



**Civil Engineering and Development Department  
Technical Circular No. 12/2019**

**Guidelines for Making Submissions to the Advisory Committee on  
the Appearance of Bridges and Associated Structures**

**Introduction**

This technical circular (TC) supplements Environment, Transport and Works Bureau Technical Circular (Works) (ETWB TCW) No. 36/2004 - The Advisory Committee on the Appearance of Bridges and Associated Structures (ACABAS) and gives guidelines to ensure a high standard in the submissions to ACABAS.

**Effective Date**

2. This TC takes immediate effect.

**Effect on Existing Circular**

3. This TC supersedes Civil Engineering and Development Department (CEDD) TC No. 07/2014 which is hereby cancelled. Apart from general updating, this revision includes a list of essential information for preparing submissions to the ACABAS and some other points to note on landscape design in **Appendix A**.

**Background**

4. CEDD makes submissions to ACABAS on projects that need to provide bridges and other structures associated with the public highway system<sup>1</sup> in accordance with ETWB TCW No. 36/2004. In preparing submissions, reference shall also be made to the following documents:

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<sup>1</sup> For the purposes of this TC, 'bridges and other structures associated with the public highway system' and 'highway structures' includes, but are not limited to, bridges, flyovers, viaduct, underpass, subway, walkway covers, earth-retaining structures, noise barriers and noise enclosures, and excludes sign gantries. The definition and scope of 'bridges and other structures associated with the public highway system' for submission to ACABAS are determined by ACABAS according to ETWB TCW No. 36/2004.

- (a) Development Bureau Technical Circular (Works) (DEVB TCW) No. 1/2018 - Soft Landscape Provisions for Highway Structures<sup>2</sup>;
- (b) DEVB TCW No. 6/2015 - Maintenance of Vegetation and Hard Landscape Features;
- (c) DEVB TCW No. 2/2012 - Allocation of Space for Quality Greening on Roads; and
- (d) Chapter 4 of Project Administration Handbook for Civil Engineering Works (PAH).

5. To ensure a high standard in the submissions, this TC addresses the following:-

- (a) basic design considerations in the planning and design stage for not only achieving high aesthetic quality of highway structures but also encouraging innovative, holistic, and value for money design; and
- (b) practical guidelines to be followed for preparing submissions to ACABAS.

### **Design Considerations**

6. In planning and design of highway structures, it is important to consider their basic structural forms, alignments; and whether they are compatible with or have any likely impact on the surroundings. Any potential adverse impact to existing/proposed vehicular and/or pedestrian circulations, travel chains, connectivity, visual aspect, local climate at pedestrian zones (such as air ventilation, shading effect, etc.) shall be fully addressed in a holistic manner. Where a series of structures is proposed in a new development area, consideration should be given to adopting an appropriate 'architectural language' guiding the form and finishes of the structures to achieve a coherent and sustainable design that gives the area its own identity in an urban design context. 'Landmark' or iconic designs with special features may be considered where appropriate at suitable locations. Both positive and negative landscape and visual impacts should be given due consideration, with design options fully explored, optimized and negative impacts mitigated as appropriate.

7. In the design process, consideration should also be given to:

- (a) all site constraints and opportunities;
- (b) the appropriateness of the design;
- (c) the appropriateness of the materials to be used;
- (d) the overall aesthetics of the proposed highway structure as well as its compatibility with the surroundings;
- (e) the acceptability of the design to the future management and maintenance<sup>3</sup>

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<sup>2</sup> DEVB TCW No. 1/2018 is applicable to all new highway structures of capital projects in the Public Works Programme (PWP), including Cat D items, irrespective of their modes of delivery.

<sup>3</sup> In case the proposed highway structures involves Environmental Impact Assessment (EIA) mechanism under EIA Ordinance (Cap. 499), the project team should take note of para. 38(c) in Annex 18 – Guideline

authorities; and

- (f) the economics of the design in terms of life-cycle costing as required in Chapter 4 of the PAH.

8. The project team should consider the siting and alignment of each of highway structures (including noise barriers and earth-retaining structures), particularly when the proposal will form part of the public realm. In the project planning and/or conceptual stage when solution space is aplenty, the project team should rigorously identify potential environmental impacts to both the natural<sup>4</sup> and built environment, and should apply the principle of environmental impact assessment, viz, avoidance-minimization-mitigation. Regardless of being proposed as mitigation or enhancement measures, landscape design and provisions of hard/soft landscape elements should be fully integrated into highway structures with adequate aerial and underground/subsurface quality spaces to sustain the growth and health of soft landscape provisions (i.e. proposed plantings of trees/palms/bamboos, shrubs, groundcovers, climbers or turves/grasses), which can be provided at grade and/or at elevated levels e.g. planters at footbridge deck, green roofs and vertical greening.

