

**Environmental Impact Assessment Ordinance, Cap.499**  
**Guidance Note**

**Preparation of Landscape and Visual Impact Assessment**  
**Under the Environmental Impact Assessment Ordinance**

(This guidance note supersedes EIAO Guidance Note No. 8/2010 with immediate effect)

*Important Note :*

*The guidance note is intended for general reference only. You are advised to refer to and follow the requirements in the Environmental Impact Assessment Ordinance (Cap 499) and the Technical Memorandum on Environmental Impact Assessment (EIA) Process. Each case has to be considered on individual merits. This guidance note serves to provide some good practices on EIA and was developed in consultation with the EIA Ordinance Users Liaison Groups and the Advisory Council on the Environment. This guidance note is subject to revision without prior notice. You are advised to make reference to the guidance note current to the date. Any enquiry on this guidance note should be directed to the EIA Ordinance Register Office of EPD on 27<sup>th</sup> Floor, Southorn Centre, 130 Hennessy Road, Wan Chai, Hong Kong. (Telephone: 2835-1835, Faxline: 2147-0894), or through the EIA Ordinance web site ([www.epd.gov.hk/eia](http://www.epd.gov.hk/eia))*

**1. Purpose**

- 1.1 This guidance note (GN) advises on the requirements in vetting Landscape and Visual Impact Assessment (LVIA) of designated projects (DPs) under the Technical Memorandum on EIA Process (EIAO-TM) for the Environmental Impact Assessment Ordinance (EIAO). The main aim is to facilitate practitioners to prepare LVIA and to satisfy their own Quality Management System prior to making submissions under the EIA Ordinance.
- 1.2 This GN is applicable to all EIA reports submitted under the EIAO unless otherwise specified in the EIA study brief. It is advisory in nature and is not intended to supersede the relevant Annexes of the EIAO-TM.
- 1.3 The considerations in identifying environmental impacts, criteria for evaluating landscape and visual impacts, contents of EIA report, guidelines for LVIA, guidelines for the review of an EIA report, contents of Environmental Monitoring and Audit Programme are respectively detailed in Annexes 3, 10, 11, 18, 20 and 21 of the EIAO-TM.
- 1.4 This GN should not be considered as a prescriptive set of rules or an exhaustive manual of methods/techniques. It does not obviate the need for the compliance of all the requirements in the relevant Annexes of the TM and the EIA study brief issued for the project. The main determining factor for endorsement of a LVIA is the quality and accuracy of the LVIA prepared by the proponent of the DP.
- 1.5 The coverage of this GN includes those types of DP that may create significant landscape and visual impacts. The level of information required for individual LVIA and hence the application of relevant parts of this GN are dependent on the type of DP and the landscape and visual context in which the DP is located.

## 2. Approach to LVIA

- 21 LVIA shall be directed towards predicting and judging of the magnitude and significance of the effects that new development/redevelopment may have on landscape and visual resources, landscape with distinctive character and visual amenity. The need for landscape impact assessment (LIA) and visual impact assessment (VIA) should be considered independently following the approach as set out in Annex 18 of the EIAO-TM.
- 22 LVIA should be an independent and informed professional assessment of the impacts from a DP. It should be based on the reasonable case scenario and/or where there is uncertainty the worst case scenario. Both positive and negative landscape and visual impacts should be given due consideration in the process.
- 23 It is recognised that, unlike other impact assessments, LVIA relies more upon experienced professional judgment and less on quantitative measurements. Hence, it is important to adopt a structured and systematic approach in LVIA to facilitate the public to understand the potential landscape and visual impacts arising from the DP.
- 24 In assessing the significance of impacts in LVIA, it is necessary to differentiate between judgment on the significance of change, which involves a greater degree of subjective opinion, and measurement of magnitude of change, which is normally a more objective and quantifiable task. Assessment should always be supported by quantified data, clear evidence, logical deduction, reasoned argument and informed judgment.
- 25 Based on the best information available at the time of the assessment, LVIA might report the main concerns on landscape and visual issues raised by interested parties<sup>1</sup>.
- 26 Information in the LVIA should be consistent with that used for other impact assessments covered by the same EIA report such as:
- noise assessment in respect of the location, extent and size of noise barriers/enclosures,
  - ecological impact assessment in respect of the quantification of landscape features and the potential impacts on them, and
  - assessment of waste management implications, e.g. in respect of potential loss of topsoil, vegetation removal and other landscape resources.

