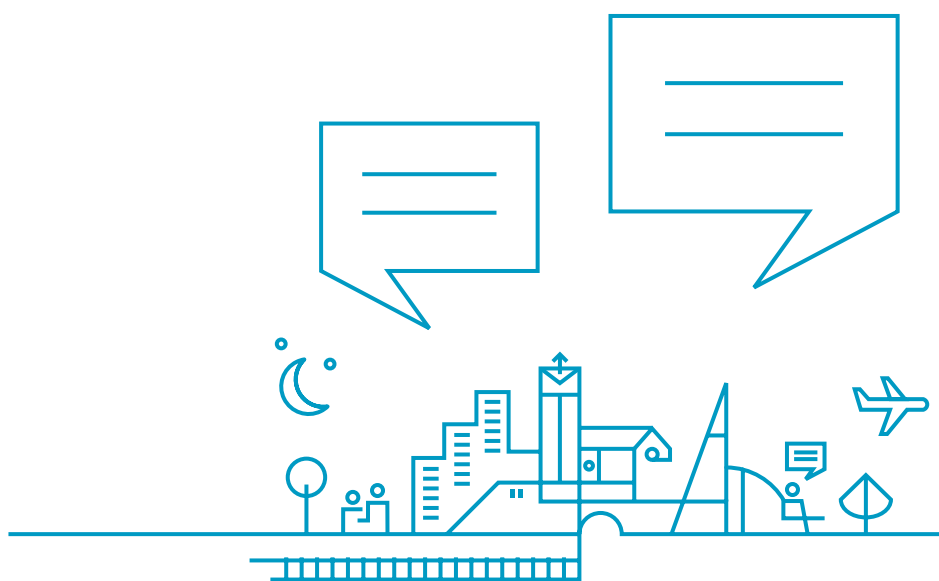


Impact Assessment Outlook Journal

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Landscape and Visual Impact Assessment

Thought pieces from UK practice



Guest Editor

Rebecca Knight, Chair of the GLVIA Panel of the Landscape Institute

Rebecca Knight

BSc DipLA MA CMLI

*Chair of the GLVIA Panel
of the Landscape Institute*

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Landscape and Visual Impact Assessment

In preparing for this Outlook Journal, I trawled the IEMA archive for articles on Landscape and Visual Impact Assessment (LVIA) and came across a piece written (pre-GLVIA3) by Naushad Tahsildar and John Flannery from Environmental Resources Management about the value of LVIA. Naushad and John's article noted that "In the absence of international LVIA guidelines, the opportunity to carry out LVIA in international EIAs/ESIAs is being missed and often not carried out even on the most significant, large scale projects" and "In not explicitly carrying out LVIA in EIAs/ESIAs, there is the potential that important aspects of the landscape and visual amenity will be overlooked, with the risk that impacts/mitigation are not taken into account in decision making and consenting". This international perspective should remind us of the value of LVIA, and how fortunate we are in the UK to have a framework within which to assess landscape and visual impact.

The first edition of the Guidelines for Landscape and Visual Impact Assessment (GLVIA1) was published in 1995, jointly by the Landscape Institute and the (then) Institute of Environmental Assessment. The 'brown book', as it was called, was my first introduction to LVIA. It was written in response to the serious erosion of the character and quality of our urban and rural landscapes that occurred in the latter part of the 20th century, and recognised a need to safeguard the quality of the environment for future generations.

The first edition of GLVIA recognised that landscape and visual impact assessment relies less upon measurement, and more upon experience and judgement, than some other EIA topics. For this reason the guidelines aimed to present a structured and consistent approach to the treatment of landscape and visual issues. GLVIA1 recommended charts and tables as "probably the best way of making complex information more accessible to consultees and the public" (Paragraph 3.80, GLVIA1) and introduced a simple 'matrix' for assessing significance thresholds which set sensitivity on one axis and magnitude on the other.

The second edition of GLVIA (GLVIA2) was published by the Landscape Institute and the Institute of Environmental Management and Assessment (IEMA) in 2002, with the aim of presenting a 'non-specific' methodology for undertaking assessments. Instead, it put the onus on the landscape professional carrying out the assessment to ensure the approach and methodology adopted was appropriate. The guidance also included a number of case studies to provide examples of (then) current practice. GLVIA2 warned against reliance on matrices, pointing out that the relationship between the two axes of a matrix (sensitivity and magnitude) is not linear.

GLVIA3 was published in 2013, after the UK Government's ratification of the European Landscape Convention. Its aim was to present "an authoritative statement of the principles of assessment" (albeit still a framework rather than a specific 'recipe'). It provided more detailed advice on the process of assessing the landscape and visual effects of developments and their significance, expanding on the components that make up sensitivity and magnitude. It also aimed to be clearer on the use of terminology and included a new expanded chapter on cumulative effects.

Since the publication of GLVIA3, other related guidance has been published by the Landscape Institute including Technical Guidance Note (TGN) 02/2019 on Residential Visual Amenity Assessment and TGN 06/19 on the Visual Representation of Development Proposals. The landscape profession will continue to develop tools and techniques, and the articles in this journal provide a snapshot of some of the current thinking amongst the profession.