9. The design considerations as listed in paragraphs 6 to 8 above aim at achieving a high aesthetic quality of highway structures through a holistic approach to sustainable development, and should be appropriately included in the project design briefs to guide designers and consultants. The project team shall also aim for building resilient and adaptive landscapes, enhancing walkability and enriching road users' experience along transport corridors, particularly pedestrians and other potential users in the public realm. For any proposed highway structures as part of the infrastructural development in the new development areas (NDAs), the project team should also take account of the urban design framework that has been or will be formulated.

### **Submissions to ACABAS**

10. Design submissions to ACABAS should be made as early as possible in the design development process to avoid abortive work. This is particularly important where a design approach on the selection of structural form may be controversial or where a need for special qualities in design and finishes to match or enhance the amenity of an area is identified.

11. Submissions should include details as described in Appendix A to ETWB TCW No. 36/2004. In general, the form, texture and colour of structures should be clearly indicated together with appropriate photomontages, model, etc. to illustrate their context with the surroundings. Where structures link up, join with or extend from the existing structures, information on the appearance of the latter, including comprehensive material sample boards where practicable, should be included in the submissions to demonstrate compatibility of the design. A non-exhaustive list of items for ACABAS submissions and some points to note on

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for Landscape and Visual Impact Assessment, Technical Memorandum on Environmental Impact Assessment Process.

<sup>4</sup> For examples, existing vegetation cover (including trees and other existing flora), natural topography, landform, landscape features (such as rivers, streams and natural watercourse), and wildlife/fauna such as egreteries etc.

landscape design are appended for reference in **Appendix A** to this TC.

12. For consultants-managed projects, the consultants should consider appointing landscape or other specialist sub-consultant to provide necessary professional services for the aesthetic design and submissions to ACABAS.

13. Adequate time should be allowed for full interdisciplinary discussion and agreement to the proposals within the project office; and to seek in-principle agreement from the vegetation maintenance department on the landscape proposal before making a submission to ACABAS. Agreement to preliminary design proposals should be sought from ACABAS before commencing the detailed design.

14. When a re-submission or follow-up submission is required by ACABAS, it should be made as soon as possible after the first submission to ensure that the design of proposed highway structure is accepted by ACABAS before tender documents are finalized.

### **In-house Support**

15. Project teams may seek advice on aesthetics of the design from the Landscape Unit of CEDD Headquarters except for in-house projects of Civil Engineering Office (CEO) which are supported by landscape teams of CEO and projects of Lantau and other outlying islands in the Islands District which are supported by landscape team of Sustainable Lantau Office (SLO). Three weeks prior to submission deadline should be allowed for respective landscape teams to provide advice.

### **Enquiries**

16. Enquiries on this TC should be addressed to Senior Landscape Architect/Headquarters 1, CEDD Headquarters.

### **References**

- (a) The latest version of “Structures Design Manual for Highways and Railways” issued by Highways Department, in particular Chapter 15 – Aesthetics
- (b) The latest version of “Guidelines on Design of Noise Barriers” jointly issued by Environmental Protection Department and Highways Department
- (c) All relevant instructions issued by Director of Highways in respect of the aesthetics of highway structures
- (d) DEVB TCW No. 2/2012 – Allocation of Space for Quality Greening on Roads
- (e) DEVB TCW No. 1/2018 – Soft Landscape Provisions for Highway Structures
- (f) The latest version of “Guidelines on Greening of Noise Barriers” issued by

Greening, Landscape and Tree Management Section (GLTMS), Development Bureau (DEVB)

- (g) The latest version of “Management Guidelines for Stonewall Trees” issued by GLTMS, DEVB
- (h) Chapter 4 of PAH:
  - para. 1.7 - Tree Preservation
  - para. 2.2 - Project Design and Estimates (regarding Selection of basic scheme and life-cycle costing consideration)
  - para. 4.7 - Landscape and Greening Works
- (i) Geotechnical Engineering Office Publication No. 1/2011 – Technical Guidelines on Landscape Treatment for Slopes
- (m) The “Street Tree Selection Guide” issued by GLTMS, DEVB
- (n) Hong Kong Planning Standards and Guidelines (HKPSG) issued by Planning Department:
  - Chapter 4 - Recreation, Open Space and Greening,
  - Chapter 11 - Urban Design Guidelines
- (o) “Design Manual Barrier Free Access 2008” (DMBFA) issued by Buildings Department:
  - Best Practice Sections of Division 1 to Division 20 in Chapter 4 – Design Requirements
  - Best Practice Section in Chapter 5 – Building Services Design Requirements,
  - Recommended Design Requirements in Chapter 6 – Design Guidelines for the Elderly and Elderly with Frailty
- (n) Other relevant guidelines and reference issued by Architectural Services Department:
  - “Universal Accessibility: Best Practices and Guideline”, 2004
  - “Universal Accessibility for External Areas, Open Spaces and Green Spaces”, 2007

( Signed )

( Albert W B LEE )

Director of Civil Engineering and Development (Atg.)

