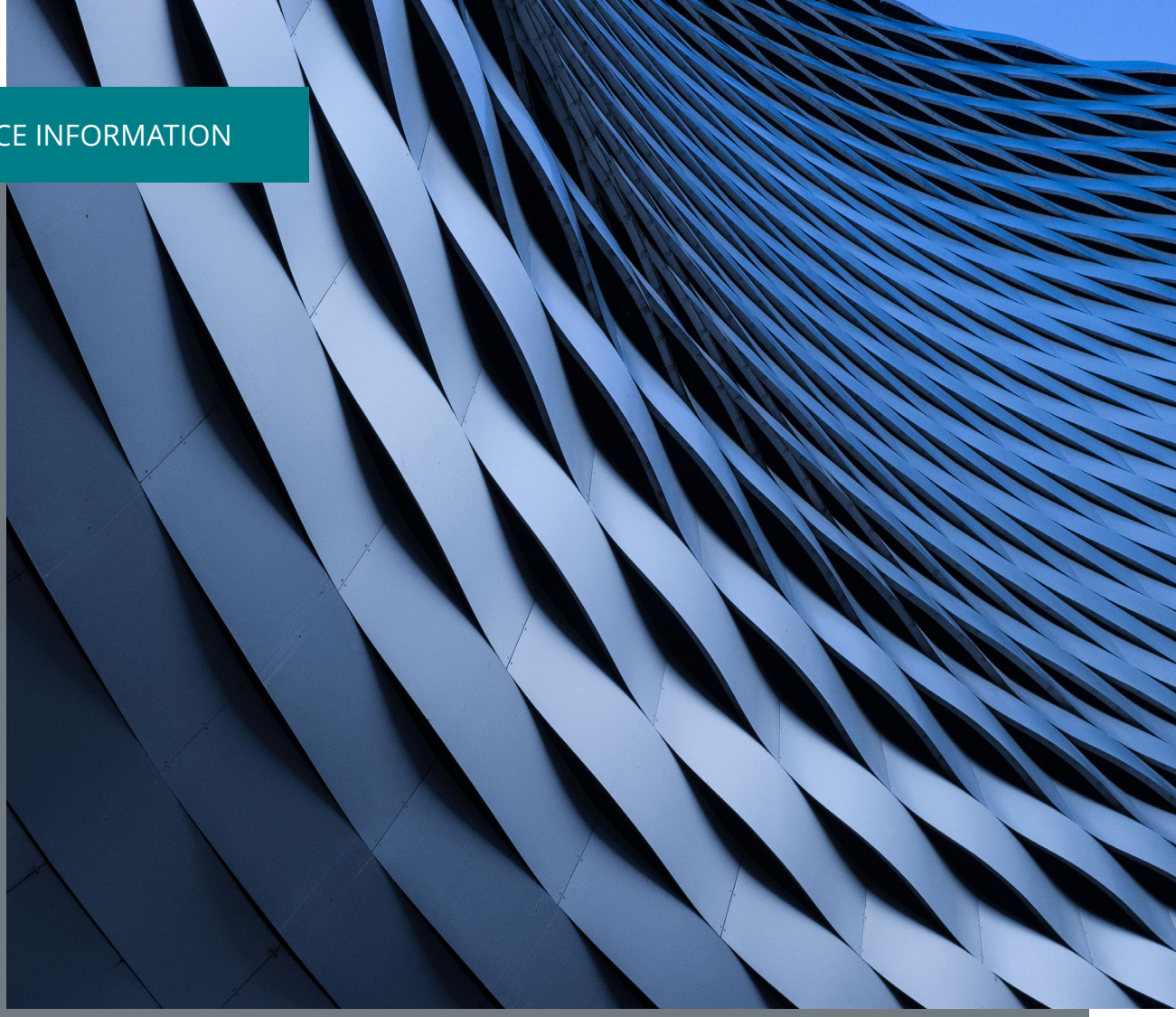
RICS PRACTICE INFORMATION



Acceleration

UK

2nd edition, February 2024

RICS®

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Practice information, UK

2nd edition, February 2024

Effective from February 2024

Published by the Royal Institution of Chartered Surveyors (RICS)
Parliament Square
London
SW1P 3AD

www.rics.org

Produced by the QS and Construction working group of the Royal Institution of Chartered Surveyors.