The first article, by Danielle Reeves, considers an approach to meaningful mitigation in a climate emergency with specific reference to trees. The second article, by Paul Macrae and Edward White, explores the relationship between planning policy and LVIA. The third and fourth articles consider the role of judgements in LVIA: in the third Ian Grimshaw and Louise Fitzgerald urge us to provide evidence to support professional judgement, and in the fourth Mary Fisher challenges us to consider whether LVIAs truly reflect the views of communities in which developments are planned. The fifth article is from IEMA's Quality Mark archive and was written by Lauren Davis, then of Pegasus Group. This article contemplated whether Townscape and Visual Impact Assessment is a sub-set of LVIA or a separate process requiring different skills, and is still relevant today. The sixth article by Lucy Foley considers the specific needs of assessing effects at night. Finally, Louise Fitzgerald considers options for the visual communication of potential effects, including the value of emerging digital technologies.

I'd like to thank all the contributors to this Outlook Journal, especially for producing their articles during the holiday season.



Meaningful mitigation in a climate emergency (with specific reference to trees)

As we 'build back better' from the pandemic and see climate change move towards the forefront of decision making, the way we assess, design and mitigate projects, particularly those that require EIA, comes to the fore.

A large proportion of local planning authorities (LPAs) have declared a climate emergency and have set climate change reduction targets. An unsolved problem is how we approach infrastructure, as the principle of expanding airports and road networks is at odds with carbon reduction policy. The Welsh government have paused all road building, which suggests they feel it is not possible to design sympathetically to fit within the existing landscape, nor is it possible to mitigate effectively without causing significant harm to the climate. If this is the case for roads, then it is likely the case for other infrastructure projects. Given our nomadic hunter-gatherer past, it is in our genes to want to travel and explore, and we have spent a year at home planning our next trip; it is unlikely we can give up on infrastructure anytime soon. While other industries look at methods to travel greener, it is our job as designers and assessors to minimise the impacts of the infrastructure itself.

Increasingly, Environmental Statements are looking at climate change issues. Trees, which bring many environmental benefits, are often a sticking point within projects, due to lack of space or inability to balance the numbers of trees required to mitigate those lost.

On a recent design project which was contractor-led and non-EIA, we created a mitigation hierarchy to protect existing trees and replace any lost. At the top of the hierarchy was to avoid loss altogether. This is something we all aim for but struggle to implement, usually due to limited focus on the existing context or environmental issues in the inception stages of the project. Avoiding the loss of established trees, as well as habitat and other features, should be on the minds of decision makers from the point they decide 'we need a new road from A to B'. Infrastructure projects would benefit by having a landscape architect involved at these early due diligence stages to give clients a fuller picture of potential environmental impacts. Similarly, waiting for an early design stage scheme fix often leads to expensive or unachievable mitigation, so involving a landscape architect in the initial phases could reduce both financial and environmental cost.

Wind farms include landscape architects in the initial stages, as changes to the siting of a turbine and tracks are often the only meaningful mitigation that can be achieved with such a project. I believe this should also be the case for other infrastructure projects. If the siting is right, we shouldn't need to surround the scheme with screen planting nor replace large amounts of vegetation. There will still be some negative impacts, but being involved in an early stage and influencing the siting will minimise this.

Not only do we struggle to avoid tree loss, but replacing loss creates its own set of problems. As landscape architects, and as a society, how do you quantify the loss of such important trees? I call for central government or LPAs, with advice from arboriculturists, to select a single method of calculating the value of trees, moving away from the traditional 3-for-1 replacement ratio and towards a more representative method. In an ever-compacted urban environment trees are often pushed out by buildings, utilities, and other infrastructure. A useful strategy would be for LPAs to ringfence areas that are currently constraint-free for urban greening. Then, where mitigation cannot be provided within a project's boundary, suitable locations can be identified nearby to allow the local area to still benefit from green infrastructure.

I want to end on my recent trip to Boscombe, near Bournemouth. Historically, the area was a bleak, empty heathland, devoid of trees. In the 1800s a local landowner planted thousands of pine trees, chosen for their perceived health benefits, and over the course of the 19th century the area became well known as a health resort. Today the benefits of this large scale tree plantation are still felt; as you walk along the streets they bring a sense of calm and offer a break from the red-hot sun of the beach. The importance of this will only increase as our planet gets hotter. The value of trees was seen as high back then, and I hope they will be valued once again.

"If the siting is right, we shouldn't need to surround the scheme with screen planting nor replace large amounts of vegetation."



Boscombe, Bournemouth © Danielle Reeves

Paul Macrae

MA (Hons) CMLI

Associate Director of Landscape Planning

LUC

Edward White

BA (Hons) MLA CMLI

Principal Landscape Planner

LUC



The relationship between planning policy and LVIA

This article sets out to explore the relationship between planning policy and LVIA. Planning policy sets the context for development, for example by indicating need, or by setting out where development is already considered appropriate. This could be, for example, through allocation for development in a local plan or through 'Pre-Assessed Areas'¹ for large-scale wind energy development in Wales. Planning policy, often informed by landscape character studies, therefore seeks to guide and direct landscape change.

It is typical for LVIA's to set out hierarchal policy context in an introductory section, identifying relevant national and local policy. This sets the scene and informs the scope and approach of the assessment. It can also align the assessment to the various policy 'tests' to which the proposal will be subjected. However, it is quite unusual in LVIA practice for the intentions of these policies to feed through into the judgements around landscape and visual effects.

In the case of a site allocated for development in the Local Plan, planning policy has determined that land use change – from, say, a greenfield site to a housing development – is appropriate or even desirable. It follows that change in landscape character is similarly anticipated and accepted. Given this in-principle acceptance, should the LVIA reflect this intention in the assessment, and if so how?

