

The Lake Lothing (Lowestoft) Third Crossing Order 201[*]



Lake Lothing
**THIRD
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**Document 7.5:
Design Report**

Appendix 6

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Appendix 6

**Part One
Design Council CABE Feedback**

Workshop 1: 22nd March 2017

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Jon Barnard
Project Manager, Lake Lothing Third Crossing
Resource Management
Suffolk County Council
Constantine House
5 Constantine Road
Ipswich
Suffolk
IP1 2DH

5 April 2017

Our reference: DCC/0840

Suffolk County Council: Lake Lothing Third Crossing

Dear Jon Barnard,

Thank you for inviting Design Council Cabe to the first design workshop for the Lake Lothing Third Crossing in Lowestoft on 22 March 2017.

We recognise the significance of the crossing for Lowestoft and its importance in alleviating congestion and potentially unlocking further growth through improved access and connectivity. In giving our advice, we aim to support Suffolk County Council and their consultants in maximising the possible benefits that can be achieved through the design of the bridge, considering the constraints that the project team are acting within, the proposed budget and the time scale.

The bridge will be a significant and visible new structure in Lowestoft. There is an imperative for this bridge to provide a lasting legacy which will not just meet its functional requirements, but also provide a meaningful place-making contribution to the town's identity, character and townscape. We do not yet think that the proposals are achieving this contribution.

The design process undertaken to date has been too strongly driven by the project constraints, and has not properly recognised the opportunities that the bridge presents. The approach taken so far has been to design a bridge which overcomes narrowly defined functional constraints, and to mitigate the bridge's impact. It has achieved this, but has failed to deliver on the wider benefits that can be secured through its design. Such a dominant structure has the potential to make a positive, confident statement which contributes to the identity, culture and future aspirations of Lowestoft and its community. By not achieving this, it fails to respond to an important project constraint, which is the risk posed by a bridge which does not deliver on the expectations of the local community for a structure which changes hearts and minds. This gap in the design process needs to be actively filled, and there is a need to go through a more comprehensive design process of contextual analysis, visioning, exploring precedents and testing options in order to inform decisions around the fundamental elements of the bridge. We are encouraged to hear that the design is in a fluid, rather than a fixed state,



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which provides the scope and opportunity to explore options and develop a design that meets the full range of constraints, opportunities and aspirations. We recommend the design team seeks out additional architectural and design input to support the next stages of the iterative design process.

Design process

We recognise the constraints involved in this project, including the port, nearby electrical and railway infrastructure, bridge height, land ownership, maintenance and safety requirements, and the need for the bridge to functionally respond to these constraints. The design team have shown themselves to be capable in managing the design process to deal with these functional constraints quite effectively. We are also keenly aware of the cost target and project timetable that the design team are working to. However we urge Suffolk County Council and their design team to widen the project considerations and constraints in order to acknowledge and include the imperative of designing a bridge that confidently reflects the history, culture and future aspirations of Lowestoft and its community. Design is a process that critically explores and balances constraints and opportunities and by thoughtfully balancing these, a design is more likely to develop that effectively and efficiently meets the bridge's functional needs and contributes to and enhances Lowestoft's identity and quality of place.

To embed the design process into the project timeline, we recommend that the project team and Suffolk County Council develop a clear vision statement for the bridge and their objectives for the bridge when completed. This would provide a benchmark against which future progress and success for the bridge design is measured. It would also be of benefit in communicating the intended outcomes for the bridge and the progress made towards these to the general public and stakeholders. The original design report produced for the project could contain material which may provide a helpful starting-point in developing this.

The absence of architectural input into the design thinking and process of the bridge's design development to date needs to be corrected as a matter of urgency. Given the stage that the design of the bridge has reached, this does not require the appointment of an architectural practice. However it does require input from appropriately experienced architects and engineers with significant experience of bridge design that are able to authoritatively support the design team. This support should focus the exploration and development of more creative solutions to develop the design beyond the functional requirements already established for the bridge.

Identity

The long-awaited Third Crossing will be an important piece of infrastructure which will provide not just the functionality of a new connection, but also a symbol of change and investment in the town. The expectations and aspirations held by the local community and the project team provide an opportunity to create a design which celebrates this significance and makes a positive contribution towards how local people and visitors think about the future of Lowestoft.

