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# The Art of Achieving Agreement to use the Observational Method

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ABSTRACT The Observational Method, OM, is a powerful technique that maximises economy while assuring safety. It can act as a driver for innovation and achieve more effective collaboration across client, design, and construction teams. Unfortunately, despite these compelling advantages, the OM continues to be significantly under-used. The practical reality is that opportunities to use the OM frequently fail at the first hurdle – agreement to use the OM is not achieved. This paper outlines the key factors involved in achieving agreement, based on more than three decades of experience in practical implementation of the OM. Achieving agreement typically presents a substantial challenge and requires sustained and convincing advocacy by an 'OM champion.' Effective implementation demands commitment by key stakeholders in the project. The challenges involved in achieving agreement include a mix of technical, contractual, and commercial issues. The paper explains how agreement may be achieved and also explores the practical limits of the OM. A major barrier to achieving agreement are contract conditions – the paper briefly reviews different contract forms and highlights those which can create the optimum environment for OM implementation. The paper concludes with recommendations for OM practitioners

KEYWORDS: Observational Method, Case Histories, Instrumentation & Monitoring, Risk Management, Safety, Real-Time Back Analysis.

## 1 INTRODUCTION

The Observational Method, OM, is a powerful, practical technique which, when used effectively, can deliver:

- Major cost, carbon and, especially, time savings;
- Enhanced safety, for example, by focusing on good communication and clearer procedures and control during construction.
- More effective collaboration between designers and constructors as well as the client;
- Opportunities for driving innovation and more effective learning from projects.

The technical basis for the OM is well established and a wide range of guidance is available, (for example: Peck, 1969; Nicholson *et al.*,1999). Eurocode 7 includes provision for using the OM (specifically clause 2.7).

However, there is little guidance available on the critical first step which is 'the art of achieving agreement to use the OM'. This paper aims to address this by outlining some of the fundamental issues which need to be resolved to achieve an agreement. Without this agreement, all the potential opportunities and benefits of using OM will continue to be missed. Powderham and O'Brien (2021) describe the practical application of the OM through a dozen case histories which cover a range of different geologies, design constraints and construction challenges. Importantly, each case history includes a description of how agreement was achieved to use the OM.

Despite the compelling list of advantages noted above, the OM continues to be significantly under-used. Typically, the main reasons for OM not being used are:

(i) Contracts (particularly between Main Contractor and Client) which inhibit the use of OM
(ii) Industry culture, which leads to poor management of risk and opportunity combined with the key organisations (such as: designer, checker, contractor, etc) wishing to sit within their respective silos and comfort zones
(iii) Lack of understanding of 'The Art of Achieving Agreement to use the OM'.

## 2 KEY FACTORS IN ACHIEVING AGREEMENT

### 2.1 *Overview – How is agreement to use the OM achieved?*

In practice, the process to achieve agreement is quite variable, requiring a flexible approach to address the circumstances particular to a given project and the specific concerns of each stakeholder. How and when the agreement is reached will also be influenced by whether OM is planned from an early project stage (ie 'ab initio') or as a 'best way out', (ie when the project is in a crisis). The most important issues to overcome are:

1. Contract Conditions
2. Design Checking / Design Assurance
3. Gaining stakeholder support

Contract Conditions can be a considerable disincentive to use of the OM and are discussed later. In many respects, successfully dealing with aspects 2 and 3 above relate to the issue of 'industry culture', noted above. Moving key organisations out of their silos and into more positive collaborative working relationships is a crucial step in the use of the OM.

