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Consistency Guarantees for Professional Appraisal of Geotechnical Engineering Design under Market Leading and Deciding

Abstract Peer review is central to the process of modern engineering. Open peer review gives the impression that decisions are arrived at in a fair and meritocratic manner with an objective, reliable, consistent process. It is responsible for identifying methodological flaws and for improving the quality. Assistance from somebody in the same discipline is valuable. Clients refer to reviewers as referees since they help to determine the fate of a design. The client sets up a hanging committee to carry out open peer review to decide whether a piece of work should be accepted, revised or rejected. Reviewers in similar specialties make up a professional group. In an open peer review refereeing a retaining and protection structure design of building foundation pit excavation, an outside expert as an assessor, might master the art of review to pay attention to guarantee consistency of processes and outcomes.

Keywords: peer review, foundation pit excavation, retaining and protection structure, design introduction()

1 Introduction

An open peer review, with the caveat that it may be more favorable, can entail much more work (Lock, 1985). The strategy for a client to decide whether a piece of work is acceptable for operation or not, is to set up a hanging committee (HC) and hence a group of peer reviewers to referee the work. Refereeing is the lynchpin about which the whole business is pivoted. Mistakes come to light after review by people from a learned society. Peer review acts as both a filter for selection and a quality control mechanism. The HC represents the interests of the client.

Usually a HC is incapable to do in-house review because the members are short of expertise. The client's boss, say, owner or proprietor of the project, and the HC is usually chaired by supervisors, administrative staff, internal consultants, technical officials who are working for the boss. They meet regularly to discuss the review outcome reports and then make decisions. The HC will have the last word but they need expert help from a pool of trusted reviewers who are the advisors at the same time. Generally independent reviewers made up a large advisor group for the HC to choose the right person from it. This refereeing is widely practiced, not to screen best design but to stop bad one from entering into market. Survival of a review gives more credibility than designer claim availability themselves. Peer review is a fairly recent innovation, not widespread until the middle of the 20th century. The reliability and validity of peer review have been reported previously (Weller, 2001). Potential relevant studies for difficulty or flawed process of peer review are presented (Smith, 2006). Some guidelines are written from the point of view of people doing the appraisal (Godlee, Jefferson, & Sabazia, 2002). Few domestic grey literatures are presented for peer review of retaining and protection structure design of building foundation pit excavation (DFE). Well-informed discussion of the process has been sparse (Zheng & Wu, 2011). The aim of this study is to explain enough about peer review of geotechnical engineering to enable reviewers to survive and benefit from it under condition of market leading and deciding.

2 How to be a competent member of peer review group

As a learned society, geotechnical engineering community achieves public purpose by external scrutiny such as operation of open peer reviews. Open peer review is a collaborative effort by a pool of experts. But it is hard to recruit good-quality reviewers and it is flattering to be invited as a reviewer. The authors used to sit face to face in

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a meeting room to go through the standard process. Usually fast track peer review procedures are asked for in market economy environment. For all disciplines it is necessity for choosing reviewers with different standpoints, both vis-à-vis the designer and one other, and for the HC to monitor how they affect decisions. The HC build a pool of trusted expertise as they will. Designers would expect refereeing to relate only to assessment by members of a peer group, which are colleagues at exactly the same stage of their careers. The design survives critical study by competent and disinterested people. As a reviewer, the first you will know is that you as a referee are a specialist adviser and not the final decision maker. Both you and designer might survive and benefit from the process of peer review. HC may assess performances of all the people attending the review meeting which can be analogy with a joint hearing (Smith, 2010).

2.1 Don't do everything they request

Different people bring their particular skill to review a design. Do those within your field of expertise. You might aim to be as constructive and dedicational as possible. You are gaining recognition from other members of the geotechnical engineering community (Demicheli & Di Pietrantonj, 2007). You are now in an assessment-review market, to meet market demands you might keep to your own opinions. Think it over like this: if you are on the receiving end of peer review, or being appraised, you want to hear something neat and directive for you to improve the design quality too.