We encourage the design team to take several steps back and explore aspirations and opportunities for the primary structure of the bridge, investigating and using precedents



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and examples, before refining detail or secondary elements. Precedents for this type of structure should be interrogated thoroughly, and when used, should come with a clear rationale for how they are appropriate and how they add something to the design process.

The bridge structure presents various opportunities for developing the narrative and identity of the bridge but achieving a successful outcome will require a deep and rigorous understanding of the identity and culture of Lowestoft and its port. The working functionality of the port communicates a very particular character which could be interpreted through the bridge's structure. Exploring the iconography of industrial ports, (for example, steel cranes, capstans, steel boat hulls, dock surfaces and other tough hardware) could provide cues for how the bascule bridge as a piece of engineering can fit into this location, and can also feed into the design of details such as handrails and seats.

The experience of using the bridge will also be a part of how it contributes to the identity of this place. Starting with the user perspective and exploring the experience of what it will be like for different users crossing the bridge, defining a narrative for each element of the crossing (the long span, the opening mechanism, the crossing of the railway, and the landing on either side) will help to produce a structure which is a pleasure to use as well as functional. In particular, the opening mechanism of the bascule can be celebrated as a spectacular event which can be an attraction in itself, rather than just a frustration for those trying to cross the bridge.

Wider context

The wider context of the bridge is crucial in how it contributes to the narrative of place, and also its functional and aesthetic roles. We think that there is a need for a more rigorous contextual analysis to support the proposals, which should incorporate urban design and landscape, character and townscape. We recommend that the design team include this wider context on future plans and drawings to ensure that it becomes fully integrated.

In acting upon this analysis, the design team should be mindful of not just the existing urban design and townscape, but of its future and the role that the third crossing will play in a changing town. One of the key objectives for the project is to open up opportunities for regeneration and development in Lowestoft. The design of the bridge, and the way in which it lands on either side, will be significant in determining the sites that come forward on the north and south sides of the bridge and the viability of this land. The bridge has the potential to act as a catalyst for further regeneration but could also preclude or blight this regeneration.

We recognise that the project has a defined geographical scope, as well as a tight timeline and budget, but it is crucial that this wider context and the future of the surrounding area, such as the Kirkley Waterfront, are given due regard at an early stage. We urge the project team to work alongside Suffolk County Council and Waveney District Council to ensure that the bridge works with and supports these longer term ambitions and that sufficient care and attention is given to the areas of landscape which sit outside the site boundary. To help achieve this, we recommend that a champion outside of the

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project team from either the County or District Council is identified who can coordinate and promote the proactive treatment of these spaces.

Landscape

During the workshop, we started to explore some of the proposals for the surrounding landscape which may be helpfully explored in more detail at later sessions. There were some positive ideas presented for the spaces at either end of the bridge which provide a helpful focus on the user experience in accessing and using the bridge. With all of these proposals, we encourage the design team to ensure that the precedents and ideas are appropriate and applicable for this project and this location, and how they add into an overall concept. They should also be consistent with the functional requirements of the bridge. For example, the retaining walls which were presented do not appear consistent with the precedent images for slender pilasters and an open area of land under the bridge.

We also advise the project team to continue to explore the practicality of access routes to the bridge, particularly for pedestrians and cyclists, which may include additional access points directly from the waterside without having to take the approach up the main carriageway. These approaches should avoid being lengthy and convoluted and should ensure the routes are of high quality right the way along.

Bridge structure

The Third Crossing when built will be a significant and highly visible structure within Lowestoft, particularly considering its length and the number of transitions. The scale of the bridge and the weight of public expectation require a bridge structure which makes a positive aesthetic contribution. At present we do not think that the design of the bridge is achieving this positive aesthetic contribution. We urge the project team to embrace it and create a design which is confident and unapologetic, rather than seeking to hide or mitigate it, which can only go so far considering the scale of the bridge.

