1 Project Mediation

1.1 The concept of project mediation is not new. Historically it has been known as “contracted mediation”. In order to bring some uniformity to the various different procedures and amendments to contracts for contracted mediation, CEDR Solve with the assistance of Fenwick Elliott produced a Model Project Mediation Agreement and Protocol (now available through CEDR Solve) which was launched in December 2006. In this paper, I refer to this form of project mediation as “Project Mediation”.

1.2 The underlying principle of Project Mediation is that the project participants (meaning the main parties to the construction contract as well as key consultants and sub-contractors) contract from the outset to use mediation as a primary means of dispute resolution in order to manage the risk of disputes during the delivery of the project. Project Mediation has been described as “an attempt to fuse team building, dispute avoidance and dispute resolution in one procedure”.

1.3 Project Mediation is still very much in its early stages, although in general there has been a positive reception to the concept. It is difficult to gauge its effect in practice, however, given that the process is largely confidential. It is noted that CEDR, in association with Germanischer Lloyd, has also recently launched “Project Mediation Plus”, which is a specific project mediation procedure for offshore wind farms and appears to be based on similar principles to Project Mediation.

1.4 The aim of this paper is to examine the extent to which Project Mediation can be used with FIDIC contracts. In order to do this, it is necessary in the first instance to consider how Project Mediation works in general and through the CEDR procedure, and then look at the application of Project Mediation to the FIDIC contracts and, in particular, how it might interface with existing provisions for Dispute Adjudication Boards and Dispute Boards.

---

1 Simon Tolson and Nicholas Gould - Project Mediation: It’s like Partnering with Teeth, Fenwick Elliott website
2 How Project Mediation works

2.1 The aim of Project Mediation is to assist in the successful delivery of a project by identifying and addressing problems before they turn into disputes. The two most contentious areas within the context of a construction and engineering contract are payment and delay. Payment problems and delays are matters that can be identified at an early stage and, if dealt with at that stage, can be nipped in the bud thus saving the parties both time and cost as well as allowing the project to progress more smoothly.

2.2 Project Mediation has the following defining features:

2.2.1 One to two project mediators are appointed at the outset of the project. The mediators are to be impartial and, if there are two of them, should consist of one legal expert and one commercial expert, both with mediation training.

2.2.2 Many of the interested parties to the project are subject to the agreement to comply with the mediation procedure throughout the duration of the project. This therefore crosses contractual boundaries and allows coordination and collaboration, ensuring that parties relevant to a particular dispute may be easily brought into the project mediation process without each party having to be approached separately and asked to consider joining an ad hoc multi-party mediation (which approach could be refused).

2.2.3 Key to the process is a workshop or series of workshops at the commencement of the project, between all parties to the project, to explain the role of the mediators and also to familiarise the parties and the mediators with the aims of the project and of the project parties and the personalities involved.

2.2.4 The project mediators visit the project on a regular basis in order to have a working knowledge of the project and the individuals working on the project. This knowledge enables the panel to have a chance at resolving differences before they escalate. Further, as the project mediators will not be coming to the dispute cold but will have built up their knowledge of the project as it progresses they will be able to use that knowledge to facilitate mediation of disputes more effectively.

2.2.5 The project mediators’ role in the project outside of formal mediation proceedings is deliberately kept flexible. This enables the parties to approach the mediators should they believe that issues have arisen that require some form of discussion, and this can be done on a confidential basis without telling any of the other parties. The aim is to provide an immediate confidential forum for the parties to air grievances and concerns which could, if left, turn into disputes.

2.3 The discussions and meetings with the project participants as part of the site visits, and outside of those site visits if necessary, are seen as “interventions” and are the
primary method by which the project mediators can help the project participants to avoid disputes. The project mediators can choose to discuss what they see as potential disputes. By anticipating potential disputes and managing unexpected risks and the parties’ expectations, the emphasis is on dispute avoidance in the first instance and then dispute resolution.

2.4 In terms of cost, project mediation is seen to be cheaper than the most comparable alternative: the standing Dispute Adjudication Board. In particular, whilst the project mediators will still be paid a monthly retainer and additional fees for interventions into the project and formal mediation, the cost that is incurred when a dispute is referred should be much less than when a dispute is referred to a Dispute Adjudication Board. In particular, the similar level of detailed statements of case, evidence and experts may well not be necessary. Instead, the parties can exchange summary position statements and supporting documents followed by a one-day mediation.

