A New Construction Contract for the 21st Century[1]

By Keith Pickavance

Background

This article is the first in a series about the first new construction contract to be published by the Chartered Institute of Building in 142 years.[2]

In 1871, the Society of Builders (the predecessor of the CIOB) and the Royal Institute of British Architects published the first standard form of a building contract for general use in the UK. In that form, it was anticipated that any drawings produced would be prepared using paper and pencil and the sparse principles of time management were that the Contractor had control of the Works and the Owner had the risk of delay.

By way of example, Clause 15 of the 1871 form states:

> *"The contractors are to complete the whole of the works …within _____calendar months after the commencement of the same, unless the works be delayed by reason of any inclement weather, or causes not under the contractors control, or in case of combination of workmen, or strikes, or lock-out affecting any of the building trades, for which due allowance shall be made by the architect, and the contractors shall complete the works within such time as the architect shall consider to be reasonable, and shall from time to time in writing appoint…."*

With a few bells and whistles added, this is the formula still adopted by most standard forms of contract available around the world today. AIA, FIDIC, NEC3, AS4000, JCT2011 are all based upon the principle that the Employer carries the risk, the Contractor has all the tools to manage and control risk, but in the event that the Contractor doesn't use them to manage the Employer's risk, the Contractor is to be given more time and more money, intuitively assessed by the contract administrator, on the basis of information provided by the Contractor in support of its claim.[3]

One other consistency, between previous attempts to manage time is that for the last 100 years or so these construction contracts have generally been based upon getting the Contractor to devise a schedule, or programme at the beginning of the job (in the

[1] This article launches a series of articles by Keith Pickavance about the CIOB's new contract for complex construction projects. For information about the new contract, visit http://www.ciob.org.uk/CPC.

[2] An earlier version was published by the NYUREJ in July 2012. The CIOB was founded in 1834. It currently has over 46,000 members in practice in more than 100 countries world-wide setting the standards for excellence in construction management. The CIOB is the international voice of the building professional, representing an unequalled body of knowledge concerning the management of the total building process.

[3] See for example, Clause 8.3.1 of A201-2007, produced nearly 140 years later, which is virtually identical to Clause 15 of the 1871 form.

form of a target) against which a failure to achieve the target can be measured, and then reporting against any divergence in the hope that improvement could be made in response to threats and/or financial encouragement. This is at the root of the problems with time management. Historical reporting of failure to achieve a notional fixed target is not an effective way to manage time on complex projects in which, inevitably, the target does not remain fixed.

Whereas buildings of the 19th century were simple, without anything in the way of services and could not be managed other than intuitively, today major projects are extremely complex, often high rise with accommodation below ground and with multiple phases and intricate services, failure is very much more expensive and they cannot be managed effectively by intuition.

As a result of its ability to calculate when and in what order work can most efficiently be carried out and, when delay to progress occurs what the effect of that delay will be on the timing of future activities, for many the critical path network has become the project-control tool of choice. But CPM scheduling is not the only technical advancement that affects the way we now work.

The 1970's saw the advent of CADD, by which it became possible to create drawings electronically, on a computer screen. By the 1980s many design firms carried out drawing and designing on micro-computers and the PC was also invented. Within 20 years CADD had been developed into an increasingly sophisticated, fully integrated three-dimensional design tool which, with the benefit of web-based tools could be contributed to by designers in different parts of the world in a common data environment.[4] It is thus apparent that in the 21st century we live in a completely different contractual and social environment from that in which the first standard form of contract was produced by the CIOB's predecessor, in 1871, the general formula of which other currently available standard forms still follow.

Against this background, in 2007, the CIOB conducted a survey of the industry's knowledge and experience of different methods of time management.[5] The survey showed that irrespective of whether the form of contract used anticipated partnering, alliancing, turn-key, construction management, management contracting, design and build or build-only from the Employer's design, the same standard of performance in regard to time management on complex construction projects could be expected and that standard of performance was generally poor. Time control, if any, was left to the Contractor. In a third of all cases the Contractor's scheduler developed the schedule alone without the collective experience of the project team. Schedules were not

[4] Building Information Modelling, as it is called, is shortly to be mandated to be used on all UK Government projects. The BIM Task Group Website, http://www.bimtaskgroup.org/, records that the Government Construction Strategy, published by the Cabinet office on 31 May 2011, announced the Government's intention to require collaborative 3D BIM (with all project and asset information, documentation and data being electronic) on its projects by 2016.

[5] "Managing the risk of delayed completion in the 21st century". The report is available from http://www.ciob.org.uk/node/16584

generally coupled with thought-out, written method statements, were not quality controlled and were not as systematic in their preparation as might reasonably be expected.

Over half of the respondents used only a master schedule with no short term planning at all. The remainder failed to integrate their short-term planning with their master schedule and the schedules were normally bar charts without linked sequencing. Project managers were therefore unable to measure the impact of slippage, or instructed change, and hence were unable to manage, other than intuitively, the effects of any delaying event.

Progress Reporting became a matter of guess–work, measured against schedules that were not regularly updated, with no understanding of the effect that preceding events had had on successor activities, or their impact on the overall project. Thus any reporting was relatively meaningless.

Only a fifth of respondents said they would voluntarily declare a delay to progress, even if the Contract required it. Nearly half the respondents did not report a delay because they might be able to get over it; a third did not want to upset the owner; a tenth admitted they might be able to blame someone else. Not only did the results show a failure of project control, but also issues of relationships, transparency and even deceit arose.

Too often schedules were used solely as a political tool to protect companies and management from accusations of blame for delays; whereas they should have been regularly updated tools used for the purpose of managing sequence and progress and to minimise the consequence of delaying events.

Over 90% of the respondents to the CIOB's questionnaire took the view that the standard of education and training in time management in the construction and civil engineering industries fell well below an acceptable standard. It was apparent that no formal education or training was available nor any qualification by way of which any level of competence could be measured. Employers were thus unable to know whether their staff engaged in time management were competent until after it was too late to do anything about it.

Against this background, in 2008 the CIOB set in motion a five-year program with a view to reducing the incidence of delays on major projects. The first stage was to set an educational standard in the publication of "*A Guide to Good Practice in the Management of Time in Complex Projects*," published in 2011.[6] This is the standard of performance to be aimed for in the management of time in complex projects. In 2012 The CIOB launched the first accreditation programme in the time management with its *"Certificate in Project Time Management*" qualification.[7] This is a general overview certification for all members of the design and construction team, to set a standard for communication.

[6] http://www.wiley.com/WileyCDA/WileyTitle/productCd-144433493X.html
[7] See www.ciob.org.uk/ptmq

The new Contract, the CIOB's *"Complex Projects Contract*", due to be published in April 2013, is written to enable parties to put the Guide into practice. The next article in this series will outline some of the more significant features of this new Contract.

About the Author

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Keith Pickavance first qualified as an architect in 1972 and then in 1978 obtained a law degree. After 20 years as an architect in private practice the last 10 years of which also involved construction management, dispute resolution and expert witness services, in 1993 he joined an American company specialising in forensic services and delay analysis. In 1996 he set up on his own again specialising in delay analysis and time management in London and Hong Kong. That practice was acquired by Hill International in 2006, an international construction management and claims consultancy with which he is now appointed an Executive Consultant.

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