingly, the identified residual effect remains unchanged.

Increase in exhaust emissions (NO₂ and PM₁₀) and potential health related effects to existing and proposed sensitive receptors

5.2.7 The potential for the Proposed Development to increase exhaust emissions (NO₂ and PM₁₀) and potential health related effects to existing and proposed sensitive receptors was assessed qualitatively (as construction traffic data was not available). The significance of effect was determined by consideration of the level of construction traffic likely to be generated by this phase of the development, the number and distance of sensitive receptors in the vicinity of the Site and the likely routes to be used by construction vehicles, the likely duration of the construction phase, and the nature of the construction activities.

5.2.8 The construction methods and phasing and quantum of development have not changed to that detailed within ES, December 2009. The assumed construction routes and likely number of construction vehicles will therefore also not change. Accordingly, the identified residual effect remains unchanged.

Operational Phase

Increase in exhaust emissions (NO₂ and PM₁₀) and potential health related effects to existing and proposed sensitive receptors

5.2.9 The increase of exhaust emissions (NO₂ and PM₁₀) and the potential health effects to existing and proposed sensitive receptors as a result of additional vehicle movements generated by the Proposed Development was assessed using the ADMS-Roads dispersion model. Annual Average Traffic (AADT) 24 hour flows (including HGV percentages and average vehicle speeds) were used as an input into the model (along with meteorological data) to assess the impact of the Proposed Development on air quality (NO₂ and PM₁₀). The ADMS-Roads model was used to produce NO₂ and PM₁₀ contour plots for both the without and with development scenarios across the Site (and not just at specific receptor locations). The assessment assumed that sensitive receptors could be located at any point within the red line boundary at ground level.

5.2.10 The quantum of development has not changed and therefore the AADT flows and the predicted air quality concentrations will also not change. Accordingly, the identified residual effect remains unchanged.

5.2.11 It is also understood that the access points shown on the previous parameter plans will be removed (although there will be the same number of access points and further detail will be provided in the 'working masterplan'). The AADT flows used in the air quality assessment were provided for surrounding roads links (see Appendix 7.3, ES, Volume 3 – Appendices, December 2009). The AADT flows for the development were calculated either side of each access point as indicated in the parameter plans, December 2010. It is therefore possible that predicted concentrations for the 'with development' scenarios may alter with the location of some of the access roads being less fixed by parameter plans and now moved to the 'working masterplan'. However, given the existing baseline conditions and the previous increases in concentrations assessed, the inclusion or exclusion of the access roads within the assessment should not cause a significant difference in the predicted concentrations and the magnitude of change. It is therefore considered that the moving some of the site access roads from the fixed parameters/principles will not cause a significant change in the magnitude of change or overall pollutant concentrations previously predicted presented in the ES, December 2009. It is therefore considered that the identified residual effect remains unchanged.

Increase in odour and nuisance (associated with extractions) to existing and proposed sensitive receptors

5.2.12 The potential for the Proposed Development to generate odour and a potential nuisance to existing and proposed sensitive receptors was previously assessed qualitatively considering the nature and intensity of the potential odours, the sensitivity of the receptors and their positioning and review of prevailing wind direction.

5.2.13 The assessment was previously undertaken on the assumption that odours could potentially be generated from any point within the red line boundary and that all receptors, both existing and proposed, were highly sensitive to odour. The changes to the parameters and principles will therefore not affect the assessment process and conclusions of the odour assessment. Accordingly, the identified residual effect remains unchanged.

5.3 CONFORMATION OF CHANGES IN RESIDUAL EFFECTS

5.3.1 **Table 5.1** provides a summary of the residual effects documented within the Environmental Statement 2009, the residual effect as a result of the changes in parameter plans and principles, as outlined in **Chapter 3 – Outline of Changes in Parameter Plan and Principles** and whether there is any change.

Table 5.1: Summary of Residual Effects for Air Quality, Dust and Odour

Effect Assessed	Residual Effect presented in ES, 2009	Residual Effect as a result of the changes in parameter plans and principles	Conformation of change
<i>Site Preparation, Earthworks and Construction Phase</i>			
Increase in dust and nuisance to existing and proposed sensitive receptors	Minor negative to negligible on residential properties within 200m	Minor negative to negligible on residential properties within 200m	NO CHANGE

	Negligible on water bodies	Negligible on water bodies	
Increase in PM ₁₀ and potential health related effects to existing and proposed sensitive receptors	Minor negative to negligible	Minor negative to negligible	NO CHANGE
Increase in exhaust emissions (NO ₂ and PM ₁₀) and potential health related effects to existing and proposed sensitive receptors	Minor negative to negligible	Minor negative to negligible	NO CHANGE
<i>Operational Phase</i>			
Increase in exhaust emissions (NO ₂ and PM ₁₀) and potential health related effects to existing and proposed sensitive receptors	Minor negative to negligible for NO ₂ Negligible for PM ₁₀	Minor negative to negligible for NO ₂ Negligible for PM ₁₀	NO CHANGE
Increase in odour and nuisance (associated with extractions) to existing and proposed sensitive receptors	Minor negative to negligible	Minor negative to negligible	NO CHANGE

5.4 FURTHER ANALYSIS AND ASSESSMENT

5.4.1 Further analysis and assessment of air quality, dust and odour will be required as the Proposed Development progresses in terms of design. The recommendations for further analysis and assessment include the following, and are consistent with those outlined within ES, December 2009.

- Identification of specific dust mitigation measures once further details of the construction phases and methods are known and detailed within a Construction Environmental Management Plan (CEMP) or similar document to ensure implementation.
- Depending on modification to traffic data, it may be necessary to undertake further quantitative assessment of air quality and potential health effects as a result of additional exhaust emissions (NO₂ and PM₁₀) on existing and proposed residential receptors as the 'working masterplan' develops. The assessment may then allow the exact locations of proposed sensitive receptors, car parks and junction improvements to be taken into account where applicable. The requirement for further air quality assessment will be discussed with WMBC at the appropriate stage.
- Assessment of the energy generating facilities was previously scoped out of the ES, December 2009 as insufficient information regarding the processes was known to enable the level of significance to be established. Assessment of emissions to air arising from the energy generating facilities will be undertaken once details of the facilities are known. Review and assessment of these processes may be undertaken to ensure air emissions are sufficiently controlled through measures such as appropriate stack heights. Detailed phases of the Proposed Development will therefore be screened and scoped for air quality assessment.
- Further assessment of odour and the potential for nuisance at existing and proposed sensitive receptors should be undertaken once the location of extraction points are known and appropriate mitigation measures implemented (where applicable).
- Further analysis of the cumulative air quality impacts and potential health effects associated with the East Float, Northbank East and Liverpool Waters as a result of cumulative road traffic and heat and power solutions will be undertaken once further details are known for each scheme.

6 NOISE AND VIBRATION

6.1 ADDITIONAL ANALYSIS AND ASSESSMENT UNDERTAKEN SINCE DECEMBER 2009

6.1.1 Since the submission of the outline planning application in December 2009, no technical noise and vibration related issues have been raised by statutory or non statutory consultees. Accordingly, it has not been necessary to have any additional key meetings or undertake additional work tasks with respect to noise and vibration.

6.2 EVALUATION OF CHANGES IN PARAMETER PLANS AND PRINCIPLES AND ASSOCIATED SIGNIFICANT EFFECTS

6.2.1 A review of the definitive list of changes in parameter plans and principles as outlined within section 3.1.4 has been undertaken. This review has included consideration to whether the changes in parameter plans and principles would give rise to a change in the significance of the residual effects outlined within the ES, December 2009.

6.2.2 The previously determined significance of the residual effects were determined based on two factors; the magnitude of effect and the receptor sensitivity. The changes to the parameter plans and principles do not change the sensitivity of the receptors. Accordingly, the following assessment considers whether the changes to the parameter plans and principles affect the magnitude of change and hence the residual effect.

6.2.3 The noise and vibration assessment presented within the ES, December 2009, considers the potential noise and vibration impacts that could arise during both the construction and operational phases of the Proposed Development. Presented below are the key impacts considered for each phase. Each impact area has been considered in turn with respect to the effect of the changes in parameters plans and principles.

Site Preparation, Earthworks and Construction Phase

Increase in noise to existing local noise-sensitive receptors

6.2.1 The ES included a qualitative assessment of construction noise. This assessment was based on the distances of existing local receptors to the closest proposed building footprints. The assessment drew on national guidance on construction noise impacts. The changes to the parameter plans and principles do not change the distances between the closest existing noise sensitive receptors and the proposed building envelopes. Accordingly, the identified residual effect remains unchanged.

Groundborne vibration levels to existing local sensitive receptors

6.2.2 The assessment of potential construction related groundborne vibration was based on the set back distances at which adopted magnitude of effect criteria may be registered for a sample of different construction activities (based on specified confidence limits). The distance of the closest existing vibration sensitive receptors was then compared against the calculated set back distances. The changes to the parameter plans and principles do not change the distances between the closest existing noise sensitive receptors and the proposed building envelopes, nor do they affect the sample of construction activities adopted in the assessment. Accordingly, the identified residual effect remains unchanged.

Operational Phase

Existing road traffic noise and industrial / commercial noise (where prevalent) on proposed residential development

6.2.3 A quantitative assessment of the prevailing local road traffic (and industrial/commercial) noise environment was undertaken to determine the suitability of the site for the proposed residential accommodation. This assessment included detailed consideration to the noise levels calculated to arise at the closest proposed build lines to the dominant local road traffic noise sources (i.e. Duke Street, Dock Road, Tower Road and Corporation Road). It should be noted that the closest commercial and industrial noise sources were identified to be located at greater distances than local road traffic sources. This assessment included consideration to potential noise impacts on internal living spaces (e.g. living rooms and bedroom), and external living spaces (e.g. balconies and gardens).

6.2.4 The changes to the parameter plans and principles do not change the distance of the closest proposed build lines to each dominant local road traffic noise source. Accordingly, the identified residual effect remains unchanged.

6.2.5 The changes to the parameters and principles confirm that courtyards areas will be integral to the design of both Vittoria Studios and Northbank West. The previous assessment included consideration to the local road traffic noise environment and its suitability for external living areas. Accordingly, the identified residual effect remains unchanged.

