

IEMA ENVIRONMENTAL IMPACT ASSESSMENT GUIDE TO  
**SHAPING QUALITY  
DEVELOPMENT**

NOVEMBER 2015



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## ACKNOWLEDGEMENTS

This guide has been developed by IEMA and environmental impact assessment professionals working for organisations registered to the EIA Quality Mark scheme.<sup>1</sup> The project was led by LDA Design, with the guide co-authored and edited by Alister Kratt, Mary Fisher and Maeve McElvaney (LDA Design), alongside Jo Murphy (National Environmental Assessment Service, Environment Agency) and Josh Fothergill (IEMA).

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## TABLE OF CONTENTS

Overview	1
Principles	2
<i>Early, effective and ongoing interaction</i>	2
<i>Appropriate stakeholder engagement</i>	2
<i>Consenting risk is managed</i>	2
<i>A clear narrative</i>	3
The interaction of Environmental Impact Assessment, design and engagement	4
Framework for delivering Environmental Impact Assessment and design interactions	5
<i>Framework of action areas</i>	5
A.1 Advocacy and persistence	6
A.2 Teamwork and communication	6
A.3 Record-keeping	6
B.1 Informed environmental input	7
C.1 Design evolution, design 'freeze/fix', and project description	7
C.2 Classified mitigation (potential effects, mitigation and residual effects)	8
C.3 Opportunities for environmental enhancement	9
D.1 Focused Environmental Statement chapters	9
Annex A: Classifying the three types of Environmental Impact Assessment mitigation	10
Annex B: References and further information	12

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## OVERVIEW

This Environmental Impact Assessment (EIA) guide establishes the principles and framework for maximising the interaction between environmental thinking and project design within the decision-making process. The aim of the guide is to contribute to the delivery of proportionate EIA, by shaping decision-making that leads to higher-quality development proposals. The guide will improve EIA practitioners' understanding of how to ensure the EIA process effectively interacts with other pre-application project activities, to generate an improved development proposal, and better environmental outcomes that otherwise would not have been achieved.

Maximising this interaction will help the reader:

**Improve environmental outcomes** - projects are designed from the outset to avoid and reduce impacts, while maximising environmental performance;

**Generate better informed decision-making** - from the earliest stages, those developing the project are informed about likely environmental implications, consenting risks, programme constraints and potential costs arising;

**Contribute to better solutions** - working together to consider the environmental, commercial and operational requirements of the project, by optimising design through collaboration;

**Reduced consenting risk, consenting delay and associated costs** - the apparent cost savings of a project that is based on the most economic design are regularly outweighed by prolonged negotiations required to achieve consent, expensive mitigation measures and restrictions imposed by conditions.<sup>2</sup>

In order to document this interactive approach, this guide suggests a narrative-led method to Environmental Statements (ES), whereby the process of environmentally-informed design and the inclusion of mitigation (primary and tertiary) as part of the design process are clearly described in one place within the ES. This has the benefit of providing a more proportionate ES which sets out a clear rationale for the final design of the development, and allows a reduction in the complexity of assessment chapters by removing the need to identify and assess 'potential' effects which have been designed out.

In the context of this guide:

**'Design'** - means all of the decisions that shape the development throughout its construction, operation and, where relevant, decommissioning phases (including both physical and operational aspects).

**Design optimisation** - means the process of coming to a final proposal having appropriately considering all of the risks, constraints and requirements within the specific circumstances of a given project.

**Environment** - means a broad approach that encompasses both biophysical and social or community issues, specifically relating to the issues listed within Article 3 of the EIA Directive (2011/92/EU, as amended by 2014/52/EU).



## PRINCIPLES

Underpinning the approach set out within this guide are four EIA co-ordination principles, which provide an effective overarching approach to shaping design via the EIA process:

- 1. Early, effective and ongoing interaction** - occurs between environmental thinking and the design process;
- 2. Appropriate stakeholder engagement** - is used to gather external views on the approaches that could be taken, before a decision is made and only where the opportunity to actually influence the decision exists;
- 3. Consenting risk is managed** - saving time and costs by taking effective account of environmental issues within a responsive design process;
- 4. A clear narrative** - is developed that provides a record of how the project's design has responded to the environmental issues identified; this is used to produce a justifiably proportionate ES.