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<sup>1</sup>In general, interested parties may include:

- Advisory Council on the Environment (ACE)
- Advisory Committee on the Appearance of Bridges and Associated Structures (ACABAS),
- Country and Marine Parks Board (C&MPB),
- District Councils (DCs),
- Harbourfront Commission
- Town Planning Board (TPB), and
- Public comment from consultation forum (if any/applicable as stated in para. 3.1(b)).

27 For easy understanding, annotated illustrative materials such as computer-generated photomontages, oblique aerial photographs, photographs, plans, elevations and section drawings should be extensively used to convey the findings of LVIA to the readers. Descriptive text should provide a concise and reasoned argument.

28 As LVIA involves appraisal of landscape and visual resources, professional judgment of impact significance and formulation of sensible mitigation measures, it is therefore recommended that professional landscape architects, planners and/or urban designers, or other competent persons be appointed to carry out the full scope of LVIA as identified in the EIA study brief.

### **3. Points to Note in Undertaking LVIA**

#### **31 Background of DP and Options**

- (a) Subject to the requirements of the EIA study brief, the background of the DP should include a broad description of the alternative option(s) / alignment(s) / design(s) which have been examined in related studies. The potential landscape and visual impacts of alternative options considered should be broadly stated and the rationale for the recommended option should be clearly explained.
- (b) Comments collected from previous consultation, if any, with relevant advisory bodies including those listed in section 2.5 above and the general public on landscape and visual aspects of the project should be summarised together with a discussion on how their comments have been addressed in the EIA report. If there is no previous consultation or no comment has been received on landscape and visual aspects, this should be clearly stated.

#### **32 Project Description**

- (a) All works that may give rise to significant landscape and visual impacts should be clearly annotated on plans such as:
  - location plan including phasing boundary where applicable,
  - details of all structures/buildings (in terms of length, width and height in mPD),
  - layouts, plans, sections and elevations, and
  - extent of temporary works area.Descriptive text should generally be confined to supplement understanding of the illustrative materials.
- (b) For construction phase, some impacts may be temporary in nature, but can be significant if left unattended. The LIA should include, where applicable, consideration of permanent works and also major temporary works undertaken during the construction stage. Construction works may include the following:
  - reclamation (temporary and/or permanent),

- site formation including slope works,
  - temporary works including vegetation clearance,
  - haul road,
  - borrow areas, and
  - dumping grounds.
- (c) For operation phase, both LIA and VIA should include, where applicable, consideration of major impacts at operation of the project, particularly the following features, which are also prominent in the landscape and visual context:
- viaducts,
  - retaining structures,
  - vent shafts,
  - tunnel portals,
  - cutting and filling,
  - embankments,
  - any mitigation measures such as noise barriers/enclosures, and
  - ancillary buildings.

### **33 Assessment Area**

- (a) For the LIA, the assessment area should include areas within 100 m from the work limit of DP, unless specified in the EIA study brief.
- (b) For the VIA, the assessment area, unless specified in the EIA study brief, should be up to the visual envelope (VE) or zone of visual influence (ZVI) which should be determined according to the scale of the DP, its distance and potential visibility from the selected viewing points, and the actual site and surrounding topographical conditions by ground inspection<sup>1</sup>. The defined VE must be shown on plan.
- (c) In order to define the VE, cross-sectional drawings shall be prepared to demonstrate the various degree of visibility in the VE. Such information is generally not required to be included in the VIA but should be kept by the applicant for verification upon request by the Planning Department.

### **34 Baseline Study**

- (a) Baseline conditions are not static and may change over time according to the planning framework. The Baseline Study aims to capture the existing condition at the time of EIA preparation for predicting the future outlook of the assessment area.
- (b) The Baseline Study should include a brief account of the landscape and visual characters and resources of the assessment area as appropriate, focusing particularly on the sensitivity of the landscape and visual system and their ability to accommodate change.