Existing road traffic noise and industrial / commercial noise (where relevant) on proposed educational facilities

6.2.6 A quantitative assessment of the prevailing local road traffic (and industrial/commercial) noise environment was undertaken to determine the suitability of the site for the proposed educational facilities. This assessment included detailed consideration to the noise levels calculated to arise at the closest proposed build lines to the dominant local road traffic noise sources (i.e. Duke Street, Dock Road, Tower Road and Corporation Road). It should be noted that the closest commercial and industrial noise sources were identified to be located at greater distances than local road traffic sources.

6.2.7 The changes to the parameter plans and principles do not change the distance of the closest proposed build lines to each dominant local road traffic noise source. Accordingly, the identified residual effect remains unchanged.

Noise from shipping movements within East Float Dock and Bascule Bridge operation on proposed sensitive development e.g. residential and educational facilities

6.2.8 A quantitative assessment of the noise from opening of the Bascule Bridge, ship pass, and Bascule bridge closing was undertaken to determine the suitability of the site for the proposed sensitive development. This assessment was undertaken for a setback distance of 15m from the Bascule Bridge. The changes to the parameter plans and principles do not change the distance of the closest proposed build lines to Bascule bridge, or the distance of the closest Proposed Development to East Float Dock. Accordingly, the identified residual effect remains unchanged.

Changes in road traffic noise levels associated with the Proposed Development on existing local noise sensitive receptors

6.2.9 A quantitative assessment of potential road traffic noise level changes associated with the development was undertaken based on the scheme traffic data. The changes to the parameter plans and principles do not change the scheme massing or density and as a result this is no change in the scheme traffic data. Accordingly, the identified residual effect remains unchanged.

Noise from industrial / commercial / plant arising from the Proposed Development on existing and proposed sensitive receptors

6.2.10 These potential impacts were assessed by determination of appropriate noise levels limits at a sample of the closest existing and proposed sensitive receptors to the Proposed Development. Compliance with the identified noise level limits would ensure a commensurate level of protection against industrial / commercial / plant noise to existing and proposed sensitive receptors. The noise levels limits were derived based on national guidance and the measured background noise levels on, and in the vicinity of the site. These noise level limits are independent of the proposed scheme layout or design, and therefore independent of the changes to the parameter plans and principles. Accordingly, the identified residual effect remains unchanged.

Existing groundborne vibration on the Proposed Development as a result of the western and eastern Bascule Bridges (which are close to the perimeter of the site)

6.2.11 A qualitative assessment of groundborne vibration arising as a result of the operation of Bascule Bridges was undertaken. The changes to the parameter plans and principles do not change the proximity of the closest Proposed Development to the Bascule Bridges. Accordingly, the identified residual effect remains unchanged.

6.3 CONFORMATION OF CHANGES IN RESIDUAL EFFECTS

6.3.1 **Table 6.1** provides a summary of the residual effects documented within the Environmental Statement 2009, the residual effect as a result of the changes in parameter plans and principles, as outlined in **Chapter 3 – Outline of Changes in Parameter Plan and Principles** and whether there is any change.

Table 6.1: Summary of Residual Effects for Noise and Vibration

Effect Assessed	Residual Effect presented in ES, 2009	Residual Effect as a result of the changes in parameter plans and principles	Conformation of change
<i>Site Preparation, Earthworks and Construction Phase</i>			
Increase in noise to existing local noise-sensitive receptors	Minor to moderate negative, occasionally rising to moderate to major negative	Minor to Moderate Negative, occasionally rising to moderate to major Negative	NO CHANGE
Groundborne vibration levels to existing local sensitive receptors	Minor to moderate negative, occasionally rising to moderate to major negative	Minor to moderate negative, occasionally rising to moderate to major negative	NO CHANGE
<i>Operational Phase</i>			
Existing road traffic noise and industrial / commercial noise (where relevant) on proposed residential development	Negligible	Negligible	NO CHANGE
Existing road traffic noise and industrial / commercial noise (where relevant) on proposed educational facilities	Negligible	Negligible	NO CHANGE
Noise from shipping movements within East Float Dock and Bascule Bridge operation on proposed sensitive development e.g. residential and educational facilities	Negligible	Negligible	NO CHANGE
Changes in road traffic noise levels associated with the Proposed Development on existing local noise sensitive receptors.	Minor negative	Minor negative	NO CHANGE
Noise from industrial / commercial / plant arising from the Proposed Development on existing and proposed sensitive receptors.	Negligible	Negligible	NO CHANGE
Existing groundborne vibration on the Proposed Development as a result of the western and eastern Bascule Bridges	Negligible	Negligible	NO CHANGE

(which are close to the perimeter of the site).			
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6.4 FURTHER ANALYSIS AND ASSESSMENT

6.4.1 The ES, December 2009 includes a section outlining monitoring and follow-up. This section presents further analysis and assessment work that will be required as the design of the development is progressed from the basis of the parameter plans and principles. A duplicate of the further work requirements detailed in the ES, December 2009 is presented below.

Site Preparation, Earthworks and Construction Phase

6.4.2 When the construction techniques and phasing have been confirmed, detailed construction noise level predictions will be undertaken which could form part of the scheme CEMP for agreement with the appointed contractor. The CEMP will also include the requirements for construction phase noise monitoring to determine compliance with appropriate construction noise limits.

6.4.3 The need for a detailed groundborne construction vibration assessment will be screened for each Quarter of the Proposed Development. This assessment will be used to ensure appropriate set back distances are incorporated into the developing scheme design, and that acceptable construction techniques are adopted. The assessment will include consideration to both human perception and the potential for structural damage (including consideration to dock walls and locks etc). Construction phase vibration surveys will also be undertaken for each Quarter in accordance with the recommendations outlined in BS 5228 Part 2 and BS 7385 1990: *Evaluation and measurement for vibration in buildings, Part 1: Guide for measurement of vibrations and evaluation of their effects on buildings* (Ref 8.13). The results of these surveys will confirm the vibration levels generated during the actual construction works and can be used to check compliance with the results of the detailed vibration assessment for each Quarter (if required).

Operational Phase

6.4.4 With respect to mitigation measures required to protect the amenity of the proposed new residential and educational aspects of the Proposed Development a further assessment will be undertaken at the detailed design stage such that appropriate site layouts can be developed, and that façade constructions, glazing units and ventilation systems can be specified. Façade constructions and ventilation systems would need to be specified once the details of elevations, orientations and internal layouts are known.

6.4.5 The need for detailed vibration assessments will be screened for each appropriate phase of development to establish the impact of the operation of the Bascule Bridges on proposed sensitive aspects of the development. This assessment will include groundborne vibration measurements at a series of different distances from both Bascule Bridges. This assessment will be undertaken in accordance with the assessment methodology presented within BS 6472: 2008: *Guide to evaluation of human exposure to vibration in buildings. Part 1: Vibration sources other than blasting*. This assessment will include the determination of appropriate vibration mitigation measures and set back distances for proposed vibration sensitive development. Mitigation measures and set back distances should be determined to ensure compliance with the condition described in BS 6472 as a 'Low probability of adverse comment' within the Proposed Development.

7 DAYLIGHT, SUNLIGHT AND OVERSHADOWING

7.1 ADDITIONAL ANALYSIS AND ASSESSMENT UNDERTAKEN SINCE DECEMBER 2009

7.1.1 Since the submission of the outline planning application in December 2009, no technical daylight, sunlight or overshadowing related issues have been raised by statutory or non statutory consultees. Accordingly, it has not been necessary to have any additional key meetings or undertake additional work tasks with respect to daylight, sunlight and overshadowing.

7.2 EVALUATION OF CHANGES IN PARAMETER PLANS AND PRINCIPLES AND ASSOCIATED SIGNIFICANT EFFECTS

7.2.1 A review of the definitive list of changes in parameter plans and principles as outlined within section 3.1.4 has been undertaken. This review has included consideration to whether the changes in parameter plans and principles would give rise to a change in the significance of the residual effects outlined within the ES, December 2009.

7.2.2 The daylight and sunlight assessments which were undertaken to inform the ES, December 2009 were based on the 'working masterplan' developed at this time (called illustrative masterplan at the time). As outlined in section 3.13 above, the 'working masterplan' was considered as 'a likely case scenario'. The reason for this is that in terms of massing, assessing a minimum and maximum scenario is likely to result in effects that are beyond worst case, to an extent that the effects presented are not considered likely.

7.2.3 The subsequent revisions to the 'working masterplan' undertaken since December 2009 have resulted in modifications to the massing of some of the buildings, most notably within SkyCity. The changes in the shape and position of the buildings are likely to generate changes in the level of sunlight to the open spaces and to some of the facades. For example the removal of one of the wings of the courtyard buildings on the southern blocks is likely to improve access of sunlight to the courtyards. This change is also likely to reduce overshadowing to the primary open space between the northern and southern building blocks of SkyCity. The magnitude of these changes will have to be quantified with further testing of the models as the design work which supports the 'working masterplan' progresses.

7.2.4 The ES, December 2009 identified areas requiring mitigation mainly to the west of the Site, i.e. Northbank West and Vittoria Studios. The mitigation options identified in the ES, December 2009 included the reduction of the height of the southern element of the courtyard buildings to improve the exposure of the open space to incident sunlight on the south whilst maintaining the overall quantum of development. Whilst these options may need to be evaluated and refined as the 'working masterplan' progresses, it is unlikely that there will be any change to the residual effects presented.

7.3 CONFORMATION OF CHANGES IN RESIDUAL EFFECTS

7.3.1 **Table 7.1** provides a summary of the residual effects documented within the ES, December 2009, the residual effect as a result of the changes in parameter plans and principles, as outlined in **Chapter 3 – Outline of Changes in Parameter Plan and Principles** and whether there is any change.