2.2 Don't make disparaging comments

Don't get into personal arguments. Don't be afraid to praise as well as criticize. Don't tempt to fill in silence for other people. Don't use sarcastic questions as your remarks. To criticize is to address the choice of behavior, not person. Develop a thick skin for people those who devalues your opinions. Don't set stricter measures for the person who has disappointed you especially in front of his colleagues. Use open questions to elicit information and enclosed sentences to confirm content of your resolution. To think like a designer helps you understand the process and pressure. Compare the comprehensiveness and tone of your review with those of your co-reviewers. Know where your expertise ends. Providing superficial or abusive reviews will be pruned out. Don't feel inhabited about expressing your true feelings. The aim of your review is two fold: help decide what to do with the design and to help designer improve it.

2.3 External assessment from different stratum are needed

Finding suitable reviewers is the most difficult aspects of organization of a peer review. Even though you have the

least appreciation of the design, you are not considered laypeople because your skills are needed too. "Average good" is enough. You are here to match with the social overall level of engineers in your discipline, especially mean level of the geotechnical engineering community. Never think you are below standard, because they need you. Don't do anything the whim takes you. A polite note explaining reasons will be helpful. So, put simple: yes. Don't oversell of your words or claim it will change something if it won't. You are relating to both process and outcomes.

2.4 To be patient to repeat yourself

Under condition of market leading and deciding, external review takes place of interior review. Ignore tiny problems but comment on the structure and key message. From Table 1 based on eligible archives, as an instance, one can't say things are getting better, since one has peer reviewed some kind of designs. 5 years down the line, how have things fared with us? The probabilities in Table 1 are percentages as repetitive times of one kind of designing defect of pre-stress anchor system per total number of designs in which pre-stress anchor system is applied with. It is anecdotally annoying that problems are hard to diminish since they first came out. They are still what they were to present time.

3 How to be a noblesse oblige executive leader of peer review group

Use of reviewers dilutes the effect of a biased reviewer (Schroter, Black, Evans, Godlee, Osorio, & Smith, 2008). Actually the role of leader of a peer review group is taken by HC. The leader usual doesn't know your expertise. Hanging committee is entitled to expect a consistent response from the executive leader. The grading given to design by reviewers is often not the sole determinants of whether they are accepted for further operation and construction implement. If you are a executive leader, say, a co-leading member of a peer review group, to run the referring process, you have to take response for making sure the other members do the same as you: more specific, not vague. Clear directions are given by you to ensure their specific skills play an active role in the process but not show off through. Remove stinging criticism or personal before review outcome reports are sent out.

3.1 Focus on big things and cut down on everything else

Have a more active part in making the reviewing productive. Avoid adding your own interpretation. No picking up errors and inconsistencies, but availability. Adjudicate between members' opinions and the designer's riposte. Your prestige is one valid criterion in the group's decision. You, even your current affiliation has more to lose

Table 1*The Probability of Appearing of Problems*

Particular years	Total numbers of foundation pits for public buildings except metros	Percentages of pre-stress anchor system used in foundation pits/%	Probability of occurrence by year/%									
			Wrong anchor distribution, or with effect of anchor group, or unsuitable incident angle, or vague surrounding environment	Inappropriate design value or unmatched number of cables	Improper value or lack of control for length	Missing measures for avoiding water/sand gush or anchor hole collapse	Anchoring force to ensure support stiffness	Deficiency of anchor stressing trial or installation description	Unsuitable control value of deformation	Lack of axial force monitoring	Short of special anchor installation technology for soft clay	Anchor gripping head/beam location conflicts with building components
2010	198	50.00	30.3	15.2	14.1	17.2	9.1	6.1	12.1	4	1	4
2011	239	51.50	23.6	17.9	19.5	16.3	15.4	3.3	13.8	3.3	2.4	3.3
2012	195	61.00	29.4	28.6	24.4	6.7	9.2	12.6	7.6	2.5	1.7	4.2
2013	292	54.50	37.7	27.7	25.2	10.1	7.5	11.3	7.5	4.4	5	2.5
2014	263	56.70	41.6	28.2	19.4	16.1	15.4	14.8	8.7	8.7	3.4	2

if you show inconsistency in judgment (Moylean, Harold, O'Neill, & Kowalczyk, 2014).