The OM demands commitment by all stakeholders and is fundamental to ensuring success in any application. Consequently, when there is no overriding driver for change, for example an 'ab initio' application, there is little incentive to depart from convention or 'business as usual'. The parties are inclined to remain within their respective silos or comfort zones. Ab initio applications are typically developed once a preliminary design is developed and project constraints raise specific challenges, (e.g., Powderham and O'Brien, 2020). By contrast, with projects that have reached a crisis, there will be a marked absence of comfort generally. This will be evident in polarised and often strongly conflicting perspectives between the parties. Here the OM would be proposed as the 'best way out' solution. Peck (1969) noted that such OM applications were more common, indicating, in turn, that resistance to change in the absence of a crisis is quite common. Even with a crisis as a catalyst, it often takes sustained and convincing advocacy by an OM champion to secure the 'buy-in' by the other parties. They will probably be in varying degrees of disagreement and will therefore not readily reach a consensus that the OM offers the best way forward. It will test the commitment, confidence, resilience and ability of the OM champion as it can take detailed development, strong advocacy and substantial time (typically many months) and effort to reach agreement. The key factors involved are as follows:

- <u>Convincing business case</u>
  The benefits of adopting the OM must be clearly established and communicated to the stakeholders – particularly to the main stakeholder on whose approval

the agreement to implement depends. The benefits will need to include commercial (time/cost) aspects, as well as technical issues. The advantages of the OM need to be sufficiently convincing when evaluated against the established conventional (or base case) design or other potential alternatives.

- Sound technical basis
  Applications of the OM often involve some form of ground/structure interaction. In urban areas the main concern is generally potential damage to existing buildings / infrastructure, (for example, Korff and Mair, 2013). Both the geotechnical and the structural aspects must be appropriately assessed and understood. This understanding must be manifest. In short, OM practitioners need to have commitment, competence and clarity. This must be evident to the stakeholders.
- Risk management
  Maintaining and demonstrating an acceptable level of safety is essential. Moreover, OM practitioners require an active and broad appreciation of the stakeholders' perspectives on risks (which typically differ across different stakeholders) and project constraints including those relating to programme and contractual issues (which also affects the business case)
- Trust
  Central to any application of the OM are interpersonal relationships in which trust between the parties plays a key role. This trust is not a given but has to be earned.

### 2.2 *Risk Management, The Power of Progressive Modification*

OM implementation through Progressive Modification, (Powderham, 1998), is when construction is started by implementing a design with a level of risk judged acceptable by all parties. This may vary from 'worst credible' through to 'most probable' conditions, although commonly the assumed starting conditions are more cautious than most probable. Monitoring is then used to enable modification of the design, on a step-by-step basis, as construction proceeds. Hence, progressive modification allows for the gradual introduction of changes, based on observed behaviour, to move towards actual conditions. The implementation of the OM through progressive modification has been found to be the best basis for achieving agreement with, typically skeptical, project stakeholders. With its additional focus on enhancing and demonstrating safety, whether for 'ab initio' or 'best way out' situations, progressive modification provides greater comfort to the stakeholders in their concerns about risk. As illustrated in Figure 1, progressive modification can address both main categories of OM. There is a big difference contractually and politically between 'best way out' situations, as opposed to 'ab initio' ones, ('best way out' situations involve crisis and consequently demand radical solutions). It is essential to appreciate that each application of the OM is bespoke and, beyond the broad concepts, each case needs to be addressed in detail for the particular project conditions.

Progressive modification brings very effective flexibility. Consequently, there is no need to commence construction with an unduly pessimistic design or one based, with little safety margins, on estimations of the most probable conditions. Instead, the conservatism of the starting condition can be chosen to accommodate the comfort levels of the stakeholders for each specific case. In this context it is vital to remember that the uncertainties are not solely related to the ground parameters.

