Tuia Pito Ora
New Zealand Institute
of Landscape Architects

CALL FOR EXPRESSIONS OF INTEREST



Visual Simulations Guidelines Update

Tuia Pito Ora, the New Zealand Institute of Landscape Architects (NZILA), is seeking expressions of interest from experienced and qualified practitioners to contribute to the development of updated Visual Simulation Guidelines.

EOI submission deadline 28 February 2025

JANUARY 2025

Tuia Pito Ora
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of Landscape Architects

Call for Expressions of Interest (EOI) for Updating Visual Simulation Guidelines

Introduction

Tuia Pito Ora, the New Zealand Institute of Landscape Architects (NZILA), is seeking expressions of interest from experienced and qualified practitioners to contribute to the development of updated Visual Simulation Guidelines. This project aims to expand on and replace the existing 2010 Best Practice Guide on Visual Simulations (BPG10.2); ensuring that the standards and practices in visual simulations within landscape architecture are reflective of current practices, industry needs and technological advancements.

It is anticipated that individual companies or teams (formed through intercompany collaboration) will respond to this expression of interest.

Objective

The objective is to undertake a review of BPG10.2 and provide new up-to-date and expanded best practice guidance that can be adopted by all members, and others who work in the field of visual simulations. It is anticipated that the guidance will not be limited to static visual simulations but will also include guidance on other digital tools and approaches to analysis and assessment including (but not limited to) Zones of Theoretical Visibility, virtual reality, augmented reality, use of video and artificial intelligence.

The proposed outcome is a detailed, well-researched document that responds to current best practice and technology. It is to be fully endorsed by the NZILA and is anticipated to be referred to by the Court. The document will be made publicly available to assist related professionals and decision-makers.

CONTENTS

1
BACKGROUND

In 2010, the NZILA Education Foundation prepared the Best Practice Guide Visual Simulations BPG 10.2. The aim of this guideline was to promote and encourage best practice standards and procedures for producing photomontage-based visual simulations and to ensure the methods and techniques used in their preparation and presentation are technically accurate and credible.

Since the preparation of this document, advances in technology have opened new and more accessible approaches to the preparation and presentation of visual representations.

In 2023, the Tuia Pito Ora NZILA Visual Representation Guidelines Working Group was established to review the BPG 10.2 guidelines.

The aim of the NZILA Visual Representation Guidelines Working Group was to build on and expand the work undertaken in Best Practice Guide Visual Simulations BPG 10.2 by exploring these advances and providing guidance on the fundamental steps.

However, updating a comprehensive guidelines document by committee was deemed inefficient, so the recommendation was made to appoint principal authors to drive the production of these guidelines. A targeted NZILA membership group will be used for peer review, with wider membership endorsement.

The summary paper prepared by the Visual Representation Working Group, which outlines the background to this project and its overall aim, along with several goals and objectives, is provided in Appendix 1 and 2 to this document.

2
PROJECT

Project overview
Visual simulations play a crucial role in landscape assessment, aiding in the visualisation and planning of projects. The existing BPG 10.2 guidelines need revision to incorporate recent technological advancements, industry best practices, and evolving client and community expectations.

The suggested table of contents developed by the Visual Simulations Guidelines Working Group is attached in Appendix 2 to this EOI. Whilst not an exhaustive list, respondents are encouraged to follow this table of contents to ensure the guidelines are aligned with current thinking and best practice.

Scope of work
The selected team will be responsible for:

- Conducting a thorough review of the current BPG 10.2 Visual Simulation Guidelines.
- Drafting updated guidelines that reflect best practices and industry standards, following the suggested table of contents.
- Incorporating feedback from the NZILA review panel (to be appointed)
- Finalising the guidelines for publication.

The suggested Guidelines brief, objectives and table of contents developed by the Visual Simulations Guidelines Working Group are attached in Appendix 1 and Appendix 2 to this EOI. Whilst not an exhaustive list, respondents are encouraged to follow this table of contents to ensure the guidelines are aligned with current thinking and best practice.

Membership approval
It is anticipated that the draft guidelines document will undergo a similar review and approval process as the Te Tangi a te Manu Guidelines. In this process, a key review group was established from the membership to provide feedback to the principal authors on the draft guidelines. Subsequently, the guidelines were sent to the entire membership for approval and ratification at the NZILA AGM.