### Early, effective and ongoing interaction

Environmental thinking, based on the considered views of appropriately skilled environmental professionals, should interact with the design process from the earliest possible stage. Ideally, environmental thinking and relevant environmental studies should inform early decisions taken about need, project viability, site selection and risk. This approach reduces the likelihood of projects being commenced on a basis that already has built-in negative environmental effects that could have been avoided.

As the project moves into the EIA process, assessments identify potential environmental effects which, combined with ongoing consultation and discussion with stakeholders and designers, lead to design refinements. This process continues until the design is optimised and sufficiently fixed for assessments to be finalised – so that those assessments are based on the likely significant environmental effects of the final optimised design, which is submitted within the application for consent (see Figure 1).

### Appropriate stakeholder engagement

Stakeholder engagement is a spectrum which ranges from inclusive engagement, allowing input into truly open decisions, to informing stakeholders of a pre-defined decision. It is important that the timing and method of engagement is tailored in light of design matters as well as the planning and EIA process. For highly constrained projects where consultees and the public could have little influence on the design, the approach will be primarily to inform, and may be best undertaken later in the process.

For projects where there are more options and where there are real possibilities for public and consultee influence, consultation should seek input and be early enough in the programme for the design to respond. In all instances, consultation should be clear about what opportunity there is to influence design, in order to avoid causing consultees to feel that input which could have been acted upon has been ignored.

### Consenting risk is managed

Consenting risk is reduced through designing out negative effects and designing in environmental benefits via the EIA process, presenting a clear narrative of the design process and providing a proportionate ES focused on the significant effects that remain. This should result in a design that responds to the environment, and an ES that communicates clearly and with the minimum of complexity. These two factors, combined with effective consultation, will increase decision-makers' confidence that they understand the development and its likely effects, and that the design has been genuinely optimised.



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### A clear narrative

Communicating a focused appreciation of environmental context via EIA and how it has informed the final optimised design is important for all projects, and should be proportionate to the nature and likely significance of the effects. The value of effective EIA practice is likely to prove particularly important for those projects which are controversial or are located in especially sensitive settings. A clear narrative of the alternatives considered, and how the design has evolved and addressed environmental concerns, can help to engender a clear picture of the way in which all of the potential effects have been considered ‘in the round’ in reaching an optimised design. By maintaining a comprehensive, structured record of how the design has responded to environmental issues, the EIA co-ordinator can evidence and inform this narrative, which should be captured in the ES and also may be reflected in other application documents (e.g. consultation report, design and access statement).

By ensuring that the ES contains a clear narrative describing how the design has responded to environmental issues, assessment chapters then can start from this point, removing any description of ‘potential’ effects which have been designed out – as those effects will not, and could not, arise from the development as proposed. In some cases, the significant effects for some topics may have been entirely avoided, and a specific assessment chapter regarding those topics may no longer be needed. In this instance, it is recommended that this decision is justified and explained within the ES, especially where the topic is included in the scoping opinion received from the consenting or competent authority.