Table 7.1: Summary of Residual Effects for Daylight, Sunlight and Overshadowing

Effect Assessed	Residual Effect presented in ES, 2009	Residual Effect as a result of the changes in parameter plans and principles	Conformation of change
<i>Operational Phase</i>			
Change in daylight falling on existing and future elevations where residential windows are likely to be	Minor to Negligible	Minor to Negligible	NO CHANGE
Change in sunlight falling on existing and future elevations where residential windows are	Minor to Negligible	Minor to Negligible	NO CHANGE

likely to be			
Sunlight and Overshadowing falling on proposed public open space	Minor to Negligible	Minor to Negligible	NO CHANGE

7.4 FURTHER ANALYSIS AND ASSESSMENT

7.4.1 The approach adopted for the Daylight and Sunlight studies has assumed that it has been and will continue to be an iterative process of support to the masterplan team on the impacts of the proposed development on the access to daylight and sunlight for buildings and open spaces. The changes to the parameter plans and principles do not appear to generate a significant change from the 'working masterplan' tested for the ES, December 2009 during the preparation of the submission. However local changes are likely to occur as a result of these changes and further iterations of the daylight and sunlight assessments models will be undertaken to identify the best mitigation options and quantify their effectiveness.

7.4.2 The changes in the shape and position of the buildings within SkyCity will require further analysis and modelling. As the 'working masterplan' continues to develop, further modelling and assessment will be completed and the effectiveness of the most appropriate mitigation options will be tested.

8 WIND

8.1 ADDITIONAL ANALYSIS AND ASSESSMENT UNDERTAKEN SINCE DECEMBER 2009

8.1.1 Since the submission of the outline planning application in December 2009, no technical wind related issues have been raised by statutory or non statutory consultees. Accordingly, it has not been necessary to have any additional key meetings or undertake additional work tasks with respect to wind.

8.2 EVALUATION OF CHANGES IN PARAMETER PLANS AND PRINCIPLES AND ASSOCIATED SIGNIFICANT EFFECTS

8.2.1 A review of the definitive list of changes in parameter plans and principles as outlined within section 3.1.4 has been undertaken. This review has included consideration to whether the changes in parameter plans and principles would give rise to a change in the significance of the residual effects outlined within the ES, December 2009.

8.2.2 The wind assessments which were undertaken to inform the ES, December 2009 were based on the 'working masterplan' developed at this time. As outlined in section 3.13 above, the 'working masterplan' was considered as 'a likely case scenario'. The reason for this is that in terms of massing, assessing a minimum and maximum scenario is likely to result in effects that are beyond worst case, to an extent that the effects presented are not considered likely.

8.2.3 The subsequent revisions to the 'working masterplan' undertaken since December 2009 has resulted in refinements to the massing of some of the buildings, most notably within SkyCity. The changes in the shape and position of the buildings are likely to generate changes in the local wind environment, particularly in areas in close proximity to these buildings. However, the overall wind environment within the site is unlikely to significantly change.

8.2.4 The rotation and elongation of the buildings in the northern section of SkyCity, resulting in larger façade areas exposed to the prevailing north-westerly winds are likely to generate high pressures on these facades which will be channelled downwards to pedestrian level. However the presence of the podiums will help to absorb these effects and mitigate the impacts, the magnitude of which will have to be quantified with further testing of the models as the design work which supports the 'working masterplan' progresses.

8.2.5 The ES, December 2009 identified areas requiring mitigation mainly to the west of the Site, i.e. Northbank West and Vittoria Studios, often the areas in close proximity to corners of the buildings where wind speeds have a tendency to increase. The mitigation options identified in the ES, December 2009 were a combination of strategic planting and landscaping to add further density and obstruction to airflow in the pedestrian areas of the Site. Whilst these options may need to be evaluated and refined as the 'working masterplan' progresses, it is unlikely that there will be any change to the residual effects presented.

8.3 CONFORMATION OF CHANGES IN RESIDUAL EFFECTS

8.3.1 **Table 8.1** provides a summary of the residual effects documented within the Environmental Statement 2009, the residual effect as a result of the changes in parameter plans and principles, as outlined in **Chapter 3 – Outline of Changes in Parameter Plan and Principles** and whether there is any change.

Table 8.1: Summary of Residual Effects for Wind

Effect Assessed	Residual Effect presented in ES, 2009	Residual Effect as a result of the changes in parameter plans and principles	Conformation of change
<i>Operational Phase</i>			
Change in wind environment from baseline conditions (providing wind shelter and wind acceleration) experienced by future users.	Minor Positive	Minor Positive	NO CHANGE

8.4 FURTHER ANALYSIS AND ASSESSMENT

8.4.1 The approach adopted for the wind studies has assumed that it has been and will continue to be an iterative process of support to the design team as the 'working masterplan' develops and a greater level of detail is provided upon which further analysis and modelling can be completed.

8.4.2 As outlined within the ES, December 2009, the residual effect assumes the implementation of measures including planting and landscaping and smoother building corners.

8.4.3 The rotation and elongation of the buildings in the northern section of SkyCity, and the generation of higher pressures on facades will need to be quantified and further testing of the 'working masterplan' is proposed.

8.4.4 As the 'working masterplan' continues to develop, there may be local changes in wind; however, further wind modelling and assessment will be completed and the effectiveness of the most appropriate mitigation options will be tested.

9 TOWNSCAPE AND VISUAL

9.1 ADDITIONAL ANALYSIS AND ASSESSMENT UNDERTAKEN SINCE DECEMBER 2010

9.1.1 The additional townscape and visual assessment work undertaken since January 2010 (as presented and summarised with the Tyler Grange 'Supplementary Townscape & Visual Information' report – Ref: TG_1005_Townscape_001) responded to the scheme parameter and 'working masterplan' revisions, which were triggered by consultee and WMBC feedback as follow-up to the submission of the outline planning application and ES, December 2009.

9.1.2 The majority of the parameter revisions applicable to the townscape and visual assessment work related to meetings and discussions between the technical representatives of the client and English Heritage. The principal meetings included:

- English Heritage and WMBC visit to Birkenhead Park – December & January 2010;
- English Heritage Advisory Committee (EHAC) Site visit and Meeting – January & February 2010;
- English Heritage and WMBC meeting – April 2010; and
- English Heritage and WMBC meeting – May 2010.

9.1.3 Initial meetings were programmed to ascertain the work tasks required to satisfy English Heritage that the tallest building parameters associated with SkyCity would not be detrimental to the roofline and setting of Hamilton Square, as well as the setting of Birkenhead Park and the Liverpool World Heritage Site (WHS). A selection of additional viewpoints were agreed with English Heritage, and photomontages prepared in relation to:

- Birkenhead Park (Park Drive, south-west of Cannon Hill, adjacent to the Memorial);
- Birkenhead Park (Park Drive, north of Park Road West, adjacent to the Upper Park);
- Liverpool WHS (The western edge of Chavasse Park);
- Liverpool WHS (Water Street, adjacent to Liverpool Town Hall);
- Liverpool WHS (Chapel Street, east of the Hargreaves Building); and
- Everton Park (Between Cochrane Street and Waterhouse Street).

9.1.4 The photomontages were presented and assessed in January 2010 as follow-up to additional field work and these were provided to English Heritage.

9.1.5 In response to the assessment findings set out within documents submitted to English Heritage, the applicant and technical representatives welcomed the 'overall in-principle' support and the acknowledgement by English Heritage that the proposals '*would not compromise the Outstanding Universal Value, authenticity and integrity of the (Liverpool) WHS*'. English Heritage also recognised that '*viewing tall buildings from Birkenhead Park would not be significantly detrimental*'.

9.1.6 Although the broad redevelopment parameters were seemingly supported by English Heritage and CABE, together with the aforementioned views on the WHS and Birkenhead Park, a number of concerns were raised about the planning application and the potential impacts on Hamilton Square. In response to this feedback, the technical team re-visited the scheme parameters, the 'working masterplan' and the assessment work in order to offer further justification and reasoning for the established principles and vision for the East Float.

9.1.7 The supplementary work undertaken in March and April 2010 aimed to 'unpack' the townscape, visual and heritage issues and in doing so, address the concerns raised by English Heritage and CABE about the scheme's impact on Hamilton Square. In particular, the work set out to address English Heritage's view that it was minded to recommend refusal unless the masterplan was significantly altered by a major reduction in height parameters. The supplementary pack of information therefore intended, in response, to provide the following:

- A further explanation of the design process and approach to considering heritage, townscape and issues;

- An explanation of the regenerative benefits for townscape and heritage assets arising through the proposals, and how these need to be considered alongside visual impact, not in isolation of;
- An analysis of the nature of the potential visual impacts, drawing upon the points raised by CABE and EH, relevant policy/guidance and precedents;
- An exploration of the degree to which changes to the masterplan could potentially be made in response to the heritage issues raised by CABE and EH; and
- An explanation of the approach to detailed design and the process of securing Reserved Matters approval for phases of the scheme which may affect heritage assets.

9.1.8 The actual townscape and visual work items undertaken to address the consultees concerns and respond to the 'calmer' parameters and 'working masterplan' included:

- The production of a Heritage Statement notes as follow-up to meetings between the technical representatives, the client, WMBC and English Heritage;
- The production of a Zone of Visual Influence (ZVI) analysis, to determine the visible extent of the tallest SkyCity parameters when viewed from Hamilton Square;
- The production of five revised representative photomontages to illustrate the subtle changes to the scheme parameters (Viewpoint 3 – Hamilton Square, Viewpoint 10 – Albert Dock, Viewpoint 12 – Hamilton Square, Viewpoint 14 – Birkenhead Park and Viewpoint 19 – Everton Hill); and
- The production of a Supplementary Townscape and Visual Information report, to set out the above process and re-assess any residual impacts in response to the parameter changes.

9.1.9 The above information was submitted to WMBC in June 2010, and subsequent confirmation received from English Heritage to confirm that *'the worst case scenario parameters relating to the siting and mass of the tall buildings at SkyCity and Marina View have been amended and would have a less harmful impact on views from the Square compared with that indicated by the original application'*.

9.2 EVALUATION OF CHANGES IN PARAMETER PLANS AND PRINCIPLES AND ASSOCIATED SIGNIFICANT EFFECTS

9.2.1 A review the definitive list of changes in parameter plans and principles as outlined within section 3.1.4 has been undertaken. This review has included consideration to whether the changes in parameter plans and principles would give rise to a change in the significance of the residual effects outlined within the ES, December 2009.