2.5 In addition to the matters set out above, other perceived advantages of project mediation are that:

- The process encourages communication and information flow and enhances collaborative working between all parties to the project.
- The process enables dispute avoidance as well as dispute resolution.
- The process is flexible and allows for imaginative solutions to be proposed that meet the parties’ actual needs during the course of the project.
- The process can be budgeted for in advance.

2.6 It is the aim of project mediation to enable conflict management and dispute resolution to be integrated into the project contracts as part of a collaborative contracting approach, allowing parties to focus on the completion of the project.

3 The CEDR Model Project Mediation Protocol and Agreement

3.1 The CEDR Model Project Mediation Protocol and Agreement was launched in December 2006. It comprises non-binding guidance notes (“the Guidance”), the CEDR Model Project Mediation Protocol (“the Model Protocol”) and the CEDR Model Mediation Agreement (“the Model Agreement”).

3.2 The Model Agreement incorporates the Model Protocol although the Model Agreement can vary the Model Protocol should the parties so wish.

3.3 The Model Protocol sets out the terms and conditions that the parties will follow. The parties are made up of the contracting body and the contractor (referred to as the “Core Parties”), any identified consultants, sub-contractors or specialist suppliers (referred to as “Key Suppliers”) and the project mediators (the “Project Mediators”).
3.4 The Model Protocol provides for either one or two Project Mediators to be appointed.\(^2\) This allows flexibility, paying due regard to the size and complexity of the project.

3.5 If not already nominated, the Core Parties, in consultation with the Key Suppliers, are to nominate the Project Mediators within 21 days of the date of the Model Agreement.\(^3\) The Guidance states that CEDR Solve will appoint the Project Mediators if necessary and they will be chosen on the basis of the mix of skills and professional backgrounds the parties think will be most appropriate for the project.

3.6 Whilst the terms of remuneration of each Project Mediator are to be mutually agreed between the Core Parties are when agreeing the terms of the Project Mediators’ appointments, the Core Parties remain jointly and severally responsible for paying one half of the Project Mediators’ fees.\(^4\) The Guidance suggests that the fees of the Project Mediators are shared equally by the Core Parties and also suggests how the Mediators should charge for the workshop(s), site visits and informal discussions and formal mediation. This is reflected in the Model Agreement.

3.7 As stated above, at the outset of the project, a workshop or series of workshops should be carried out with the Project Mediators. The Guidance suggests that the Project Mediators set the format of the workshop but that it should generally include:

- The roles and responsibilities of the project members.
- Understanding how others function.
- Project mediation review: principles, process and the role of the Project Mediators.
- Identifying communication lines.
- Identifying project pressure points.

The Guidance suggests that the Project Mediators charge a one-off fee for the workshop(s).

3.8 What is clear from the Guidance and the Model Protocol is that it is envisaged that the bulk of the work to be carried out by the Project Mediators is through interventions and discussions carried out during the course of the project. It is important to note that the Project Mediators are given very wide powers through the Model Protocol, including the power to call meetings and ask for documentation and the flexibility to deal with the dispute or potential dispute in the manner that they consider to be most appropriate. These powers are outlined in more detail below. It is therefore important that the project participants trust the Project Mediators who have been appointed to be able to undertake their role well and to be able to intervene successfully.

3.9 The Guidance states that access to the Project Mediators is to be for the duration of the project, and at regular intervals the Project Mediators are to attend the project site to discuss progress and identify any actual or potential communication problems

\(^2\) Model Protocol, clause 2  
\(^3\) Ibid, clause 3  
\(^4\) Ibid, clause 4
between the project participants. This is reflected in the Model Protocol which states that the purpose of the site visits is to enable the Project Mediators to become and remain acquainted with the nature and progress of the works at the Project and of any dispute.\(^5\)

3.10 The Guidance also suggests that the Project Mediators’ visits should normally coincide with the regular project or site meetings. This is sensible in terms of resourcing on the part of the project participants. As a default, the Model Protocol provides for the site visits to take place at intervals of not more than 56 days.\(^6\) The timing and agenda for the visits are to be agreed between the Core Parties and the Project Mediators but in the absence of agreement the Project Mediators shall decide the timing and agenda.\(^7\) Project visits are to be attended by the Project Mediators, the Core Parties and the Key Supplier(s) and should be coordinated by the Contracting Body in cooperation with the Contractor.