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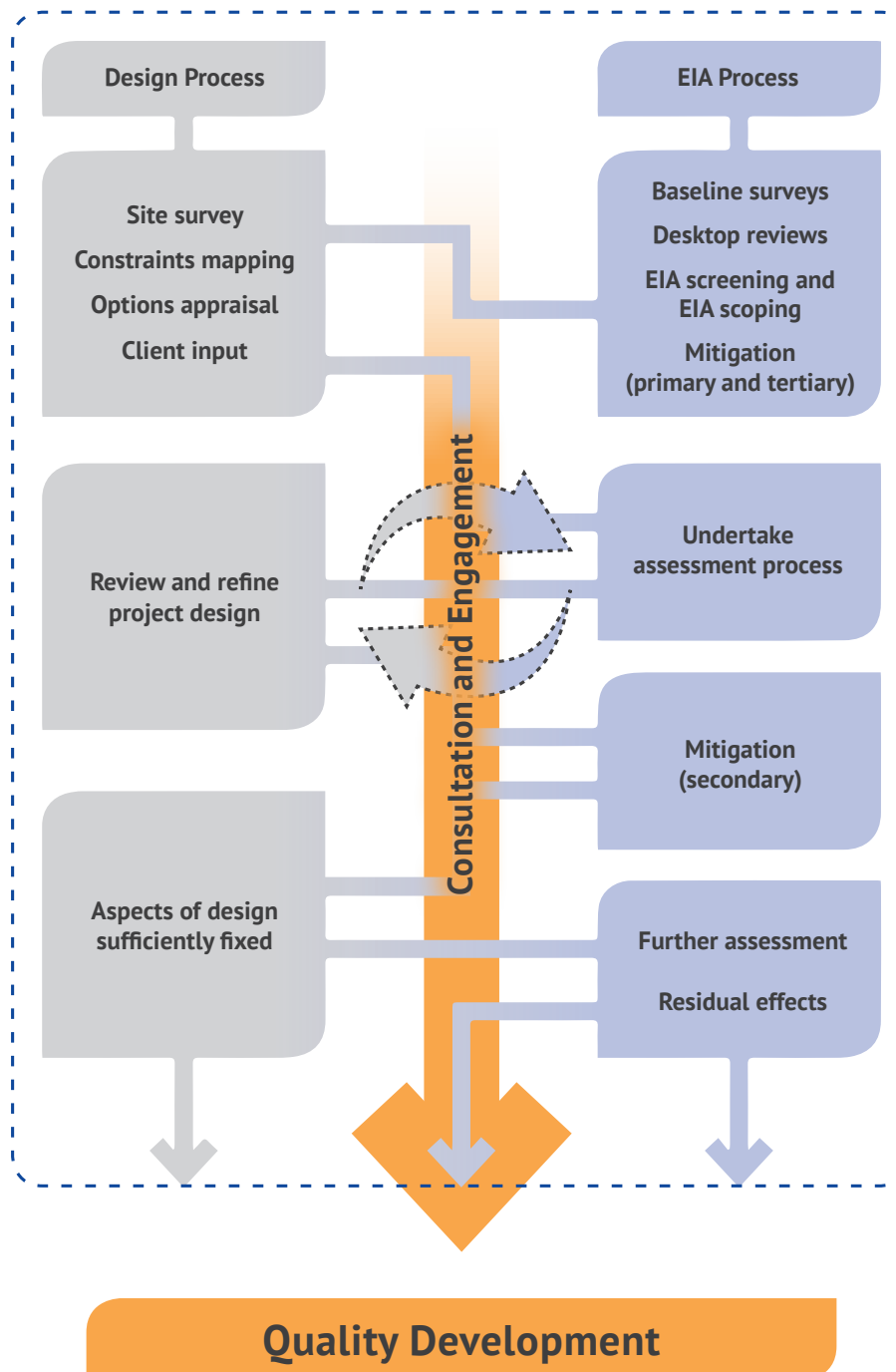


## THE INTERACTION OF ENVIRONMENTAL IMPACT ASSESSMENT, DESIGN AND ENGAGEMENT

The EIA and design processes should interact with each other, with both being informed by, and informing, ongoing stakeholder engagement. EIA identifies potential environmental effects which, combined with ongoing

engagement with stakeholders, often leads to design refinements to reduce the significance of negative environmental effects. This relationship is illustrated in Figure 1.

**Figure 1:** The interaction of design and Environmental Impact Assessment processes





# FRAMEWORK FOR DELIVERING ENVIRONMENTAL IMPACT ASSESSMENT AND DESIGN INTERACTIONS

EIA can influence design in many ways, and the earlier the interaction between the EIA process and design process commences, the more likely it is that cost-effective, positive outcomes will be achievable. Examples of how EIA can influence design include:

- the review and selection of alternative development sites to avoid key sensitive receptors;
- altering site layout to work with a site’s existing natural systems;

- amending the design of a specific aspect of the development to manage impacts;
- specifying particular construction techniques to avoid effects on particular receptors; and
- changing materials to reduce volume and/or transport impacts.

Figure 2 sets out the framework for delivery of the principles through coordinating the EIA process and preparing the ES.

**Figure 2:** Environmental Impact Assessment and design interaction framework

PRINCIPLE		FRAMEWORK OF ACTION AREAS		
1. Early, effective and ongoing interaction	A	Advocacy and persistence	Teamwork and communication	Record-keeping
2. Appropriate stakeholder engagement	B	Informed environmental input		
3. Consenting risk is managed	C	Design fix and evolution	Classified mitigation	Environmental enhancement
4. A clear narrative	D	Focused ES chapters		



## Framework of action areas

### A.1 Advocacy and persistence

From the earliest stages, all environmental professionals involved in the project – in particular the EIA co-ordinator – should proactively advocate the principles set out in the first part of this guide, to maximise the benefits and get the whole project team on board. The whole project team includes, but is not limited to:

- the client team and/or development promoter;
- planners;
- EIA team;
- designers;
- legal advisers; and
- engineering and construction teams.