3
EOI SUBMISSION

Submission requirements

Interested members should submit the following:

- A cover letter expressing their interest in the project.
- A CV outlining relevant industry experience.
- A brief proposal (max 2 pages) outlining approach to updating the guidelines, including how they plan to incorporate the suggested table of contents.

Eligibility criteria

Interested members must meet the following criteria:

- Demonstrated experience in landscape architecture with a focus on visual simulations and / or a strong understanding of current and emerging technologies in visual simulation.
- Good writing and communication skills.
- Ability to work collaboratively with a team and stakeholders.

Selection process

Submissions will be reviewed by the NZILA Board and staff. Selection will be based on:

- Relevance and quality of experience.
- Demonstrated understanding of the project objectives.
- Quality of the proposal.
- Ability to deliver within the specified timeline.

Submission instructions

Please submit your EOI and supporting documents to NZILA Administration at admin@nzila.co.nz by 5pm Friday 28 February 2025.

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TIMELINE & CONTACT

Timeline
Friday 28 February 2025 - EOI Submission Deadline
Friday 14 March 2025 - Notification of Selection
Tuesday 1 April 2025 - Project Commencement
September 2026 - Draft Guidelines Submission
January 2027 - Final Guidelines Submission

Contact information
The Board has appointed Simon Button, a current member of the Board, to lead the update of the Visual Simulation Guidelines. Simon was selected for this role due to his experience in Landscape Planning and Resource Management. As part of this responsibility, he will act as the primary point of contact for this review.

For any questions or further information, please contact:
Simon Button
simon.button@isthmus.co.nz

Submissions should be sent to admin@nzila.co.nz per submission instructions.

We look forward to receiving your submission

Tuia Pito Ora
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APPENDIX 1
NZILA Visual Representation Guidelines – Working Group – Brief

Background
In 2010 the NZILA Education Foundation prepared Best Practice Guide Visual Simulations BPG 10.2. The aim of this guideline was:

> *To promote and encourage best practice standards and procedures to produce photomontage based visual simulations, and to ensure the methods and techniques used in their preparation and presentation are technically accurate and credible.*

Since the preparation of this document, advances in technology have opened new and more accessible approaches to the preparation and presentation of visual representations. In essence, such advancements can be organised into three fundamental steps of:

- Data Gathering and Management
- Preparation of Digital Models
- Presentation of visual representations

The aim of the NZILA Visual Representation Guidelines is to build on and expand the work undertaken in Best Practice Guide Visual Simulations BPG 10.2 by exploring such advances and set out guidance around these fundamental steps:

1. Data Gathering and Management
Data gathering and management is an important initial part of preparing a range of different types of visual representations. Some key data gathering and management factors that need to be carefully understood include:

- Human vision (field of view, depth of field, colour, movement, binocular vision, figure ground).
- Photography (focal length, sensor size, resolution).
- Data capture (LiDAR/Photogrammetry accuracy, return type, file types, editing).
- Digital Elevation Models (DEM), Digital Surface Models (DSM) and MESH models, resolution, datum, projection,
- Georeferencing (datums & projections).
- Data integration and limitations (using data from different sources).
- Digital model input (formats, rendering, lighting, textures, etc.).
- Software (different software for different purposes).

Once the data has been gathered, it must be organised and processed to be used in the creation of digital models required to present different types of visual representation. This typically involves aligning the data to a common coordinate system, correcting for errors or distortions, and interpolating values between data points to create an accurate model.

To manage the data effectively, it is important to follow best practices for data organisation and storage, including using appropriate file formats, creating clear and consistent naming conventions, and maintaining proper metadata. It may also be necessary to use specialised software or tools to process and analyse the data, such as geographic information systems (GIS) or photogrammetry software.

Overall, a combination of data gathering and management skills, as well as knowledge of the principles and techniques involved in mapping and geospatial analysis, is required.

2. Preparation and use of Digital Models
Once an accurate understanding of the landscape has been established through reliable data, the use of digital models can be extremely useful in articulating and communicating visual change, as they can be used

to provide a highly detailed and accurate representation of a design or concept. By using digital models, designers and artists can create vivid and realistic images that accurately depict the intended look and feel of a project.

Digital models also offer several benefits over traditional methods of communication, such as hand-drawn sketches or physical prototypes. For one, they are much more flexible and can be easily edited and modified to reflect changes in the design. They are also easier to share and collaborate on, as they can be easily accessed and viewed by multiple people at once.