- As set out in Section 3, and the updated Design and Access Statement (July 2010) a number of key parameter and design principle changes were incorporated and the original assessment material re-visited.

9.2.2 The professional judgements made in response to the parameter and design principle revisions were based on additional fieldwork, the consideration of revised desktop material and the review of the regenerated photomontage material (as listed at paragraph 9.1.8).

9.2.3 Consistent with the findings of the ES, December 2009, the additional townscape and visual assessment work undertaken confirmed that the proposed East Float development would not substantially harm any identified townscape, visual and heritage receptors; however, it was again acknowledged that the development would result in changes to skyline when views from certain places such as Hamilton Square.

9.2.4 The changes to the parameters and design principles have been assessed consistently and the outcome suggests that all residual effects considered remain the same in terms of magnitude. Therefore, there has been No Change in the impacts set out within the ES, December 2009 (**Table 9.3**). Whilst no change in impacts has been experienced, the revisions have resulted in minor qualitative improvements and/or slight reductions in harmful effects. These improvements/reductions are not significant enough to shift the impact classifications, but further explanation is set out below for the most sensitive townscape and visual receptors in relation to the operational phase of the development. Those receptors include:

- TCA 3: Birkenhead Park and corresponding Viewpoints 4, 13, 14 and 15;
- Hamilton Square Conservation Area and corresponding Viewpoints 3 and 12; and

- Liverpool World Heritage Site and corresponding Viewpoints 10, 11, 16, 17 and 18.

Site Preparation, Earthworks and Construction Phase

9.2.5 The range of construction effects identified within the ES, December 2009 and subsequent material will remain unchanged, as the impacts of construction plant and static cranes will remain largely the same, with slight variations in crane heights and positioning. The reduction in the straight line height of the northern SkyCity spiral (limited at 125m to 150m from west to east, with the principal tower retained at 226m) is likely to result in a slight qualitative improvement, given the reduction in tower cranes and above ground construction activities that will be visible from sensitive receptors such as those listed above.

Operational Phase

9.2.6 With regard to the completed development, the assessment throughout has responded to the maximum 'worst case' parameters, supported by a range of design principles as well as a "working masterplan", which assists in providing the reader some indication of how a building scenario could appear within those parameter parcels. A commentary for the most sensitive receptors identified at paragraph 9.2.4 is set out below, taking each in turn.

TCA 3: Birkenhead Park and corresponding Viewpoints 4, 13, 14 and 15

9.2.7 Given the street level enclosure surrounding the Park, the principal issue determining the magnitude of any residual impact was that of the skyline visibility of the maximum development parameters. The sensitivity of the Park is classified as National (character) and Medium/High (views), thus any development visible from this designated green space is likely to result in an adverse impact. However, judgement of such impacts had to be balanced against the fact that the Park contained no designated Strategic Views and that many of the designed spaces had an inward-looking focus. In relation to the original scheme parameters, it was concluded that the more open areas of the Park did have views towards the maximum parameters associated with the SkyCity quarter and the Marina View and Four Bridges quarter. Views were also obtainable towards the consented Northbank East proposals. The magnitude of change upon the character of the Park was deemed to be Low overall, whilst the change for views was determined as being Moderate. This results in a Minor Adverse residual effect for both character and views; however, areas of the Park with no direct views would experience a Neutral impact. The users of the Park would also experience adjustment to the skyline features over time, thus reducing the perceived operational impacts. The development could also be viewed as visual marker for the improved prosperity of the former Birkenhead Docks, and aid legibility and linkage between the Park and Proposed Development.

9.2.8 The subsequent revisions to the parameters, design principles and 'working masterplan', presented very little change in terms of the character and visual impact upon the Park. The calmer spiral associated with SkyCity and the reduced parameter heights (226m tower retained, with the northern straight line spiral decreasing from 150m to 125m) offered some qualitative improvement in the overall extent of intrusion, yet the impact magnitude remains the same, given that visibility to distant skyline features have been introduced to the parkland context.

9.2.9 The other alterations to scheme parameters and the 'working masterplan' at ground level would not be visible from Birkenhead Park.

Hamilton Square Conservation Area and corresponding Viewpoints 3 and 12

9.2.10 The ES, December 2009, considered that whilst this townscape feature and heritage asset was obviously susceptible to a change in character as a result of the Proposed Development, the setting would remain largely intact and the inward focus and strength of the built containment will reduce any influence that the new skyline components delivered. The influence and alteration to the townscape setting of Hamilton Square Conservation Area was therefore considered to be Minor Adverse in relation to both townscape character and visual impacts, given the National (character) and Medium/High (visual) sensitivity of the feature. Once again, this was assessed as reducing over time as a result of receptor adjustment. The effect upon the setting of the western, central and northern portions of the Square was considered to be Neutral given the lack of visibility of the proposed scheme.

9.2.11 The visibility of the proposed scheme as assessed in December 2009 was associated with only two parameter quarters, which were SkyCity and Marina View and Four Bridges. It was the height and massing of these parameters which most concerned English Heritage in terms of the visual impact and setting of Hamilton Square. To address these concerns the design team promoted a 'calmer approach', which included a staggered SkyCity spiral concept. Whilst retaining the critical mass and maximum height (226m) to deliver an 'internationally recognisable

waterfront', the remainder of the spiral parameters were re-graded, to reduce the extent of visual intrusion from Hamilton Square. As part of the package of supplementary information submitted in June 2010, the Marina View parameters were also reduced, to ensure that the way-marker tower parameters (in the foreground when viewed from Hamilton Square) became more slender in appearance.

9.2.12 As illustrated through the provision of additional photomontages, the parameter alterations provided a clear demonstration that the tall building parameters and 'working masterplan' (as viewed from the eastern portion of Hamilton Square) had reduced in terms of visibility and overall prominence. Whilst this represented a qualitative improvement and assisted in satisfying English Heritage that scheme revisions had resulted in a less harmful impact on views from Hamilton Square; the impact magnitude remains the same, given the fact that the designated feature will be influenced by the distant skyline parameters and there will be a noticeable change from some public viewpoints.

9.2.13 The other alterations to scheme parameters and the 'working masterplan' at ground level would not be visible from Hamilton Square.

Liverpool World Heritage Site and corresponding Viewpoints 10, 11, 16, 17 and 18

9.2.14 Notwithstanding the fact that the Site is located outside the WHS buffer zone, it was recognised within the December 2009 ES that the implementation of the Proposed Development had the potential to have an in-direct effect upon the character relationship of the WHS and Birkenhead; however, the distance of the proposals beyond the designated WHS buffer and the extent to which the WHS has already been influenced by more immediate redevelopment meant that the overall effect upon setting was Neutral. The placement of series of more significant parameters including the tall building cluster, assisted in balancing the architectural approach in the context of the Mersey corridor, yet the character of the adjoining townscapes would remain different in terms of historic components, aesthetics and surrounding urban context. As a townscape receptor of International sensitivity, the WHS was assessed as experiencing a Low magnitude of change, given the separation of the receptor by the River Mersey corridor. However, the improved interface between Birkenhead Docks and the WHS would result in a Moderate Beneficial impact upon townscape character, particularly as it would balance the already consented Northbank East development proposals.

9.2.15 In terms of visual impacts, the ES, December 2009 concluded that the Proposed Development parameters and 'working masterplan' would appear as a prominent architectural 'statement' on the Wirral waterfront when viewed from receptor locations of Medium/High sensitivity. The design principles developed would ensure that the scheme encloses the dock environment and 'steps-up' to the central SkyCity focal point (which reached a maximum height of 226 metres). The visual connection to the Grain Warehouses and the Hydraulic Tower were retained and the improved legibility of the Birkenhead Docks was considered to result in Moderate/Minor Beneficial residual effects.

The subsequent revisions to the parameters, design principles and 'working masterplan', presented very little change in terms of the character and visual impact upon the WHS. The calmer spiral associated with SkyCity north and the reduced parameter heights (226m tower retained, with straight line spiral decreasing from 150m to 125m) offered greater definition for the tall building parcel. The alterations to the southern SkyCity parameters were less evident and despite the reduction in the overall mass and size of the Marina View tower, the principle of providing a way-marker and legible feature for the waterfront was retained. Whilst these scheme revisions have resulted in slightly different parameter configurations the impact magnitude for both townscape character and visual amenity remains the same (Moderate Beneficial) given the distant inter-visibility between the development proposals and the WHS, and the retention of parameters that respect the scale of the docks and re-address the visual balance between the Liverpool and Birkenhead conurbations.

9.2.16 The other alterations to scheme parameters and the 'working masterplan' at ground level would not be visible from the WHS receptors identified.

9.3 CONFORMATION OF CHANGES IN RESIDUAL EFFECTS

9.3.1 **Table 9.1** provides a summary of the residual effects documented within the Environmental Statement 2009, the residual effect as a result of the changes in parameter plans and principles, as outlined in **Chapter 3 – Outline of Changes in Parameter Plan and Principles** and whether there is any change.

9.3.2 The table also includes a comparison against further viewpoints undertaken since December 2009 (i.e. 14-19) against the changes in parameters and principles.