Positive outcomes still may be achievable even if professional environmental input and advice is only recognised later in the process; so persistence in working towards an interactive approach, even in small ways, can yield benefits.

### A.2 Teamwork and communication

To ensure that environmental impacts are avoided or reduced as part of the design process, and that mitigation measures are built in, rather than requiring them to be bolted on, EIA co-ordinators must foster good working relationships with all members of the project team. This will ensure that the information flow throughout the process is clear. EIA cannot be undertaken as a remote function if a truly interactive design process is to be deployed. All team members have a role in identifying opportunities to avoid adverse effects, maximise benefits and/or deliver appropriate mitigation.

The EIA coordinator also forms a key link between all of the team members, and is in a position to monitor whether proposed design changes may have potential environmental effects: for example, where a form of mitigation proposed to mitigate one environmental effect could cause adverse effects for other environmental topics. The EIA co-ordinator should recognise that communication is a key aspect of their role and seek to facilitate it. For some projects this may mean organising and co-ordinating design meetings that bring together the design, technical, commercial and environmental disciplines.

### A.3 Record-keeping

All key decisions regarding design and environmental mitigation should be recorded, detailing what was decided and why, from the earliest possible stage. This recording process should be managed by the EIA co-ordinator, and recording should be on an ongoing basis to avoid the quality of such information deteriorating over time. There are five key benefits to keeping these records.

1. As the design evolves, it is easier to check back and ensure that a new decision does not reverse something important that was decided previously. This is not likely to happen for simpler projects, but for complex projects with very long time frames the reasons behind previous design decisions can be forgotten, especially if team members change.
2. The list of key mitigation commitments can be itemised, enabling their ongoing tracking into conditions, management plans or detailed design.
3. The parameters that the EIA is based on can be clearly set out. Section C.2 (below) regarding mitigation describes an approach to identifying mitigation measures which facilitates this. This is valuable in dealing with post-consent modifications, as it clearly flags up those aspects of design that have been relied on in reaching judgements, and which may require reassessment if amended.
4. A detailed record of design decisions forms the basis for setting out the project description and design narrative – telling the story of how the project has evolved to take account of environmental factors.
5. Good record-keeping of decisions ensures that the interaction of design and assessment is transparent, allowing people from different disciplines, within the project team (see Figure 1), can check whether each decision will have an impact on their area of responsibility, and if so what impact that decision will have. On the environmental side, this improves intra-project cumulative effects, where mitigation measures to reduce an impact in one area can inadvertently cause additional negative impacts to others (e.g. a noise mitigation bund generating a negative visual impact).



### **B.1 Informed environmental input**

The timing of seeking stakeholder input on relevant environmental issues (including the screening and/or scoping processes) should be driven by the availability of sufficient project detail and baseline information, to permit adequately informed submissions and encourage adequately informed consultee responses. As the project evolves, consideration should be given as to whether further consultation is required to allow consultees to respond in respect of key design changes. Techniques which can be used include the ‘Rochdale Envelope’<sup>3</sup> and/or the use of parameter plans.<sup>6</sup> The planning strategy including the type of application to be made will inform the level of detail, but one may not be a direct reflection of the other: for example, if a detailed planning application is to be made, it does not necessarily mean that the ES must mirror that level of detail.

### **C.1 Design evolution, design ‘freeze/fix’, and project description**

As the design progresses, it is important to ensure that the EIA team is kept aware of which aspects of the design and technical options are fixed and which are still evolving. Starting assessments before the design is sufficiently fixed can result in unnecessary rework; however, each environmental topic area may require different aspects to be ‘fixed’ before they can start (or finalise) their assessment. It is essential that all topics included in the EIA ultimately assess the final design, in order to ensure that the content of the ES provides a consistent, relevant and accurate description of the project’s significant environmental effects.

In finalising the design which forms the basis for the EIA and consent application, there is a balance to be maintained between a detailed design and similarly detailed project description which provides certainty, and one which provides sufficient flexibility to take account of, for example, future advances in construction techniques or technology. It is important that the EIA coordinator provides input into the discussion on the level of detail required. This is needed to ensure that the EIA team can undertake an adequate and proportionate assessment for their discipline, without constraining the ability to improve the design.

Using the narrative-led approach, it is important that the ES describes the influence that the environment and consultation responses have had on design evolution, and how that led to the specific development proposal, thus meeting the EIA regulation requirements in respect of alternatives. One way of achieving this is via a chapter dedicated to the topic of the design evolution, which then can be referenced by other chapters.