3.11 The Project Mediators should also receive a copy of all documents requested by them.\(^8\)

3.12 The Model Protocol states that the Project Mediators may discuss matters in private at any time in order to consider the nature and progress of the Project or any matter relating to a dispute, whether referred to the Project Mediators or not. The Guidance goes further than this and suggests that the Project Mediators may also have discussions with the project participants, together or separately, to assist in the prevention of disputes or clarify the information requirements they need to address in a dispute prior to settlement discussions. Further, the Guidance states that outside of site visits, it is for the parties to keep the Project Mediators informed about any issues that might affect contract performance. The parties may call the Project Mediators at any time to discuss project concerns and seek guidance.

3.13 The Model Protocol provides that the Project Mediators may adopt any reasonable procedure to progress the resolution of any dispute referred to them by the parties; this includes meetings, if necessary, and setting out a procedure or timetable and agenda to take the matter forward, including exchanges of information, telephone discussions and site visits. The Project Mediators are given the power to decide the procedure in the absence of prompt agreement by the parties.\(^9\) The Project Mediators can also request short summaries or position papers from the parties prior to a meeting.\(^10\)

3.14 The Model Protocol also provides for the Project Mediators to have the power to adopt an inquisitorial procedure in respect of the facts of any dispute.\(^11\) The Model Protocol lists a number of methods that the Project Mediators can adopt to undertake their task, including establishing the procedures to be used during the course of the Project in attempting to facilitate the resolution of any dispute, conducting site

---

\(^5\) Ibid, clause 13  
\(^6\) Ibid, clause 11  
\(^7\) Ibid, clause 12  
\(^8\) Ibid, clause 15  
\(^9\) Ibid, clause 18  
\(^10\) Ibid, clause 19  
\(^11\) Ibid, clause 21
visits, meetings or discussion as they think fit and making use of their specialist knowledge, if any.

3.15 The Model Protocol provides that any Core Party or Key Supplier may at any time refer any dispute to the Project Mediators who shall then proceed in accordance with the Model Protocol. There are two key points here. Firstly, disputes can be referred to the Mediators regardless of whether or not the disputes are subject to arbitration, adjudication or litigation (or any other form of alternative dispute resolution) under the contracts between the parties to the Model Agreement. This, no doubt, is in order to assist parties to compromise where they are in the process of formal disputes.

3.16 Secondly, it is interesting to note that Key Suppliers can force a mediation/discussion to take place even though they have not appointed the Project Mediators. If it is envisaged that the parties have free rein to contact the Project Mediators to seek guidance, care must be taken that all parties (including consultants and subcontractors) do not try to use the Project Mediators to obtain advice as to how best to progress their side of a dispute. In a situation where the Project Mediators can be contacted by any party on a confidential basis the Project Mediators must be and must be seen to be entirely impartial.

3.17 For the purpose of these site visits and discussions, the Guidance suggests that the Project Mediators are paid a monthly retainer and that there is also an hourly rate. A daily rate can also be agreed should the need arise.

3.18 In the event that the parties are unable to avoid the dispute and a dispute arises and that dispute cannot be resolved through the more informal discussions and interventions of the Project Mediators as set out above, then the parties may enter into a formal mediation conducted by the Project Mediators using the CEDR Model Mediation Procedure. In this case, the Guidance suggests that the Project Mediators are paid on an agreed daily rate and pro rata hourly rate for the hours spent on the formal mediation.

3.19 The Model Protocol provides for each party to have a Lead Negotiator, being the representative of the party who has full authority to settle any dispute. Whilst the Lead Negotiator’s role in negotiations is not mentioned it is obviously envisaged that a Lead Negotiator should be present at the formal mediations and should maintain a presence during the interventions by the Project Mediators.

3.20 In the event that a new Key Supplier joins the project participants then the Model Protocol requires the Core Parties to require the new Key Supplier to join itself to the Project Mediation process. However, in practice, care must be taken to ensure that this does in fact happen.