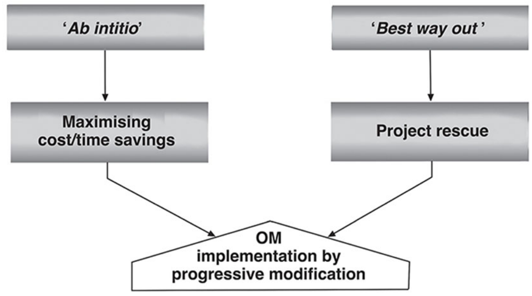


Figure 1. OM categories – all can be addressed by progressive modification

As discussed by O'Brien et al, (2022), the uncertainties (and any associated parameters / safety margins) can relate to: construction activities, workmanship and processes; structural behaviour (including that of aged existing buildings / infrastructure); ground-structure interaction; groundwater conditions. Hence, simply applying a partial factor on a ground parameter will often not address the range of issues that need to be managed. Progressive modification, as discussed by Powderham and O'Brien (2020), does not need to be constrained by any prescriptive requirement to implement and complete an application of the OM with a fixed level of conservatism in the design. It is essential, however, to have a realistic appreciation of the potential range of conditions from the most probable to the worst credible. Such an understanding is central to establishing the viability of any application of the OM. This assessment requires, as well as investigation and analysis, experience and engineering judgement.

It is important to note that design modifications do not always have to be contingent measures of a corrective kind, although this is often assumed. It is implied, for example, in the relevant clauses relating to the OM in Eurocode 7. Rather than design modifications being restricted to corrective contingencies, progressive modification inherently offers the potential for a fully flexible process. Through its step-by-step approach, it creates the opportunity to maximise value by facilitating the introduction of beneficial design changes in a safe and controlled manner. And, if the OM is commenced from a demonstrably safe conservative base, most of the design changes are likely to be beneficial. Moreover, this managed incremental approach also facilitates a very effective way to deal with unfavourable conditions. Thus, with this ability to satisfy safety concerns while also maximising value, progressive modification creates a fertile basis on which to achieve agreement to implement the OM.

### 2.3 *The importance of simplicity*

It is essential that the practical implementation of the OM (such as contingency measures, monitoring, trigger limits) is kept as simple as possible. This is necessary both to maximise the likelihood of achieving agreement to use the OM and to ensure the OM is effectively implemented. Although much sophisticated and creative thinking is required by an OM Champion, simplicity both in communication and execution is central to the OM. The importance of this was articulated by Peck (2001): "the OM paid off handsomely, without more than the most elemental theory and with only qualitative predictions. There were few refinements, and no elaborate computer modelling to be 'validated' by exotic remote-reading sensors. These refinements are not the essence of the OM. They have their place, but they should not deflect attention and resources from the essence of the method". Therefore, the temptation to over-complicate the method should be resisted. The OM provides a simple way to address and resolve complexity. All of the case histories discussed by Powderham and O'Brien (2020) involved the resolution of very complex conditions. For example, the Boston Central Artery Tunnel Jacking, (Powderham and O'Brien, 2020), involved a sensitive network of seven interconnecting railway tracks which was subject to seven different sources of ground movement. These included, tunnel jacking, jet grouting and artificial ground freezing within deep deposits of made ground and alluvium which had been affected by two centuries of waterfront development. This complexity was resolved on a simple basis through one set of OM control traffic lights focused on the allowable rail track movement limits. One common risk for OM implementation can be generated by a project's political environment. This may lead to the proliferation of non-critical instrumentation and the imposition of supplementary management systems (and perhaps several 'traffic lights') by different stakeholders - together with overly prescriptive requirements. Such complications are likely to substantially compromise the effectiveness of the OM.

### 2.4 *Key Limitations of the OM*

In outline, the implementation of the OM requires:

1. the ability to reliably obtain the critical observations in a timely manner (typically through a well-designed instrumentation/monitoring system, located at key parts of the structures/sub-surface)
2. an understanding of the credible failure / deformation mechanisms, and specifically that the proposed works will not be vulnerable to progressive collapse or sudden failure
3. the ability to implement timely pre-planned contingency measures (this requires close collaboration between designer and contractor)
4. adequate stakeholder support, in addition to the client, contractor and designer, other key parties may include owners of adjacent infrastructure/buildings in vicinity of works, instrumentation/monitoring specialists and independent checkers/regulators

Table 1 outlines the key limitations for the OM and potential solutions. Often, the main barrier to implementation of the OM (assuming the contract conditions are supportive) are not technical or construction planning issues (i.e., items 1 to 3 above), but rather it is a lack of stakeholder support. This can be resolved but typically requires experienced and determined advocacy, as noted earlier in this paper.