3.2 Tell the hanging committee what to do, to be a HC

Hanging committee appears to place similar weight on the opinion of each reviewer. They need help and collaboration. Given this reliance on peer review, specific assessments should be relatively objective and reproducible. You are the irreplaceability of a group work as an expert on methodology. Usually you are expected to do something with little guidance, on the basis of having undergone the process yourself. You are a pundit, umpire and coach, or even beyond them. You may tell your group members take an inclusive approach rather than limit comments to strict but artificial definitions. Take good care of time constraints of defense. Some wealthier clients have a full time professional staff, as technical officials in the hanging committee, to do in-house reviews and preparation for further external reviews. Technical officials major in civil engineering and are experts in preparing issues for external reviews. They don't have large databases of reviewers but they can nominate reviewers (Schroter, Tite, Hutchings, & Black, 2006).

3.3 Consensus is reached after discussion

Disagreement between reviewers is common, both on specific points and on whether the work should be accept. Disagreements are resolved through discussion. Hanging committee will re-assess the report of peer review and reach their own decision. You will want to claim clearly whether you offer to see the designs again after they has been revised. That is a key part of responsible reviewing to

see whether the designer have adequately addressed your concerns. You would reaffirm that the designer provide a covering letter outlining the changes they have made in response to your comments. The covering letter makes the re-reviewing substantially easier. Make sure that you are clear about what the HC want of you: you are asked to decide the design is available for the client and for society in general. Tell the designer don't make changes not suggested by reviewers. If the designer insists, ask them identify the changes in response.

3.4 Aspects of the process will be arranged and conducted by you

Becoming a good reviewer takes time and practice. You receive no instructions on how to proceed and are not clear about what you are being invited to do. They think you are well up on the current literature. Admit your limitations but bear in mind that the hanging committee may have reviewers specifically assessing the financial side of the projection the design related to. Executive leader writes the review report for the leader. Ambiguous comments like an essay on methodological are frustrating. A median period of a peer review meeting is less than 3 hours.

3.5 Produce a proper peer review outcome report

The HC is likely to provide you with some forms to complete. They may send forms with ticks boxes to record each aspect of it and space for free text comments. Begin with a brief outline of the project; these show you have understood the project. Number your comments. Make clear to HC where your co-reviewers' expertise ends so that they will know when to consult additional reviewers from

other specific-discipline. Some time you will mediate between appraiser and appraisee. It is a check and appeal mechanism for both sides. Avoid words to elicit defensive reaction. Address issues in order of importance. Collate the data. Diminish discordant recommendations. Achieve fully rounded opinions. There has been no formal training for such an important job and the quality of review will be assessed too. Sometimes it is better to swallow your pride. There is no strict protocol or validated outcome measure for your report. To accelerate or retard the proceed, relies on your conscious. To refine design or not, depends on your judgment. There is no inclusion criterion for referee. Hanging committee gives designers to suggest reviewers for their own design, and monitor the performance of the nominated reviewers. They are likely to be representative of their type. Don't force to obviate arguments. Field-specific differences are needed. With perseverance most work can be accepted at last. So be constructive to help them reach compromises of better solutions. They are trying to carry out a thorough review. They are putting their faith in you.

4 Conclusions and discussion

Open peer review is more egalitarian, increasing accountability and transparency. Potential benefits of it outweigh the negatives. Reviewers under an open peer review system provide more feedback on the methods and more constructive comments on the contents. The helpfulness, quality and detail of the outcome reports are valuable. The HC commonly had no time or inclination or ability to judge a design on its own merits. To achieve fairness in a discipline that is riddled with flawed methods, controversy and diversity such as geotechnical engineering, all one can do with peer review is try to obtain authentic work. Consistency depends on the people participating in the process of it.

The HC can chose an assessor whose biases or proclivities are well known to them, that is the risk of creating a charmed circle of referees whose opinion can be anticipated from the start. There is no substitute for

constantly striving to find new assessors, and say, let market do it. They may become part of a cosy coterie but the market may change them. Institutionalization, structure, function of the system is progressing itself. Practices aimed to control and evaluate the potential negative effects of it might be implemented meanwhile.

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