15 Dec 2022

Industry Professionals

Dear Sir/ Madam,

EARTH CONTROL MEASURES (ECM) – ECM DESIGN SCORING FRAMEWORK

With reference to the earlier Circular dated 6 June 2022 regarding the implementation of the ECM Design Scoring Framework which took effect from 1 July 2022.

2 It has been encouraging to note that the quality of ECM submissions over the past months have improved since the rolling out of the ECM Design Scoring Framework.

3 Taking into consideration the ECM Design scoring framework was implemented across the board to all ECM submissions starting from 1 July 2022 as compared to previous efforts where a small number of ECM submissions were selected for review, and to also give the industry more time to adjust to the ECM Design scoring framework, the demerit points for QECP suspension will be raised as follows:

- From 6 to **12** demerit points *(accumulated over a 1-year period)*
- From 12 to **24** demerit points *(accumulated over a 2-year period)*

4 Nevertheless, the demerit points for QECP suspension will be re-adjusted should there be a worrying trend on the quality of ECM submissions.

5 The earlier ECM design submissions scoring framework remains unchanged and all demerit points accorded to QECP from 1 July 2022 remains unchanged. QECPs are again reminded to ensure sufficient time, efforts and resources are provided for each ECM submission to ensure a good quality ECM submission.

6 If there is need for clarification, please email qecp@iesnet.org.sg

Thank you.

Yours faithfully

Mr Yeo Keng Soon
Director
Catchment & Waterways
PUB

Mr Dalson Chung
President
The Institution of Engineers
Singapore

Er. Chuck Kho
President
Association of consulting
Engineers Singapore

[FOR REFERENCE] 9 June 2022 Circular on Design Scoring Framework

Date: 09 June 2022

Industry Professionals

Dear Sir/Maam

EARTH CONTROL MEASURES (ECM) – ECM DESIGN SCORING FRAMEWORK

Since 2002, the Institution of Engineers Singapore (IES) have rolled out various ECM workshops to equip Qualified Earth Control Professionals (QECP) with better understanding of ECM design and implementation for ECM works. The QECP Review Panel Scheme was also jointly rolled out by IES, the Association of Consulting Engineers (ACES) and the Public Utilities Board (PUB) in 2015, to review the design and comprehensiveness of the plans.

2 As part of continuous efforts to raise the quality of ECM design submissions, IES/ACES will be implementing an ECM Design Scoring Framework as a structured way to evaluate the quality of ECM design submissions, to take effect from 1 July 2022.

3 Each new ECM design submissions to PUB will be scored according to the structured ECM Design Scoring Framework based on the types of errors found in the submissions. Errors are categorised into (i) major errors/omissions, (ii) minor errors/omissions, and (iii) Other errors/omissions, with points tiered based on the severity of errors in each category.

4 Demerit points will be issued to QECPs based on the tabulated score in each submission. QECPs whose submission is scored with 6 or more demerit points may risk a 1-year suspension under the Qualified Erosion Control Professionals Registry administered by IES-ACES *(subjected to QECP Review Panel's discretion)*. Please see Annex A below for details of the ECM Design Scoring Framework (non-exhaustive).

5 If there is need for clarification, please contact Victor Tham (IES QECP Registry) at victor.tham@iesnet.org.sg.

Thank you.

Yours faithfully

Mr Yeo Keng Soon Director Catchment & Waterways PUB	Mr Dalson Chung President Institution of Engineers Singapore	Er. Teo Yann President Association of Consulting Engineers Singapore

Annex A

ECM Design Scoring Framework *(Non- Exhaustive)*

No	Scoring Criteria	Demerit Points
1	Submission has been **rejected > 3 times by PUB**	6
2	**Major design errors/omissions** • QECP endorsement missing • Protection of existing drains not considered • Using existing live drain as part of storage pond • No cut-off drains provided • Under-sizing of total storage volume by 50% or more • Did not specify length of cut-off drain to be used as storage volume • Cut-off drain not connected to storage pond • Improper connection between multiple storage ponds • No sub-catchment calculations for separate ponds • Drainage work – Did not provide ECM detail plan for drain construction work • Drainage work – Did not indicate that "sand bags shall be removed during heavy rain & end of the day when work has stopped" • Drainage work – Existing drain fully blocked without proper bypass provided • Designed above ground storage pond (i.e. runoff unable to properly gravitate into storage pond) • Using entire site as a storage pond silty water (i.e. realistically will not be able to do works while entire site is filled with silty water waiting to be treated) • Multi-phase work – No separate drainage system OR ECM plan for each phase	2 (Per error; No cap)
3	**Minor design errors/omissions** • Access road and ECM for road not indicated for multi-phase project • Under-sizing of total storage volume by 10 – 49% • Using cut-off drain full length as part of the storage volume • Using cut-off drain located at steep slope as part of the storage volume	1 (Per error; Cap at 3 points)

	• Using treatment plant or washing bay as part of the storage volume • Used "C" value that is too low without valid explanation (e.g. soil data) • Used "C" value of < 0.65 for general soil condition • Did not provide physical hump(s) to segregate sub-catchments within ECM site • Clean water discharge point(s) not connected to public drain • Clean water discharge point(s) not shown • Did not provide silt trap(s), when it is necessary • Did not provide CCTV monitoring system (for exposed area ≥0.2 ha) • Did not show proper anchoring of silt fencing • Did not provide adequate treatment plant(s), when it is necessary • Did not provide maintenance checklist and schedule • Insufficiently detailed calculations. • Missing dimensions on detailed plans and cross-section drawings (e.g. for storage pond, cut-off drains, etc)	
4	**<u>Other errors/omissions</u>** • Wrong entry into the online forms (exposed area, address, wrong file attached, etc) • Reports and E-forms do not tally • ECM checklist incorrectly filled • No road name on the plan OR no location plan • Invalid QECP certificate attached • Missing cross-sectional drawings • Revised ECM plan – Did not explain why revision to approved plan is made • Revised ECM plan – Did not highlight the difference in the revised ECM plan	1 (Per 2 errors; Cap at 2 points)