There are some fundamental elements of the bridge design which still require resolving, such as the single or double leaf bascule. We think there could be benefits in either and we question whether symmetry creates adequate justification for the choice of a double bascule. For this and other options for the structure and form, we encourage the design team to explore precedents in the first instance, before undergoing thorough tests on the various options. This exercise should weigh up the positive benefits, the drawbacks, and the cost of various options to allow the design team to make a holistic assessment of the options which can provide the best possible outcomes within the budgetary constraints. We urge the design team to avoid making decisions around any of the fundamental or the secondary issues until these options have been fully considered.

The control tower will also become a prominent and highly visible part of the bridge design, which will be a significant building and piece of architecture in its own right. It requires careful thought as part of the considerations for the structure of the bridge, but the best location will be partly determined by the decision made over a single or double bascule. We note that the control tower does not need to be in the river and could be placed on land so long as clear sight lines and safety is maintained.

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There are several important secondary elements of the bridge structure which have also been explored by the design team. We recommend that these elements are considered once the fundamental elements have been resolved to ensure it results in a coherent design. However there are some promising ideas which we encourage the design team to explore further, such as the pausing places on the bridge and interventions to communicate and celebrate the opening of the bridge for waiting traffic and pedestrians.

We question the choice of using steel and concrete over the railway on the north side, which is a linear structural form which may not work for the curved roadway currently proposed. We encourage the design team to explore using a box girder solution, which would not require a transition from steel to concrete and would allow for a more sculptural, slender form.

There may be maintenance issues with steel bascules and we encourage the design team to fully explore these implications or to investigate other options.

Development Consent Order process

The project timeline indicates that the Development Consent Order (DCO) application will be submitted in November 2017. The examination is a creative process and we encourage the project team to approach the development of the application and the narrative presented as such. It will be crucial to the success of the examination that the narrative is coherent, believable and that it explains the rationale behind the final solution.

We also recognise that the consultation stages are soon to begin prior to the submission of the DCO, but that there are still some fundamental design issues to be resolved. We are concerned that the material presented at consultation may change substantially before the submission of the DCO which presents a risk to the robustness of the application. We urge the design team to be realistic about the material they are intending to present and their stage in the design process in managing this timeline.

Handling stakeholders

The Associated British Ports in Lowestoft are the operator of the existing bascule bridge and may be the operator of the new third crossing. As such, they have an important stake in the management of the control tower which has implications at the design stage. It is important that the operator provide a clear brief to the project team regarding the requirements for openings and management. These requirements should be clearly expressed so that the design team can manage these within the wider aspirations and constraints for the project.

Presentation material

The material presented to the panel has primarily consisted of technical engineering drawings. These drawings give an impression of the details being fixed rather than elements still in development. We think that in exploring the fundamental elements of the bridge and its design, it would be beneficial for the design team to explore using more hand drawings to communicate the key points and the look and feel of the structure. This type of drawing is also likely to help during the consultation process, by communicating to the public the elements which have been fixed and those which are still fluid. This will help to guide comments and make the best of the consultation process.

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Advice given outside the workshop

The advice given elsewhere in this letter has emerged directly from comments given during the formal design workshop on the 22nd. From the panel induction and subsequent discussions there are some additional points which we felt it helpful to include:

- We question the justification for the use of the Design Manual for Roads and Bridges, which introduces potentially unnecessary constraints. We recommend the design team explore the use of Manual for Streets, considering the intended speed limits
- The third crossing will open up opportunities for regeneration, but without additional support from the District Council and County Council (as recommended elsewhere in this letter) there is little scope for these opportunities to be realised. We emphasise the importance of ambition and leadership from these authorities in realising the wider benefits of the crossing
- We note the intention to follow a Design and Build procurement route, rather than a traditional procurement route. This may result in poorer design quality and if this is the route taken, we encourage the project team to take steps to ensure continuity through the design into the construction phases
- We encourage the design team to further explore how green infrastructure will be incorporated into the structure, both on the bridge and the approach
- The treatment of the underside of the bridge requires further consideration at a later stage to ensure that this is a pleasant rather than a hostile environment for pedestrians and cyclists

If you have any questions around the content of this letter please do not hesitate to contact us.