What does the guidance say?

IEMA's Guidelines for Environmental Impact Assessment (2004) says that "compliance with policy (or plan) objectives" may be a component that can influence the evaluation of significance in EIA.² However, although GLVIA3 recognises that policy is the framework within which EIA is carried out (alongside the EIA Regulations), it implies that policy and the assessment of effects are separate: *"It is for the competent authority to judge the balance of weight between policy considerations and the effects that such proposals may have"* (paragraph 2.17).

Despite GLVIA3 indicating that effects should be assessed independent of policy, it does suggest that policy should be a consideration for the baseline study. For example, when determining landscape value, it is suggested that factors *"...need to be interpreted to reflect the particular legislative and policy context prevailing in particular places"* (paragraph 5.28).

So it seems LVIA can reflect policy in determining value (and thereby sensitivity), but not in judging significance. Should it be down to the decision maker to take the results of the LVIA and consider compliance with policy? Or as suggested in the IEMA guidance, should policy become more of a factor when determining the significance of effects?

1. Identified in Future Wales: The National Plan 2040, the National Development Framework for Wales (see <https://gov.wales/future-wales-national-plan-2040-0>)

2. IEMA (2004) Guidelines for Environmental Impact Assessment

How do other disciplines address policy?

We have considered the approaches taken by our colleagues in cultural heritage and ecology, as these EIA disciplines are more similar in approach to LVIA than other environmental topics.

In Cultural Heritage Impact Assessments, policy is also used to shape the scope and approach. As with LVIA, an account of the legislative and policy frameworks for heritage management and planning is included in the assessment, but compliance with policy does not influence judgements around 'harm' to the significance of heritage assets.

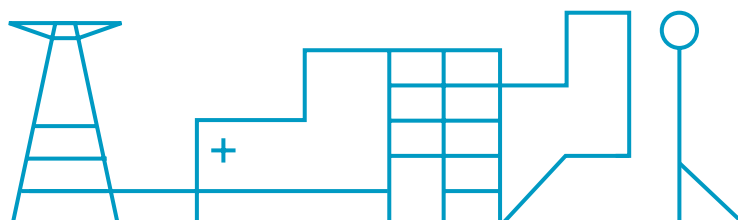
Similarly, policy dictates the scope of Ecological Impact Assessment and determines which species and habitats should be surveyed and characterised. The ecological importance of the site is considered in relation to these features and, where impacts are identified, mitigation or compensation is designed to ensure policy is complied with. The policy does not dictate whether impacts are significant, as that is for the assessor to determine.

Conclusion

The judgements made in an LVIA should be based by the assessor on the nature of the receptors, and the nature of the change arising from the development, as GLVIA3 recommends. Policy sets the context for these judgements but should not directly influence them. To do so could result in no significant effects being found, regardless of the quality of the proposal or the effects arising from it. If a development of a site would lead to significant effects, surely these should be reported whether the site is allocated or not. Finding no significant effects would suggest that the development is 'acceptable', which is rightly a matter for the decision maker to consider in the round, taking account of all the evidence in front of them. Mitigation, in the form of design enhancements, is generally developed in response to significant effects. If the application of policy led to no significant effects, it would be difficult to justify such measures.

Policy may indicate the in-principle acceptance of landscape change, but it is for the LVIA to quantify this change as a judgement of effects, and to focus on the iterative design process to ensure the development is integrated into the landscape in the best possible way.

"Policy sets the context for these judgements but should not directly influence them."



Ian Grimshaw

BA (Hons) MA (LM) MSc CMLI MRTPI

Director

The Environment Partnership

Louise Fitzgerald

MSci PGDip CMLI

Senior Landscape Planner

The Environment Partnership



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The role of professional judgement in LVIA

For many subjects or environmental aspects, guidance is available that sets out how judgement should be applied with reference to quantification of effects. The assessment of effects may refer to measurements taken by equipment or from surveys using counts or refer to the application of models.

Guidance for non-LVIA topics may set thresholds, such as levels of harmfulness or recommended distances between activities and areas of sensitivity, that assist assessments and help guide a fairly binary answer (pass or fail). Nonetheless, the application of process and the interpretation of results involves professional judgement and differences arise and need resolution.

Professional judgement in LVIA comprises the presentation of subjective assessment in an objective framework. Some aspects of LVIA are objective such as reporting on the number of trees which will be lost as a result of proposed development. However, the majority of the assessment requires the expression of professional judgement such as determining landscape quality or condition and ascertaining the magnitude of change.

LVIA relies on professional judgement of effects without any accepted defined scales or thresholds which relate to a replicable form of measurement. This can present a challenge for the landscape professional. Whether an effect is beneficial, neutral or adverse is also based on professional judgement and the Guidelines for Landscape and Visual Impact Assessment (GLVIA3) acknowledge that this is a "particularly challenging" aspect of assessment. Professional judgement is also required to determine whether an effect is significant or not in the context of EIA.