Table 9.1: Summary of Residual Effects for Townscape and Visual

Effect Assessed	Residual Effect presented in ES, 2009¹	Residual Effect as a result of the changes in parameter plans and principles	Conformation of change
<i>Site Preparation, Earthworks and Construction Phase</i>			
Change in character of TCA 1: River Mersey Corridor	Moderate/Minor adverse	Moderate/Minor adverse	NO CHANGE
Change in character of TCA 2: Dock System/Wider River Valley	Minor adverse	Minor adverse	NO CHANGE
Change in character of TCA 3: Structured Parkland/Birkenhead Park	Minor adverse (Neutral for some spaces)	Minor adverse (Neutral for some spaces)	NO CHANGE
Change in character of TCA 4: Landscape Edge/M53 Corridor	Minor adverse	Minor adverse	NO CHANGE
Change in character of TCA 5: Structured Industry	Neutral	Neutral	NO CHANGE
Change in character of TCA 6: Fragmented Industry	Neutral	Neutral	NO CHANGE
Change in character of TCA 7: Laird Town Plan Residential Neighbourhood	Neutral	Neutral	NO CHANGE
Change in character of TCA 8: Birkenhead Town and Waterside Environs	Neutral	Neutral	NO CHANGE
Change in character of TCA 9: Northern Neighbourhoods	Neutral	Neutral	NO CHANGE
Change in character of TCA 10: Southern Neighbourhoods	Neutral	Neutral	NO CHANGE
Change in character of Liverpool World Heritage Site	Minor adverse (Moderate/Minor adverse in closer proximity)	Minor adverse (Moderate/Minor adverse in closer proximity)	NO CHANGE
Change in character of Hamilton Square Conservation Area	Minor adverse (Neutral for some areas)	Minor adverse (Neutral for some areas)	NO CHANGE
Change in character of Flaybrick Hill Cemetery Conservation Area	Neutral	Neutral	NO CHANGE
Change in character of Bidston Village Conservation Area	Neutral	Neutral	NO CHANGE
Change in character of Grain Warehouses (East Float) Listed Buildings	Moderate/Minor adverse	Moderate/Minor adverse	NO CHANGE

¹ Where further supplementary information has been provided in June 2010, the residual effect within this document supersedes that within the ES, December 2009.

Change in character of Wirral Waterfront	Neutral	Neutral	NO CHANGE
Change in character of Bidston Hill Area of Special Landscape Value	Minor adverse	Minor adverse	NO CHANGE
Change in character of Bidston Moss Local Nature Reserve	Neutral	Neutral	NO CHANGE
Change in character of Wirral Skyline and Birkenhead Docks	Minor adverse	Minor adverse	NO CHANGE
Change in visual amenity upon Viewpoint 1: Egerton Bridge, Twelve Quays	Minor adverse	Minor adverse	NO CHANGE
Change in visual amenity upon Viewpoint 2: Duke Street Viewing Area	Minor adverse	Minor adverse	NO CHANGE
Change in visual amenity upon Viewpoint 3: Hamilton Square	Minor adverse	Minor adverse	NO CHANGE
Change in visual amenity upon Viewpoint 4: Birkenhead Park	Minor adverse	Minor adverse	NO CHANGE
Change in visual amenity upon Viewpoint 5: Woodside Ferry Terminal	Neutral	Neutral	NO CHANGE
Change in visual amenity upon Viewpoint 6: Bidston Hill	Minor adverse	Minor adverse	NO CHANGE
Change in visual amenity upon Viewpoint 7: Bidston Moss Community Woodland	Minor adverse	Minor adverse	NO CHANGE
Change in visual amenity upon Viewpoint 8: Liverpool Anglican Cathedral	Moderate/Minor adverse	Moderate/Minor adverse	NO CHANGE
Change in visual amenity upon Viewpoint 9: Liverpool Metropolitan Cathedral	Moderate/Minor adverse	Moderate/Minor adverse	NO CHANGE
Change in visual amenity upon Viewpoint 10: Albert Dock	Moderate/Minor adverse	Moderate/Minor adverse	NO CHANGE
Change in visual amenity upon Viewpoint 11: Princess Dock	Moderate/Minor adverse	Moderate/Minor adverse	NO CHANGE
Change in visual amenity upon Viewpoint 12: Hamilton Square	Minor adverse	Minor adverse	NO CHANGE
Change in visual amenity upon Viewpoint 13: Birkenhead Park	Minor adverse	Minor adverse	NO CHANGE
Viewpoints 14 – 19 were not included as part of the ES, December 2009 but as part of the supplementary information provided in June 2010.			

Change in visual amenity upon Viewpoint 14: Birkenhead Park	Neutral – Moderate/Minor adverse	Neutral – Moderate/Minor adverse	NO CHANGE
Change in visual amenity upon Viewpoint 15: Birkenhead Park	Neutral – Moderate/Minor adverse	Neutral – Moderate/Minor adverse	NO CHANGE
Change in visual amenity upon Viewpoint 16: Chavasse Park	Minor adverse	Minor adverse	NO CHANGE
Change in visual amenity upon Viewpoint 17: Water Street	Neutral	Neutral	NO CHANGE
Change in visual amenity upon Viewpoint 18: Chapel Street	Neutral – Minor Adverse	Neutral – Minor Adverse	NO CHANGE
Change in visual amenity upon Viewpoint 19: Everton Park	Minor adverse	Minor adverse	NO CHANGE
<i>Operational Phase</i>			
Change in character of TCA 1: River Mersey Corridor	Moderate beneficial	Moderate beneficial	NO CHANGE
Change in character of TCA 2: Dock System/Wider River Valley	Minor beneficial	Minor beneficial	NO CHANGE
Change in character of TCA 3: Structured Parkland/Birkenhead Park	Neutral - Minor adverse (with receptor adjustment over time)	Neutral - Minor adverse (with receptor adjustment over time)	NO CHANGE
Change in character of TCA 4: Landscape Edge/M53 Corridor	Minor beneficial	Minor beneficial	NO CHANGE
Change in character of TCA 5: Structured Industry	Minor beneficial	Minor beneficial	NO CHANGE
Change in character of TCA 6: Fragmented Industry	Minor beneficial	Minor beneficial	NO CHANGE
Change in character of TCA 7: Laird Town Plan Residential Neighbourhood	Neutral	Neutral	NO CHANGE
Change in character of TCA 8: Birkenhead Town and Waterside Environs	Neutral	Neutral	NO CHANGE
Change in character of TCA 9: Northern Neighbourhoods	Neutral	Neutral	NO CHANGE
Change in character of TCA 10: Southern Neighbourhoods	Neutral	Neutral	NO CHANGE
Change in character of Liverpool World Heritage Site	Moderate beneficial	Moderate beneficial	NO CHANGE
Change in character of Hamilton Square Conservation Area	Neutral - Minor adverse (with receptor adjustment over	Neutral - Minor adverse	NO CHANGE

	time)	(with receptor adjustment over time)	
Change in character of Flybrick Hill Cemetery Conservation Area	Neutral	Neutral	NO CHANGE
Change in character of Bidston Village Conservation Area	Neutral	Neutral	NO CHANGE
Change in character of Grain Warehouses (East Float) Listed Buildings	Moderate beneficial	Moderate beneficial	NO CHANGE
Change in character of Wirral Waterfront	Neutral	Neutral	NO CHANGE
Change in character of Bidston Hill Area of Special Landscape Value	Moderate beneficial	Moderate beneficial	NO CHANGE
Change in character of Bidston Moss Local Nature Reserve	Minor beneficial	Minor beneficial	NO CHANGE
Change in character of Wirral Skyline and Birkenhead Docks	Moderate/Minor beneficial	Moderate/Minor beneficial	NO CHANGE
Change in visual amenity upon Viewpoint 1: Egerton Bridge, Twelve Quays	Minor beneficial	Minor beneficial	NO CHANGE
Change in visual amenity upon Viewpoint 2: Duke Street Viewing Area	Minor adverse (with receptor adjustment over time & moderate beneficial for new views created)	Minor adverse (with receptor adjustment over time & moderate beneficial for new views created)	NO CHANGE
Change in visual amenity upon Viewpoint 3: Hamilton Square	Minor adverse/Neutral (as a result of receptor adjustment over time & neutral for central-northern extent of the Square)	Minor adverse/Neutral (as a result of visibility variance and receptor adjustment over time. Neutral for the western, central and northern extent of the Square)	NO CHANGE
Change in visual amenity upon Viewpoint 4: Birkenhead Park	Moderate/Minor adverse (with receptor adjustment over time & neutral for some areas)	Neutral – Moderate adverse	NO CHANGE ²
Change in visual amenity upon Viewpoint 5: Woodside Ferry Terminal	Neutral	Neutral	NO CHANGE

² The supplementary package of information, June 2010 provided a greater level of assessment than in the ES, December 2009. The additional work completed concluded that at some locations within Birkenhead Park the effect would be considered as neutral. Therefore the range of the effect has increased from moderate to minor adverse moderate adverse to neutral. Therefore although the residual effect has not changed, there are some locations within Birkenhead Park that will not be subjected to any change.

Change in visual amenity upon Viewpoint 6: Bidston Hill	Moderate/Minor beneficial	Moderate/Minor beneficial	NO CHANGE
Change in visual amenity upon Viewpoint 7: Bidston Moss Community Woodland	Moderate/Minor beneficial	Moderate/Minor beneficial	NO CHANGE
Change in visual amenity upon Viewpoint 8: Liverpool Anglican Cathedral	Moderate/Minor beneficial	Moderate/Minor beneficial	NO CHANGE
Change in visual amenity upon Viewpoint 9: Liverpool Metropolitan Cathedral	Moderate/Minor beneficial	Moderate/Minor beneficial	NO CHANGE
Change in visual amenity upon Viewpoint 10: Albert Dock	Moderate/Minor beneficial	Moderate/Minor beneficial	NO CHANGE
Change in visual amenity upon Viewpoint 11: Princess Dock	Moderate/Minor beneficial	Moderate/Minor beneficial	NO CHANGE
Change in visual amenity upon Viewpoint 12: Hamilton Square	Minor adverse/Neutral (as a result of receptor adjustment over time & neutral for central-northern extent of the Square)	Minor adverse/Neutral (as a result of visibility variance and receptor adjustment over time. Neutral for the western, central and northern extent of the Square)	NO CHANGE
Change in visual amenity upon Viewpoint 13: Birkenhead Park	Moderate/Minor adverse (with receptor adjustment over time & neutral for some areas)	Moderate adverse - Neutral	NO CHANGE ³
Viewpoints 14 – 19 were not included as part of the ES, December 2009 but as part of the supplementary information provided in June 2010.			
Change in visual amenity upon Viewpoint 14: Birkenhead Park	Moderate/Minor adverse (with receptor adjustment over time & neutral for some areas)	Moderate adverse - Neutral	NO CHANGE ⁴
Change in visual amenity upon Viewpoint 15: Birkenhead Park	Moderate/Minor adverse (with receptor adjustment over time & neutral for some areas)	Moderate adverse - Neutral	NO CHANGE ⁵
Change in visual amenity upon Viewpoint 16: Chavasse Park	Moderate/Minor beneficial	Moderate/Minor beneficial	NO CHANGE
Change in visual amenity upon Viewpoint 17: Water Street	Neutral	Neutral	NO CHANGE

³ As above.