---

12 Ibid, clause 8
13 See also, Model Protocol, clause 29 which is drafted to ensure that extant proceedings are not stayed for the purposes of mediation unless by virtue of court order.
14 See the definitions section of the Model Protocol and also clause 25
15 Model Protocol, clause 26
3.21 If the Core Parties wish to terminate the appointment of a Project Mediator then this can be done, but only by the Core Parties acting together.\textsuperscript{16} The Model Protocol also provides that a Project Mediator’s appointment shall terminate if (i) a Project Mediator declines to act or is unable to act due to death, disability or resignation; (ii) the last payment is made between the Core Parties in respect of the Project; or (iii) at such other time as the Core Parties may mutually agree.\textsuperscript{17} Therefore the Project Mediator is able to terminate his or her appointment by resignation should he or she so wish.

3.22 As to the Model Mediation Agreement, this may be terminated by the Core Parties acting together, CEDR Solve or the Project Mediators acting together giving CEDR Solve 28 days’ written notice of termination.\textsuperscript{18} There is further provision for the immediate termination of the Mediation Agreement in the event of insolvency by any of the Core Parties, CEDR Solve or all of the Project Mediators.\textsuperscript{19}

3.23 The Model Protocol contains a confidentiality clause.\textsuperscript{20} This provides for each party involved in the “project mediation process or Formal Mediation” to keep confidential and not use for any collateral or ulterior purpose any information arising out of, or in connection with, the project mediation process or Formal Mediation, including the fact of any settlement and its terms save for the fact that project mediation or a Formal Mediation is to take place or has taken place.

3.24 This clause is supplemented by a further clause which states that all “information arising out of, under or in connection with the project mediation process or Formal Mediation” is without prejudice, privileged and not admissible as evidence or disclosable in current or subsequent litigation, arbitration, adjudication or other proceedings except in relation to information that would in any event have been admissible or disclosable in any such proceedings.

3.25 The issue that arises is where one party refuses to cooperate in the Project Mediation process (including formal mediation). To refuse to participate, having agreed to do so, would be a breach of contract. However, would the refusal to participate fall under the definition of “information arising out of or in connection with the project mediation process or Formal Mediation” or would it be information disclosable in any event? If the information does not fall within the exception then there is a potential conflict as the party seeking a remedy for the breach of contract (i.e. enforcement of some nature) would be unable to evidence the breach due to the confidentiality clause. The distinction, it is submitted, lies in whether “information” can be construed as relating only to the substance of the dispute rather than to the procedure associated with the dispute. However, this is a fine distinction and one that could easily be tested.\textsuperscript{21}

\textsuperscript{16} Ibid, clause 5  
\textsuperscript{17} Ibid.  
\textsuperscript{18} Model Protocol, clause 27  
\textsuperscript{19} Ibid, clause 28  
\textsuperscript{20} Ibid, clause 30  
\textsuperscript{21} The Model Protocol and Model Agreement is, by default, subject to English law (see below) therefore the without prejudice rule should apply to the communications in the project mediation process. In Unilever plc v The Proctor & Gamble Co [2000] 1 WLR, 2436, CA, Robert Walker LJ identified a list of exceptions to the without prejudice rule. However, it is not clear whether the situation referred to here would fall into one of these
3.26 Whilst not set out in detail in this paper, it should be noted that there are further clauses relating to confidentiality in the Model Protocol, including the ability for the parties to consent to disclosure of confidential information, for the project mediators to make disclosure if there is a serious risk of their being subject to criminal proceedings unless the information is disclosed and the stipulation that the Project Mediators cannot be called as witnesses or arbitrators in relation to matters arising from or in connection with the project mediation process or a Formal Mediation.22

3.27 Turning to the Model Agreement, this is a relatively brief document. It incorporates the Model Protocol and is made between the Contracting Body, the Contractor, the Key Suppliers and the Project Mediators.

3.28 It provides for Lead Negotiators to be identified within 21 days of the date of the Model Agreement.23 It states that fees should be borne equally between the Core Parties and the Project Mediators’ fees are paid through CEDR Solve.24 It also provides for a 50% reduction in the retainer paid to the Project Mediators following practical completion25 and for the parties to bear their own costs and expenses of participation in the Project Mediation process.

3.29 Finally, the default drafting of the Model Agreement is that it is to be governed by English law and English language and that the court of England shall have exclusive jurisdiction to settle any dispute arising out of or in connection with the Model Agreement.26

3.30 CEDR have produced the Model Protocol and Model Agreement to try to bring a level of best practice to the concept of project mediation. However, I should note that should parties wish to adopt their own form of project mediation or amend the Model then they are free to do so.