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<sup>1</sup> Technically speaking, when the viewer is at a distance equal to three times of the height of a structure/building, the viewer will tend to see it as part of a group rather than a single structure/building. Thus, the boundary of VE could be considered in accordance with such technical assumption.

- (c) Landscape resources (LRs) should be quantified as far as practicable for LIA, with respect to special landscape features. Landscape character of the project area and its relationship with the adjacent areas should be addressed. Landscape character areas (LCAs) and key landscape elements within the assessment area should be identified and annotated on plan. Some projects may require a broad tree and/or vegetation survey to be carried out.
- (d) A broad-brush tree/vegetation survey should normally be prepared as an integral part of the landscape baseline study. Such broad-brush survey could be quantified as far as practicable by estimation supported with on-site survey unless there are site constraints (e.g. accessibility) within the assessment area, rather than detailed survey of individual trees, such that it could assist a brief account of the landscape characters and resources of the assessment area for LIA purpose at the time of EIA preparation. Unless specified elsewhere in the EIA study brief, a detailed tree survey to fulfill the requirements as stipulated in the Development Bureau Technical Circular (Works) No. 4/2020, or Lands Administration Office, Lands Department Practice Note No. 6/2023 for Tree Preservation and Removal Proposals is not necessary for the preparation of LIA.
- (e) Besides vegetation, other LRs such as special topographical or geological features, reservoirs, streams and other water bodies, etc. should be investigated as part of the Baseline Study for LIA.
- (f) Visual resources such as key public views, viewing corridors/viewing directions, harbour and ridgelines, and visual characters should also be identified on plans for VIA.
- (g) Key public viewing points (VPs)<sup>2</sup> should be identified and justified with their locations clearly shown on plans for VIA.
- (h) Annotated oblique and aerial photographs, photographs taken at key public VPs and relevant maps/plans with short notes should be used to illustrate the existing baseline conditions.

### **35 Scope of Impacts**

- (a) LIA should comprise assessments of the impacts both on LRs and LCAs, which is created by the combination of LRs and built developments.
- (b) VIA should identify and predict the type and extent of permanent impacts from

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<sup>2</sup> Visual impact should take into account views from key strategic and popular local VPs. VPs could be kinetic or static, including key pedestrian nodes, popular areas used by the public or tourists for outdoor activities, recreation, rest, sitting-out, leisure, walking, sight-seeing, and prominent travel routes where travellers' visual attention may be caught by the DP. It is not practical to protect private views without stifling development opportunity and balancing other relevant considerations. From public interest consideration, it is far more important to protect public views. Generally, VPs should cover all four cardinal directions and include short- to long- range views. Selection of VPs could also be referred to Chapter 11 on Urban Design Guidelines in the Hong Kong Planning Standards and Guidelines (HKPSG), the Explanatory Statements of relevant statutory plans, adopted outline development plans and layout plans, and completed planning studies available for public reference.

changes in visual composition, visual obstruction and visual change.

- (c) The presentation of landscape and visual impacts in construction<sup>3</sup> and operation stages should preferably be in table form covering items as specified in section 3.6 below.
- (d) Extent of work limits including temporary works areas should be presented on plan. The duration of construction impact should be stated.
- (e) For DP under Schedule 3 of the EIA Ordinance, if the LVIA could include a list of all DPs under Schedule 2 within the assessment area with an assessment of the potential landscape and visual impacts from all DPs and non-DPs within the assessment area, further LVIA is not required for the application of environmental permit (EP) for the DPs under Schedule 2. If detailed information for the DPs under Schedule 2 is not available at the time of EIA study, the LVIA for the DP under Schedule 3 should contain a broad assessment of the potential landscape and visual impacts arising from all DPs and non-DPs within the assessment area with a recommendation to carry out further detailed LVIA's before the application of EP for the DPs under Schedule 2.