Items 1 and 2 above are usually developed by the designer, working for the main contractor under a design/build contract. A key outcome is the definition of trigger levels for critical observations; these should be project and structure specific trigger levels developed on a bespoke basis, discussed by O'Brien et al (2022). Effective determination of performance limits that can be managed through the OM requires experience and judgement, together with multi-disciplinary inputs by geotechnical and structural engineers (with appropriate ground-structure interaction expertise, working collaboratively together).

The identification, design, planning and logistics associated with contingency measures are crucial tasks. The selection of an appropriate contingency measure can transform OM from being unacceptable to being a very attractive opportunity.

Table 1. Limitations and Potential Solutions for OM implementation

| **Limitation** | **Potential solutions** | **Comments** |
|---|---|---|
| Inability to reliably obtain critical observation in a timely manner | Modify design solution or construction means/methods (or instrumentation system) | Fundamental issue, OM cannot be used unless resolved. |
| Inability to implement timely contingency plans | Modify construction sequence, or schedule. Identify rapidly installed contingencies. | Fundamental issue, OM cannot be used unless resolved. |
| Vulnerable to progressive collapse or sudden failure | Modify structure, ensure potentially vulnerable components are more robust and ductile. | Fundamental issue, OM cannot be used unless resolved. |
| Lack of stakeholder support – existing asset owner and independent checker | Careful explanation of the OM; consider use of progressive modification / verification process. Showcase relevant case histories. Set up Expert Panel, with experienced OM practitioners.<br>Introduce a strong interface manager. | Gaining support can be a major challenge. Can be resolved with: experienced input; determined advocacy. Multi-discipline inputs (geotechnical + structural) commonly required. |

This also creates opportunities for creative collaboration between designer and contractor. The key is usually simplicity and speed of installation. Appropriate materials and equipment will need to be mobilised to site, so the contingency measure can be installed within an agreed timescale if a trigger limit is reached. The appropriate timescale also requires consideration of the time required to obtain and interpret the critical observations compared with the timescale for deformation to reach a critical magnitude.

### 2.5 *Contractual and Commercial Environment*

#### 2.5.1 *Optimum commercial environment*

Fundamentally, the OM requires real collaboration and trust amongst the key organisations involved in its implementation. Unfortunately, adversarial behaviour, a silo mentality and a lack of trust are common across the construction industry. A shift to more collaborative behaviour requires, as a minimum, for contracts to stimulate:

1. closer co-ordination between client, contractor and designer to allow opportunities to be identified and developed;
2. a non-adversarial environment which encourages the required teamwork;
3. a commercial framework that encourages the above, so benefits, in particular cost savings (note: these may be direct or indirect due to time savings) are shared equitably between parties.

The above requirements are not generally facilitated by the standard types of priced (lump sum or bill of quantities based) contracts which are often used in the construction industry. Hence, it is unsurprising that the OM is under-used. Experience indicates that the most effective stimulus to implementation of the OM is to include a Value Engineering (VE) clause in the contract.

