

Impact Assessment Outlook Journal  
Volume 16: June 2023

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# EIA as a Design Tool and Consideration of Alternatives

Thought pieces from UK Practice



Guest Editors

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We have a great responsibility to care for the environment we inhabit and that society needs. We need to strive to act with intelligence and integrity and an 'outcomes-based approach' is now key to help us intentionally plan for good. Future generations depend on what we do now-that is our legacy and their inheritance.

**Alister Kratt, LDA Design**



## Alister Kratt

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Welcome to Volume 16 of the Impact Assessment Outlook Journal, 'EIA as a Design Tool and Consideration of Alternatives'. This volume brings together a collection of articles on the importance of design and the Environmental Impact Assessment (EIA) process, defining and securing project outcomes and the role of EIA coordinators. A number of the articles explore the consideration of alternatives as part of the EIA process, including the implications of the emerging Environmental Outcomes Report Regulations.<sup>1</sup>

My thanks to all the guest contributors whose articles have been ably coordinated by Peta Donkin, Director of EIA (Infrastructure) at LDA Design, and for the authors' patience in my reviews. I provide a summary of these articles at the end of this volume and highlight a few key issues in this foreword.

This publication benefits from conversations with two of the UK's leading experts in design and forward thinking that bookend the articles: Professor Sadie Morgan OBE, on the importance of design and the design process; and Professor Dame Julia King, in relation to the climate emergency, a systems approach and the need for behavioural change—a call to the professions to fully engage in climate and environmental leadership. My thanks to both for their contributions and insights.

Since leading IEMA's practitioner guidance note 'Shaping Quality Development' in 2015,<sup>2</sup> I believe that EIA practice has become part of an increasingly iterative and interdisciplinary project design process. There remains a need to continue to practise this behaviour and for EIA coordinators to express confidence in environmental leadership and prompt interdisciplinary thinking. It is equally important that interdisciplinary behaviour delivers tangibly good project outcomes that bring delight to our every day and demonstrate a respect for our environment.

It is clear from a number of the articles that establishing a more consistent and thorough approach to consideration of alternatives would be beneficial and that there is an opportunity to secure better project outcomes through the emerging Environmental Outcomes Reporting process.

Now is an important point of change in the world of EIA practice, and practitioners need to be properly informed and prepared for it for two reasons. Firstly, in England the 'outcomes-based approach', should it be formally endorsed, will lead to a fundamental alteration of project process and there will be a need to set a clear ambition for projects from the earliest stages. This will require good leadership and collaborative behaviour. Despite the fact that Environmental Outcomes Report legislation is likely to only affect England, EIA practitioners across the UK retain a clear responsibility to drive good design and environmental outcomes through their leadership and collaborative approach. Secondly, our society is increasingly well informed with a heightened awareness of the impact of climate change, the need to address resilience and adaptation in the design of development and infrastructure, and the need to protect and manage our natural systems. Society's expectations to secure responsible and well-designed projects are quite rightly increasing and practitioners have a clear mandate to deliver on that expectation.

<sup>1</sup> [www.gov.uk/government/consultations/environmental-outcomes-reports-a-new-approach-to-environmental-assessment](http://www.gov.uk/government/consultations/environmental-outcomes-reports-a-new-approach-to-environmental-assessment)

<sup>2</sup> [www.iema.net/download-document/7014](http://www.iema.net/download-document/7014)

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This heightened expectation should also be addressed by the management of change in the natural environment in a comprehensive, joined-up and deliberate manner. The natural environment is 'our most precious asset', as Katie Medcalf highlights with reference to Professor Sir Partha Dasgupta; in conversation with Julia King, Julia has made clear the need for urgent progress with reference to Greta Thunberg's 'cathedral thinking'. I am struck by the urgency of the issues we face and what is already upon us.

The natural environment needs to be better understood, changes imposed on it need to be addressed in a joined-up way, project geography needs to be unlimited, and the change that has and is happening to our environment and to society needs to be recognised and addressed. With these foundations, we can design for better outcomes and address resilience and the need for adaptation over time.

As Sadie Morgan noted, 'although design needs to be guided by good creative leadership, really it is everyone's responsibility ... coming together to gain a fuller, collective understanding'. It is clear that approaches to stakeholder consultation need to improve in order to establish a proper understanding of stakeholders' concerns and what a community wants and the impact of proposals on those communities, ensuring design outcomes properly address both place (environment) and people.

A number of contributors have noted that the approach to design needs to be founded on clear design principles and that design quality and outcomes should be secured through clear and careful governance through the life of the project.

Contributors have also made it clear that the environment needs to be understood as a system and have highlighted that good-quality, coordinated data on the existing and future environment will help the industry understand impacts better, inform design responses at a local and wider spatial level and will aid the setting of outcome targets.

Finally, a number of contributors have made reference to the need to alter behaviours and the need for collaboration.

Design thinking supports the delivery of good outcomes for people and place. It has been variously written about by Stanford School,<sup>3</sup> Design Council<sup>4</sup> and McKinsey and Co.,<sup>5</sup> to name but a few. I summarise the view:

- Design is more than a feeling: it includes being able to be analytical and to synthesise, demonstrate understanding and be good at communicating, measuring and driving design;
- Design is more than a department: it involves cross-functional talent, collaboration and interdisciplinary and integrated working;
- Design is more than a phase: it involves iteration, optioneering, learning from others (people and contexts), looking to the future and understanding approaches to governance including flexibility and fixity;
- Design is more than a product: the process and outcome is about user experience and people, demonstrating a care for our environment, listening and empathising, human connection and informed environmental response.

We have a great responsibility to care for the environment we inhabit and that society needs. We need to strive to act with intelligence and integrity and an 'outcomes-based approach' is now key to help us intentionally plan for good. Future generations depend on what we do now—that is our legacy and their inheritance. I hope you enjoy the read and find it informative, challenging and empowering.

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<sup>3</sup> [web.stanford.edu/~mshanks/MichaelShanks/files/509554.pdf](http://web.stanford.edu/~mshanks/MichaelShanks/files/509554.pdf)

<sup>4</sup> [www.designcouncil.org.uk/our-work/skills-learning/tools-frameworks/framework-for-innovation-design-councils-evolved-double-diamond/](http://www.designcouncil.org.uk/our-work/skills-learning/tools-frameworks/framework-for-innovation-design-councils-evolved-double-diamond/)

<sup>5</sup> [www.mckinsey.com/capabilities/mckinsey-design/our-insights/the-business-value-of-design](http://www.mckinsey.com/capabilities/mckinsey-design/our-insights/the-business-value-of-design)

# In conversation with: Sadie Morgan

Although design needs to be guided by good creative leadership, really it is everyone's responsibility, and the biggest efficiency is always made through coming together to gain a fuller, collective understanding

**Sadie Morgan**



## Sadie Morgan

OBE, BA (HONS), MA, DU LSBU (HON.), FRSA, HON FRIBA



# In conversation with Sadie Morgan

Professor Sadie Morgan is a founding director of Stirling Prize winning architects dRMM, founder of the Quality of Life Foundation and board member of the National Infrastructure Commission. Here she explains in conversation with Alister Kratt, why we need to embed good design to prioritise the health and well-being of people and planet.

### Why does good design matter to you?

I had an unusual upbringing, brought up on a commune started by my grandfather. It taught me the importance of looking after others and about creating environments where that can happen well. Right from the beginning, I noticed how design could transform lives.

We need major infrastructure designed in a way that takes full account of people's needs, place and climate. When I arrived at the National Infrastructure Commission in 2015, there wasn't enough talk about design, about how people might react to major new infrastructure, or even about how design could be more closely tied to environmental management.

Design needs to be planned for, invested in, and thought through. It has to be about more than how things look. I set up the Quality of Life Foundation to move the conversation on from just the aesthetic. How can the process work to get the best results? If we design things well, asking the right questions from the start and staying focused on what we want to achieve, then we can improve people's every day.

