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Group : 12

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Development Bureau
Technical Circular (Works) No. 1/2018

Soft Landscape Provisions for Highway Structures

Scope

This Circular supersedes DEVB TC(W) No.2/2013 concerning the policy and requirements for soft landscape provisions for “highway structures”, which in this circular refer to bridges and other structures associated with the public highway system¹. It updates the requirements and acceptance process for soft landscape provisions for highway structures in order to streamline administrative processes for vetting of soft landscape proposals and encourage innovative, holistic, and value for money design.

2. This Circular 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. Subvented projects are encouraged to follow the requirements set out in the Circular as far as practicable.

¹ For the purposes of this Technical Circular, ‘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, but excludes sign gantries. The definition and scope of ‘bridges and associated structures’ for submission to ACABAS are determined by ACABAS according to ETWB TC(W) No.36/2004.

Effective Date

3. This Circular takes immediate effect. Projects accepted by the Advisory Committee on the Appearance of Bridges and Associated Structures (ACABAS) and/or exempted under DEVB TC(W) No. 2/2013 prior to the promulgation of this Circular are not affected. Re-submissions to ACABAS are required to follow this Circular.

Effect on Existing Circulars

4. This Circular should be read in conjunction with the following circulars:

Circular No.	Subject
ETWB TCW No. 36/2004	The Advisory Committee on the Appearance of Bridges and Associated Structures (ACABAS)
DEVB TC(W) No. 2/2012	Allocation of Space for Quality Greening on Roads
DEVB TC(W) No. 6/2015	Maintenance of Vegetation and Hard Landscape Features

Policy

5. The Government is committed to providing a safe and high-quality environment through a holistic approach to sustainable development, with the aim of building resilient and adaptive landscapes, enhancing walkability and enriching road users' experience along transport corridors, particularly pedestrians.

6. During the feasibility assessment of a project and design options, soft landscape provisions should be accorded priority for highways structures that will —

- (a) form part of the public realm, such as footbridges and walkways, especially structures that do not have existing soft landscape in their immediate surroundings. However, certain structures may warrant soft landscape provisions to complement existing landscape for enhanced experience. The project landscape architect² should be consulted in this regard;

² Project landscape architect is the landscape architect responsible for the project planning, design and/or implementation stages.

- (b) mitigate landscape or visual impacts identified in environmental impact assessments under the Environmental Impact Assessment Ordinance; and/or
- (c) improve the built environment, such as ameliorating urban heat island effects, enhancing ecological linkages, or enriching urban forestry and biodiversity, etc.

7. Soft landscape may be integrated with the highway structure (for example, on bridge decks, rooftops, and vertical elements), or adjacent to it with due consideration of its operation, maintainability and life-cycle costs as a whole. Cost-effective and sustainable designs through simple and effective methods, e.g. at-grade planting of shrubs and trees or other suitable plants to screen flyovers and noise barriers from sight, should be adopted where feasible. The principle of “right plants at the right place” should be adopted and the use of native species, where appropriate, should be considered in the soft landscape design.

8. To accomplish a coherent and integrated design, soft landscape provisions must be considered in conjunction with hard landscape elements throughout the planning, design, construction and operation of the project.

Requirements

9. Project offices are required to undertake a holistic approach in the planning and design process to maximise the effectiveness of soft landscape provisions, taking into account the project life-cycle considerations highlighted in paragraph 12 below and the relevant design guidelines at **Appendix A**.

10. ETWB TCW No. 36/2004 stipulates that project offices responsible for the proposed highway structures should obtain acceptance of the Director of Highways by submitting their design proposals, including landscape aspects, to ACABAS before implementation. Submissions made for this purpose should include the information set out at **Appendix A** of ETWB TCW No. 36/2004, together with information on the soft landscape proposal for the highway structures, and explain the design concept and how the proposal suits the site context and constraints. Project offices should address the considerations set out in paragraph 12(a) and (b) below, where relevant and applicable, in the submission to ACABAS.