Overall, digital models can be a powerful tool for communicating visual changes and are increasingly being used in a variety of design and creative fields.

3. Presentation of Visual Representations

Following a process of gathering reliable data and preparation of an accurate digital model, presentation of visual representations is integral to ensuring accurate and credible portrayal of a proposed change in the landscape. This can entail the following techniques:

Photomontages & Visual Simulations

Perceptions of photo simulations can vary depending on the individual and the context in which they are viewed. In general, visual simulations are used to create realistic-looking images that depict a hypothetical or theoretical situation. To ensure outputs are considered credible and believable, visual simulations require a high level of accuracy and clarity. The quality of the presentation also needs to be sufficient to enable an informed assessment to be made.

While the aim of visual simulations is to accurately communicate the appearance and context of modifications and/or changes in the landscape, they are not, and indeed cannot be "real life views". Accordingly, visual simulations do not in themselves provide answers – they are simply very useful tools to assist in the assessment and decision-making processes whereby better informed and more transparent judgements on effects can be made.

Information accompanying visual simulations should include all relevant viewpoint information, camera, photographic and digital model data, and all other information e.g. data gathering and management information to enable the reader/viewer to understand the basis and parameters used in the preparation of the simulations.

Augmented and Virtual Reality

Augmented reality (AR) and virtual reality (VR) can be useful tools for assisting with understanding the visual change to a landscape while on site, and the preparation of an assessment of visual effects, as they allow users to view and interact with proposed developments in a realistic, immersive environment. Accurate data gathering and management and the preparation of digital models is required to create credible and believable AR and VR models.

Some specific advantages of using AR and VR for visual impact assessments include:

- Realistic visualization: AR and VR can provide a highly realistic representation of a proposed development, allowing users to view it from multiple angles and perspectives. This can help to better understand how the development will look and feel when it is built.
- Interactive exploration: AR and VR allow users to interact with the proposed development in a way that is not possible with static images or 2D renderings. This can help to better understand the scale and layout

of the development, and how it will fit into the surrounding environment.

- Collaboration: AR and VR can facilitate collaboration between different stakeholders, such as architects, planners, and members of the community. This can help to ensure that all perspectives are considered, and that the development meets the needs and concerns of all parties involved.
- Cost and time savings: Using AR and VR for visual impact assessments can potentially save time and money, as it can reduce the need for physical mock-ups or multiple design iterations.
- Overall, AR and VR can provide a powerful and immersive way to assess the visual impacts of a proposed development and can facilitate better decision-making and collaboration among stakeholders.

Video

Video and animation can be very effective tools for communicating how a new development will change the landscape, as they allow designers and planners to visually show the proposed changes in a way that is easy for people to understand.

There are several ways that video and animation can be used to communicate the impact of a new development on the landscape. Some examples include:

- 3D modelling: By creating a 3D model of the existing landscape and the proposed development, assessors can show how a new development/ change in the landscape will fit into the surrounding area and what it will look like from different angles and perspectives by integrating it into site video.
- Video Animations: Animations can be used to show how a new development will change the landscape over time, highlighting the key features and how they will be integrated into the surrounding area.
- Video tours: Video tours can be used to show the new development from the perspective of someone walking or driving through it, highlighting the key features and how they will function in the real world.

Overall, video and animation are powerful tools for communicating the impact of a new development on the landscape, as they can help designers and planners to convey their vision clearly and effectively to stakeholders, decision-makers, and the public.

Sketches and Drawings

Sketches and hand drawings can be useful tools for assessment of visual effects because they allow users to convey ideas and concepts visually, quickly and easily. They can be used to:

- Explore different design options: Sketching can be a useful way to quickly explore different design options and evaluate their potential visual impacts.
- Communicate ideas: Sketches and hand drawings can help to clearly communicate ideas and concepts to others, such as architects, planners, and members of the community.
- Record observations: Sketches and hand drawings can be used to record observations of the site and surrounding environment, which can be helpful for understanding the context and potential visual impacts of a proposed development.
- Engage stakeholders: Sketching and hand drawing can be engaging and interactive and can be used to facilitate discussions and collaboration with stakeholders.

Overall, sketches and hand drawings can be useful tools for visual impact assessments because they allow users to explore and communicate ideas and can facilitate collaboration and engagement with stakeholders quickly and easily.

Goals & Objectives of the Project

It is expected that the above information may be provided as a series of standalone PDF documents, allowing for easy updating of information asrequired as technologies change, or as a principle base document which shows how the necessary steps come together.