⁴ As above.

⁵ As above.

Change in visual amenity upon Viewpoint 18: Chapel Street	Moderate/Minor beneficial	Moderate/Minor beneficial	NO CHANGE
Change in visual amenity upon Viewpoint 19: Everton Park	Moderate beneficial	Moderate beneficial	NO CHANGE

9.4 FURTHER ANALYSIS AND ASSESSMENT

9.4.1 In terms of the current parameter definitions and ‘working masterplan’ and owing to the sensitivity of views from Hamilton Square, the ability for forthcoming masterplan iterations to oscillate on the northern SkyCity parcel (between the 125m height parameter and the 150m parameter) will be limited to oscillation below a straight line drawn between those two points. This has been illustrated on the latest photomontages and assessed accordingly.

9.4.2 For the southern parcel of SkyCity, there will be more of an ability to oscillate between the maximum 80m height parameter and the 41m height parameter, meaning that buildings can be both above and below a straight height line drawn between the two points. This is due to the lesser visibility and sensitivity of this part of the scheme, as evidenced within the EIA.

9.4.3 The sensitivity of views from Hamilton Square will also require masterplan iterations to adhere to the maximum massing and height parameters set out in the supplementary package of information submitted in June 2010 in relation to the Marina View tower.

9.4.4 Given the sensitivity of the skyline views, particularly from Hamilton Square and Birkenhead Park, any further changes to the SkyCity and Marina View parameters, design principles and ‘working masterplan’ will require further ‘detailed assessment’ if they breach the above criteria. Likewise, the progression of detailed design for specific buildings or defined quarters will require further assessment, to review the implications, impacts and mitigation options against the original Design and Statement and associated guiding principles, and to set out new impacts (both adverse and beneficial) that may arise as a result of the detailed design process. Such impacts are unlikely to exceed the worst case scenarios assessed at this outline stage, unless the height and massing parameters currently established are significantly altered.

10 ARCHAEOLOGY AND CULTURAL HERITAGE

10.1 ADDITIONAL ANALYSIS AND ASSESSMENT UNDERTAKEN SINCE DECEMBER 2010

10.1.1 With the exception to clarification to WMBC over archaeological terminology in July 2010, no technical issues related to below ground archaeology have been raised by statutory or non statutory consultees since the submission of the planning application in December 2009. Accordingly, it has not been necessary to have any additional key meetings or undertake additional work tasks with respect to archaeology. However, further meetings, analysis and reports have been undertaken in relation to townscape issues and how they affect wider heritage assets, which are outlined within in **Chapter 9 – Townscape and Visual**.

10.2 EVALUATION OF CHANGES IN PARAMETER PLANS AND PRINCIPLES AND ASSOCIATED SIGNIFICANT EFFECTS

10.2.1 A review of the definitive list of changes in parameter plans and principles as outlined within section 3.1.4 has been undertaken. This review has included consideration to whether the changes in parameter plans and principles would give rise to a change in the significance of the residual effects outlined within the ES, December 2009.

10.2.2 The assessment of significant effects upon resources within the historic environment was made on the basis of both known and potential remains in terms of archaeological assets, and also extant built heritage remains. The built heritage remains were given greater consideration within **Chapter 11 - Townscape and Visual** of the ES, December 2009.

10.2.3 In order to account for potential archaeological remains, the assessment endeavoured to make a professional judgement based on the existing known archaeological baseline and to what potential remains might be present.

Site Preparation, Earthworks and Construction

Disturbance of buried known/unknown archaeological deposits

10.2.4 The ES, December 2009 provided a qualitative assessment of buried known/unknown archaeological deposits of primarily Prehistoric and Post Medieval data based on the magnitude of change and the cumulative sensitivity. Both the boundary and quantum of the Proposed Development has not changed.

10.2.5 Disturbance will still occur upon known/unknown archaeological deposits in the key locations where archaeological deposits are proposed to exist. As there are no changes to the red line boundary, the baseline conditions presented within the ES, December 2009 remains valid as does their sensitivity. The proposed changes to the parameter plans and principles will not change the overall magnitude of the effects assessed. Accordingly, the identified residual effect remains unchanged.

Increase in traffic, dust and vibration and increase in risk of damage to sensitive cultural heritage receptors

10.2.6 The ES, December 2009 provided a qualitative assessment of traffic, dust and vibration, primarily in relation to the Hydraulic Engine house and tower, although consideration was provided to other sensitive cultural heritage receptors.

10.2.7 Whilst the maximum height parameters for Upper Four Bridges has increased from up to 16m in height to up to 18m in height, the use and depth of piling is unlikely to change from that considered within the ES, December 2009. The evaluation presented within the ES, December, 2009, e.g. the sound structure of the Hydraulic Engine House and Tower remains valid. Therefore, the sensitivity of the receptor and magnitude of change remains valid. Accordingly, the identified residual effect remains unchanged.

10.3 CONFORMATION OF CHANGES IN RESIDUAL EFFECTS

10.3.1 **Table 10.1** provides a summary of the residual effects documented within the ES, December 2009, the residual effect as a result of the changes in parameter plans and principles, as outlined in **Chapter 3 – Outline of Changes in Parameter Plan and Principles** and whether there is any change.

Table 10.1: Summary of Residual Effects for Archaeology and Cultural Heritage

Effect Assessed	Residual Effect presented in ES, 2009	Residual Effect as a result of the changes in parameter plans and principles	Conformation of change
<i>Site Preparation, Earthworks and Construction Phase</i>			
Disturbance of buried known/unknown archaeological deposits	Minor to negligible	Minor to negligible	NO CHANGE
Increase in traffic, dust and vibration and increase in risk of damage to sensitive cultural heritage receptors	Negligible	Negligible	NO CHANGE

10.4 FURTHER ANALYSIS AND ASSESSMENT

10.4.1 The ES, December 2009 concluded that there was sufficient archaeological potential to warrant the agreement of an archaeological mitigation strategy in partnership with the Merseyside Archaeological Service.

10.4.2 The agreement would be demonstrated by the production and adoption of a Written Scheme of Investigation which would detail the type of archaeological mitigation required, and summarise the findings of the assessment to date.

10.4.3 The mitigation strategy, in line with best practice, would not seek to judge which archaeological resources had greatest value. In this way, the recovery of evidence in relation to known archaeological deposits (as detailed within the ES, December 2009) would not preclude the investigation of material pertaining to archaeological periods which have not been indicated as being definitively present. Such remains could include evidence from the prehistoric period, for which only general evidence has been identified thus far (rather than evidence from specific prehistoric period subdivisions).

11 DRAINAGE, FLOODING AND WATER RESOURCES

11.1 ADDITIONAL ANALYSIS AND ASSESSMENT UNDERTAKEN SINCE DECEMBER 2010

11.1.1 The Environment Agency provided a Position Statement on 12th February 2010. It welcomed that the application realises the importance of protecting existing water supplies and they supported the consideration of options for reducing water consumption in both residential and commercial uses. It was noted that as the scheme moves forward, close dialogue with utilities providers will be required to ensure that the development does not contribute to exceeding the capacity of either the foul water network or the Waste Water Treatment Works.

11.1.2 Following a consultation meeting held with the Environment Agency on 22nd February 2010 minor amendments were made to the Flood Risk Assessment (FRA) and Chapter 13 of the ES: Drainage, Flooding and Water Resources, December 2009. These were submitted as part of the package of supplementary information in June 2010.

11.2 EVALUATION OF CHANGES IN PARAMETER PLANS AND PRINCIPLES AND ASSOCIATED SIGNIFICANT EFFECTS

11.2.1 A review of the definitive list of changes in parameter plans and principles as outlined within section 3.1.4 has been undertaken. This review has included consideration to whether the changes in parameter plans and principles would give rise to a change in the significance of the residual effects outlined within the ES, December 2009.

11.2.2 After reviewing changes in parameter plans and principles in the context of the effects identified within the Chapter 13 – Drainage, Flooding and Water Resources of the ES, December 2009, it is considered that they will not change the receptors identified, or their sensitivity.

11.2.3 The changes in maximum height parameters across East Float, the extension of the development parcel within SkyCity and will not impact flooding risks. The changes in parameters and principles will not give rise to significant increases or decreases in stress on foul/surface water drainage systems or water resources, particularly as these are based upon the quantum of development for which there has been no change. Therefore, the magnitude of change presented within the ES, December 2009 remains valid. Accordingly, the identified residual effects remain unchanged.

11.3 CONFORMATION OF CHANGES IN RESIDUAL EFFECTS

11.3.1 **Table 11.1** provides a summary of the residual effects documented within the ES, December 2009, the residual effect as a result of the changes in parameter plans and principles, as outlined in **Chapter 3 – Outline of Changes in Parameter Plan and Principles** and whether there is any change.

Table 11.1: Summary of Residual Effects for Drainage, Flooding and Water Resources

Effect Assessed	Residual Effect presented in ES, 2009	Residual Effect as a result of the changes in parameter plans and principles	Conformation of change
<i>Site Preparation, Earthworks and Construction Phase</i>			
Increase in Physical Contaminants on Surface Water (e.g. from surface water run-off, dewatering activities and dock filling operations)	Negligible	Negligible	NO CHANGE
Increase in Risk of Surface Water and Drainage Flooding (on demolition and construction workers)	Negligible	Negligible	NO CHANGE
Increase in Risk of Fluvial Flooding (on demolition and	Negligible	Negligible	NO CHANGE

construction workers)			
Increase in Risk of Tidal Flooding (on demolition and construction workers)	Negligible	Negligible	NO CHANGE
Increase in Risk of Groundwater Flooding (on demolition and construction workers)	Negligible	Negligible	NO CHANGE
<i>Operational Phase</i>			
Increase in Physical Contaminants on Surface Water (from surface water run-off)	Negligible	Negligible	NO CHANGE
Increase in Flood Risk as a Result of Increased Surface Water Run-off (to future populations and third parties)	Negligible	Negligible	NO CHANGE
Increase in Risk of Fluvial Flooding (on construction workers and construction activities)	Negligible	Negligible	NO CHANGE
Increase in Risk of Tidal Flooding (to future populations and third parties)	Minor (Negative)	Minor (Negative)	NO CHANGE
Increase in Risk of Groundwater Flooding (to future populations and third parties)	Negligible	Negligible	NO CHANGE
Increase in Foul Drainage and Associated Sewage Treatment Works	Negligible	Negligible	NO CHANGE
Increase in Potable Water Supply	Minor (Positive)	Minor (Positive)	NO CHANGE

11.4 FURTHER ANALYSIS AND ASSESSMENT

11.4.1 The ES, December 2009 includes a section outlining monitoring and follow-up. This section presents further analysis and assessment work that will be required as the design of the development is progressed from the basis of the parameter plans and principles. A duplicate of the further work requirements detailed in the ES, December 2009 is presented below.