Yours sincerely



Elli Thomas

Design Council Cabe Advisor

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Review process

Following a site visit and discussions with the client and design team, the scheme was reviewed on 22 March 2017 by John Lyall (Chair), Michael Coombs, Kelvin MacDonald and Lindsey Wilkinson. These comments supersede any views we may have expressed previously.

Confidentiality

Since the scheme is not yet the subject of a planning application, the advice contained in this letter is offered in confidence, on condition that we are kept informed of the progress of the project, including when it becomes the subject of a planning application. We reserve the right to make our views known should the views contained in this letter be made public in whole or in part (either accurately or inaccurately). If you do not require our views to be kept confidential, please write to cabe@designcouncil.org.uk.

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cc (by email only)

Attendees

Project team

Michael Wilks	Suffolk County Council
Jon Barnard	Suffolk County Council
Andrew Pearce	Suffolk County Council
Mark Northing	Mouchel
Chris Fernandez	Mouchel
Matthew Jessop	Mouchel
Jane McCarthy	Mouchel

Consultees

Anita Seymour	Suffolk County Council
Robert Scrimgeour	Waveney District Council

Design Council Cabe

Victor Callister	Design Council Cabe
Brian Quinn	Design Council Cabe
Elli Thomas	Design Council Cabe

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**Part Two
Design Council CABE Feedback**

Workshop 2: 29th June 2017

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Lake Lothing Third Crossing, Lowestoft

Suffolk County Council

Design Advice Workshop

Notes from 29 June 2017

Thank you for inviting Design Council CabE to provide additional support on the emerging proposals for the Lake Lothing Third Crossing at the meeting on 29 June 2017. This workshop note summarises the key discussion points addressed during the two sessions. The first session with the core project team addressed the detailed design of the structure. The second session with wider stakeholders addressed the implications of the new bridge on the wider area and particularly the north and south landing points most directly affected by the bridge.

Session 1

Design Development of Bridge Structure

Design concept and approach

We are very supportive of the positive progress made to design development since the previous Design Workshop in March 2017. A clear design narrative is emerging, which alongside the input of the appointed architectural advisor is leading to some exciting ideas based on thorough analysis. The design concept of “marine tech” provides a utilitarian, beautiful and contemporary reference point that can help to focus the development of options and bring cohesion to the separate elements of the structure towards a single aesthetic purpose.

To further support the development of the design concept and the overall approach we recommend that:

- To help refine and distil the preferred solutions, the range of options being considered for different elements of the structure should continue to be iteratively tested
- The identification of preferred options for each individual element should be considered in the context of the whole structure and the surrounding area, including when the bridge is open and closed and during the night and day
- The remit of the appointed architectural advisor should be expanded to allow the full utilisation of the architect’s experience and expertise, including allowing the project team to experience the direct contribution made by the appointed architect to other landmark bridges. This should include the commission to design and draw rather than merely advise. An expanded remit will help to ensure consistency of the overall approach and the effective resolution of details.

The concept sketches for the bridge suggest a simple, minimalist and elegant structure with a continuous sense of “flow” from end to end. In order to retain this concept into the design, we recommend that:

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- The choice of structural materials, including the choice between post tensioned concrete/precast concrete and steel, is as consistent as possible so as to reduce the sense of change from the deck to the bascule
- A consistent palette of materials, lighting, seating, signage, and colour is established
- Motifs and detailed design elements such as furniture and materials respond to the surrounding context, reflecting Lowestoft as a place
- Signage and lighting are kept to a minimum and where possible co-located. The emerging options for these elements are encouraging and we recommend pushing the Design Manual for Roads and Bridges requirements to ensure a simple and elegant solution
- Steps are taken to avoid the imposition of superfluous clutter such as signage or barriers at a later date by agencies such as Highways England or Associated British Ports.

Bridge mechanism

The preferred option for a single leaf rolling lift is set to create a structure which is presently unique in the United Kingdom. The mechanism and the experience of its opening and closing will constitute a piece of moving sculpture which can go beyond its functional requirements to be celebrated by users and onlookers. To maximise this opportunity we recommend that:

- The design is kept minimal, thereby highlighting the mechanism of the structure
- While parts of the lifting mechanics will be visible in the current proposals, more could be done to make them fully visible and distinct

Further testing is required to ensure slender, elegant shapes throughout the structure, including:

- The addition of weight onto the lifting arm while retaining the slender design, perhaps by extending the length of the arm
- The shape of the counterweight
- The angle of the deck, which could create an iconic symbol if lifted to 90*

We recognise that the side of the hinge is still to be resolved but note the potential benefits in hinging from the south side considering the lower number of constraints and the more civic nature of the space.