We need to develop a better approach to infrastructure, housing and development, with a higher profile for EIA. They are key to supporting the drive towards wider regenerative outcomes. In terms of planning strategically, at a national scale, there needs to be stronger leadership and a shift in values, and more understanding of what building sustainably means and the opportunities that it brings.

### What new approaches are needed to achieve better design?

Repositioning EIA to be outcomes-focused does mean new mindsets, especially more spatial thinking around projects. That's the way to ensure that new development is always part of the bigger picture and is anchored in a proper sense of place.

One of the main reasons I set up the HS2 Design Review Panel was to help professionals see the value in thinking beyond the red line. Large-scale projects present extraordinary opportunities to secure wider benefits, but whatever the scale, project team members all need to be encouraged to focus on what could be achieved. By thinking more broadly, you also keep options open for positive moves later in the life of a project.

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Design and EIA process should be rooted in community engagement. Local people often need more clarity about the benefits of a project for them and their community. They need to know how climate change will be managed and how the local environment will be protected.

When stress testing the impact of a scheme, EIAs generally engage with stakeholders around mitigation. But what if the EIA process was more focused on what communities want and need to get out of change in their area? How will the local community or local environment benefit from a wind farm or a solar farm? These are the wider questions we need to be asking ourselves. This requires in-depth consultation to get information which is qualitative rather than just quantitative.

Always remember, people need a sense of control over what is happening. They are looking to feel better connected to nature and to be able to move around more easily. They want to live in healthy homes in affordable places where there is a sense of community. They need to feel genuinely embedded in the process of change, and never excluded.

*Design requires rigour and process, and good outcomes never come out of haphazard thinking. To deliver sustainable places, somebody has to be thinking about materiality, somebody has to be thinking about the environment, somebody has to think about behaviours and how users will interact with what is there.*

### How do we start having better conversations around design and outcomes?

There are typically 12+ technical disciplines contributing to the EIA process. Each brings its individual expertise, but it is shared experience and collaboration which matters when it comes to problem solving, and in the case of EIA, minimising adverse impacts and maximising positive outcomes. An interdisciplinary consultant team can have the most fruitful conversations.

I can think of an interesting example from HS2—a viaduct over a river. Complex and energy intensive engineering solutions were being explored to address crossing the river in the most 'efficient' manner. Then the conversation widened to include the project environmental planner and landscape architect. They suggested a local realignment of the river. This turned out to be a better solution, but it only happened through having a diversity of perspectives.

Although design needs to be guided by good creative leadership, really it is everyone's responsibility, and the biggest efficiency is always made through coming together to gain a fuller, collective understanding.

Design requires rigour and process, and good outcomes never come out of haphazard thinking. To deliver sustainable places, somebody has to be thinking about materiality, somebody has to be thinking about the environment, somebody has to think about behaviours and how users will interact with what is there.

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### What does the future look like?

In an increasingly complicated world, we need to seek to live more simply, and every footprint on the environment must be as small as possible. Although people are now recognising sustainable development as providing everyone with a better return over time, old habits are strong. We will all need to constantly revisit our use of resources, thinking about how we could pare back. Increasingly, starting again will not be the answer.

The design principles developed by the NIC Design Group provide a foundation for the governance of design through the life of a project. We want to see these used more and more in large-scale projects. I hope that through a stronger focus on the long term, making delivery as good as we can, we can build trust so that people welcome and celebrate new infrastructure and places.

I remember when at dRMM we were appointed to advise on a school with 'reverse truancy' issues—pupils coming in but just for lunch. The building was earmarked for demolition, but we argued for a major overhaul instead. That school went on to be the best performing school in the borough. Of course, there were lots of reasons, but I believe that looking at what was already there and making it better, rather than starting again, was part of that success. The approach signalled hope in what was there, and in the pupils themselves.



# Articles

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## **Dr Katie Medcalf**

Our most precious asset: Application of climate and biodiversity data in EIA, and how this can influence design and the consideration of alternatives

## **Jeremy Randall**

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## **Ed Hargreaves**

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## **Hanne Larsson**

EIA as Environmental Design: How can we enable better design and decision-making that centres the environment, especially in light of the climate emergency?

## **Matthew Fox**

Fixity and adaptive design: The importance of an agreed framework between EIA and Design allowing for adaptive design in large scale DCO projects, whilst maintaining consentability and legibility of assessment

## **Sam Griffiths**

Strategic data and design principles: How assessment of alternatives could be informed by strategic environmental data and framed by project design principles

## **Robert Pile**

Towards a positive outcome: How can we use the shift in narratives to 'outcome' from 'impact' to empower engagement from environmental assessors in the design process?

Dr Katie Medcalf

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Environment Director, Environment Systems



## Our most precious asset: Application of climate and biodiversity data in EIA, and how this can influence design and the consideration of alternatives

Given that our environment functions as a dynamic system, integrating design with scientific evidence and modelling has multiple benefits when incorporated into alternative site assessment and the development proposal at the early stages of design. The land, water and biodiversity the environment supports are all interconnected, and understanding and mapping these can allow the natural capital of an area to work for the development, rather than just being seen as issues to work around—an opportunities led approach, rather than a constraints led approach. Considering the evidence for ecosystem service risk, opportunities to enhance them and the changing processes likely through climate change, can help to plan for a long-term resilient development, good for society, economy and nature into the future.

The main focus of Environmental Impact Assessment (EIA) is often the legal requirements to avoid, minimise and mitigate any damage to the environment caused by development; often less weight and time is put on beneficial impacts being identified. Concentrating mainly on environmental damage engenders the view that the environment and development objectives are in competition, at a time when the Dasgupta Review<sup>6</sup> has proven that our economy is actually dependent on, and embedded in, nature.

*Concentrating mainly on environmental damage engenders the view that the environment and development objectives are in competition, at a time when the Dasgupta Review has proven that our economy is actually dependent on, and embedded in, nature.*

Nature provides 'ecosystem services' such as capturing and holding carbon (helping us to achieve Net Zero targets), cleaning water, mitigating flooding, protecting and enhancing biodiversity, and cooling the air. With evidence of which parts of a development site are providing these ecosystem services, the design process can maximise the benefits that the environment can provide to the development; thus adding value to the site (as Natural Capital) and delivering positive outcomes, rather than simply preventing harm.

<sup>6</sup> [www.gov.uk/government/publications/final-report-the-economics-of-biodiversity-the-dasgupta-review](https://www.gov.uk/government/publications/final-report-the-economics-of-biodiversity-the-dasgupta-review)

The mapping and modelling of ecosystem services has progressed significantly in the last ten years, and it is now possible to describe the quantity and quality of services provided by a specific site and set this in the context of the surrounding land, which will also influence the ecosystem services on the site.

The delivery of ecosystem services in any area is related to the interactions between habitats, soil, geology, landform, topography, hydrological processes and existing management activities. Understanding these key functions and the relationships between them

helps determine where there may be risks to a site. For example, removing woodland on a steep slope of sandy soil will cause a high risk of erosion.

Using principles developed through 'restoration ecology', it is possible to scientifically model areas where changes to land management or habitats would deliver enhancements to ecosystem services. SENCE (Spatial Evidence for Natural Capital Evaluation) developed by Environment Systems Ltd provides such place-based information on natural capital.



Climate models are used to help increase understanding of the predicted impact that climate change will have on key habitats, soils and hydrological processes. Using detailed climate models for the UK, the effects of climate change on different species can be modelled to understand likely changes and the main climatic risks (e.g., increased rainfall) that a site will likely be affected by. The decision-making process can be adapted to build mitigation for this into the design, effectively future-proofing a development. By understanding these risks, informed decisions can be made on the siting of useful habitats such as wetlands and woodlands that can store water, lessening the effects of increased rainfall, so helping to meet the needs of future generations.