### **3.6 Impact Assessment**

- (a) LVIA should take into account existing/planned/approved land uses as the baseline conditions. All direct impacts on existing/planned/approved land uses, and on future outlook of the area should be discussed.
- (b) Landscape impacts should be quantified based on landscape dynamics i.e. different conditions at different planning horizons should be provided when considering the magnitude of change.
- (c) Impact of the DP on LRs including special landscape features and on the LCAs should be assessed. Where situations warrant, it may be necessary to evaluate the merits of preservation in totality, in parts or total destruction of existing landscape and the establishment of a new LCA.
- (d) VIA should be made for identified key public VPs.
- (e) LVIA should be determined in significance thresholds, which are made up of two components, namely magnitude of change to baseline conditions due to the DP and sensitivity of LRs, LCAs and viewers. An evaluation matrix with brief visual appraisal shall be derived for judging impact significance. Broadly speaking, magnitude of change relates to parameters of the DP in the context of baseline conditions while sensitivity refers to properties of LRs, LCAs and viewers. The following are some common but non-exhaustive factors normally considered in deriving the magnitude of change and sensitivity in assessing landscape and visual impacts:

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<sup>3</sup> Applicable to LIA only.

(i) Factors affecting the magnitude of change for assessing landscape impacts include:

- compatibility of the project with the surrounding landscape,
- duration of impacts under construction and operation phases,
- scale of development, and
- reversibility of change.

(ii) Factors affecting the sensitivity for evaluation of landscape impacts include:

- quality of LRs and LCAs,
- importance and rarity of special landscape elements,
- ability of the landscape to accommodate change,
- significance of the change in local and regional context, and
- maturity of the landscape.

(iii) Factors affecting the magnitude of changes for assessing visual impacts include:

- Visual composition – Impacts on visual balance, compatibility, harmony, unity or contrast,
- Visual obstruction – Impacts on condition, quality and character of visual resources, and
- Visual change – Impacts on changes with direct sightlines (considering degree of visibility and viewing distance) to the existing and future public views by comparing before and after the proposed development.

(iv) Factors affecting the sensitivity of viewers for evaluation of visual impacts include the type of viewers and value of existing views (if applicable).

(f) Landscape impacts should be classified depending on whether the impacts are adverse/beneficial, short term/long term, irreversible/reversible and cumulative/residual impacts. Separate assessment should be made for construction phase and operation phase impacts. Assessment of landscape impacts should include presentation of the following in a matrix format:

- LRs / LCAs,
- Sources of impact,
- Type of impacts: impact on LRs and impact on LCAs,
- Magnitude of change: negligible, slight, moderate or substantial,
- Landscape sensitivity: low, medium or high,
- Significance thresholds of potential landscape impact (before mitigation);
- Mitigation measures, and
- Significance thresholds of landscape impact (after mitigation measures)

established) at the operation stage.

- (g) Similarly, visual impacts should be classified depending on whether the impacts are adverse/beneficial. Assessment should be made for operation phase impacts. Assessment of visual impacts should include presentation of the following in a matrix format:
- Location of VPs/viewers,
  - Type and approximate number of viewers,
  - Description of existing view and degree of visibility of DP (such as glimpse, partial view, vista, open view, and panorama view),
  - Viewer sensitivity: low, medium or high,
  - Source of impact,
  - Minimum viewing distance of viewers
  - Magnitude of change: negligible, slight, moderate or substantial,
  - Mitigation measures, and
  - Significance thresholds of visual impact (after mitigation measures established).
- (h) For some DPs such as transport projects, different sections may create different landscape and visual impacts. The LVIA should contain assessments and mitigation measures specific to each section and the LRs, LCAs and viewers affected.
- (i) In order to illustrate the landscape and visual impacts and to demonstrate the effectiveness of the proposed landscape and visual mitigation measures, photomontages at selected representative public VPs shall be prepared to illustrate existing conditions and the proposed development with and without mitigation measures at the operation stage.
- (j) Applicants may consult the Planning Department on the proposed selection of suitable representative public VPs for the preparation of the photomontages after the preliminary assessment.

### **3.7 Recommendation of Design and Mitigation Measures and Implementation Programme**

- (a) Design that would enhance the landscape and visual quality shall be encouraged and adopted.
- (b) Alternative alignment(s), design(s) and construction method(s) that would avoid or reduce the identified impacts on landscape, and/or visual amenity shall be thoroughly examined before adopting other mitigation measures to alleviate the impacts.
- (c) Solid mitigation measures that are practical and viable to implement rather than design intent should be proposed.