It is almost an industry accepted norm that new development will result in negative effects and it is rare that LVIA will report positive effects. This is particularly the case when reporting on anticipated effects on visual receptors (people looking at a view). Professional judgement must be applied to consider whether the change will affect the quality of the visual experience, given the nature of the existing views. For example, in an assessment of a new visitor attraction on a brownfield site, the assessor might consider whether people would prefer to see open, derelict brownfield land, or the new visitor attraction. On the one hand the development would provide a positive use and, if of high architectural merit, would arguably look a lot better than a derelict site, but on the other hand the development would result in a loss of perceived openness and introduce new built form. There is a generally unspoken assumption that no built form is preferable to any built form, but the assessor's role is to consider how the development will affect the quality of the visual experience.

GLVIA3 advises that suitably qualified and experienced landscape professionals should carry out Landscape and Visual Impact Assessment and the EIA Regulations require that competent persons undertake assessments. It is clear that the intention of this guidance is that the assessor should be experienced and able to apply professional judgement in an informed way. However, in practice LVIA's and Landscape and Visual Appraisals are variable in their quality and authors vary in their experience and competency.

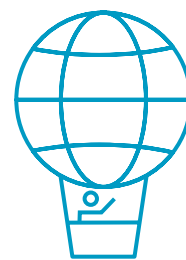
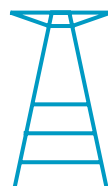
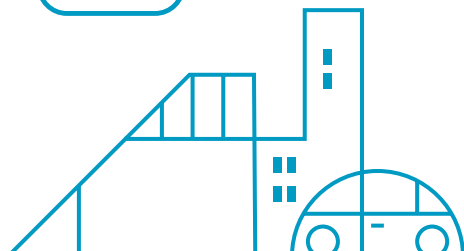
Positive effects may be more likely to occur where high quality development is proposed in degraded areas as part of a regeneration proposal, but can also apply to high quality development on greenfield sites. For example, new residential development on the edge of a vernacular village, whilst introducing more built form and causing loss of undeveloped land could adopt the vernacular style, restore historic walls and railings, provide opportunities for increased biodiversity and respect or even restore character.

Harm to the open countryside is frequently cited as a reason for refusal when determining planning applications and large chunks of time in the appeal process can be taken in parties focusing on disagreements in terms of the sensitivity of receptors and magnitude of potential effect on landscape and visual receptors.

The key to credibility is to include evidence to support any professional judgements that have been made. Judgements should be based on clearly explained and transparent methods so that the reasoning applied at different stages can be traced and examined by others.

LVIA is used as a tool to guide developers and decision-makers. Differences in professional opinions are explored at appeal hearings and public inquiries. Ensuring high consistency in methods applied can ensure that, rather than spending time unravelling nuanced presentations of judgements arising from differing approaches, the focus is on the long-term contribution of development to landscape character and visual amenity.

“Some aspects of LVIA are objective such as reporting on the number of trees which will be lost as a result of proposed development. However, the majority of the assessment requires the expression of professional judgement.”



Remember when I asked for your opinion? ... Yeah, me neither

The difference between professional opinion and public opinion is an interesting point in relation to LVIA. When undertaking LVIA, our task is to identify the 'likely significant effects'. A distinction is made between effects on: "landscape as an environmental resource in its own right and on people's views and visual amenity" (GLVIA3). This suggests that the landscape exists separately from the human element.

That concept becomes problematic however, when the definition of landscape is considered. If, as defined in GLVIA3 and the European Landscape Convention "*Landscape is an area, as perceived by people...*", then without people to do the perceiving there is no landscape; it's just "*an area*", part of the surface of a planet. Separation does not stand up to scrutiny when we consider the various component elements either. It is people who contribute to and appreciate the patterns that form character; and people who attribute value and collectively agree to protect designated landscapes. Some of you having reached this part of the article will be thinking 'but landscape fabric - surely?'. However, if we ignore the human element, then any judgements we make about vegetation removals are about ecology - it is people's appreciation of trees, hedges and other physical features that makes this a matter for LVIA.

With this in mind, when we are judging the 'likely significant effects', what does our professional opinion reflect? It could be one or both of:

- The view of the well-informed and expert observer - informed by an in-depth knowledge of our topic, the conventions of our work, and its current thinking - similar to an art or theatre critic.
- A genuine attempt to understand and explain how people who live locally or visit the area will experience a change so that decision-making can take account of that information.

Considering that the purpose of undertaking EIA and LVIA is to identify the 'likely significant effects' then we might expect the second of these two options to be the main focus. However, if this were the case, then a firm grounding in public opinion would be fundamental to establish the evidential basis for LVIA. This would not mean every development being subject to an opinion poll. Rather, we would expect to see LVIA's referencing authoritative national studies and surveys that helped us to understand and explain perceptions of landscape, different types of development and acceptability - nationally and regionally, and over time, as cultural changes take place and responses to different forms of development alter.

“Painting is a faith and it imposes the duty to disregard public opinion” (Van Gogh)

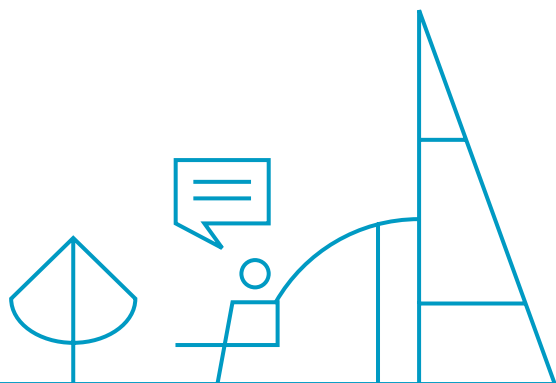
In fact, we do not see this, which suggests that LVIA inclines more to the art critic end of the spectrum. With this in mind, it is not so surprising that we find “professional judgements about the significance of effects identified through LVIA, and whether they are positive or negative particularly challenging” [GLVIA3].