Calculating the greenhouse gas budget and ensuring neutrality, as part of efforts to reach net zero, is already a consideration of EIA. Taking a wider view and factoring in the carbon budget of the environment of the site into net zero calculations, allows a fuller impact of a development on the carbon budget to be considered. Good design can provide significant offset and prevention of loss within the plans and enable a project to plan for the future longevity of the environment.

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There are also advantages of considering ecosystem services at multiple scales; this helps set the site firmly within the landscape units that are related to and dependent on it. For example, understanding nature networks at a site scale and how they are integrated into wider nature networks, can provide key information to help the site design work at both a wider and more detailed scale to provide additional benefits for people. Data is readily available for strategic, regional assessments, but within a site, using specific detailed features such as the habitat from the EclA will be needed to maximise benefit at this level.

Considering ecosystem services as part of the design process can significantly add to the long-term viability of the site and bring added value to the site itself, whilst also strengthening the EIA process by looking to achieve and deliver positive environmental outcomes.

The Dasgupta Review described nature as 'our most precious asset' and concluded, as the Independent put it, that 'humanity has collectively mismanaged' its 'global portfolio'. In short, our demands far exceed nature's capacity to supply the 'goods and services' on which society relies. Providing a sound foundation to site selection and project design through the proper understanding of natural systems and the use of an outcomes-based approach, provides an opportunity to reverse the mismanagement of our natural environment and ensure we make properly informed assessments of the effects development has on the natural environment.

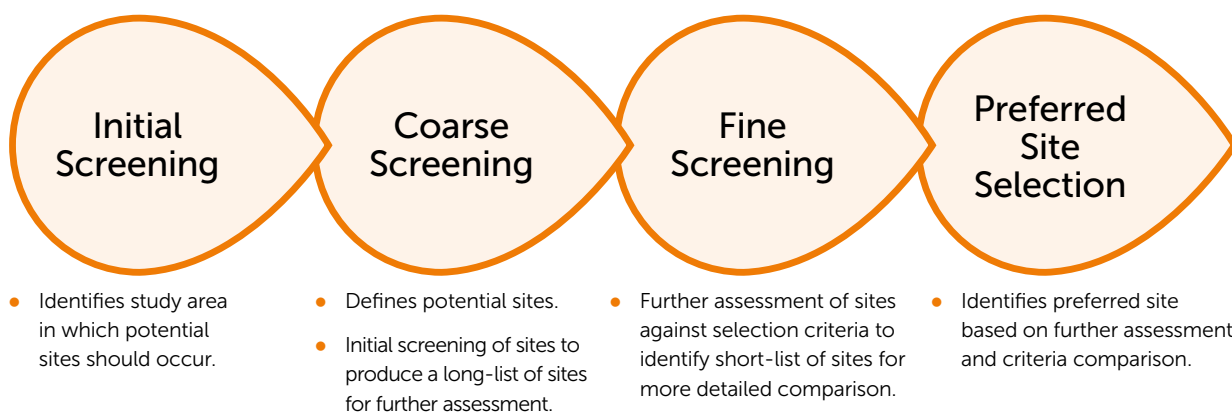


## Positive outcomes: Outcome-focused site selection-an opportunity to embed positive environmental outcomes in project design

Environmental Impact Assessment (EIA) Regulations require the consideration of reasonable alternatives, which, among others, include the site (location) of the proposed project. The Environmental Statement needs to indicate the main reasons for the preferred site being selected, including a comparison of the environmental effects.

No standard best practice guidance or methodology for site selection exists in the United Kingdom, and nor is there an established national baseline by which to measure effects. Yet the broad approach across projects is generally the same, as depicted in Figure 1.

Figure 1. Exemplar of the Site Selection Process



Site selection relies on multi-criteria analysis to determine the preferred site for a project. It considers various criteria, including technical suitability, cost, programme, safety, and social and environment impacts, and weighs up the needs of the project against the advantages and disadvantages of potential sites. The influence environmental effects have on the selection of the preferred site depends on:

- The level of importance assigned to it in comparison to the other selection criteria
- The level of environmental analysis undertaken to support site selection, including at which stage of the site selection process environmental analysis takes place
- The focus of the environmental analysis, including the availability of relevant environmental information.

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The level of environmental analysis often seen within a site selection process is a desk-based assessment of environmental constraints. This may be supplemented by site investigations/surveys at fine screening or preferred site selection. The focus of this environmental analysis is understanding the potential for significant adverse environmental effects and preferring sites with a low risk of such effects. The primary objective for such a site selection process is to identify a site that minimises risk to project delivery through reducing the potential for adverse significant effects. This traditional approach to site selection is *effect-focused*. While there is an obvious benefit in helping reduce the negative environmental impact of a project, it potentially fails to help identify a preferred site that maximises the potential for achieving positive environmental outcomes.

Although in no way a new concept, the drive towards achieving positive environmental outcomes made an appearance in the 25 Year Environment Plan.<sup>7</sup> In May 2022, the UK Government introduced the Levelling-up and Regeneration Bill (LURB),<sup>8</sup> which, if enacted, would allow for the replacement of the European Union (EU) environmental assessment system with a new framework for Environmental Outcomes Reports (EORs). This new framework aligns with the recently published Environmental Improvement Plan 2023,<sup>9</sup> and would allow for the setting of Specified Environmental Outcomes requiring EORs to demonstrate how a plan or project contributes to, or hinders, their achievement.

As with the current environmental assessment system, the Bill specifies that EORs would still require the consideration of reasonable alternatives. The Bill hints that consideration of alternatives would need to include how the alternative contributes to or hinders the achievement of Specified Environmental Outcomes, with preference given to alternatives that increase the extent to which an environmental outcome is delivered.

The potential introduction of EORs opens the door for a site selection process that is *outcome-focused*.

This begs the question: how can the achievement of positive environmental outcomes be maximised to encourage community support for a project while avoiding/minimising negative environmental impact and risk to project delivery?

An outcome-focused approach provides an opportunity to secure a balanced environmental view, taking into consideration both adverse and positive environmental effects at an early stage of project development, while also recognising that a focus on securing environmental outcomes could deliver benefits for:

- The environment;
- The wider community; and
- Project delivery.

The 25 Year Environment Plan states: 'Positive environmental outcomes can help reduce local opposition to development' and 'shorten the planning process'. Whether it shortens the planning process remains to be seen, but there are ready examples where an outcome-focused site selection process has benefited the environment and wider community.

There remains a need to improve and standardise our approach to consideration of relevant alternatives, whether that be in an EIA or EOR. There will always be project, applicant and stakeholder nuances to consider. The benefit of an outcome-focused site selection process is clear, allowing for the achievement of positive environmental outcomes to be embedded in the project site selection process and preferred site design from the earliest of stages, rather than merely limiting the adverse impacts arising on various sites under consideration and the final preferred site.

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<sup>7</sup> HM Government. 2018. A Green Future: Our 25 Year Plan to Improve the Environment. Available at [25-year-environment-plan.pdf \(publishing.service.gov.uk\)](#)

<sup>8</sup> Department of Levelling Up, Housing & Communities. 2022. Levelling-up and Regeneration Bill. Available at [bills.parliament.uk/publications/49177/documents/2671](#) or [Levelling-up and Regeneration Bill - Parliamentary Bills - UK Parliament](#)

<sup>9</sup> HM Government. 2023. Environmental Improvement Plan 2023: First revision of the 25 Year Environment Plan. Available at [Environmental Improvement Plan \(publishing.service.gov.uk\)](#)



## Good data, good behaviour, good principles: Reasonable alternatives need to be assessed and not merely demonstrate they have been considered - project level outcome-based option appraisals

### Introduction

The proposed Environmental Outcomes Report (EOR) Regulations present a foundation for an outcomes-based approach to be established and applied in the consideration of alternatives. But the Regulations also present a significant challenge to current practice by proposing that reasonable alternatives need to be 'assessed' as opposed to merely 'demonstrating that reasonable alternatives have been considered' as currently required under the Environmental Impact Assessment (EIA) Regulations.