#### 2.5.2 *Value Engineering*

The implementation of the OM requires substantial extra effort during the early project stages, especially by the contractor and designer (for example, evaluation of alternatives, extra analysis and planning of various scenarios, design and planning for contingency measures, etc). Hence, there has to be some commercial incentivisation to encourage the parties to begin considering OM implementation, otherwise the OM will be a non-starter irrespective of perceived technical benefits, (Tran and Molenaar, 2012). Value engineering is the term given to a contractual mechanism that encourages the contractor to suggest changes to the client's original design. In the authors' experience the inclusion of a value engineering clause has been the crucial catalyst for the OM to be implemented. The key features of this type of clause are:

1. each party is encouraged to propose changes that provide a benefit to the project, such as a reduction of time, costs, improved safety, etc;
2. the client can reject a proposal, but the reasons must be given and a resubmission allowed, provided it addresses the reasons for a previous rejection;
3. the parties receive a fair share of the savings, based upon the level of risk taken by each party (the percentage split should be specified in the clause).

The main parties will be the contractor and client. However, the contributions by the designer, checkers and specialist sub-contractors should also be appropriately recognised.

#### 2.5.3 *Conditions of Contract*

The OM has been implemented under a wide range of different contracts. However, as noted above, contractual conditions are often the key blocker to using the OM. Table 2 provides a brief overview of different contract types and their compatibility with the implementation of the OM.

As noted in Table 2 some of the newer forms of contract (Early Contractor Involvement, ECI, and Partnering) offer a far better basis for achieving agreement to use the OM than traditional contracts (where the parties often exhibit adversarial attitudes), Patterson, 2010.

The recent editions of two standard forms of contract: FIDIC and NEC have created far more opportunity to implement the OM because they now include a value engineering clause as a standard clause in the contract, as discussed by O'Brien et al (2022).

### 2.6 *Design Checking / Design Assurance*

Checking and quality assurance procedures are becoming more complex in many parts of the world, especially for major projects. Hence, there is an increasing risk that independent checking and approval procedures becomes a factor which prevents OM being implemented. Clients need to be aware of this pitfall so that alternative innovative ideas, including OM, are fairly and objectively assessed by suitably competent and experienced professionals. The independent checking scope and timing are important when implementing the OM. Some recent OM applications have been adapted (known as 'the verification process') to meet onerous design assurance requirements (eg Pye et al, 2022) and enabling OM to be implemented. Addressing checkers concerns during OM implementation is driving use of advanced analysis, which means that real-time back-analysis is likely to become increasingly important in future OM applications, (e.g., Tschuchnigg et al, 2026; Wride et al, 2026).

The implementation of the OM requires suitable experience and engineering judgement (e.g. Dunnicliff and Deere, 1984) and is therefore ill-suited to routine checks by junior staff. An alternative means for a client to ensure there is rigorous independent review is to appoint an Expert Panel to carry out peer reviews during the OM. The Panel should include engineers with design and construction expertise and relevant multi-disciplinary skills. The Peer Review process is flexible and can focus on specific aspects (eg safety, technical, commercial) in a timely way at different stages through the project. In the UK a proactive form of Peer Review, known as Peer Assist (PA) has been endorsed by the I.C.E. and Health and Safety Executive, refer to Standing Committee on Structural Safety (SCOSS) website: www.scoss.org.uk

## 3 SELECTED PRACTICAL EXAMPLES OF ACHIEVING AGREEMENT TO USE THE OM

Table 3 provides a summary of some selected case histories which illustrate the range of solutions which enabled the OM to be used, within projects where the original constraints would have prevented OM from being considered. These examples include:

1. Insertion of a value engineering clause - for the Limehouse Link project the first problem was the contractual constraints to introducing design changes during construction. Such limitations make the OM a complete non-starter. It was unlocked by adding a value engineering clause to the contract and was the first example in the United Kingdom of the OM being introduced through such a clause. This was added as a variation to the design and build contract well after construction had started.
2. Preliminary Site Trials – these can showcase potential benefits before stakeholders totally commit to using OM. The trials can address project specific concerns which can be quite variable. Innovative thinking can also unravel potentially complex issues. For Limehouse Link there was no consensus on the need for mid-height props amongst key stakeholders. Rather than a party attempting to carry out more sophisticated analysis, a 'soft prop' trial was carried out. This simply involved leaving a 25mm gap between the retaining wall and one end of each prop in the trial section. The trial showed that the gap did not close and therefore the mid-height props were demonstrably unnecessary.
3. Simple, low cost contingency measures – for Heathrow airport airside road tunnel, the use of blinding struts as a potential contingency measure rather than conventional props meant the use of OM became viable. Similarly, for Wembley Stadium the identification of mass concrete counter-weights (to mitigate excessive pile-group rotation) unlocked the use of OM. Contingency planning requires close collaboration (between designer and contractor) and, often, creative lateral thinking to solve specific project constraints.
4. Design checking and assurance – for Crossrail, the timescales for independent checking, could have stopped OM being used. OM was adapted into a 'verification process', which included an experienced checker being actively involved in pre-defined 'verification point' workshops during OM implementation.

Table 2. Overview of contract types and potential synergy with the Observational Method.

| Contract Type | Key Features | Collaboration between designer and Contractor | Opportunity for OM |
|---|---|---|---|
| Traditional (Design/Bid/Build) | Client appoints designer, design completed, successful contractor builds design | Very Limited. Typically, designer separated from Contractor | Very limited, unless a Value Engineering (VE) clause is introduced - for example at Limehouse Link |
| Design and Build | Client's designer prepares a 'reference design'. D&B team prepare tender design and if successful completes final design and builds project. | Potentially good, but intense time pressure during tender may limit opportunity to build rapport and trust. | More opportunity than traditional, but Client approvals and independent checkers may hinder. May not be in commercial interests of Contractor or designer to pursue OM, unless incentivised through a VE clause. |
| Early Contractor Involvement (ECI) | Reference design developed by appointed Contractors during 'Stage 1' of ECI process. Stage One ends with the agreed scope, prices, programme and risk allocation for the remaining design and construction in 'Stage Two'. Stage Two is often a target contract. | Typically, better than conventional D&B, due to reduced time pressures and opportunity to seek and develop innovation | Very good potential, since additional time during Stage 1 of ECI provides greater opportunity to build trust between parties. For example, the use of partnering and the 'single team' approach developed under the NEC for the Heathrow cofferdam recovery solution. |
| Alliancing | Multi-party delivery framework focuses on a co-operative process aims to promote: trust, alignment of commercial interests and collaboration. | Very good. Innovation promoted through more collaborative environment. Positive interaction between all parties encouraged. | Potentially excellent. Alignment of commercial interests and risk sharing is conducive to OM. Longer term relationships, should further enhance OM opportunities. |

Table 3. Selected examples of how agreement to use the OM was achieved

| Project | Project Type | Catalyst(s) for OM Agreement | Comment |
|---|---|---|---|
| Limehouse Link | Propped retaining wall | Value engineering clause introduced during project<br>Trial of a 'soft prop' | Enabled Contractor to gain from any cost savings derived from OM<br>The trial overcame technical differences in interpretation of temporary prop loads between stakeholders |
| Heathrow Airport, airside road tunnel | Propped retaining wall | Use of 'Blinding Struts' as contingency measure | Mobilisation of conventional props was commercially and logistically unattractive given small scale of works and constrained physical workspace. |
| Boston Central Artery | Jacked tunnel | Implementation under 'alias' of 'SCRIDAT' (standing committee on instrumentation data review attributed to tunnelling) | A previous (and flawed) implementation of the OM, known to the client, meant that the term 'OM' could not be used. The term 'the OM' is often mis-understood by non-specialists – and needs clear explanation at the outset. |
| Wembley Stadium | Pile groups | Use of mass concrete counter-weight as contingency measure | Pile groups subject to highly complex loading, however the most critical scenario could be mitigated by a counterweight – critically this could be rapidly implemented through readily available site equipment. |
| Irlam Rail Bridge Replacement | Embankment on Soft Clay | 'Delay periods' introduced for pre-load embankment construction | Over-loading of existing bridge foundations related to soft ground consolidation; delay periods readily reduced risk, these were modified on basis of monitoring. |
| Crossrail Moorgate Shaft | Deep Shaft | 'Verification Process' introduced to satisfy projects onerous checking/assurance requirements | 3 construction stages selected as 'verification points' (VP), attended by designer / checker. At each VP if analysis of monitoring indicated critical movement limit would not be exceeded, then design could be modified (whilst maintaining design assurance/independent checking). |