Having described this evolution process, the project description should clearly describe only the final design, explicitly referencing the mitigation measures incorporated into the design as primary mitigation (see description in Section C.2, below).



## C.2 Classified mitigation (potential effects, mitigation and residual effects)

Classifying mitigation measures into one of three key types helps to achieve a more proportionate ES, as it allows for some mitigation measures to be taken as read in assessing effects. Annex A of this guide sets out three distinct forms of mitigation:

1. **primary** (inherent);
2. **secondary** (foreseeable); and
3. **tertiary** (inexorable) mitigation.

The core definitions of these three types of mitigation are presented below (with further detail set out in Annex A).

**Primary mitigation** is an intrinsic part of the project design – it should be described in the design evolution narrative and included within the project description. For example, reducing the height of a development to reduce visual impact.

**Secondary mitigation** requires further activity in order to achieve the anticipated outcome – typically, these will be described within the topic chapters of the ES, but often are secured through planning conditions and/or management plans. For example, description of certain lighting limits that will be subject to submission of a detailed lighting layout as a condition of approval.

**Tertiary mitigation** will be required regardless of any EIA assessment, as it is imposed, for example, as a result of legislative requirements and/or standard sectoral practices. For example, considerate contractors practices that manage activities which have potential nuisance effects.

Itemising the mitigation measures within the ES, and identifying which type of mitigation each measure is, aids clarity and clearly flags up which aspects of the design are primary mitigation measures. Itemisation also assists consideration of post-consent design development or amendments by identifying what can and cannot be changed without requiring reassessment, and what needs to be done to deliver mitigation during the post-consent stages. Finally, it aids clear identification of the secondary mitigation measures which may need to be secured via condition and/or management plans.

Using the narrative-led approach, both primary and tertiary mitigation should be clearly included in the project description, and can be taken as read in assessing effects. The basis for the EIA should be that both these forms of mitigation definitely will be delivered: thus, any effects that might have arisen without these forms of mitigation do not need to be identified as 'potential effects', as there should be no potential for them to arise.

Therefore, the difference in significance between potential effects and residual effects only requires consideration where secondary mitigation is involved – resulting in a simpler and more proportionate ES.

In some instances, primary mitigation – through the design – may be sufficient that it is judged that one or more topics, initially scoped into the EIA, no longer require assessment through the remainder of the EIA process. This is because the primary mitigation means that any likely impacts on the topic's receptors resulting from the development will no longer lead to significant effects. Where this arises, consideration should be given to scoping these topics out, or providing brief summary chapters or a single chapter summarising a number of topics – again, resulting in a more proportionate ES.



### C.3 Opportunities for environmental enhancement

While there is no regulatory driver for securing environmental gain through development, the EIA process is likely to gather information that could allow a developer to build effective and valuable environmental benefits into the design of their project. Such benefits can help enable development and provide reasons for communities and wider stakeholders to support the developer's aspirations for the site. The EIA co-ordinator has a role in encouraging the assessment team to identify such opportunities, and in ensuring that these are communicated to the developer and design teams and reflected clearly in the ES.

### D.1 Focused Environmental Statement chapters

Where the narrative-led approach is being followed, as discussed above, chapters should take as read both primary and tertiary mitigation measures in identifying potential effects. The outcome of this approach should be to generate fewer, more proportionate ES topic chapters (see Box 1 for advice on identifying a proportionate ES chapter).

The project description, presented in the opening part of the ES, should be sufficiently detailed that each chapter can refer back to it and rely on this content; this is further aided if the ES includes a clear, itemised mitigation summary.<sup>4,5</sup> (see advice in Section C2 and Box 1). Then, each chapter need only provide a very brief reference to the aspects of the design (primary mitigation) and tertiary mitigation that are relevant to the topic under consideration. Secondary mitigation will require more detailed description.

#### Box 1: Review checklist for a proportionate Environmental Statement using the narrative-led approach

##### The proportionate ES:

1. has a project description which clearly describes the parameters of the development, and sets out all primary and tertiary mitigation included;
2. clearly describes the evolution of the design and details how environmental effects have been avoided or reduced through the design process;
3. contains a clear, itemised mitigation summary;
4. only contains those chapters needed to report on likely significant effects arising from the finalised design.

##### The proportionate ES chapter:

1. refers to the main ES project description and design evolution;
2. briefly summarises key mitigation relevant to the topic;
3. only assesses potential effects arising from the final design, incorporating all primary and tertiary mitigation;
4. only identifies pre-mitigation effects and residual effects where secondary mitigation is required;
5. focuses primarily on significant effects.