Consideration of alternatives/option appraisals need to be undertaken at an appropriate stage in the project lifecycle and are normally undertaken before the point at which Environmental Statements are started or even before EIA Screening and Scoping commences, but this present approach will need to be altered, and an approach developed which sets an industry standard.

### Context setting

Option appraisals have been undertaken at the strategic level since 2004, under the Strategic Environmental Assessment Regulations, where the core of the assessment work focuses on appraising reasonable alternatives. At the project level this is not the case, as the EIA Regulations merely require that a preferred alternative is justified with reference

to other reasonable alternatives. This highlights the gap that will need to be bridged by practitioners in advance of the EOR Regulations coming into force.

Guidance on undertaking option appraisals is relatively scarce, with just National Grid's 'Our Approach to Options Appraisal', published in 2012.<sup>10</sup> This high-level approach provides a good starting point, setting out the key principles for establishing a framework to identify and balance technical, socio-economic, environmental and cost considerations, in selecting project options.

### Challenges of option appraisals

The greatest challenge to undertaking option appraisals is the application of relevant assessment criteria at appropriate points in the design process backed with a commensurate level of granularity in project and environmental baseline information.

Option appraisals undertaken earlier on in the process differ, in that they require a full range of technical topic matters to be weighed up 'in the round' to make more strategic decisions in the absence of extensive levels of detail. At this high level of assessment, they often fail to differentiate between options, and merely point towards the preferred one.

<sup>10</sup> [www.nationalgas.com/document/81076/download](http://www.nationalgas.com/document/81076/download)

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There are certainly cases where this is a true reflection of reality, but often it is the case that the appraisal methodology hasn't been adapted to focus on key differentiators, instead covering a breadth of what are often more generic discipline technical topics.

Careful consideration of the timing and sequencing of option appraisals is key. They should be programmed to align with the planning process, stakeholder engagement and public consultation, and the structuring of optioneering and consideration of alternatives.

#### **Dynamic and digital option appraisals**

The next step is to develop options through interdisciplinary workshops structured under an agreed methodology and defined criteria or project design principles. The key to achieving this is using good data and good behaviour, and the structuring of sufficiently flexible design parameters that can mature through the life of the project while providing sufficient robustness to drive the direction of the early project design option and preferred option process.

#### **Quality and behavioural approach to use of data**

The effective use of a Geographic Information System (GIS) platform with inputs from engineers, lands teams, environmental specialists, planners and decision makers is essential, drawing on all key environmental sources and knowledge to inform the development of options and alternatives.

Data layers from the spectrum of disciplines should be collated into one place, such as ArcGIS Online Project, with an associated common data environment to allow them to be individually mapped, overlain, and used to inform the development of options.

Once preliminary options have been developed based on this data, option appraisal workshops should be undertaken with the support of tools such as ESRI StoryMaps to facilitate interactive workshops communicating key messages and providing structure. This offers great advantages for genuinely collaborative team behaviour and outputs over the collation of inputs from different disciplines in traditional static documents.

The issue is one of timing and process. Collaborative workshops should ideally be structured to provide points of reflection at appropriate points in the project process and at defined points of testing and decision-making at defined gateways. It is all too easy to work to a programme driven by defined outcomes and miss early opportunities to properly consider where the process is heading and what the likely project outcomes are telling us before it's too late.

Where option appraisals are informed by data collected in the field, a holistic digital data platform should be employed to standardise, automate and integrate data at the point of collection. This involves using mobile devices preloaded with a variety of supportive software such as ArcGIS Collector which allows for live georeferenced commentary, survey, and inspection data capture, data logging, and ongoing monitoring.

#### **Limitations of project level option appraisals— the need for a national spatial strategy**

The consolidation of a strategic plan/programme level assessment (currently SEA) and project level assessment (currently EIA) presents an opportunity for a better join-up between strategic and project scale assessments and delivery of positive outcomes. However, this can only go so far under the current planning policy regime. The current regime is under review and there is a genuine opportunity to secure change and improve direction. EIA practitioners will have an important role to play in feeding into policy review to support the delivery of joined-up outcomes.





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## EIA as Environmental Design: How can we enable better design and decision-making that centres the environment, especially in light of the climate emergency?

The International Association for Impact Assessment (IAIA) defines an Environmental Impact Assessment (EIA) as, 'the process of identifying, predicting, evaluating and mitigating the biophysical, social, and other relevant effects of development proposals prior to major decisions being taken and commitments made'.<sup>11</sup> Let's break that down.

### Identify

If we have data at the project outset, we will know what our starting point is. Avoid the floodplain, the ancient woodland, ground conditions, know how many places are left in the primary school down the road, learn what the community needs and how you can support them.

Identify the capacity. Adopt the mindset of an environmental planner to show the connections between what the client wants to achieve and what's possible within the existing environmental capacity—work with the available space.

*The principles of interdisciplinary project interaction should be embedded into the design and EIA process. Early design insights and operational characteristics combined with sound present and future environmental knowledge steers better decision-making. Frequent design feedback breeds better design.*

<sup>11</sup> [www.iaia.org/pdf/special-publications/What is IA\\_web.pdf](http://www.iaia.org/pdf/special-publications/What%20is%20IA_web.pdf)

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Realise what matters to all project stakeholders—learn to speak a client’s/regulator’s/community’s language. An EIA is often conflated with environmental design in their minds. We know it isn’t the same but for the same reason a homeowner doesn’t care whether it’s rain, sea, or river water flooding their kitchen; a non-environmental specialist doesn’t care about the technical detail, only how it affects them.

Identify a stakeholder’s reason for asking about the change that’s being designed. Securing this granularity will help define the parameters within which the plan or project can reasonably work.

### Predict

Understanding the future is key here. Some facts will be more certain than others, based on established surveying techniques, sound judgement and known environmental interactions, whilst others will not. Learn to roll with it and broaden your project experiences, consent types and locations, as much as you can. Experience is what people pay for; it is what trust is built on. Predictions help de-risk a project, quantify costs and support our early career professionals. Our projects are for the future and we need to be comfortable in that space.

The principles of interdisciplinary project interaction should be embedded into the design and EIA process. Early design insights and operational characteristics combined with sound present and future environmental knowledge steers better decision-making. Frequent design feedback breeds better design.

### Evaluate

EIA coordinators should foster confidence. They should encourage appropriate and timely challenge, integrated working, and genuine reporting of interim findings to inform project design decisions. Don’t be afraid to be wrong. Others will have their own agendas within the project. Evaluate how that impacts on the work you’re trying to deliver.

Now, more than ever, we need to be at the forefront of innovation. Our projects will extend across near continuous climatic, societal and environmental change. Our project processes and how we define and gauge the effects resulting from our assessments need to alter, in order to properly address that change.

### Mitigate

Because the environment constantly changes, and because those involved in EIA are often scientists, we tend to avoid definitive, certainty-giving language resulting from project mitigation. But regulators, clients and stakeholders like this. We live in a world that values ‘yes/no’. We should seek to act as ‘environmental designers’—our role is to ensure that environmental impacts and effects are clearly expressed and sufficiently certain to properly inform decision makers.

Building mitigation into the project design and process through defined and regular design moments establishes space for design changes to be considered and for environmental understanding to be incorporated. Mitigation may come at a capital or programme cost; it requires proper integrated discussion to secure delivery and, if not, an understanding of risk. EIA addendums should be the exception, not an expectation.

### And repeat

IEMA’s ‘Shaping Quality Development’ guidance gives a foundation for integrated working. As industry professionals, we ought to be pushing ourselves to be better, building on that guidance to become ‘environmental designers’ rather than ‘mere’ EIA coordinators. We do this by educating ourselves, adopting a curious mindset, drawing from the interdisciplinary environment we foster and by working collaboratively with designers, clients and contractors. Listen to the communities about what their place is, and what it isn’t. No time to waste.