11.4.2 A CEMP for the control and management of potential risks at the Site will be developed for each phase and implemented by individual contractors for the preparatory and construction stages of the development. Each CEMP will incorporate the mitigation measures recommended above to reduce the significance and, where possible, eliminate the identified impacts.

11.4.3 The CEMP will be a live document setting out the construction management system to be adopted on-site. Detailed risk assessments will be produced for all operations from which a safe system of work shall be developed. Contractors will be required to monitor this process and develop assessments and working methods appropriate to changes in work activities.

11.4.4 The temporary construction phase surface water drainage and operational phase surface water and foul drainage systems are to be designed during the detailed design stage encompassing measures discussed in the sections above, particularly including measures for minimising volumes and preventing contamination of sensitive waterbodies. Silt traps utilised in drainage system in the construction phase should be routinely monitored to ensure effectiveness.

11.4.5 A flood management plan will be developed for the Site. This will be a 'living document' and will be updated regularly with changes to EA and Local Planning Policy and updated climate change predictions. It will include operational arrangements for managing water levels in the dock, particularly when lowering of the levels is required to attenuate anticipated flood water. This will be developed alongside the Port of Liverpool. The flood management plan will also include provision of risk awareness for construction workers and contingency plans for evacuation of the Site during both construction and operational phases.

11.4.6 Further FRAs will be produced for individual phases of the Proposed Development. These will include more detailed flood mitigation measures and information on how the Site will be protected from flooding over the development's lifetime.

11.4.7 Groundwater elevations and flow direction will be determined during the future intrusive investigations.

12 GROUND CONDITIONS, HYDROGEOLOGY AND CONTAMINATION

12.1 ADDITIONAL ANALYSIS AND ASSESSMENT UNDERTAKEN SINCE DECEMBER 2010

12.1.1 The Environment Agency provided a Position Statement on 12th February 2010. This stated that although further work, including detailed site investigations and appropriate remediation, will be required to ensure that the development poses no unacceptable risk of pollution to the water environment, it is their opinion that these can be undertaken as the design process progresses towards future detailed reserved matters submissions.

12.1.2 Following a memo received from the Merseyside Environmental Advisory Service (MEAS) received on the 22nd June 2010, WSP have prepared a further supplementary document as outlined below. This should be read in conjunction with the ES, December 2009.

- East Float, Wirral Waters: Supplementary Geo-Environmental Report.

12.2 EVALUATION OF CHANGES IN PARAMETER PLANS AND PRINCIPLES AND ASSOCIATED SIGNIFICANT EFFECTS

12.2.1 A review of the definitive list of changes in parameter plans and principles as outlined within section 3.1.4 has been undertaken. This review has included consideration to whether the changes in parameter plans and principles would give rise to a change in the significance of the residual effects outlined within the ES, December 2009.

12.2.2 After reviewing the changes in parameter plans and principles, it is considered that the only potential issue requiring further clarification relates to the extension of the development parcel to the western edge of the SkyCity north parcel. This has been considered against the context of the effects identified within the ES, December 2009 and is only considered to be relevant to the following effects:

Site Preparation, Earthworks and Construction Phase only

- Potential risk of exposure to Unexploded Ordnance.

Both Site Preparation, Earthworks and Construction Phase and Operational Phase

- Potential exposure to contamination/ asbestos and effects on human health;
- Potential exposure to ground gases;
- Potential exposure to geotechnical risks; and
- Reduction in groundwater quality underlying the Site from the construction of foundations.

12.2.3 The receptors will remain the same, as will their sensitivity. The area over which these risks are applicable will only very slightly increase relative to the overall development plot and the measures proposed to mitigate the above effects remain valid and applicable. Therefore, it is considered that there will be no change to the magnitude considered within the ES, December 2009. Accordingly, the identified residual effects remain unchanged.

12.3 CONFORMATION OF CHANGES IN RESIDUAL EFFECTS

12.3.1 **Table 12.1** provides a summary of the residual effects documented within the ES, December 2009, the residual effect as a result of the changes in parameter plans and principles, as outlined in **Chapter 3 – Outline of Changes in Parameter Plan and Principles** and whether there is any change.

Table 12.1: Summary of Residual Effects for Ground Conditions, Hydrogeology and Contamination

Effect Assessed	Residual Effect presented in ES, 2009	Residual Effect as a result of the changes in parameter plans and principles	Conformation of change
<i>Site Preparation, Earthworks and Construction Phase</i>			
Potential exposure to contamination/ asbestos and effects on human health	Negligible	Negligible	NO CHANGE
Potential release / migration of contamination to Controlled Waters	Negligible	Negligible	NO CHANGE
Potential exposure to ground / maintenance workers to hazardous ground gases	Negligible	Negligible	NO CHANGE
Potential risk to development workers from instability or compressible ground relating to underground structures (geotechnical risks)	Negligible	Negligible	NO CHANGE
Potential risk of exposure to Unexploded Ordnance to ground / maintenance workers.	Negligible	Negligible	NO CHANGE
Presence of Japanese Knotweed and associated effects on development structures.	Negligible	Negligible	NO CHANGE
Reduction in groundwater quality underlying the Site from the construction of foundations	Negligible	Negligible	NO CHANGE
Reduction in quality of Soils and Neighbouring Sites from the disturbance / mobilisation of contaminated materials	Negligible	Negligible	NO CHANGE
<i>Operational Phase</i>			
Potential exposure to contamination to future populations and third parties.	Negligible	Negligible	NO CHANGE
Potential risk of hazardous ground gas ingress into properties and associated effects on human health of future populations and third parties	Negligible	Negligible	NO CHANGE
Potential exposure to geotechnical risks within the development and associated effects on future populations and third parties.	Negligible	Negligible	NO CHANGE

12.4 FURTHER ANALYSIS AND ASSESSMENT

12.4.1 The ES, December 2009 includes a section outlining monitoring and follow-up. This section presents further analysis and assessment work that will be required as the design of the development is progressed from the basis of

the parameter plans and principles. A duplicate of the further work requirements detailed in the ES, December 2009 is presented below.

12.4.2 A CEMP for control and management of potential risks at the Site will be developed and implemented by the Principal Contractor for the preparatory and construction phases of the Site. The CEMP will incorporate the mitigation measures recommended above to reduce the significance and, where possible, eliminate the identified impacts.

12.4.3 The CEMP will be a live document setting out the management system to be adopted on site. Detailed risk assessments for all operations from which a safe system of work shall be developed. The Principal Contractor will be required to monitor this process and develop assessments and working methods appropriate to changes in work activities.

12.4.4 As outlined above and in response to the memo received from MEAS, WSP have prepared a further supplementary document, East Float, Wirral Waters: Supplementary Geo-Environmental Report, July 2010. The focus of this report is to respond to queries raised and further clarify and condense the conceptual site model and preliminary risk assessment for the site.

12.4.5 In addition and as outlined within the ES, December 2009, further detailed assessment will be completed via intrusive ground investigations, and remedial works if necessary, prior to each stage of the development.

13 ECOLOGY AND NATURE CONSERVATION

13.1 ADDITIONAL ANALYSIS AND ASSESSMENT UNDERTAKEN SINCE DECEMBER 2010

13.1.1 Following the submission of the ES, December 2009, WSP prepared a separate precautionary Ecological Impact Assessment (EclA) to respond to post-planning submission comments from WMBC, MEAS and Natural England. The EclA was included as part of the Supplementary Information submitted to WMBC in June 2010.

13.1.2 The EclA was developed on the baseline surveys undertaken by WSP in June 2009, and subsequent bat activity surveys completed on the site during May 2010; these works having been undertaken following further consultation with both Natural England and MEAS.

13.1.3 In addition to the EclA and the associated supporting surveys, WSP also submitted a CIA, addressing potential cumulative effects on receptors of nature conservation value arising as a result of the development of Northbank East, East Float and Liverpool Waters. Further information is provided within this document.

13.2 EVALUATION OF CHANGES IN PARAMETER PLANS AND PRINCIPLES AND ASSOCIATED SIGNIFICANT EFFECTS

13.2.1 The EclA, June 2010 was undertaken in reference to the Guidelines for Ecological Impacts Assessment in the United Kingdom (Institute of Ecology and Environmental Management, 2006) whereby potential effects on receptors of ecological and nature conservation importance are assessed with reference to the ecological structure and function of the receptor. The assessment process is outlined in more detail within Section 2.1 of the EclA, June 2010.

13.2.2 It should however be noted that the focus of the EclA, June 2010 is not necessarily to assess whether impacts are Significant or Not Significant, but more to assign a level of significance relating to the importance of the receptor, the magnitude or extent of change, the duration of the effect and the geographical scale at which the impact will be significant. Where practicable impacts which are assessed as being of significance at only the Local scale are scoped out of the assessment, unless there are potential legal implications (i.e. impacts on legally protected species).

13.2.3 In addition the guidelines require an informed assessment of confidence, specifically a four point scale of likelihood ranging from Certain (95% probability) to Extremely Unlikely (less 5% probability). Again reference should be made to Section 2.1 of the EclA.