LVIA also currently lacks a calibration measure to answer the rather important question of ‘how do we know if we are doing it right?’ To find this out we could go back and look at a completed development and see whether we still agree with the LVIA assessment. But that involves an art critic marking their own or another art critic’s homework - it is not a true test of whether we genuinely captured how people who live locally or visit the area will experience a change. The truth is that we cannot know the answer to that without asking people, and so we return to the absence of surveys.

GLVIA3 tells us that LVIA “takes place in a context where, over time, landscapes evolve and society’s needs and individual and community attitudes change”. One important example is that potentially already, or sometime in the near future, the most common response to seeing wind turbines in the landscape may be either indifference or a sense of pride/relief/hope at seeing such a tangible effort to combat climate change. Similarly difficult points can arise with topics such as whether well-designed development which creates a new townscape would be an improvement over greenfield landscape in poor condition.

In these scenarios, effects may be assessed as negative on a precautionary basis to ensure an LVIA has covered the worst case for legal safety in decision-making. But if that worst case affects a minority of people, have the ‘likely significant effects’ been identified? It might be more helpful to decision-makers if, in addition to discussion of the merits of siting and design, we could also provide some evidence of what the public - who we serve in undertaking LVIA - really think and feel.

“a firm grounding in public opinion would be fundamental to establish the evidential basis for LVIA”



Townscape and Visual Impact Assessment: is it a sub-set of LVIA or a separate process?

Undertaking a Townscape and Visual Impact Assessment (TVIA) requires not only a good understanding of townscape, in order to distinguish the different parts of the urban form, but also a recognised and robust approach that assesses the likely significant effects of a project on the environment. This calls for a methodology in accordance with the EIA Directive and UK Regulations.

A dictionary definition given for townscape is 'the visual appearance of a town or urban area; an urban landscape'. Overarching TVIA is the European Landscape Convention (ELC) which adopts a broad definition for landscape that encompasses townscape. It states 'Landscape is an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors'. Therefore the convention's definition of landscape covers natural, rural, urban and peri-urban areas in a comprehensive way. How comfortable professionals are with this 'concept of landscape' as defined in the ELC and how well they consider this definition to be the accepted norm would be an interesting debate. Certainly the Transport Analysis Guidance (TAG), used to appraise the impact of transport proposals on the built and natural environment, defines 'landscape' and 'townscape' as

distinct from one another. TAG states that landscape 'is both the physical and cultural characteristics of the land itself', whilst townscape 'is the physical and social characteristics of the built and non-built urban environment.' Both topics are discussed separately within the guidance and with a different methodology outlined to assess the character for each. TAG states the landscape features that define character are: pattern; tranquillity; cultural; and land cover. Whilst the townscape features that define character are: layout; density and mix; scale; appearance; human interaction; and cultural.

The Guidelines for Landscape and Visual Impact Assessment (GLVIA3), produced by the Landscape Institute in 2013, also outline Townscape Character Assessment (TCA) and Landscape Character Assessment (LCA) as being distinct tools for understanding the landscape baseline.

LCA has a widely used methodology whilst TCA has accepted techniques in its preparation, both studies distinct and independent from one another. However GLVIA3 does not specifically refer to TVIA as an assessment in its own right, but rather considers townscape to be a sub-set of landscape - bringing us back to the ELC definition of landscape as an all-inclusive term.

1. At the time this archive article was written. Lauren is currently an Urban Designer at Robert Hitchens Ltd.

Pegasus Planning Group undertook a TVIA for a key development in the market town of Cirencester as part of an EIA. For this assessment GLVIA3 was used to guide its preparation. This allowed for an approach that accorded with the EIA Directive and UK Regulations. The main differences that occurred between this TVIA and a more typical LVIA included:

- a smaller, localised study area;
- an assessment of townscape elements and features - which required a certain level of expertise to assess building styles, materials, building enclosure and scale etc.; and,
- the need to assess the existing condition of townscape character when existing baseline information was absent.

Other differences included the need to build an accurate CGI model of the proposed development in order to assess likely significant effects on the townscape resource. This required existing building heights to be known to ensure the proposed development was recorded as accurately as possible when rendered into the photoviews.

GLVIA3 states that the guidance it provides is 'equally applicable to all forms of landscape and does not separate townscape out for special treatment.' Although GLVIA3 clarifies this by saying 'townscape refers to areas where the built environment is dominant' and that 'townscape means the landscape within the built-up area, including the buildings, the relationships between them, (and) the different types of urban open spaces'. Although the ELC provides a clear definition for landscape, I would contend there is residing confusion between professionals as to the accurate terminology of what defines townscape and landscape. In terms of approach, I would consider GLVIA3 to be the most appropriate guidance available in preparing a TVIA as part of an EIA. So does this firmly put TVIA within the remit of a landscape architect? I would say yes. However, whether the prominence of townscape will grow within GLVIA , branch off as a separate topic with its own approach - possibly employing the abilities of other professionals - or continue as a subset to landscape, remains to be seen.

"...there is residing confusion between professionals as to the accurate terminology of what defines townscape and landscape."



