



# Report review for consulting acousticians

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*Abstract* - Having calculations and documents reviewed is an important aspect of practicing as an acoustic consultant, through all stages of a consulting career. There is often relatively little training, instruction and guidance on the review process provided to consultants. This can manifest as trepidation or concern from reviewees or as unhelpful or unfocused output from reviewers. This paper addresses the three most common types of technical review encountered in consulting, being internal review, external review and peer review. Guidance is provided on the main areas which each type of review should focus on. For each type of review, examples of common pitfalls are also provided. The paper is intended to provide guidance to both reviewers and reviewees.

## 1 INTRODUCTION

Report review is not only an everyday activity for consulting acousticians; it is also a vital step in any quality assurance process and core to the resolution of acoustic disputes. For example, Members of Engineers Australia are required to seek peer review as part of their competent practice (Engineers Australia, 2019). However, there is often relatively little training, instruction or guidance on the review process provided to consultants. Technical reports are a tangible distillation of an individual's work on a project and consultants can understandably be sensitive to critique of that work. These and other factors can manifest as trepidation or concern from reviewees or as unhelpful or unfocused output from reviewers. This paper aims to provide some guidance to both reviewers and reviewees on the process of report review. The paper makes a distinction between three types of report review being (1) internal (technical) review, (2) external review and (3) external peer review. General guidance is provided on common approaches to all types of review, as well as items specific to each type of review.

## 2 TYPES OF REVIEW

This paper considers the three most common types of report reviews carried out by consulting acousticians, being:

1. Internal (technical) review. In this context this refers to review of a report prepared by a colleague within the same firm. This is typically required as part of quality assurance processes, for example under ISO 9001 (International Standards Organisation, 2015). It is an important step for many firms to ensure consistency of approach and application among staff and to ensure a firm's reputation is protected by delivering quality output. It is important to delineate that a report review, including an internal review, is different to a calculation review, which will usually take place in parallel to an internal report review (often by the same person).
2. External review. In this context an external review is a review of a report prepared by an author from a different firm, but for the same client. This may be driven by the client's desire to mitigate risk on a project or to verify that whatever being proposed is appropriate. It is also sometimes used as a strategy to ensure the reviewer is subsequently unable to act on the side opposing a proposal, due to the inherent conflict of interest.

3. External peer review. In this context an external peer review is a review of a report prepared by an author from a different firm, for a different client to that which commissioned the original report. Such reports are often commissioned by a regulator, such as a Council, by a party to court proceedings or by a court entity.

It is worth noting that although this paper refers to review of reports the intent is review of documents in many formats, for example letters, memorandums and even emails.

### **3 APPROACHES TO REVIEW – COMMON TO ALL TYPES**

A number of factors are common to all types of report review.

#### **3.1 Scope of review**

It is important that the reviewer, the reviewee and (where applicable) any third party reader are all clear on what the scope of the review is.

In a report documenting an external review, it is recommended to include an outline of the scope of the review at the start of the document. A statement of what is excluded from the review may also be appropriate. For internal review the expectations, procedures and hence scope of review are often predefined as part of a Quality Assurance framework. Nevertheless, it is prudent for the reviewer to confirm to the reviewee what their understanding of the review scope is. This might include whether grammar and punctuation has been reviewed, or whether design logic has been vetted, or whether a calculation review has also been carried out.

It is important that the reviewer also takes into account the scope of the report they are reviewing. A review is not a design document. Design responsibility rests with the author of the original report. Reviewers should not be offering design advice in their review. In the context of an external review or external peer review, offering design advice exposes the reviewer to the risk of taking on design responsibility. The proffering of a design solution by a reviewer infers that the reviewer has a full understanding of the holistic project or problem and its context, which is rarely the case.

In the case of internal review, it is common to point the reviewee in the right direction for them to resolve issues with the report. In some instances, the reviewer may then continue to work with the reviewee on their design or calculations, but such collaboration is separate from the report review process.