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## Fixity and adaptive design: The importance of an agreed framework between EIA and Design allowing for adaptive design in large- scale Development Consent Order (DCO) projects, whilst maintaining consentability and legibility of assessment.

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Large-scale projects often involve a constant game of push and pull between Environmental Impact Assessment (EIA) practitioners seeking sufficient fixity to enable robust assessment, with engineers seeking flexibility in design to enable a scheme to be able to be built as quickly and efficiently as possible and able to adapt to the challenges that it may face during the delivery phase.

This push and pull then continues on into the examination and decision-making stage of the planning process for these projects. A common refrain of inspectors and decision makers that all EIA practitioners will be used to is, 'how is this assessment outcome secured?'. Often this turns into, 'how is your assumption secured?'. Decision makers often want the answer to these questions to be an ability to tie a project down to a specific design or a specific location. This can then lead to much difficulty at the delivery stage as unexpected obstructions or landowner demands mean that designs can't actually be delivered within those specified parameters, leading to significant cost and programme implications.

An example faced multiple times by this author is of 'indicative' Environmental Masterplans which are said to show one way in which an applicant's mitigation could be delivered to reach an outcome of no significant landscape effects, but that are then used throughout the Examination/Inquiry process as 'gospel' by submission authors as to how mitigation will be taken forward, leading to, for example, specific bat crossings needing to be put in place which later detailed surveys show are not required.

The EIA process has a key role to play in ensuring these risks don't come to fruition and allow adaptive mitigation (so important for a climate change affected future) to come forward. It can do so in the following ways:

- Agreeing early on across all EIA topics and with the wider project team, the range of scenarios for assessment that are being brought forward and determining the worst-case options for each topic to assess those scenarios and the infrastructure needed to deliver them. For example, for marine dredging, has the assessment accounted for the impacts of cleaning and storage equipment on land, or emissions from vessels taking it out to a licensed disposal site? Or if borrow pits are required, the range of scenarios of what will be done with the dug-up materials (and the traffic movements associated with them);

- Considering how those scenarios for assessment may change over a project's lifetime, how that can be assessed, and how mitigation might change. In line with the Government's proposed changes to the environmental assessment regime through Environmental Outcomes Reports (EORs), assessments could focus on outcomes that need to be achieved, and therefore the limits that need to be put in place to achieve them, rather than specific activities. For example, imposing caps on the increase in traffic volumes to certain roads arising from your development, with mechanisms for monitoring and additional mitigation if required. This will allow an adaptive approach to design mitigation measures to be undertaken;
- Ensuring that all EIA topics are involved in the development of an agreed set of parameters that are consistently applied but still allow for flexibility, with topics then assessing the relevant worst case of that flexibility or developing additional parameters as the assessment process is carried out. This will be secured by a combination of documentation subject to the consenting regime:
  - Conditions/Development Consent Order (DCO) drafting setting out specific parameters
  - For DCOs, the powers to deviate, expressed in words and with reference to Works Plans
  - Engineering drawings
  - Certified/conditioned plans
  - A defined list of design principles sufficient to govern the design of the project.

*It is important for EIA teams to be involved from the beginning of projects to ensure that the different EIA factors are being weighed into what can be considered to be acceptable scenarios, limits or parameters, and how broad or flexible the identification of mitigation measures can be.*

It is vital that the EIA process seeks to consider the broadest possible approach to the application of the above mechanisms. However, it is also important that no topic does so in isolation, e.g., what is worse for soils, may in fact be better for Landscape and Visual Impact Assessment (LVIA) or cultural heritage reasons.

As such, it is important for EIA teams to be involved from the beginning of projects to ensure that the different EIA factors are being weighed into what can be considered to be acceptable scenarios, limits or parameters, and how broad or flexible the identification of mitigation measures can be, i.e., by being involved in project development optioneering.

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This includes consideration of the size of the red line boundary for a scheme, e.g., to allow for greater land take for mitigation/enhancement measures for the most affected topic areas which could, on balance, allow for greater engineering parameters. On DCOs especially, leaving this input too late can lead to serious procedural and programme difficulties.

Once agreed scenarios/limits/parameters are set, the language that is used to describe them becomes of paramount importance and EIA coordinators must ensure that an effective project lexicon is developed dealing with the following matters:

- When it comes to describing documents, is it 'for approval', 'indicative' or 'illustrative' and what does the project say each of those terms means for assessment purposes?

- Is there a limit of deviation that the assessors understand that the scheme engineering plans may not show them, but they need to be factored into the assessment, and matters such as photomontages?
- Is there an agreed list of what the parameters are for the development phase of the scheme?
- The description of mitigation needs to be sufficiently broad to allow for the flexibility sought and not specific unless the assessment demands it.

In conclusion, there are a great many tools within the EIA arsenal that can assist in scheme flexibility; however, they need to be applied early and robustly to ensure this can be delivered.

# Sam Griffiths

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## Strategic data and design principles: How assessment of alternatives could be informed by strategic environmental data and framed by project design principles

Why here? Why this layout? Why not over there? Such questions are heard at consultation events up and down the country. The answers should, of course, be readily available, and clearly set out in the discussion of alternatives in an Environmental Statement (ES). But how persuasive is the answer? How do practitioners take the discussion of alternatives from a point of principle to demonstrating that this is the right design in the right place?

Schedule 4 of the EIA Regulations (2017) requires 'a description of the reasonable alternatives (for example in terms of development design, technology, location, size and scale) studied by the developer... including a comparison of the environmental effects'.<sup>12</sup> The difficulty comes in the fact that the EIA is the very tool to consider those environmental effects. Without an assessment, how can they be considered? I outline two developments in current practice that would support the provision of a framework for quantitative and qualitative justification for alternative project design.

### Consideration of alternative locations

One answer is already in play for offshore wind farms. As part of the Offshore Wind Evidence and Change Programme (OWEC), led by The Crown Estate, Natural England are setting up the POSEIDON project (Planning Offshore Wind Strategic Environmental Impact Decisions). The project collates existing baseline data, identifying

gaps and filling them through assessment. This data will then be available for the public to interrogate, allowing developers to better understand the baseline conditions of potential sites. As well as speeding up the EIA process, the availability of baseline data will also allow applicants to make an informed assessment of alternatives.

Similar decision-making tools are increasingly available in urban areas. In 2018, the Greater London Authority published the Green Infrastructure Focus Map. The GIS-based tool overlays 13 data sets, each with the potential to be influenced by the quality or quantity of green infrastructure. Users can select a hexagon (one of 15,042 across London) to determine the greatest need in proximity to their site, for example, the need to increase access to public open space. The tool allows decision makers and developers to select sites and craft a development that is responsive to the needs of the local area.

The common theme to these tools is the free and easy access to up-to-date spatial data. Should part of the digitisation of EIAs include a requirement to submit a project's baseline information? Of course, this would raise as many questions as it answers. Who would maintain the database? Who is responsible for the accuracy of the information? Who owns the data, and pays for it? It is worth grappling with such questions to utilise the valuable data collected across a study area for a single project, to inform the consideration of alternatives for others.

<sup>12</sup> [www.legislation.gov.uk/ukxi/2017/571/contents/made](http://www.legislation.gov.uk/ukxi/2017/571/contents/made)

### Consideration of alternative layouts

The other consideration in the discussion of alternatives concerns alternative development proposals and the use of design principles. Often a proposal will be designed around constraints, keeping clear of flood zones or incorporating buffers from sensitive habitats. But as EIA professionals we know that design alternatives should not be merely based around constraints but informed by design principles that govern the life of a project's passage through from optioneering to submission.