The goals of the project include:

- *Goal 1:* To identify, promote and encourage best practice and procedure in data gathering and management, preparation of digital models and presentation of different visual representation techniques that can be used in support of landscape and visual analysis, assessment and expert evidence.
- *Goal 2:* To identify the range of techniques available and to ensure that they are credible and fit for purpose.
- *Goal 3:* To provide a clear and concise guideline around the creation, accuracy, and presentation of each different visual representation technique.
- *Goal 4:* To help landscape architects stay up-to-date with the latest tools and techniques available.
- *Goal 5:* To ensure consistency with the requirements of the Environment Court and recommendations contained within Te Tangi a te Manu.

The objectives of the project include:

- *Objective 1:* To identify the range of acceptable methods and techniques available for the presentation of visual representations including:
  - Sketches and Drawings
  - Photomontages & Visual Simulations
  - Augmented Reality & Virtual Reality
  - Video
  - Other techniques
- *Objective 2:* To Identify the advantages and limitations of each method or technique identified.
- *Objective 3:* To provide clear and concise guidance around when and how each method should be used.
- *Objective 4:* To recognise the suitability of different methods and techniques for different situations.
- *Objective 5:* To promote and enable transparency in the use of visual simulations and recognise their limitations.
- *Objective 6:* To ensure that visual simulations are based on accurate and up-to-date data, and that they reliably depict the intended design and features of proposed development.
- *Objective 7:* To provide guidance on the selection of appropriate software and techniques for creating visual simulations, and to help landscape architects make informed decisions about the use of these tools.
- *Objective 8:* To encourage collaboration and communication among landscape architects and other professionals involved in the creation of visual simulations, to ensure the highest possible level of accuracy, quality and consistency through peer review.
- *Objective 9:* To recognise the suitability of different methods and techniques and level of detail for different situations.
- *Objective 10:* To provide practical methodological and technical guidance:
  - Camera (focal length, sensor size etc).
  - UAV data capture (photogrammetry, LiDAR, control points).
  - Digital Modelling and camera matching (integrating 3D models into an image correctly).
  - Presentation (Field of View, reading distance, resolution).

Target Audience

a. Landscape Architectural Practitioners
b. Graphic Artists and Digital Modellers
c. Allied Professionals
d. Decision Makers
e. Stakeholders

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APPENDIX 2

NZILA Visual Representation Guidelines – Suggested contents

1. Introduction
    - Background
    - Definitions
2. Digital Data
    - Data sources – Point Cloud (formats, return type, accuracy)
    - Data sources – Other (contours, DEM, DSM)
    - Datums & Projections
    - Software (guidelines for processing digital data)
3. Viewshed Analysis
    - Definition and Purpose
    - Use of Height Data (contours, DEM, DSM)
    - Earth Curvature and Refraction
    - Cumulative Viewshed Analysis / Zone of Theoretical Visibility
4. Viewpoints
    - Human Field of Vision (resolution, field of view, depth of field, peripheral vision)
    - Selecting Viewpoints
    - Weather and Lighting conditions
    - Night Photography
5. Equipment
    - Camera Characteristics (resolution, focal length, sensor size)
    - Camera Types (SLR, phone, tablet)
    - Tripods and Panoramic Heads
    - Position Fixing
6. Visual Simulations (Photomontages)
    - Using Visual Simulations as Evidence
    - Types of Visual Simulation (wireframe, concept, survey accurate)
    - 3D Model Inputs (formats, materials, lighting, textures, etc)
    - Photo Stitching vs Wide Angle Photography
    - Aligning 3D Models and Photos
    - Depiction of vegetation (realism, growth rate scenarios)
    - Advantages and limitations of Visual Simulations
    - Night Simulations
    - Tilt Shift Lenses
    - Methodology Statement
    - Presentation (Printing, Reading Distance, On-screen)
7. Visualisations
    - Using Visualisations as Evidence (advantages and limitations)
    - Types of Visualisations (including sketches and drawings)
8. Video
    - Using Video as Evidence (advantages and limitations)
    - Types of Videos (Animations, Tours)
9. Augmented and Virtual Reality
    - Using AR/VR as Evidence (advantages and limitations)
    - Types of AR/VR
10. Artificial Intelligence
    - Using Application of AI to Graphic Evidence (disclosure, disclaimers)