#### **3.2 Appropriate capability**

The reviewer should have appropriate experience, expertise and knowledge to undertake the review. This is within the requirement to practice within areas of competence which applies to members of Engineers Australia (Engineers Australia, 2019), the Australian Acoustical Society (Australian Acoustical Society, 2024) and the Institute of Acoustics (Institute of Acoustics, 2022).

It may be appropriate to state the expertise of the reviewer, and is required for some review documentation.

#### **3.3 Technical accuracy**

Any review should assess the technical accuracy of the report under review. This paper is focused on the approach to reviews, rather than the technical aspects that are required. Issues such as the appropriateness of policies, standards and specifications and how they are applied would be considered, along with the logical reasoning of presented arguments and consideration of the assumptions that form basis of findings. This is however outside of the scope of this paper and underscores the need for a reviewer to have appropriate capability to undertake the review.

As identified previously, a report review is separate to a calculation review. However, the reviewer should check that presented results, contour maps etc in the report are consistent with the conclusions and inferences drawn in the report from those results. For example, a calculation review may confirm the accuracy of a noise prediction. However, if the report then includes this (correct) prediction, which indicates exceedance of the stated criteria, and but incorrectly concludes that no mitigation action is required, then the report review should identify this. The calculation review confirms the accuracy of calculations. The report review confirms that the reported calculation results support the conclusions drawn in the report.

### **3.4 Impartial and objective**

The reviewer must carry out their review in an impartial and objective manner. Honest and fair critique must be provided where appropriate. The review is of a document, not of a person, and criticism should not be made personal.

### **3.5 Timeliness**

Any review should be delivered in a timely manner. This program should be communicated at the start of the process and adhered to. Where the time required for a review extends during the course of the work this should be communicated as early as possible. It is important to bear in mind that the reviewee will be dependent on the feedback from the review in their continued work, and timeliness shows professional courtesy to the reviewee.

### **3.6 Brevity**

Warren (Warren & Day, 2008) proposed that the length of a review and amount of detail contained in it is governed by the following factors:

- Length of the subject report
- Adequacy of the subject report
- The significance of the potential noise effects which are being assessed
- Scale of the project being assessed

A review document that is longer than the report under review is typically an indication that the reviewer has failed to adhere to the purpose of the review and/or appreciate the report in the context of the above four factors.

### **3.7 Requests for further information**

It is common for a reviewer to identify that some information (e.g. data, assumptions, basis etc) is missing from the report and is required in order to substantiate the report outcomes. Where this is the case the reviewer should make it clear what additional information is required. Similarly to the point on brevity above, requests for further information should be commensurate to, and not stray beyond, the scope of the report.

### **3.8 Integrity and consistency**

A reviewer should act at all times with integrity. A reviewer should be consistent with their own practice and should not change their approach regardless of who has retained their services. The following principles of integrity are adapted from the University of NSW (University of NSW, 2021) and Association of Consulting Structural Engineers NSW (Association of Consulting Structural Engineers NSW, 2017) peer review guidelines:

1. Honesty in all aspects of communication;
2. Accountability in the conduct of review;

3. Professional courtesy and fairness in working with other; and
4. Good stewardship on behalf of others.

### 3.9 Safety in design

Any work a consultant carries out should keep Safety in Design principles (NSW Government, 2019) in mind. If a potential hazard is identified in the course of a review, this should be raised.

## 4 GUIDANCE FOR INTERNAL REVIEW

The focus of internal review is on:

- Quality and consistency of a firm's output
- Teaching and training staff to continue their professional development
- Providing a second viewpoint and a fresh pair of eyes on a piece of work
- Identifying anything that has been forgotten
- Ensuring the flow of information is set out in a logical and digestible manner
- Ensuring the report addresses the project needs and client expectations

A review of English and grammar is also typically included, although proof reading to punctuation and spelling etc may be carried out by a separate party.