## 4 CONCLUSIONS AND RECOMMENDATIONS FOR OM PRACTITIONERS

### 4.1 *Conclusions*

Although, there are compelling benefits in the use of the OM, such as cost/time savings, improved safety and risk management, etc, it is significantly under-used. This neglect is typically due to contractual conditions (which act as a disincentive to its use) or adverse perceptions of undue risk (in part due to prevalent industry culture). The inclusion of a value engineering, VE, clause in contract conditions, which allows potential savings to be equitably distributed, has often been a catalyst for OM to be used. Sometimes, a VE clause has been inserted after project commencement to facilitate OM use (when a client has seen a strong business case, in terms of cost/time savings, risk reduction, etc). The OM is also widely misunderstood across the industry. On this matter, OM advocates need to recognize that communicating what OM is and how it can be implemented must focus on the essence of the OM, Peck (2001).

Agreement to use the OM requires a range of issues (both non-technical and technical) to be resolved. Typically, it has also required a determined experienced individual to emerge from a project team, to act as an advocate for use of the OM (the 'OM champion'). Gaining agreement requires a flexible approach to address project specific constraints and concerns, however, it is always necessary to:

- Provide a strong business case
- Develop a sound technical basis
- Produce robust risk management
- Gain the trust of key stakeholders

Technically, the essence of the OM and the key to success in applying the OM is in identifying the critical observations and having the means to obtain and act upon them (ie implement pre-planned contingency measures) in a safe and timely manner. This latter aspect relates to a cardinal limitation of the OM: if it is not possible to change the design during construction, then this renders the OM a non-starter. It must also be possible to address the range of credible conditions (both through the observations and the contingency measures), varying from worst credible through to most probable. The OM is most effective where the critical observations can be reliably obtained through simple measurements. The multiple stakeholders involved in a project, often have widely varying perceptions of risk and how it can be addressed. The implementation of the OM though progressive modification has often been found to be the best basis for gaining agreement to use of the OM. With its focus on an incremental, step-by-step, approach progressive modification creates the opportunity to maximise value whilst also allowing OM to start from a demonstrably safe condition.

### 4.2 *Recommendations for OM Practitioners*

Based on more than three decades of OM experience, the following are recommended:

1. Establish an ongoing site presence and visit the site as early as possible; it is an essential part of observation and assessing site conditions and how these may evolve during construction.
2. Relate design to construction on an informed basis, designers need to have an appreciation of construction plant, means and methods.
3. OM typically requires a multi-disciplinary approach, ensure there is balanced expertise across an OM team (as a minimum this usually requires inputs from both structural and geotechnical engineers).
4. Recognise that achieving agreement to use the OM typically presents a substantial challenge. To gain agreement, the differing commercial issues across the parties need to be addressed, conditions of contract may need modification to facilitate the use of the OM.
5. Treat each application of the OM as bespoke, generally there is a unique combination of skills/attitudes across a project team and its stakeholders, together with project specific constraints, and desired outcomes. Promote teamwork and engender trust. Seek awareness and understanding of stakeholders' priorities and concerns. They will vary between the parties.
6. Keep it simple – but not simplistic. Exercise engineering judgement and avoid undue complication. Advances in technology, for example, in instrumentation and analysis can be a powerful support in the use of the OM, but they are not the essence of the OM. Ensure there is a focus on critical observations and carefully monitor their trends.
7. Study case histories and appreciate the lessons learned.

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