Night-time LVIA

Night-time assessments are increasingly being prepared in support of planning applications for new development. Whether introducing new development in what is otherwise a dark landscape, or proposing schemes that may increase light levels in already lit environments, night-time LVIA helps applicants to design schemes that can be accommodated within the receiving environment and gives planning authorities the confidence to reach a robust planning decision.

Landscape and Visual Impact Assessments (LVIAs) are used to determine the effect of development proposals on the surrounding landscape and visual receptors and identify what, if any, mitigation measures are required. Night-time assessments are increasingly recognised and requested by planning authorities as a useful instrument to support LVIAs.

But surely 'under the cover of darkness' such impacts are limited ...? Yes, it's true that much of the detail of development will not be appreciable at night, however the importance of Dark Landscapes is increasingly recognised by planning authorities for appreciation of starry skies, support of nocturnal wildlife and benefits for human health. Night-time assessments are usually included either due to the high level of lighting proposed as part of a development, or the sensitive nature of the site that may, for example, be within an Area of Outstanding Natural Beauty or a Dark Sky Reserve. Six of the UK's National Parks have been designated as International Dark Sky Reserves.

Night-time LVIAs follow a similar method to that for standard LVIAs, undertaken in accordance with the Guidelines for Landscape and Visual Impact Assessment, Third Edition (GLVIA3)¹ and have inherent cross-overs with Lighting Assessments carried out by lighting engineers. However, whereas Lighting Assessments will establish lux levels and consider light spill, night-time LVIAs will further consider the 'sight of light' and the effects of light on the character of an area and available views.

Undertaking this type of assessment requires specific expertise, particularly in relation to night-time photography and fieldwork assessment. Photographs must record the baseline views in low light levels, preferably when other artificial lighting (such as street lights and lights on buildings) is present, in order to record existing light levels and apparent brightness of artificial lights. The Landscape Institute's (LI) publication Visual Representation of Development Proposals² provides useful tips for the fieldwork and equipment for night-time photography at Appendix 5. Scottish Natural Heritage 2017 guidance³ recommends that '*approximately 30 minutes after sunset provides a reasonable balance between visibility of the landform and the apparent brightness of artificial lights*' – this can be a tricky balancing act! In experienced hands, however, representative photographs can be achieved that capture the night-time scene and can be used as a base for Accurate Visual Representations (AVRs) which can give a very useful impression of how a completed development would look in its environment under specific lighting conditions.

1. Landscape Institute: Guidelines for Landscape and Visual Impact Assessment, Third Edition, April 2013 (Landscape Institute and IEMA)

2. Landscape Institute: Technical Guidance Note 06/19 Visual Representation of Development Proposals, 17 September 2019

3. Scottish Natural Heritage Guidance: Visual Representation of Wind Farms v2.2 February 2017 (SNH 2017)

Our night-time assessments have taken us to beautiful parts of the country, experiencing landscapes in a different way, and we often encounter a range of nocturnal wildlife. Often ecologists too must consider light levels in their assessment work and, in particular, effects of new sources of artificial light on nocturnal species such as bats. Many planning authorities routinely require that important dark corridors are protected and that lighting assessments are undertaken / lighting plans prepared to demonstrate that this can be achieved. Holistic solutions that serve to respond to both disciplines are often possible and can contribute to wider objectives of visual mitigation and biodiversity gain.

Helpfully, application of measures to minimise effects on 'dark landscapes' can minimise adverse effects on nocturnal biodiversity. Examples of suitable measures include the use of:

- LED luminaires, due to their lower intensity and dimming capability when compared to traditional lighting;
- Warm white (i.e. more yellow/orange colour) light which is typically experienced as a 'softer' shade and attracts comparably fewer insects;
- Low level illuminated lights to prevent upward light spill and light spill onto boundary vegetation and adjacent land;
- Passive Infrared Sensors (PIRs) on security lighting, which will only activate as and when required for safety purposes;
- Dimming regimes and part night lighting strategies; and
- Dark corridors and buffer zones.

Notwithstanding the technical challenges of this work, night-time assessment is one of the more unusual tasks undertaken as a landscape architect which creates a refreshing new challenge. The 2019 LI guidance referred to above suggests that a forthcoming LI-supported publication called Landscape and Visual Assessment: Artificial Light and Lighting will 'shed

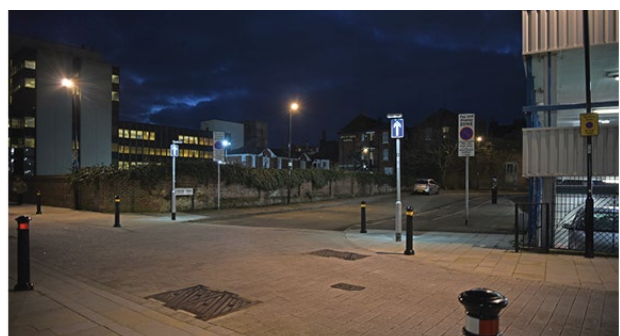
some light' on exposure and ISO settings for night-time photography. This would be very welcome to those of us tasked with night-time photography.