## **I. List of Essential Information for ACABAS Submissions**

The submission package shall include but not limit to the following essential information in order to facilitate the Members of ACABAS to better understand the proposal and to review the compatibility of the proposed structures:

- (i) Main Text
  - (a) Project background and information
  - (b) Site context, constraints and opportunities
  - (c) Design concept / rationale / theme / innovative and creative design (if any)
  - (d) Other planned developments, if any in the surrounding area
  
- (ii) Design Elements
  - (a) Architectural Considerations:
    - i. Location, alignment, general arrangement, orientation etc.
    - ii. General layout
    - iii. Material schedule with finishes/textures and colour scheme (presenting the samples of proposed materials at the meeting to illustrate the true colours and texture is recommended)
  - (b) Landscape Proposals:
    - i. Existing trees and vegetation to be affected and proposed treatment (if applicable)
    - ii. Landscape strategy that illustrates full integration of the structure into the existing or proposed landscaped area, as well as the existing environment
    - iii. Landscape and visual mitigation measures identified in the approved EIA Report (if applicable)
    - iv. Planter, drainage and irrigation details with well annotated sections and elevations
    - v. Plant selection supported with design objectives (also the vegetation strata and respective compositions, if applicable)
  - (c) Engineering Considerations:
    - i. Structural design
    - ii. Building Services:
      - Pillar box placement and dimensions
      - Lighting scheme
      - Drainage system including downpipes (concealed or not concealed)
    - iii. Maintenance access and safety devices for the hard and soft landscape provisions

- iv. Location, orientation and dimensions of other massive or bulky ancillary fixtures such as road signs, if any to be part of the proposed structures
- (iii) Alternative design/alignment/location and recommended options with justifications (if applicable)
- (iv) Drawings and illustrative materials (A3 size preferred)
  - (a) Location plan
  - (b) Layout plan
  - (c) Sections and elevations
  - (d) A set of photographs with adequate coverage of the existing site condition and its surroundings including adjoining buildings and structures to illustrate the site context
  - (e) Appropriately annotated photomontages to demonstrate the overall appearance, form and texture, as well as compatibility of the proposed structures with the site and its relationship with the adjoining environs including buildings structures
- (v) A model/fly-through/animation video should be presented at the meeting for complicated structures and when necessary.
- (vi) Re-submission / follow-up submission
  - (a) A summary of action taken after previous submission
  - (b) A table of response to comments (RtoC) with well-illustrated revision of the design
  - (c) Revised details shall be highlighted to illustrate amendments made to the previous submission
  - (d) Revised photomontage(s) demonstrating the relationship between existing and proposed features if there is change of appearance
  - (e) All amendments, revisions and changes to drawings/plans/illustrations/text shall be appropriately highlighted to facilitate communication of information

## **II. Points to Note on Landscape Design**

Apart from the requirements set out in DEVB TCW No. 1/2018, project offices are recommended to give due considerations to the following details when addressing concerns from the ACABAS: :

- (i) Landscape Planning
  - (a) The landscape context, site characteristics and conditions of the surrounding area should be taken into consideration when formulating an optimal landscape solution
  - (b) Potential impacts on existing vegetation particularly trees should be minimized as far as practicable
  
- (ii) Landscape Design
  - (a) The landscape design should explore for better integration with the engineering design and careful consideration of site constraints, functions, aesthetics, landscape effect, maintenance, safety, cost effectiveness in early design stage
  - (b) The proposed landscape treatments should be compatible and harmonious with surrounding environment
  - (c) Sufficient space should be allocated for landscape planting, both above ground and below ground. If space allowed, at-grade planting is preferred to vertical landscape or roof landscape provision
  - (d) The recommended minimum soil depths (excluding finishes and subsoil drainage layer) for different vegetation types should be allowed, which are 1.2m for trees, 0.6m for shrubs/climbers/bamboos and 0.3m for grass/ground covers. Sufficient planter width (excluding thickness of planter wall and finishes) should also be allowed by consideration of various plant species for vegetation growth
  - (e) Both irrigation and drainage systems for landscape planting should be thoroughly considered and appropriately provided
  - (f) Close liaison and agreement with the maintenance parties at the early design stage is crucial. Project offices should identify and secure prior commitment from the relevant department(s) with regard to the management of all landscape provisions (hardworks and softworks) in the planning and design stages before implementation
  - (g) All hard and soft landscape proposals should be illustrated in plan, sections and perspectives / photomontages to demonstrate the feasibility and sustainability of the proposals
  
- (iii) Plant selection
  - (a) The principle of “the right plants at the right place” should be adopted
  - (b) The use of native species, where appropriate, should be considered in the soft landscape design
  - (c) Species recommended in the “Street Tree Selection Guide” should be



considered if suitable and practicable

- (d) The Greening Master Plan of the concerned districts can be made reference to
- (e) Simple and bold planting scheme for easy long-term horticultural maintenance taking account of harsh roadside environment is recommended. If feasible, landscape design concept and intended objectives, with a list of tentative plant species, shall be included in the ACABAS submission

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