Unless required, for example due to a company policy, it is not generally helpful or required to rewrite a document in the reviewer's style. If the content is correct and reads well, then there is no need to rewrite large sections of text. The reviewer should however make suggestions where there is scope to remove irrelevant information, improve readability and conciseness. The reviewer should consider the ease of navigating the document to find information relevant to the reader as well as the consistency of information and its presentation.

In considering the above the reviewer should keep the intended audience(s) in mind and ensure the report is appropriate for them. Reports written for architects, planners, courts, the general public or other acoustic experts will require different approaches. For example, a lengthy report for a court or regulator will generally require an executive summary early on that makes the key findings and recommendations easy and quick to find. The author (and reviewer) need to consider who the audiences for the report are, what their level of technical understanding is, and what each of those readers are looking to the report for.

The internal review is an important step in ensuring the quality and consistency of a firm's output. It is an opportunity to challenge any statements, recommendations or conclusions made in the report prior to them being scrutinised by external parties.

With internal review it is recommended that suggested changes are discussed or explained to the reviewee. Comments in the margins or document tracking should be provided. A discussion following the review, or at least an offer to discuss, is highly recommended. Whilst quality assurance processes will vary from firm to firm, the documentation of the review process should be covered. For example, a record should be kept of reviews and how feedback was adopted.

The reviewer should consider the experience of the reviewee when providing feedback. For example, a review of a report prepared by a consultant with 20 years' experience is going to assume a lot of existing knowledge and understanding, compared to a review of a recent graduate's work.

The reviewer should make clear what items are comments or suggestions, and what items are required amendments to satisfy the reviewer. Any of the later items that the original author does not wish to adopt for some reason need to be discussed and justified, and typically the report amended to better reflect the adopted reasoning.

Both reviewer and reviewee should remember that a review is never intended to put someone down, to belittle them or to make someone feel bad.

## 5 GUIDANCE FOR EXTERNAL REVIEW

The focus of external review is on:

- Assisting the client, but not to pander to them
- Maintaining professional integrity
- Quality, readability and flow of information
- Suggesting changes to the reviewee, where there may be a better approach for the required outcome
- Ensure appropriate methodology has been used

As discussed previously, the reviewer does not hold design responsibility and for external review this is particularly pertinent. The balance of providing helpful input but without taking on design responsibility is a delicate one.

Consultants are typically engaged by clients to assist them to solve their acoustic problems. This generally involves identifying the problem and then working towards a solution, not hiding the problem. Identifying a problem and then removing reference to it in a report (for example) is not the role of an independent consultant. A consultant who panders to a client and compromises their integrity and independence is no longer an independent consultant. Apart from the ethical issues with this approach, in the long term the market will identify the non-independent nature of the consultant and value their services in a way that reflects this.

### 5.1 Conflicts of interest

A reviewer should disclose any actual or perceived conflicts of interest in the report under review. The request for review may need to be declined in some instances.

### 5.2 Respect of IP and confidentiality

Intellectual property (IP) in the report under review rests with the reviewee (or others) and not the reviewer. The reviewer should never infringe the intellectual property protections of its owner. Similarly, the reviewer may be provided with confidential materials for review and should not exploit or disclose such confidential information.

### 5.3 Notification to author

When engaged to undertake an external review it is good practice to notify the author of the report. This can assist in understanding the nature of the author's engagement, allowing them to point out any restrictions in their brief or provide background information to the project that can assist the reviewer.

Such notification is a requirement of consultants working for AAAC Member Firms (Association of Australasian Acoustical Consultants, 2024) as well as Members of the Acoustical Society of New Zealand (Acoustical Society of New Zealand, 2024). As the AAAC Report Writing Guidelines (Association of Australasian Acoustical Consultants, 2017) point out "the Peer Reviewer should attempt to contact the author of the report, where permitted by the client and where clarification would address questions the peer reviewer has."

## 6 GUIDANCE FOR EXTERNAL PEER REVIEW

The items identified for external review regarding conflicts of interest, respect of IP and confidentiality, and notification to author all equally apply to external peer review.