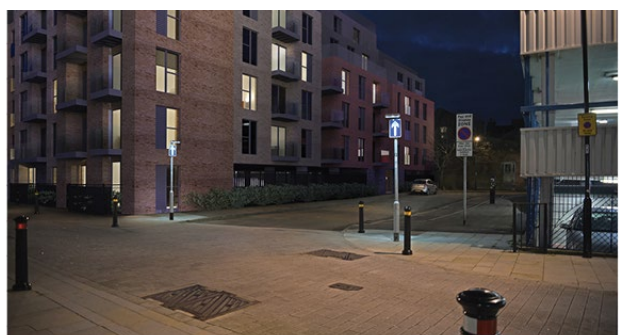
Existing daytime view of the site



Daytime AVR of proposed hotel



Existing night-time view of the site



Night-time AVR of proposed hotel

Visual communication of potential effects in LVIA

The presentation of visual information is integral to the communication of landscape and visual effects. There are tools available to landscape architects for use throughout the LVIA process but each has its strengths and weaknesses and it is crucial for the EIA team to understand the pros and cons of each.

Types of visualisation

Visualisation is a broad term which can be applied to technical visualisations such as verified photomontages, also known as accurate visual representations (AVR)¹, and to illustrative visualisations, which are more often used in marketing to convey the essence of a project.

Technical visualisations

Technical visualisations are often requested on developments which are likely to be contentious, but it is important to understand their limitations. To ensure that photomontages correctly reconstruct the scale and perspective seen from the point at which the photograph was taken they must be printed, often on large A1 sheets, and curved around the viewer to represent real-world viewing angles, limiting accessibility to the general public. There is much guidance on technical visualisations refined from critiques of their early application^{2/3} and progress has been made to make this guidance more accessible to the public⁴.

Photomontages are temporally limited in the sense that they are only accurate at the time of data capture: the view will change throughout the day, with the seasons and with the years as vegetation matures. Representing vegetation accurately requires experience of vegetation growth rates and heights, appearance in different seasons, and skill in representing species and habits correctly.

Illustrative visualisations

Illustrative visualisations, or Computer-Generated Imagery (CGI), generally is intended for public audiences and often aims to emulate a visual scene – something which exists in the mind but not yet in reality. Many practitioners leverage the creative, experiential, and evocative potential of such visualisations which are often particularly vivid and stylised. There is a relationship to real world experience but not equivalence.

Alternative technologies

A move to online consultation events during the coronavirus pandemic likely has accelerated use of alternative technologies including 3D platforms and virtual reality software as methods of visual communication, but these tools have limitations which are important to understand.

1. London View Management Framework Supplementary Planning Guidance. London Plan 2011 Implementation Framework, March 2012.

2. Technical Guidance Note 06/19, Visual representation of development proposals, Landscape Institute, 2019

3. Visual representation of wind farms Guidance Version 2.2, Scottish Natural Heritage, 2017

4. Visual representation of wind farms Summary for members of the public and Decision-makers Version 2.2, Scottish Natural Heritage, 2017

Digital Planning Platforms

Digital Planning Platforms such as VU.CITY are becoming increasingly popular amongst architects, planners, landscape architects and local authorities. The key advantage of this software is in its interactivity. These platforms provide 3D models of major cities and integrated tools to carry out Zone of Theoretical Visibility mapping and model proposals to see how it would look from certain vantage points and at all angles. Our experience is that the use of VU.CITY is prevalent in London where many local authorities have access to the software and actively use it to test not only scale and massing, but also the suitability of viewpoint locations. Whilst software such as VU.CITY can produce simplified visuals, this is not a match for the detail of verified photomontages.

Computer animation and virtual-reality (VR)

Wind turbines are intrinsically dynamic objects, so static images are in many ways a poor illustration. Computer animation and VR techniques are being used to some extent to address this issue.

Computer animation can be helpful to illustrate the effects of moving objects such as wind turbines, adding value to the decision making process, but the outputs are difficult to verify. Animations also generally lack the real world detail shown in photomontages.

VR provides a fully immersive experience which gives a viewer the ability to interact with the virtual world in a seemingly real way, usually by viewing a model using a headset. This can help people to comprehend and visualise proposed development. Such technology is especially useful on large-scale infrastructure projects. It can be argued that VR technology provides a more immersive experience, one in which the viewer can physically turn their head to see different aspects of proposals. But in the same way as illustrative visualisations, it creates a presentation of an interpreted future, one which is reflective of aspiration, rather than reality. The key to acceptability of VR moving forward will be its accuracy.

Conclusion

Accurate visual representation is an essential part of LVIA. The inclusion of visual material within an LVIA can bridge differences in technical knowledge and is particularly useful for public consultation. Arguably the most important thing about visualisations for LVIA is that they are accurate in terms of scale and massing of any proposals, and that any assumptions and limitations are understood.

Emerging digital technologies provide the opportunity for an immersive and informative experience, which is more accessible and interactive than traditional paper-based visuals. However, verified photomontages/AVRs are likely to be central to LVIA for some time to come.

“The key to acceptability of VR moving forward will be its accuracy.”



