

Engineering Review Meeting (ERM) Process – Terms of Reference**Name of Group:** Engineering Review Meeting (ERM)**Title:** Terms of Reference – October 2019

[Note: This document should be read in conjunction with the accompanying Technical Advisory Group (TAG) Terms of Reference]

Membership:

ERM is a focused group for the Engineering, ICT, Estates Facilities and Health, Safety and Environment teams.

- The ERM members are listed as follows:

Andy Hammond	Head of Engineering, Energy and Environment
Shenice Lalor	Engineering Technical Assistant
Rak Patel	Acting Head of Maintenance (or appropriate team leader)
Owen Everall	Chief Engineer
Mark Pearce	Building Surveyor (as appropriate)
Tania Bozinovska	Network Infrastructure Manager
Denis Murphy	Head of Health and Safety
As appropriate	Safety Team
<i>As appropriate</i>	Building Manager
<i>As appropriate</i>	User Co-ordinator

Purpose/Role of the ERM Group:

The purpose of the ERM is to review the technical aspects of a project at successive RIBA stages. The meetings are seen as an opportunity for the Design Team to present the technical aspects of the Mechanical, Electrical and Public Health (MEP) to include BMS, Fire, Security, Energy, ICT systems and associated Health, Safety and Environmental issues with the ERM members.

The format of the meeting is intended to:

- encourage collaboration between the Design Teams and ERM members.
- ensure that the design is in accordance with Imperial College requirements from a design and operational perspective.
- enable the Design Team to present outstanding items from previous design stages, which may require further direction from ERM members.
- assist with delivery of the project in line with the Imperial College Particular Requirements, Health, Safety and Environmental requirements, Operational and/or User requirements, standards and/or codes of practices.
- review of any 'exceptional' items not in compliance with College Standards, whereby options and recommendations will need to be presented to, and approved by, TAG.

- discuss sustainability and energy saving initiatives with regards to MEP services and any subsequent life cycle cost assessments.

Accountability:

- ERM members are responsible for providing technical assurance to TAG, by reviewing the Design Team proposals to validate whether the College Standards have been complied with, and whether particular building and site constraints have been addressed.
- Notwithstanding any comments provided by ERM reviewers, the Design Team shall not in any way be absolved from their responsibilities to fully comply with College Standards, as far as is reasonably practicable.
- The ERM members should also review the design to assess whether design proposals are expected to deliver best value for money to the College (e.g. appropriate supply chain, whole life vs. capital cost considerations and energy efficiency).

Review:

- A combined 'ERM/TAG Comments Tracker' template (ref. example in Appendix A) has been prepared for the ERMs which will document all advice, comments and actions from the meetings and formal reviews of Design Stage Reports.
- The combined 'ERM/TAG Comments Tracker' identifies:
 - ◆ Project Name, Number and Current Project Stage
 - ◆ Ref No.
 - ◆ Issue Raised
 - ◆ Raised By
 - ◆ Raised at RIBA Stage
 - ◆ Date Raised
 - ◆ Actions/Notes
 - ◆ Resolution by
 - ◆ Advice Status
 - ◆ Order of Cost Estimate (*where appropriate*)
 - ◆ Approved By
- Project Managers shall ensure that the ERM reviewers' comments and the Design Team's responses are accurately recorded in the 'ERM/TAG Comments Tracker' after each ERM, and shall circulate the Tracker to the ERM members and Design Team for review, before it is then issued to TAG members.

Working Methods:

- The Project Manager shall ensure that all relevant design documents (including Design Stage Reports) are sent to the Engineering Manager and Engineering Technical Assistant (via the Estates Engineering e-mail address estatesengineeringteam@imperial.ac.uk), as well as the other ERM Members, **a minimum of one week** prior to the ERM.

- It is expected that ERMs will be aligned with substantial completion of each design stage, and information included in the Design Stage Reports should reflect the appropriate level of detail. Changes made to the design within the week leading up to the ERM can be discussed in the meeting, and documented in the 'ERM/TAG Comments Tracker', where appropriate.
- The ERM reviewers' comments and the Design Team's responses shall be incorporated into the 'ERM/TAG Comments Tracker' and distributed to the TAG members. The Design Team's responses need to clearly set out a strategy for addressing the matters raised and confirm the timescales for doing so.

Meetings:

- At the beginning of each design stage Pre-ERMs should be arranged with the appropriate ERM members which should include the Engineering Team (contactable via the Estates Engineering e-mail address: estatesengineeringteam@imperial.ac.uk), in order to run through initial design philosophies and strategies etc.
- Project Managers shall arrange and attend all ERMs, ensuring that the appropriate ERM members and external Design Team members attend.
- The ERMs shall be held before a TAG meeting is due to take place, on a date to be confirmed by the Project Manager.
- The meeting format is to be agreed with the Design Team, this could comprise a short presentation or the Design Team may prefer to work through specific design items. The Project Manager should issue a timed and discipline driven agenda prior to the meeting. Agenda items shall include the following items, MEP to include BMS, Fire, Security, Health, Safety and Environment, Energy and ICT.
- ERM members are expected to invite the relevant members of their teams to each ERM.
- To review ERM/TAG comments tracker in order to agree the ERM members comments and subsequent design team comments and close out items as appropriate
- For larger or more M&E complex projects a number of ERMs should be arranged in order to work through the design thoroughly.
- Project Managers shall ensure that each RIBA design stage (0-5) has an ERM date planned into the project programme.
- The ERM/TAG Administrator will prepare a 3-month look-ahead schedule of forthcoming ERMs and issue to ERM/TAG members on the last working day of each month, to be followed by meeting invites from the Project Manager.
- To review ERM/TAG comments tracker in order to agree the ERM members comments and subsequent design team comments and close out items as appropriate

Sharing of information and resources:

- To send email identifying report location and tracker for review and comment
- Engineering Team to comment directly onto the ERM/TAG Comments tracker, other ERM Members to issue comments directly to Project Manager.
- Additional comments raised at ERM to be documented onto ERM/TAG comments tracker
- Issues and comments raised should be responded to and closed out when appropriate.
- The ERM/TAG Administrator will set up a dedicated folder on the College SharePoint site for the 'ERM/TAG Comments Tracker', enabling a common point of access to all internal and

external parties. The relevant design documents (including draft and final Design Stage Reports, Exception Reports and relevant drawings) shall also be saved within this folder, with a weblink to be sent to ERM reviewers, for ease of reference. It is noted that Project Managers shall be responsible for also saving final Design Stage Reports into the Estates Development and Project's filing system.

Appendices:

- Appendix A: 'ERM/TAG Comments Tracker' template
- Appendix B: ERM Procedure Flow Chart

Definition of terms:

- **TAG** – Technical Advisory Group
- **ERM** – Engineering Review Meeting
- **RIBA** – Royal Institute of British Architects

Appendix A: 'ERM/TAG Comments Tracker' template

1	A	B	C	D	E	F	G	H	I	J	K
2	ERM/TAG Comments Tracker			Current Project Stage				Advice Status		Generally compliant with College Policy but clarification required	
3	Project:									Exceptions to Policy and/or Standards	
4	Project No.									Item not approved	
5											
6	Ref	Type	Issue raised:	Raised at (ERM/TAG):	Raised by:	Raised at RIBA Stage:	Date Raised:	Actions/Notes:	Owner:	Status (Open/Closed):	Approved by:
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Appendix B: Procedure Flow Chart