In his *An Essay on Prints*, published in 1792,<sup>13</sup> William Gilpin defined some of the earliest design principles, in this case for the creation of 'the picturesque'. Gilpin established a series of rules or principles including the consideration of shapes and forms, light and tones, harmony and colour to help inform and underpin decision-making in design.

More recently 'Lord Holford: The Holford Rules' were established in 1959<sup>14</sup> and comprised a set of planning guidelines in relation to amenity that provided a benchmark for the consideration of alternative designs for electricity grid connection routes, allowing landscape and visual specialists to compare schemes against clearly defined criteria. Despite their antiquity, the principles remain essentially unaltered to the present day (updated in 1990 by CEGB).

The use of consistent design principles in project design development remains key, especially in the consideration of what may be more subjective drivers. Design principles can, and should, support the framing of alternative layouts for a site as part of project optioneering, as well as the development of the preferred layout. Design principles have most recently been promoted by the National Infrastructure Commission Design Group<sup>15</sup> as a means of governing design. The guidance provides a broad framework of four principles—climate, people, places and value—for the development of project-specific design

principles to support the proper consideration of design during pre-application processes, examination/inquiry and post-approval condition/requirement discharge.

This guidance provides a framework for a project team to establish bespoke design criteria against which alternatives can be developed and measured. This fulfils the requirement for consideration of alternative design impacts and layout considerations including scale, and, in addition, supports the definition of good design as part of our emerging 'outcomes' process under the recently published Environmental Outcomes Report (EOR) consultation.

Why here? Why this layout? The sharing of accurate, spatial data and the identification of project and discipline-specific design principles, should form a key part of the structure to the response, providing quantitative and qualitative justification resulting in a reasoned and persuasive discussion of alternatives.

*The guidance provides a broad framework of four principles—climate, people, places and value—for the development of project-specific design principles to support the proper consideration of design during pre-application processes, examination/inquiry and post-approval condition/requirement discharge.*

<sup>13</sup> Gilpin, William, *An Essay Upon Prints*, London: G. Scott for J. Robson, 1768.

<sup>14</sup> The "Holford Rules" are a series of planning guidelines first developed in 1959 by Lord Holford, adviser to the then Central Electricity Generating Board (CEGB) on amenity issues. The rules are not published as a single work.

<sup>15</sup> [nic.org.uk/studies-reports/design-principles-for-national-infrastructure](https://www.nic.org.uk/studies-reports/design-principles-for-national-infrastructure)

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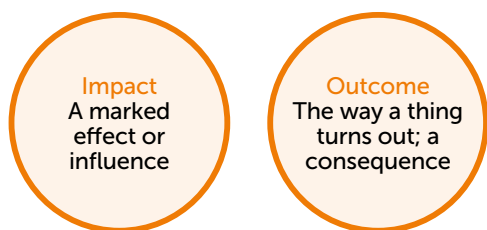
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L D A DESIGN



## Towards a positive outcome: How can we use the shift in narratives to 'outcome' from 'impact', to empower engagement from environmental assessors in the design process?

What do we mean by outcomes and impacts?<sup>16</sup>



While these two definitions may appear to be broadly similar, there is a subtle but important difference. The definition of impact refers to a fixed point of time, what is the marked (negative) effect or influence of the 'thing'? Answering this question can be undertaken at any point in time and independent of the design process. Whereas the definition of outcome infers a more holistic approach and considers the process undertaken to exert influence on the way a 'thing turns out'; what are the consequences of our actions in influencing the way a 'thing turns out'?

The shift from reporting an impact to understanding the outcome is an incredibly important change. A change that will put the environment and design at the forefront of all plans and projects. This change is needed as we still see instances of EIA as a discrete siloed deliverable, comprising impenetrable technical reports that fundamentally fail in influencing the outcome of a plan or project.

We all recognise that the environment is an extremely complex interconnected system and any action we take has a consequence, simply expressed through the Chinese proverb that expresses that actions result in consequences—potentially good or bad:

***The flapping of the wings of a butterfly can be felt on the other side of the world.***

For our actions to have the greatest potential of securing large change, they need to be considered at the early stages of any project. This concept isn't new and the IEMA documents 'The State of Environmental Impact Assessment in the UK'<sup>17</sup> and 'Shaping Quality Development'<sup>18</sup> both advocate the early engagement of EIA professionals in order to maximise the benefits and minimise the risk.

**So how is thinking about outcomes any different?**

The EIA process typically operates in a way that reports on the effects on the environment at a fixed point in time, assuming that the world around us isn't changing and that the health of the existing environment is broadly acceptable. The process seeks to minimise negative impacts on the existing environment and preserve the status quo. We know that the health of

<sup>16</sup> Definitions provided by Oxford Languages

<sup>17</sup> Special Report, The State of Environmental Impact Assessment in the UK, Institute of Environmental Management & Assessment, 2011.

<sup>18</sup> IEMA Environmental Impact Assessment Guide to Shaping Quality Development, Institute of Environmental Management & Assessment, 2015.



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our rivers and oceans, the state of local and global terrestrial biodiversity, our impact on climate, and the air quality of our urban areas—and even our own health and well-being—are already in a poor condition. Our process must reflect this understanding.

EIA reporting typically focuses on project impacts and identifying mitigation to reduce the impact on our already fragile and depleted environment. An outcomes approach presents the opportunity to shift that focus and empower technical assessors to think about the consequence of a plan or project within the context of change. Change is implicit when thinking about outcomes and a plan or a project is either the problem or the solution in achieving an outcome. As EIA coordinators, it is our responsibility to empower technical specialists to engage in the project design process to affect change.

### How is that different to what we do now?

For an outcomes approach to be effective, the outcomes need to be set and agreed at the start of the project. An outcome of a plan or project needs to properly consider the accurate and dynamic baseline context and the project team needs to drive through integrated activity towards the agreed outcomes.

The Environmental Improvement Plan<sup>19</sup> and Environmental Targets Regulations<sup>20</sup> have already commenced the process of legislating outcomes for the UK. The outcomes are essentially defined as targets for how things turn out in the future. Every plan or project will need to consider these UK outcomes and the consequence they may have on a project or plan. To do this will require the engagement of all technical environmental professionals and project designers to understand the possible outcomes of a particular plan or project and agree how these outcomes can be positively shaped by integrated design activity.

Merely reporting the impacts of a plan or project and identifying mitigation to reduce effects to an acceptable level, is no longer good enough and indeed never was. We all need to understand the possible outcomes and achieve them through good design and make early interventions in projects to secure the biggest impact for good. If we fail to do this, the opportunity to effect change in a project will be diluted.

The NPPF makes clear that the consideration of the environment is critical in delivering 'good design'. Good design is as much about the process as it is the product; it is about the way a thing turns out as well as *how* it has *turned out*.

Good design can be facilitated by EIA coordinators actively leading and demonstrating integrated behaviour. Coordinators are charged more than ever, to bring together technical and design professionals to establish, define and agree the outcomes for a particular plan or project and lead the project to deliver these outcomes. Achieving an outcomes-based approach will require enhanced levels of integrated working between design and technical assessment teams maintaining an eye on the target—moving towards the outcome with deliberate activity.

Like the butterfly, the small actions we take as EIA coordinators, technical assessors and design professionals at the outset of a plan or project, can generate large changes in how things turn out. If the outcomes are aspirational and properly founded, the outcomes should be good and secure betterment, not only for a plan or project but for the world we and our future generations will live in.

<sup>19</sup> Environmental Improvement Plan 2023, DEFRA.

<sup>20</sup> Environmental Target Regulations for Fine Particulate Matter (2023 No.96), Marine Protected Areas (2023 No.94), Water (2023 No.93), Residual Waste (2023 No.92), Biodiversity (2023 No.91) and Woodland and Trees Outside Woodland (2023 No.90).

# In conversation with: Professor Dame Julia King

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Every month that passes locks in more damaging impacts. Action is needed, and we need it now.