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

IEMA and the Landscape Institute's websites contain a treasure trove of IA and LVIA related content, as well as information about the work of both Institutes on policy, guidance and training. But not everyone makes the most of this free member content. Specifically, regarding impact assessment and LVIA, the following key resources available via the IEMA and Landscape Institute's websites may be useful to readers:

- IA events and webinars at the Landscape Institute and IEMA.
- The Landscape Institute and IEMA Guidelines for Landscape and Visual Impact Assessment (Third Edition).
- Other IEMA guidance and advice, such as the recent IEMA Principles of Cultural Heritage Impact Assessment in the UK, and the IEMA Proportionate EIA Strategy.
- The Landscape Institute's Technical Guidance Note 1/20 Reviewing Landscape and Visual Impact Assessments (LVIAs) and Landscape and Visual Appraisals (LVAs).
- The Landscape Institute's Technical Information Note 01/21 GLVIA webinar Q&As.
- Over 400 EIA articles and 200 case studies related to EIA, developed by IEMA EIA Quality Mark registrants in recent years.
- Individual and organisational recognition specific to EIA, through the IEMA EIA Register and EIA Quality Mark schemes respectively.
- Further information on:
 - The IEMA IA Network.
 - The Landscape Institute GLVIA Panel.
 - The IEMA GESA Group (Global Environmental & Social Assessment).
 - Geographic/Regional and Working Groups at IEMA.



Summary

Rebecca Knight - Guest Editor

We are fortunate in the UK to have guidelines for assessing the landscape and visual impact of projects. The various iterations of the Landscape Institute's and IEMA's joint guidelines have varied between providing a more structured approach (GLVIA1) and a looser framework within which a methodology can be designed (GLVIA 2 and 3). No methodology is perfect and it is clear that any guidance that sets out 'principles' rather than an exact 'recipe' leaves room for different interpretations.

Danielle Reeves has suggested that we should value trees more highly and focus more on sympathetic siting of development and avoidance of tree loss (the top end of the mitigation hierarchy). Paul Macrae and Edward White have concluded that while policy sets an important context for assessment and determining value, it shouldn't influence the significance of effects. Ian Grimshaw and Louise Fitzgerald acknowledge that there are no defined scales or thresholds which relate to a replicable form of measurement in LVIA, and call for clear evidence to support judgements. Mary Fisher suggests that evidence to support judgements in an LVIA should include what the public and local communities actually think and feel. Lauren Davis concludes that GLVIA3 is the most appropriate guidance available in preparing a Townscape and Visual Impact Assessment (TVIA), and that TVIA is within the remit of a landscape architect. Lucy Foley presents us with some examples of mitigation measures that can reduce effects at night, and Louise Fitzgerald concludes that traditional paper based verified photomontages/AVRs are likely to remain central to visualisation of development proposals, despite the emergence of digital technologies that can provide a more immersive experience.

It is important that we continue to question what we do, and develop approaches to ensure LVIA is as consistent and useful and as it can be. It is hoped that the articles in this issue of the Outlook Journal will stimulate discussion and lead to improved tools and techniques in field of LVIA.

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Landscape Institute's GLVIA Panel

Rebecca Knight (Chair)

Sarah Gibson

Laura Campbell

Melanie Croll

Rufus Howard (IEMA)

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Danielle Reeves

Paul Macrae and Edward White

Ian Grimshaw

Louise Fitzgerald

Mary Fisher

Lauren Davis

Lucy Foley

IEMA's EIA Quality Mark - a scheme operated by the Institute allowing organisations (both developers and consultancies) that lead the co-ordination of statutory EIAs in the UK to make a commitment to excellence in their EIA activities and have this commitment independently reviewed. 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. In April 2021, IEMA celebrated the 10-year anniversary of the EIA Quality Mark.

Celebrating 10 years
of the IEMA EIA
Quality Mark



Year
Anniversary

Landscape and Visual Impact Assessment

This eleventh edition of the Impact Assessment Outlook Journal provides a series of thought pieces on Landscape and Visual Impact Assessment. In this edition, the Guest Editor (Rebecca Knight) has selected seven articles produced by landscape professionals. The result is a valuable yet quick read across some of the different aspects of landscape and visual impact assessment.

About the Guest Editor: Rebecca Knight BSc DipLA MA CMLI

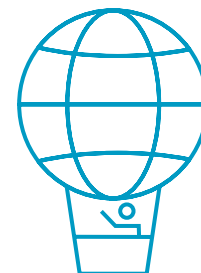
Director at LUC

Rebecca is a Chartered Landscape Architect with a specialist interest in landscape character assessment and its applications (including landscape sensitivity and capacity studies) and landscape and visual impact assessment (including design of mitigation). Rebecca also delivers training and provides expert witness services for public inquiries. A Director of Landscape Planning at LUC with 25 years' experience, she is also author of the LVIA Chapter for 3rd and 4th Editions of 'Methods of Environmental Impact Assessment' by Morris and Therivel, published by Routledge. Rebecca sits on the Landscape Institute's Technical Committee and is the new Chair of the 'GLVIA Panel' which discusses issues relating to LVIA and when necessary, publishes clarifications relating to the guidelines.



About IEMA

IEMA is the professional body for everyone working in environment and sustainability. We're committed to supporting, encouraging and improving the confidence and performance, profile and recognition of all these professionals. We do this by providing resources and tools, research and knowledge sharing along with high quality formal training and qualifications to meet the real world needs of members from their first steps on the career ladder, right to the very top.



We believe that together we can change perceptions and attitudes about the relevance and vital importance of sustainability as a progressive force for good. Together we're transforming the world to sustainability.

iema.net

About the Landscape Institute

The Landscape Institute (LI) is the chartered body for the landscape profession. It is an educational charity that promotes the art and science of landscape practice. The LI's aim, through the work of its members, is to protect, conserve and enhance the natural and built environment for the public benefit. The LI provides a professional home for all landscape practitioners including landscape scientists, landscape planners, landscape architects, landscape managers and urban designers.

landscapeinstitute.org