4 Project mediation and the FIDIC contracts

4.1 It is helpful to highlight some of the key differences between Project Mediation and the Dispute Adjudication Board (“DAB”)/Dispute Board (“DB”) process under the most recent FIDIC contracts. These differences include:

4.1.1 Under the Dispute Adjudication Agreement, neither party can request private advice or opinions from the DAB/DB. This can be contrasted with the right to direct confidential access to a Project Mediator.

exceptions. See also Reed Executive plc v Reed Business Information Limited [2005] 1 WLR 3026, CA per Jacob LJ. This case can be distinguished by the fact that the judgment related to a narrow point, namely whether without prejudice communications could be considered on the issue of costs. For a good general discussion of these authorities see the judgment of Mr Stuart Isaacs QC in Tim Brown v Stephen Rice and Anor (2007) CILL 2467.

22 Model Protocol, clauses 33 and 34
23 Model Agreement, clause 2
24 Ibid, clause 5
25 Ibid, clause 6a
26 Ibid, clause 11
4.1.2 A DAB/DB decision is admissible to an arbitration tribunal. This can be contrasted with interventions, discussions and mediation in the Project Mediation which are kept confidential.

4.1.3 Whilst the new Red Book, new Yellow Book and the Silver Book provide for the parties to try to reach amicable settlement on disputes,\(^\text{27}\) this is only after a decision has been reached by the DAB and a notice of dissatisfaction has been served. With Project Mediation, the emphasis is on amicable settlement as early as possible in the life of the dispute.

4.1.4 The DAB/DB process relates to the parties to that particular FIDIC contract (employer/contractor). Project Mediation involves all significant parties involved in the project.

4.1.5 Whilst there is provision in the new Red Book for a DAB to provide a non-binding opinion,\(^\text{28}\) the DAB can then provide a decision on the same dispute, and come to a different result. Project Mediators do not decide any of the disputes that come before them and cannot act as arbitrators at a later date.

4.1.6 The DAB process is 84 days. Interventions and even formal mediation in the Project Mediation process should take substantially less time to complete.

4.2 If Project Mediation is used with the FIDIC contracts then, it is submitted, it must be used to supplement the existing dispute resolution provisions in the particular contract.\(^\text{29}\) If this does not happen then the parties have no recourse to a formal tribunal should they be unable to resolve their differences.

4.3 In general, the current FIDIC contracts provide for reference of disputes to either a DAB (new Red Book, new Yellow Book, Silver Book) or a DB (the MDB Harmonised version). DABs can be standing DABs (as envisaged by the new Red Book) or ad hoc DABs (as envisaged by the new Yellow Book and the Silver Book). In practice, and possibly for reasons of cost, it appears that parties tend to prefer ad hoc DABs rather than standing DABs although on high value projects standing DABs are still appointed.

4.4 The question of the effectiveness of DABs is a separate topic (and covered elsewhere during this conference). However, there is no reason why Project Mediation cannot be considered for use with FIDIC contracts. The question that then arises is whether Project Mediation should be used as a substitute for DABs or whether project mediation can be used to supplement the DAB process.

4.5 Project Mediation and DABs/DBs are very different processes, as highlighted above. Depending on the needs of the parties to the project, it is possible for the parties to amend the particular FIDIC contract that they are using to delete the provision for a DAB or DB and, instead, use Project Mediation alone. However, the drawback to this is that should a dispute be incapable of resolution then the parties’ only recourse to a

---

\(^{27}\) Clause 20.5
\(^{28}\) Clause 20.2
\(^{29}\) i.e. clause 20 of the new Red Book, new Yellow Book and the Silver Book
formal tribunal would be to an arbitral tribunal (probably subject to the ICC rules) or (rarely) to litigation.\textsuperscript{30} For smaller value or less complex disputes, the time and cost that full-blown arbitration or court proceedings would take are likely to outweigh the benefit of taking the matter further and parties may well be put at a commercial disadvantage.

4.6 If the project is in the UK, then there is a likelihood is that it would be subject to the Housing Grants, Construction and Regeneration Act 1996 and, accordingly, the parties could use adjudication instead. However, in our experience relatively few contracts within the UK use FIDIC.