The objectives for external peer review are:

- Evaluating the outcomes and conclusions of the report and whether they are suitably supported
- Identifying incorrect, inappropriate, ambiguous or missing information
- Assisting the client, but not pandering to them
- Maintaining professional integrity, including consistency of approach

It is important for the reviewer to remember that their approach is not necessarily the approach that all consultants do (or need to) take. Others may follow different procedures or processes, and the important question is whether the outcome is appropriate and sufficiently supported.

As outlined in Sections 3.4, 3.8 and 5, maintaining professional integrity and consistency is paramount. This does not mean that you cannot take input or guidance from your client, but your advice and actions should reflect your independence, responsibilities to all relevant stakeholders and ethical responsibilities.

### 6.1 Reader experience

The purpose of a peer review is typically to assist a client or the court, using your professional expertise, so that they have a clear understanding of the situation. It should not be an opportunity to show off the reviewer's expertise, for example by picking on minor points, nor to personally criticise or belittle an author.

Peer reviews should be aimed at the reader's level of understanding. Unlike for external peer reviews, where the review will assist a peer from a different company who has a thorough understanding of the technical aspects, external peer reviews are intended to assist persons that are (generally) not technically experienced. Therefore, external peer reviews should ensure that they can be understood by the client through simplified or lay language where necessary, while ensuring that the technical background is captured appropriately.

### 6.2 Peer review structure

In order to stick to the objectives of the peer review some structure is useful to sort and identify important items. The following structure for peer reviews is set out in the AAAC Report Writing Guidelines (Association of Australasian Acoustical Consultants, 2017) and suggests categorising items in three ways, as:

1. Advice, which they believe is incorrect or inappropriate;
2. Advice which requires clarification or additional information;
3. Minor points which, in the peer reviewer's opinion, may not be the approach they would have taken, however, do not alter the outcome/ conclusion of the report

The primary consideration in most instances is whether an identified item would change, or remove confidence in, the conclusions of the report. Therefore, the reviewer must consider the significance of items, not just their technical correctness, when preparing their peer review and ask themselves 'what is the significance of this, will it affect the conclusion/outcomes of the report'.

## 7 ADVICE FOR REVIEWEES

As stated at the outset, consultants can understandably be sensitive to critique of their work. Remember that a review is not a criticism of you, it is a learning opportunity. Reviewers have different styles and lots of comments or corrections does not mean you prepared a terrible report. A light touch is not always the best feedback to get from a reviewer as this may not help you improve your work. Particularly in the context of internal review, remember that we all have limited time in life and for someone to take the time to understand your work and show you a better way by sharing their experience is a gift of their time and knowledge.

It is worth specifically noting the challenges faced by consultants writing reports in a language other than their native tongue. Over 60 percent of Australia's qualified engineers (Engineers Australia, 2023) were born overseas and we have many people in our field for whom English is a second language. Writing technical reports can be particularly challenging for them and refining the flow of language and grammar takes time. Do not be disheartened. Remember that every correction that somebody takes the time to make helps in refining your writing.

## 8 FINAL REMARKS

Review of reports is a constant activity throughout a consultant's career. There are requirements on both reviewers and reviewees to act with integrity and respect. Reviews should be carried out in an impartial and objective manner and should never be made personal. All reviews should have a clear scope and objective, for example to determine whether the conclusions of the report are supported by evidence, and the review should focus on responding to that objective.

## ACKNOWLEDGEMENTS

We acknowledge the first nations custodians of the lands on which our work is conducted, and our income derived, including the Gadigal people of the Eora Nation, the Terramerragal people of the Kuringgai and the Māori and Moriori of Aotearoa. We acknowledge them and pay respect to their Elders, both past and present. Sovereignty in Australia has never been ceded or extinguished and co-exists with the sovereignty of the Crown. Always was, always will be, Aboriginal land.

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