13.2.4 In recognition of the above assessment criteria, and for the purpose of consistency, WSP have retained the terminology and assessment criteria within the SoCC. Consequently this section should be reviewed with due reference to the Guidelines for Ecological Impact Assessment in the United Kingdom (Institute of Ecology and Environmental Management, 2006) and the EclA, June 2010 as appropriate.

13.2.5 A review of the definitive list of changes in parameter plans and principles as outlined within section 3.1.4 has been undertaken. This review has included consideration to whether the changes in parameter plans and principles would give rise to a change in the significance of the residual effects outlined within the ES, December 2009.

Site Preparation, Earthworks and Construction Phase

Changes to sites of nature conservation importance

13.2.6 Sites within proximity of East Float are provided within the EclA (Section 3, Baseline Conditions, EclA, June 2010). The closest statutory sites to the Proposed Development are the Mersey Narrows and North Wirral Foreshore pSPA.

13.2.7 Potential impacts on statutory designated sites associated with the Proposed Development comprise the potential release of contaminants, either associated with construction operations or the disturbance of contaminated sediments within Vittoria Dock. Localised reduction in air quality was also assessed. Impacts on sites of nature conservation value was assessed in detail within Chapter 13 - Drainage, Flooding and Water Resources, Chapter 14 - Ground Conditions, Hydrogeology and Contamination, and Chapter 7 Air Quality, Dust and Odour of the ES, December 2009.

13.2.8 In recognition of the low potential and following adoption of an appropriate mitigation strategy, including the provision of an appropriate CEMP it was determined that the residual effect on sites of nature conservation importance would be Not Significant.

13.2.9 It is considered that the proposed changes to site layout, massing or building height would not represent a material change to site preparation or construction activities and accordingly the proposed residual effect as a result of the changes to the parameter plans would remain Not Significant.

Changes to the designated bird assemblages

13.2.10 Breeding and over-wintering surveys completed in 2008 confirmed that the Site was not considered to be of particular importance for assemblages of over-wintering birds. Surveys did confirm that the site supports winter roosts for cormorant (*Phalacrocorax carbo*), with two separate roosting sites identified on derelict and disused lighting gantries.

13.2.11 Mitigation measures incorporated into the EclA, June 2010 include a commitment to undertake pre-construction checks of the roosts to assess the potential for disturbance to breeding cormorants and to ensure that features are removed at an appropriate time of year to avoid sensitive breeding and/or over-wintering activity (as appropriate). Mitigation measures also include the provision of artificial roosts within the finished scheme to ensure long-term provision of high tide, winter roosting or breeding features. Residual effects on designated bird assemblages were assessed as being Not Significant.

13.2.12 It is considered that the proposed changes to site layout, massing or building height would not represent a material change to site preparation or construction activities and accordingly the proposed residual effect as a result of the changes to the parameter plans would remain Not Significant.

Loss of potential bat roosting habitat

13.2.13 Existing buildings within the Site were assessed as offering moderate potential for roosting bats, in recognition of their state of deterioration. However although the buildings were assessed as being suitable for bats, the wider landscape within the site and its immediate surrounds were such that the likelihood of these buildings being used by species of bat was considered to be low. In particular the large expanse of brackish water, limited foraging and commuting habitats and high levels of artificial lighting were all considered to greatly reduce the potential for bats to be using the site.

13.2.14 Following consultation with MEAS and Natural England, WSP completed bat activity surveys of the site and its surrounds. No bat activity (either foraging or commuting) was identified and consequently it was established that the potential for the site to be used by species of bat was extremely low.

13.2.15 Although surveys cannot prove absolute absence of bats from site it is considered that a precautionary strategy to update surveys in advance of key development phases, and the provision, where necessary, of pre-demolition checks, would reduce the potential significance of impacts on bats to Not Significant.

13.2.16 It is considered that the proposed changes to site layout, massing or building height would not represent a material change to site preparation or construction activities and accordingly the proposed residual effect as a result of the changes to the parameter plans would remain Not Significant.

Operational Phase

Changes to designated bird assemblages

13.2.17 It is considered that the proposed development will represent a potential increase of approximately 4,700 residents seeking outdoor recreational activities (Extended Screening for Appropriate Assessment, February 2010, submitted as part of the package of supplementary information, June 2010). A review of current management strategies and recreation impacts on or around sites of nature conservation importance and their associated bird assemblages, confirmed that there was the potential for long-term deterioration, associated with walkers, both with and without dogs.

13.2.18 In addition increased lighting was considered to have a localised impact on bird foraging and migration activities, specifically the 'beacon' effect of tall buildings on bird flight paths.

13.2.19 The Proposed Development includes the provision of green infrastructure within the development and the potential levy for off-site green infrastructure provision (both new sites and maintenance or enhancement of existing sites). In addition consideration has been given to an appropriate lighting strategy, and/or the implementation of a 'lights off' strategy on office and commercial buildings.

13.2.20 The residual effect on designated bird assemblages was considered to result in an unlikely long-term negative effect.

13.2.21 It is considered that the proposed changes to site layout, massing or building height would not represent a material change to operational activities and accordingly the proposed residual effect as a result of the changes to the parameter plans and principles would remain an unlikely long-term negative effect.

Contribution to long-term biodiversity

13.2.22 The site comprises features of negligible to low value for ecology and nature conservation, dominated by areas of hardstanding, existing industrial and office developments and areas of open dockland. The loss of these habitats, in whole or in part, was assessed as being Not Significant during the extended Phase 1 habitat survey. Accordingly the loss of these habitats was scoped out of both the ES, December 2009 and the subsequent EclA, June 2010. Irrespective of habitat loss the scheme includes the provision of green open spaces, considered to represent long-term enhancement to the ecological baseline and these contributions were assessed within both Chapter 11 Townscape and Visual of the ES, December 2009 and the EclA, June 2010.

13.2.23 Subject to detailed design, the Proposed Development has the potential to offer significant long-term biodiversity gain through the creation of more diverse and structurally complex habitats. Habitats will comprise areas of formal and semi-formal green open space including tree planting of native and ornamental species, freshwater habitats including areas of open water and marginal aquatic planting. In addition, the proposed development includes partial reclamation of the dockyard and the creation of brackish saltwater wetlands around SkyCity.

13.2.24 Habitat enhancement measures are considered to offer a range of habitats for widespread and commonly occurring species, representing a tangible enhancement to the existing ecological baseline. Subject to detailed design and the adoption of an appropriate long-term management strategy habitat enhancement was assessed as representing a certain long-term positive effect.

13.2.25 It is considered that the proposed changes to site layout, massing or building height would not represent a significant material change to the quantum or quality of habitats offered by the Proposed Development and accordingly the proposed residual effect as a result of the changes to the parameter plans and principles would remain certain long-term positive.

13.3 CONFORMATION OF CHANGES IN RESIDUAL EFFECTS

13.3.1 **Table 13.1** provides a summary of the residual effects documented within the ECIA as provided within the Supplementary Package of Information submitted to WMBC in June 2010, the residual effect as a result of the changes in parameter plans and principles, as outlined in **Chapter 3 – Outline of Changes in Parameter Plan and Principles** and whether there is any change.

Table 13.1: Summary of Residual Effects for Ecology and nature Conservation

Effect Assessed	Residual Effect presented in the EclA, 2010	Residual Effect as a result of the changes in parameter plans and principles	Conformation of change
<i>Site Preparation, Earthworks and Construction Phase</i>			
Changes to sites of nature conservation importance	Not significant	Not significant	No change
Changes to designated bird assemblages	Not significant	Not significant	No change
Loss of potential bat roosting	Not significant	Not significant	No change

habitat			
<i>Operational Phase</i>			
Changes to designated bird assemblages	Unlikely long-term negative	Unlikely long-term negative	No change
Contribution to long-term biodiversity	Certain long-term positive	Certain long-term positive	No change

13.4 FURTHER ANALYSIS AND ASSESSMENT

13.4.1 No additional analysis or assessment works are considered necessary as a result of the changes in the parameter plans and principles.

13.4.2 Specific additional works, including those measures outlined within the EclA remain and no change to their scope is proposed as a result of the changes to parameter plans and principles. For completeness the necessary additional works identified within the EclA have been outlined below.

- Breeding bird surveys of the East Float site, specifically to ascertain the use of cormorant roosting site for breeding birds;
- Updated bat activity surveys at key development milestones, with particular reference to changes in site management;
- Provision of a comprehensive CEMP including an ‘early warning’ system of checks and measures to prevent the accidental release of contamination into sensitive receptors; and
- Provision of a long-term landscape and ecological management strategy to maximise biodiversity gain.

14 CONCLUSION

14.1.1 Following the submission of the package of supplementary information in June 2010, a number of clarification issues were raised by the Council in relation to changes to the parameter plan and principles that have been made and whether such changes have a material effect on the submitted ES. Clarification issues were also sort on the mechanisms for delivery of further supporting technical assessment.

14.1.2 Therefore, this SoCC has been prepared in response to the clarification issues raised. A review of the definitive list of changes in parameter plans and principles as outlined within section 3.1.4 has been undertaken by each of the technical specialists involved with the ES, December 2009 and/or supplementary information provided in June 2010. This review has included consideration to whether the changes in parameter plans and principles would give rise to a change in the significance of the residual effects outlined within the ES, December 2009 or EclA, June 2010.

14.1.3 Chapters 3 to 13 demonstrate that there are no changes to the residual effects presented within the ES, 2009 or EclA, June 2010. For each of the effects considered this outcome has been supported by appropriate evaluation. For further information please refer to the Summary of Residual Effects, for which a table has been presented in each of the technical Chapters (**Chapters 4-13**). The only exception to this relates to **Chapter 11 – Townscape and Visual**, where there has not been a change in residual effect but the range of residual effects has increased to demonstrate that the residual effect at some locations within specific receptors is neutral.

14.1.4 The SoCC is intended to be read as supplementary information in support of the ES, December 2009 and supplementary package of information submitted in June 2010.

14.1.5 The information presented within the SoCC is considered to provide the necessary clarification requested and determines that the changes in parameter plans and principles outlined within **Chapter 3 – Outline to Changes in Parameter Plans and Principles** has no material effect upon the ES, December 2009 and supplementary information presented alongside.