## ANNEX A: CLASSIFYING THE THREE TYPES OF ENVIRONMENTAL IMPACT ASSESSMENT MITIGATION

MITIGATION	DESCRIPTION
<b>PRIMARY (INHERENT)</b>	<p>Modifications to the location or design of the development made during the pre-application phase that are an inherent part of the project, and do not require additional action to be taken.</p> <p><b>Key principles:</b></p> <ul style="list-style-type: none"> <li>• Action at the top of mitigation hierarchy, with greater ability to avoid impacts.</li> <li>• Best applied early, because they become more difficult to accommodate as the design progresses and stabilises.</li> <li>• Become a fundamental part of the design seeking consent.</li> <li>• Described in detail within the ES project description.</li> </ul> <p><b>Examples include:</b></p> <ul style="list-style-type: none"> <li>• Reducing the height of a development to reduce visual impact.</li> <li>• Identifying a key habitat or archaeological feature that should remain unaffected by the development's layout and operation: e.g. retaining an unimproved grassland area in situ as part of an open space strategy.</li> <li>• Developing a transport strategy that reduces trips, avoiding the need for junction improvements.</li> </ul>
<b>SECONDARY (FORESEEABLE)</b>	<p>Actions that will require further activity in order to achieve the anticipated outcome. These may be imposed as part of the planning consent, or through inclusion in the ES.</p> <p><b>Key principles:</b></p> <ul style="list-style-type: none"> <li>• A flexible form of mitigation that can be proposed at any point within the EIA process, including during the decision-making process.</li> <li>• Tend to operate in the middle of the mitigation hierarchy, focusing on reducing the significance or likelihood of adverse effects.</li> <li>• While they would be integrated into the application for consent, this form of mitigation requires additional action post-consent, beyond the core function of the development, to be implemented.</li> <li>• Carry a greater risk of non-implementation or ineffective application post-consent than primary or tertiary mitigation.</li> <li>• Best managed through an environmental management plan.<sup>4,5</sup></li> </ul> <p><b>Examples include:</b></p> <ul style="list-style-type: none"> <li>• Describing certain lighting limits, which will be subject to the submission of a detailed lighting layout as a condition of approval.</li> <li>• Providing a transport or movement framework, underpinning a Section 106 (Town and Country Planning Act 1990 (as amended)) commitment to provide public transport or limit car movements through operational planning.</li> </ul>



MITIGATION	DESCRIPTION
<b>TERTIARY (INEXORABLE)</b>	<p>Actions that would occur with or without input from the EIA feeding into the design process. These include actions that will be undertaken to meet other existing legislative requirements, or actions that are considered to be standard practices used to manage commonly occurring environmental effects.</p> <p><b>Key principles:</b></p> <ul style="list-style-type: none"> <li>• Can be identified at any point during the design and EIA process.</li> <li>• The least flexible form of mitigation – either they exist, or they do not.</li> <li>• The EIA Co-ordinator must be confident that any tertiary mitigation identified is very likely (&gt;90%) to occur without further specific activity being undertaken within the EIA process.</li> <li>• It is helpful, but not strictly necessary, to include tertiary mitigation related to construction activities, within a draft Construction Environmental Management Plan (CEMP) (or similar) included in the ES, to ensure that these actions are highlighted to the principal contractor.<sup>4,5</sup></li> </ul> <p><b>Examples include:</b></p> <ul style="list-style-type: none"> <li>• Applying emission controls to an industrial stack to meet the requirements of the Industrial Emissions Directive (Directive 2010/75/EU).</li> <li>• Considerate contractors' practices that manage activities which have potential nuisance effects.</li> </ul>



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## ANNEX B: REFERENCES AND FURTHER INFORMATION

### References

1. IEMA, EIA Quality Mark, available at: [www.iema.net/qmark](http://www.iema.net/qmark)
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### Further information

EIA Quality Mark articles (2011, ongoing), The Environmentalist, available at [IEMA Membership Login Required]: [www.environmentalisonline.com/qmark](http://www.environmentalisonline.com/qmark)

### For developers seeking high-quality EIA co-ordinators

Look for organisations registered to the EIA Quality Mark (available at: [www.iema.net/qmark/registrants](http://www.iema.net/qmark/registrants)); or individuals registered to IEMA's EIA specialist register.

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