- (d) For projects involving Schedule 2 DPs, the agreement from relevant parties should be sought in respect of the responsibility of funding, implementation, management and maintenance of the proposed mitigation measures prior to their inclusion into the LVIA. It should be noted that any “grey” areas in these aspects would affect the implementation and/or the effectiveness of the mitigation measures during the operation phase. Unless these issues have been resolved, the effects of these mitigation measures should be discounted in the LVIA.
- (e) Project boundaries should be clearly indicated on all scaled plans including mitigation plans, which can indicate any off-site mitigation measures. Land matters arising from such measures should be fully resolved prior to inclusion of any off-site mitigation measures into the LVIA. In addition, the locations and types of VPs/viewers should also be annotated on mitigation plans to facilitate assessment of impacts.
- (f) In addressing environmental monitoring and audit, a schedule should be prepared to show the implementation details and the parties responsible for all the mitigation measures from design stage to operation stage.
- (g) A practical programme for implementation of the recommended mitigation measures shall be worked out to ensure timely completion of the mitigation measures.
- (h) While design that would enhance the landscape and visual quality shall be encouraged and adopted, architectural design and landscaping arrangement would normally be revised or further developed in the detailed design stage. Flexibility would be allowed for project proponents to enhance the landscape and visual design at later stages of the project.

### **3.8 Noise Barriers / Enclosures**

- (a) Given the fact that using noise barriers/enclosures as a means to reduce adverse noise impact have their own impact on the visual amenity, they should not be widely adopted as the only way to reduce traffic noise. Alternative ways for mitigation and good environmental land-use transport planning should firstly be explored.
- (b) The choice of colours, design and materials of the noise barriers/enclosures should be compatible with the surrounding buildings and development context.
- (c) If there is insufficient space to screen the noise mitigation structures by design features, integrating with boundary walls, or landscape plantings, efforts should be made in the design of the overall form and surface treatment of the structures to make them to become features of aesthetic value in order to give character to the area.
- (d) To ensure good and innovative design, it is advisable to seek early advice from the ACABAS and agreement with relevant implementation and maintenance

departments.

### **3.9 Presentation Materials**

- (a) All illustration materials should be clearly annotated to facilitate understanding of the LVIA.
- (b) Colour photos should be used to show LRs, special landscape elements, LCAs and key public views.
- (c) Mapping of landscape impacts and visual impacts should be made in colour.
- (d) If possible, computer-generated photomontages should be prepared to illustrate LVIA and the mitigation effects. In preparing the photomontage from key public VPs, the following should be considered :
  - where necessary, it shall include photomontages to illustrate the effect of the proposed mitigation measures at close range,
  - the main associated features of the DP such as viaducts, retaining structures, noise barriers, catenary system, tunnel portals, vent shafts, cuttings, embankments, lighting poles and associated buildings, etc. as in the case of road project should be reflected in the photomontages,
  - public VPs shall be taken at practical human eye level for realistic presentation of views and at representative locations, hence photomontages taken with distorted (e.g. wide or panoramic) angles should be avoided.
  - the overall impact of the DP on the adjacent setting should be shown, and
  - photomontages shall be presented at a minimum of A4 size.
- (e) Computer graphics shall be in a common format compatible with desktop computers. In addition, technical details such as system set-up, software, data files and functions in preparing the illustrations shall be recorded as these may need to be submitted for verification of the accuracy of the illustrations.
- (f) Other illustrative materials shall be legible and of suitable sizes, preferably no larger than A3 size, can be used to supplement photomontages to facilitate easy understanding of the DP by the public:
  - oblique and aerial photographs showing the general setting of DP in relation to the surrounding setting,
  - plans, cross-sections and elevations showing important details of the DP, and
  - 3-dimensional illustrations or computer-aided drawings.

### **3.10 Conclusion of LVIA**

- (a) The conclusion should briefly recap the impacts of the DP. Areas where the landscape and/or visual impacts remain significantly adverse after exhaustive mitigations should be clearly highlighted and the justifications for such cases should be put forward.

- (b) All mitigation measures should be summarised and a comparison with quantification should be made on the net gain/loss of landscape resources affected by the DP.
- (c) The impacts on individual LRs, LCAs or VPs should be clearly stated as to how they are synthesized to arrive at the overall impact of the DP.

Urban Design and Landscape Section  
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