Support structures

The piers will be highly visible and should be elegant and beautiful in themselves. We note that:

- A post tensioned structure would be likely to result in thinner piers
- The width of the piers will affect the width of each span of the bridge. This will affect how the bridge looks and also how it works functionally, particularly if boats will need to travel under the side spans
- Symmetrical piers would have an aesthetic benefit. The mechanics on the hinging side of the bascule will require a certain width, which could be thinned as much as possible and replicated on the non-hinging side

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- The sketches indicate some interesting ideas for the shape of the supports, which require further testing. These should be elegant and could also reflect the “marine tech” concept

In assessing whether cable stays should be included, we recommend:

- Only including them within the design if they provide a clear function
- Exploring whether they can reduce the weight and width of the deck
- Exploring the cost impact, particularly considering maintenance
- How the tension works when the bridge is raised
- The impact of cable stays on wind and vibration

Control tower

The control tower will be a separate and highly visible element which should be consistent with the concept and identity emerging for the bridge itself. A consistent approach to finishes and materials will support this.

We note that there is no brief available for the control tower from ABP. We encourage the project team to continue to ask for a brief, on the basis that:

- There may be additional functions related to the running of the port which could be located within the control tower
- The functional requirements of the tower are likely to have changed since the construction of the existing control tower
- Future requirements are likely to change, as technology such as drones may make the tower superfluous

Additional comments

We also encourage the project team to explore and consider:

- Whether the width of the bridge can be narrowed in order to reduce the weight, shadow and cost of the structure. The width of the cycle route will be key to this. Options to consider include combined cycle route or externally attached cycle and pedestrian paths.
- How the road closure will work when the bridge is raised, including the locations of vehicle, cycle and pedestrian waiting areas
- The strategy for the lighting of the road and the structure
- The location and design of viewing galleries

Chair’s comment

Following the workshop, the Chair noted the potential issues associated with a design and build procurement route regarding the quality and consistency of the final bridge in the hands of the eventual contractor. Either the novation of the current design team and appointed architect or a strong watching brief will help to ensure the design quality standards of the original design are upheld.

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Session 2

Implications of bridge structure on surrounding areas

Development Consent Order (DCO) process and consultation

The parameters set out within the DCO are broad and do not provide a high degree of confidence as to the final design. To provide greater confidence and build in consensus, we encourage the project team to consider developing a design approach document alongside the local planning authorities.

The narrative of a constructive and ongoing dialogue with the public and stakeholders is crucial to an effective DCO process and examination. To support a robust and effective public consultation process which brings the public with it, we recommend that:

- The red line boundary to be addressed through consultation is clarified, and that this includes surrounding parks directly impacted by the bridge
- Drawings are both exciting and understandable by the general public. We note that the moving images of the bridge opening and closing are powerful in conveying the experience of the bridge
- People are shown ideas and options which can allow for creative and aspirational responses through consultation
- The consultation process could also include the use and management of open spaces and how the community can be involved in this.

Regeneration, identity and place

The Lake Lothing Third Crossing will be a catalyst for regeneration on the immediate north and south landings as well as across Lowestoft more widely, but is operating within a regeneration context which is constantly changing. To ensure the bridge sets the right catalyst for the town and delivers on this regeneration objective we recommend that:

- The drawings and plans produced by the project team go beyond the red line to set out a possible future context and anticipate what happens next
- Ongoing dialogue takes place between the local planning authorities and the project team to unlock opportunities and reflect changes

The substantial investment in the Lake Lothing Third Crossing is a unique opportunity for Lowestoft, and could lead to further investment in the future. To maximise these opportunities, we recommend that the project team and stakeholders explore:

- The identification of a champion for the project who can identify and engage potential opportunities and funding sources. The new Lowestoft Town Council may be a starting-point for a champion
- The mapping of opportunities and catalysts across Lowestoft, how they interlink, and the role that the bridge can play in these
- The opportunities for the town centre presented by the potential Heritage Action Zone, in terms of funding sources and support
- How the bridge can provide an attraction for visitors and further activity as well as a functional part of the movement network
- Potential partners for the design, function and use of surrounding public spaces, such as the Broads Authority and the Suffolk Wildlife Trust
- How the existing Enterprise Zone can help to direct and unlock growth and opportunities

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The Lake Lothing Third Crossing is likely to reduce traffic on the other bridges in Lowestoft. This will provide benefits to the town centre as the reduction in traffic will make for a more attractive environment for visitors and pedestrians and thereby encourage people to spend time there. This may encourage businesses to invest in new facilities to capitalise on the enhanced pedestrian environment and provide opportunities for placemaking in the town centre, such as:

- The creation of a gathering space at the existing bascule bridge, supporting activities and buzz rather than being traffic-dominated
- The creation of better pedestrian connections from north to south across the existing bascule bridge.

Temporary uses can be effectively used to test out the viability of activities and uses, particularly on the north and south landing where there is little existing activity:

- We note that cafes, restaurants and business spaces may not be viable on the northern side but temporary structures can test this before more substantial investment is made
- Lowestoft has a limited amount of cultural or small business space and temporary uses can provide affordable workspaces
- Temporary uses can form an important first phase of longer term regeneration plans.

North landing

We note that there is no existing council policy for the north landing of the bridge. The design team has an opportunity to set out the possible future here but the local planning authority should take an active role in assessing the suitability of this.

Making the most of the green and open spaces proposed by the design team for the north landing could include:

- Exploring how these spaces interact with the existing park, such as whether they are connected to the space or form an extension of the park
- Defining an attractive and welcoming edge treatment to the railway line
- Exploring whether the embankment to the edge of the railway can be replaced by a span to produce a more open and welcoming edge
- Maximising the opportunities for wildlife and ecology along the railway line
- Using the consultation process to identify local partners and community groups who can take ownership of spaces to meet local needs, such as allotment spaces. Suffolk Wildlife Trust or Otley College could be potential partners.

South landing

The south landing of the bridge is likely to be a more civic and active space than the north landing. The type of activities which this space will support requires careful consideration alongside the local planning authorities regarding:

- An assessment by an independent out of town valuator to explore the likely opportunities for activities
- Whether employment space alone will provide a sufficiently active and welcoming space. Hotel and leisure activities could play a role in diversifying the uses.

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The existing Area Action Plan and outline planning consent for the south landing provide a relevant policy context, particularly regarding the requirement to maintain access to the waterfront along the length, which needs to be reflected in the design for these spaces. The local planning authority should ensure that there are sufficient development management policies to handle planning applications when development comes forward.

The control tower could provide flexible uses and other elements, such as a viewing platform, which can provide catalysts for specific activities along the south landing.

The proposed land take by the roundabout is significant and we encourage the design team consider whether this can be reduced to improve the quality of the urban environment.

Next steps

Should you have any questions about the content of this note, please do not hesitate to contact us. We look forward to continuing to provide design review, advice and support on the emerging proposals to ensure the best possible outcomes for the future users of the Lake Lothing Third Crossing.

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Attendees

Jon Barnard	Suffolk County Council
Jonathan McDowell	Matter Architecture
Zeyna Soboh	Mouchel
Mark Northing	Mouchel (Session 1 only)
Paul Caine	Mouchel (Session 1 only)
Sam Smith	KGAL (Session 1 only)
Anita Seymour	Suffolk County Council (Session 2 only)
Robert Scrimgeour	Waveney District Council (Session 2 only)
Philip Perkin	Waveney District Council (Session 2 only)
Brian Quinn	Design Council Cabe
Elli Thomas	Design Council Cabe
John Lyall	Built Environment Expert (Chair)
Michael Coombs	Built Environment Expert
Peter Clash	Built Environment Expert
Annie Coombs	Built Environment Expert (Session 2 only)
Mike Hayes	Built Environment Expert (Session 2 only)