11. Project offices should identify and secure prior commitment from the relevant department(s) with regard to the management of all landscape provisions in the planning and design stages before implementation in accordance with DEVB TC(W) No. 6/2015. Highways Department would continue to be the works agent for the maintenance of irrigation systems on future footbridges and flyovers.

Project Work Stages Considerations

12. The overall project objectives should be clearly stated and the benefits of the proposed soft landscape provisions in various aspects, such as social, environmental and functional etc., should be elaborated to demonstrate value for money. Key considerations at different work stages are briefly described below.

(a) *Planning*

- Qualitative cost-benefit assessment of design options: the feasibility and the merits / demerits of the proposed provisions and the overall project cost over the life-span of the highway structure should be evaluated;
- Proper spatial planning: to minimise potential downstream compromises and abortive work, and to allocate sufficient space for soft landscape provisions and supporting hard landscape works;
- Explore innovation: encourage innovative ideas and practical options at the planning stage to maximise lead time and forward planning of potential initiatives; and
- Integrated team: include relevant disciplines such as landscape architects in the core project team as part of the planning process.

(b) *Design*

- Integrated design: the soft landscape provisions should be supported with quality hard landscape works and integrated with the overall structural design of the highway structure. Project offices should aim at a holistic approach that seamlessly coordinates all elements to deliver project objectives that pursue design excellence;
- Pursue innovation: regularly review to encourage innovative ideas and practical options; and

- Design for construction: consider constructability and cost-effectiveness of the highway structures and requirements of the operation stage as well as integration of maintenance planning into the design process.

(c) ***Implementation and Operation & Maintenance (O&M)***

- Advance works: trial planting under close monitoring to verify design proposals, or early ordering of planting stock including timely inspections and verification of quality stock is recommended.
- Diligent contract supervision: ensure all relevant documentation are submitted according to the contract specifications, reviewed and authorised by the relevant professionals.
- Timely nursery and site inspections: carry out nursery inspections during the works implementation and reject non-compliant stock. Maintain diligent site supervision and inspection of implemented works;
- Early preparation for O&M stage: timely preparation and agreement of an itemised management and maintenance matrix for all landscape provisions including hard and soft landscape works; and
- Sustainable O&M: consider the O&M timeframe, especially for proprietary or bespoke products. Allow flexibility during the O&M stage to adjust and adapt to changing conditions, processes, or supply chains. Where practicable, programme timely reviews to capture lessons learned.

Submission

13. The soft landscape provisions for highways structures should form part of the required submission to ACABAS as stipulated in ETWB TCW No. 36/2004. For design proposals for highway structures without soft landscape provisions or the necessary associated maintenance facilities for the soft landscape provisions, the project office should set out the reasons for the consideration of ACABAS. Site constraints, functional and design objectives, life-cycle project costs, safety or maintenance implications, balanced with the merits / demerits as well as alternative landscape schemes investigated should be explained. Reasons such as avoidance of maintenance would not be accepted. ACABAS will scrutinise individual design proposals

and explanations, and may accept proposals or recommend design revisions to incorporate soft landscape provisions.

14. Any disagreement with the views of ACABAS should be brought up to the relevant authorities pursuant to paragraph 21 of ETWB TCW No. 36/2004.

Further Enquiries

15. For enquiries on this Circular, please contact Assistant Secretary (Greening and Landscape 1), Greening, Landscape and Tree Management Section (GLTMS) of the Development Bureau.

(C K HON)
Permanent Secretary for Development (Works)

List of Design Guidelines:

1. *Structures Design Manual for Highways and Railways* (2013 edition). Highways Department HKSARG (May 2013)
2. *Guidelines on Design of Noise Barriers (2nd Issue)*. Environmental Protection Department and Highways Department HKSARG (January 2003)
3. *Guidelines on Greening of Noise Barriers (2012)*. Greening, Landscape and Tree Management Section, Development Bureau HKSARG (April 2012)
4. *General Guidance Notes of Design for Safety*, Development Bureau HKSARG and Occupational Safety and Health Council (2016)