**Professor Dame Julia King**

# Professor Dame Julia King

Baroness Brown of Cambridge

*DBE FREng FRS FMed Sci*



## In conversation with Professor Dame Julia King

Professor Dame Julia King (Baroness Brown of Cambridge) DBE, FREng, FRS, FMed Sci is an engineer and a crossbench member of the House of Lords, Chair of its Science and Technology Select Committee. She chairs the Carbon Trust and the Adaptation Committee of the Committee on Climate Change. Here Julia King explains, in conversation with Alister Kratt and Peta Donkin, the urgency of addressing humanity's impact on the natural environment and the climate.

### How as a society in the UK can we deal with climate change?

Changing behaviour will have a far greater influence going forward. Almost 80% of our decarbonisation to date has come from technology that we don't notice—mostly changes to the power system—and much of what remains to be done involves individual choices—how we decide to heat our homes, and how we travel.

Everything we build from now on needs to be designed for our future climate. Government is committed to a net zero electricity system by 2035, and National Grid has to build as much transmission infrastructure in the next seven years as they have built in the last 30 years. That infrastructure will have to last for up to a century, and it needs to have minimal carbon impact and be resilient to everything our changing climate can throw at it. Delivery at that scale and speed will require a lot of calculated risk by everyone involved, including the regulators.

### Is enough in place for change like that to happen?

I think that our approach to land-use planning needs to become far more intentional, whether that is for renewable energy generation, or giving more land to forestry to increase timber construction, or to stop new development in floodplains.

At the same time, every initiative needs the best planning and design, and be accountable through high-quality public consultation. People have strong ideas and emotions about the function of the countryside and what it should look like.

All infrastructure design must focus much harder on minimising its carbon footprint. Having looked at how HS2 compares with high-speed rail in France, we seem to create quite a lot more infrastructure to achieve the same end. This brings higher carbon intensity, destroys more woodland to create access and makes the process slower and more expensive.

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### Do we have a good understanding of what the future baseline looks like?

We have got some pretty good baseline information on average temperature rise. For example, probably another 0.6 degrees by 2050 in the UK. The maximum temperatures in the South East have been rising at almost 1 degree per decade, so by mid-century, we could be experiencing summer peak temperatures of at least 43 degrees.

Climate impacts are already with us, with the last decade being the hottest one on record. Despite this, we still haven't thought through the extreme scenarios we should be planning for in different sectors. For example, the 40 degree temperatures of 2022 caused problems in the electricity system, ranging from transformers overheating to a shortage of cooling water, to excessive expansion of overhead wires. In terms of impacts on the natural environment and what we can do to increase resilience, we need consistent data to understand the impacts from our actions—indeed in many areas we need much better data to monitor the effects of climate change and of actions we need to take to adapt to it.

We have to plan and design for resilience and adaptation. With at least 30 more years of escalating hazards ahead, adaptation is still getting pushed down the line. The last decade has been a lost decade in terms of preparing for the risks we already have and those that we know are coming. Every month that passes locks in more damaging impacts. Action is needed, and we need it now.

### What leadership is needed for a more resilient system?

With renewables poised to become the backbone of our energy supply, the challenge is less about the design of individual assets than about the design of the system. We need to understand all the interdependencies and establish resilience standards.

For example, a couple of years ago there was a significant period of 'wind drought'. This should drive us to establish the redundancy we need in the energy supply system—the level of storage and/or alternative renewable fuel.

When it comes to systems thinking, we are still in a position where it's pretty well every energy project for itself, in part because much of the supply is essentially a private development delivery model and interdependencies are not fully understood or factored in. It is Government which has to take responsibility for the system architecture. By way of example, we need companies sharing data, on resilience standards that other players in the system can rely on. Government needs to provide leadership on safe and acceptable ways to allow sensitive information to be shared to support the establishment of a systems approach and accelerate delivery of cost-effective resilient systems for our critical infrastructure.

In relation to resilience, failures within the electricity system can have a cascade effect and it is this type of issue that needs strategic management. I recently heard a company that manages smart vehicle charging for electric vehicles at night through a cellular network say that when it experienced a substation outage, all the cars switched to charge at peak time instead. About 300 cars were involved, but imagine the impact on the grid of that kind of failure magnified across a city in the future, say, with 300,000 cars.

### How can development move forward at the pace we need to see?

We need to learn from elsewhere about how to get the public on board so we can get on with the new infrastructure we need so desperately. Major infrastructure planning can blight people's homes for years before the project is finally approved, but we only pay compensation when we finally go ahead with the project. France and Germany are both more generous and also award compensation as soon as the project is announced. We need to reform the system.

There are often conflicts between potential land uses and community needs. We need to explain to people the consequences of not doing some of these things. We need to plan land use positively, and make sure that the people who are affected by new infrastructure share in the benefit. With onshore wind, communities that get cheaper electricity have generally been very supportive.

*We have to plan and design for resilience and adaptation. With at least 30 more years of escalating hazards ahead, adaptation is still getting pushed down the line. The last decade has been a lost decade in terms of preparing for the risks we already have and those that we know are coming.*

### What does the future look like?

I would certainly hope we had built a zero carbon energy system, that we had really embraced energy and resource efficiency and the sharing economy. Actually I think we are seeing the latter, especially among the younger generation. Going back to my childhood, on the corner of the street there would be a repair shop. And when the radio broke you got it repaired so it lasted another ten years. Product design needs to allow for update and repair. But this comes back to corporate as well as personal behaviours.

### What role should the professional institutions be playing in relation to the climate emergency?

Climate mitigation and adaptation should be absolutely central considerations in the planning system and we need far more high-quality CPD for professionals to inform understanding. I would like to see the professional institutions making the climate emergency a very big part of their accreditation of undergraduate degree courses, so new project managers have climate embedded in their thinking and have the confidence and appetite to challenge when they don't see it in the thinking of their bosses and their organisations.

### What needs to happen next?

We are awaiting the Government's third annual National Adaptation Programme (NAP), addressing immediate risks identified in the Climate Change Risk Assessment. I think Government has got the message that it needs to be completely different from the first and second Programmes, which haven't been very effective at all.

We need to take up Greta Thunberg's challenge of 'cathedral thinking'—by which she meant getting on with it. We could be sitting around for another five years, thinking and planning and designing how the governance could work. We need to start building the foundations now, even though we don't yet know what the roof looks like.

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# Summary and Conclusion

Alister Kratt – Guest Editor

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The opening conversation with Sadie Morgan serves to open our minds and draw attention to a future outlook that is considered and pared back. Sadie makes clear that EIA professionals are key to supporting the drive towards wider regenerative outcomes, that there needs to be stronger leadership and a shift in values, and more understanding of what building sustainably means and the opportunities that brings, and that people want to feel genuinely embedded in the process of change, never excluded. Finally, she makes it clear that design requires rigour and process, and good outcomes never come out of haphazard thinking.

In the first article, 'Our most precious asset', Katie Medcalf draws attention to the need for EIA practitioners and project designers to understand the most precious asset we have been given—the natural environment we inhabit. Katie describes how our environment functions as a dynamic and interconnected system and highlights the benefits of integrating design with scientific evidence and modelling as part of alternative site assessment and the development proposals at the early stages of design.

Jeremy Randall, in his article 'Positive outcomes', identifies that there is no standard best practice methodology for site selection or national environmental baseline to inform the assessment of effects. He goes on with clarity to explore the virtues of an 'outcomes-focused approach' to site selection allowing for the achievement of positive environmental outcomes in contrast to an 'effect-focused approach'.

Ed Hargreaves' article, 'Good data, good behaviour, good principles' draws our attention to the Environmental Outcomes Report (EOR) Regulations that present a foundation for an outcomes-based approach for EIA. It is clear that the Regulations present a significant challenge to present-day practice in relation to alternatives. This emerging change brings into sharp focus that EIA should inform good decision-making throughout the development of a project that will realise beneficial outcomes for people and the environment rather than merely comprise a report of effects arising from a project proposal recorded at the end of a project process.