4.7 Therefore, Project Mediation would work best overlaid on the DAB structure. This being the case, the next question is whether it would work better with a standing DAB or with an ad hoc DAB.

4.8 It is easy to see how the parties to a contract might consider it unpalatable to appoint two separate panels (a DAB and a mediation panel) for the duration of the project. Both panels will be paid a monthly retainer, both panels will seek to attend site every few months and meet the parties and adjudicate or mediate on disputes or potential disputes, all of which is not only costly but consuming in terms of management time.

4.9 The parties would have to be sure that the appointment of the panels would save sufficient time and cost in the resolution and avoidance of disputes so that the overall cost (which could be budgeted at the outset) is worth it. As standing DABs tend to be used on the higher value projects it may well be that the parties do believe this to be the case. However, in practical terms it is more likely that until value for money becomes a proven fact, contracting parties will be suspicious of appointing both a standing DAB panel and a standing project mediation panel. Further, if a party had to choose between a standing DAB and a project mediation panel, they could well choose the DAB on the basis that binding decisions are made and these bring a level of certainty. Further, the parties can always agree to ad hoc mediation if they so wish (although at that stage, there is always the danger that one party may refuse to agree to mediate).

4.10 The situation regarding ad hoc DAB/DB panels is slightly different. If an ad hoc panel is brought into the project as and when disputes become irreconcilable, then this could work very well with a standing Project Mediation panel. The Project Mediation panel can use their experience and project knowledge to ensure that disputes are resolved, but those that simply cannot be resolved could then be referred to the ad hoc DAB as a last resort.

4.11 One point that should be noted is that should the parties opt to use Project Mediation with the FIDIC forms of contract then care must be taken not to fall foul of the condition precedents in relation to bringing claims.\textsuperscript{31} It could be quite easy to fail to notify a dispute within the contractual time limits because parties are focusing on

\textsuperscript{30} See clause 20.8 of the new Red Book, new Yellow Book and the Silver Book

\textsuperscript{31} See clause 20.1 of the New Red Book, the new Yellow Book, the Silver Book and the MDB Harmonised version
resolution of the dispute. This should not be allowed to happen and the requisite notices should be given.

4.12 As to the future, it is noted that the new FIDIC Gold Book\textsuperscript{32} contains the following clause:

\begin{quote}
If at any time the Parties so agree, they may jointly refer a matter to the DAB in writing with a request to provide assistance and/or informal discussion and attempt to resolve any disagreement that may have arisen between the Parties during the performance of the Contract. Such informal assistance may take place during any meeting, site visit or otherwise. However, unless the Parties agree otherwise, both Parties must be present at such discussions. The Parties are not bound to act upon any advice given during such informal meetings, and the DAB shall not be bound in any future Dispute Resolution process and decision by any views given during the informal assistance process, whether provided orally or in writing.

If a dispute of any kind whatsoever arises between the Parties, whether or not any informal discussions have been held under this Sub-clause, either Party may refer the dispute in writing to the DAB according to the provisions of Sub-Clause 20.5 [Obtaining Dispute Adjudication Board’s Decision].
\end{quote}

4.13 Whilst this is not Project Mediation, as with clause 20.2 of the new Red Book, this does allow the DAB to participate in an informal process to try to resolve disputes. However, this procedure does raise the issue that the DAB could become aware of confidential or without prejudice information which the parties would not want the DAB to see in the event that the DAB is to make a decision on the matter. This is regardless of the fact that the DAB should disregard such information when making their decision. Contracting parties may still consider it unpalatable for a potential tribunal to have sight of such information. This in turn could hinder parties from providing all the information necessary to allow full discussions and therefore could hinder resolution of the dispute.

4.14 Further, this process does not allow other participants in the project to become involved in the mediation process in the same way as Project Mediation.

5 Concluding remarks

5.1 In summary, Project Mediation is a collaborative process designed to manage the risk of disputes by focusing on dispute avoidance and project knowledge and the participation of all parties during the project duration.

5.2 Project Mediation is compatible with the FIDIC suite of contracts but it is submitted that the most appropriate way in which to utilise Project Mediation is in addition to the use of ad hoc DABs.

3 October 2007
Karen Gidwani
Fenwick Elliott LLP

\textsuperscript{32} Design Build Operate (published October 2007)