In 'EIA as Environmental Design', Hanne Larsson makes clear that EIA professionals need to understand the future environment and the role of an EIA coordinator to drive interdisciplinary behaviour—be courageous in challenging the team, accept that assessment needs to alter to properly address our changing environment, that there needs to be space for design change to be considered—and calls for EIA coordinators to act as Environmental Designers fostering a collaborative and interdisciplinary environment.

'Fixity and adaptive design' is the subject of Matthew Fox's article, which addresses a common question, 'how is this assessment outcome or assumption secured?' He outlines the risks associated with an 'indicative' Environmental Masterplan which are often considered to show one way in which mitigation could be delivered but notes that there remains a risk that this masterplan

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approach becomes a vehicle to illustrate all mitigation solutions. He identifies that the EIA process has a key role to play in ensuring these risks don't come to fruition and the need to allow for adaptive mitigation and clear articulation of document status and project description.

In Sam Griffiths' article 'Strategic data and design principles', Sam outlines how assessment of alternatives could be better informed and justified by the provision of strategic environmental data and founded on project-specific design principles to objectively and persuasively reason that a proposed development is the right design for a development and is in the right place.

In the final article, 'Towards a positive outcome', Robert Pile outlines how we can use the shift in narratives to 'outcomes' from 'impact', to empower engagement from impact assessors in the design process and move towards a more holistic approach and action that exerts influence on the way a 'thing turns out'. A change that will put the proper consideration of the receiving environment and the design process at the forefront of all the plans and projects. Robert concludes that it is an EIA coordinator's responsibility to empower technical specialists to engage in the project design process to affect change to project outcomes.

Turning to the conversation with Julia King, I am struck by the urgency of the issues we face and what is already upon us. It is clear we need to think about design resilience and environmental and project adaptation as our environment and climate inevitably continue to change until our actions to arrest and better manage change take effect. The most precious asset we have been given needs to be properly understood and the communities of which we are a part need to be given the respect they are rightly due in the projects and plans we seek to promote. We need to de-silo our thinking and advise and act for the better good.

I believe that we are standing on the edge of a point of significant change in best practice and societal expectation. I believe IEMA should consider the preparation of new practitioner guidance to develop some of the key issues outlined in these excellent articles:

- we need to address and influence guidance on an outcomes-based approach to assessment
- establish establishment of an agreed approach to alternatives;
- refresh the description of what constitutes a design process and where EIA fits; and
- provide direction on sourcing and defining outcomes.

I spoke about the possible addition of an 18th UN Sustainable Development Goal at the 2023 NSIP Forum – 'I/We'. So much of what now matters in delivery of sustainable outcomes relies on our behavioural change from national government to the individual. We all have a part to play.

*The most precious asset we have been given needs to be properly understood and the communities of which we are a part need to be given the respect they are rightly due in the projects and plans we seek to promote. We need to de-silo our thinking and advise and act for the better good.*





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# Do you make effective use of ALL of IEMA's IA member resources?

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IEMA's website contains a treasure trove of IA-related content, as well as information about IEMA's volunteer network groups, blogs, webinars and policies. But not everyone makes the most of this free member content, including:

- Future events and webinars.
- Recordings of past webinars, with over 24 hours' worth of IA content.
- IA guidance & advice: such as the recent guides on Land and Soils, GHGs, and Health in EIA.
- The Proportionate EIA Strategy.
- Over 400 EIA articles and 200 case studies related to EIA, developed by Q Mark registrants in recent years.
- Individual and organisational recognition specific to EIA, through the EIA Register and EIA Quality Mark schemes respectively.
- Opportunities to get involved with:
  - IA Steering Group
  - IA Network and Working Groups
  - Geographic/Regional Groups.

[www.iema.net](http://www.iema.net)



# Acknowledgements

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**Alister Kratt** and **Peta Donkin**, Directors at LDA Design, have acted as the guest editors for this edition of the new IA Outlook Journal. We recognise and appreciate their contribution.

We also offer thanks to the series editors and reviewer of this edition: Rufus Howard. We would like to thank the authors of the articles in this sixteenth edition of the Impact Assessment Outlook Journal:

**Alister Kratt**

**Ed Hargreaves**

**Hanne Larsson**

**Jeremy Randall**

**Professor Dame Julia King**

**Dr Katie Medcalf**

**Matthew Fox**

**Peta Donkin**

**Robert Pile**

**Sadie Morgan**

**Sam Griffiths**

Alongside the authors we would also like to thank the EIA Quality Mark registrant organisations, and invited collaborators, who gave the authors time and encouragement to write the articles and allowed their publication in this IEMA IA Network publication. They are: dRRM, Environment Systems, Icen Projects, LDA Design, Mott MacDonald, Pinsent Masons, and WSP.

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**IEMA's EIA Quality Mark** – A scheme operated by the Institute allowing organisations (both developers and consultancies) that lead the coordination of statutory EIAs in the UK to make a commitment to excellence in their EIA activities and have this commitment independently reviewed. Founded in 2011, the EIA Quality Mark is a voluntary scheme, with organisations free to choose whether they are ready to operate to its seven EIA Commitments: EIA Management; EIA Team Capabilities; EIA Regulatory Compliance; EIA Context & Influence; EIA Content; EIA Presentation; and Improving EIA practice.

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## EIA as a Design Tool

This sixteenth edition of the Impact Assessment Outlook Journal provides a series of thought pieces on EIA as a Design Tool, and the consideration of Alternatives. In this edition, the Guest Editors, Alister Kratt and Peta Donkin, have selected seven articles and two interviews produced by IEMA professionals and invited experts. The result is a valuable yet quick read across some of the different aspects of UK and international practice exploring EIA as a design tool and the consideration of alternatives.

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### About the Guest Editor: Alister Kratt,

BA (Hons), FLI

*Director - Infrastructure, LDA Design*



Alister is a Director of LDA Design and is a landscape architect, masterplanner and spatial planner with 30 years' consultancy experience. He is a regular speaker on design process and infrastructure design and was a TEDx speaker at the Royal Society Whitehall series on infrastructure legacy. He has contributed to round table sessions on infrastructure to support policy development, presented to the Hendry Review and undertook a peer review of the NIC's design principles. His projects have received a number of awards including the Landscape Institute Presidents' Award in 2014. He was lead author of IEMA guidance on the value of good design and its role in EIA process. Alister led the first NSIP project in the UK and is a recognised expert in DCO projects and projects of scale. He sat on HS2's first Design Panel, is a panel member of the Design Commission for Wales and advisor to local authorities on complex developments of scale. Recent major projects include masterplan lead for Heathrow West alternative airport expansion, HS2 Euston Station and several large solar projects. He is design lead for Sizewell C and also advisor on several new community projects.

### About the Guest Editor: Peta Donkin,

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*Director of EIA (Infrastructure), LDA Design*



Peta is Director of EIA and Infrastructure and Energy lead at LDA Design. She is an environmental planner with over 20 years' experience in coordinating and delivering projects ranging from initial project development through to delivery of T&CPA and Nationally Significant Infrastructure Projects, with vast experience in renewable energy and large-scale infrastructure. She delivers strategic and technical project advice to shape and deliver strong, innovative projects which are influenced by, and tailored to, the environment, with a view to achieving positive outcomes. She was the EIA Lead for the Longfield Solar and BESS DCO, and is the EIA Lead for the Mallard Pass Solar DCO.

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We also help and support public and private sector organisations, governments and regulators to do the right thing when it comes to environment and sustainability related initiatives, challenges and opportunities. We work to influence public policy on environment and sustainability matters. We do this by drawing on the insights and experience of our members to ensure that what happens in practice influences the development of government policy, legislation, regulations and standards.

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