ISBN 978 1 78321 519 5

Acknowledgements

RICS would like to thank the following for their contributions to this document, which was originally published as a guidance note in 2011.

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RICS standards framework

RICS' standards setting is governed and overseen by the Standards and Regulation Board (SRB). The SRB's aims are to operate in the public interest, and to develop the technical and ethical competence of the profession and its ability to deliver ethical practice to high standards globally.

The RICS Rules of Conduct set high-level professional requirements for the global chartered surveying profession. These are supported by more detailed standards and information relating to professional conduct and technical competency.

The SRB focuses on the conduct and competence of RICS members, to set standards that are proportionate, in the public interest and based on risk. Its approach is to foster a supportive atmosphere that encourages a strong, diverse, inclusive, effective and sustainable surveying profession.

As well as developing its own standards, RICS works collaboratively with other bodies at a national and international level to develop documents relevant to professional practice, such as cross-sector guidance, codes and standards. The application of these collaborative documents by RICS members will be defined either within the document itself or in associated RICS-published documents.

Document definitions

Document type	Definition
RICS professional standards	**Set requirements or expectations for RICS members and regulated firms about how they provide services or the outcomes of their actions.** RICS professional standards are principles-based and focused on outcomes and good practice. Any requirements included set a baseline expectation for competent delivery or ethical behaviour. They include practices and behaviours intended to protect clients and other stakeholders, as well as ensuring their reasonable expectations of ethics, integrity, technical competence and diligence are met. Members must comply with an RICS professional standard. They may include: • mandatory requirements, which use the word 'must' and must be complied with, and/or • recommended best practice, which uses the word 'should'. It is recognised that there may be acceptable alternatives to best practice that achieve the same or a better outcome. In regulatory or disciplinary proceedings, RICS will take into account relevant professional standards when deciding whether an RICS member or regulated firm acted appropriately and with reasonable competence. It is also likely that during any legal proceedings a judge, adjudicator or equivalent will take RICS professional standards into account.
RICS practice information	**Information to support the practice, knowledge and performance of RICS members and regulated firms, and the demand for professional services.** Practice information includes definitions, processes, toolkits, checklists, insights, research and technical information or advice. It also includes documents that aim to provide common benchmarks or approaches across a sector to help build efficient and consistent practice. This information is not mandatory and does not set requirements for RICS members or make explicit recommendations.

Introduction

What is ‘acceleration’?

This practice information summarises what is meant by ‘acceleration’ in the construction industry, how acceleration can be achieved in practice, and how it can be valued. When used in connection with construction contracts, ‘acceleration’ generally refers to increasing the originally planned or current rate of progress of the work so as to complete the project (or, where the contract allows for the project to be completed in sections, a section of the project) earlier than would otherwise be the case.

A contractor on a construction project may want to complete the project early to reduce site running costs or free up key site staff to work elsewhere, or they may want to accelerate in order to ensure completion by the contract completion date, so as to avoid liability for liquidated damages.

An employer may want a contractor to accelerate progress in order to avoid the construction work being handed over late. In many cases, the completion date for a project is crucial to the employer and any deferment of that date may have very serious repercussions. In these circumstances, it may be in the employer’s best interests to compensate the contractor for any additional costs incurred in accelerating the works, rather than to face the cost consequences of the building not being ready when required and also a claim from the contractor for loss and expense in the form of prolongation costs.

Some of the points made in this practice information apply equally, whether the acceleration is instigated by the contractor or the employer, but the focus is on acceleration requested by the employer.

It is likely that, regardless of the form of contract or type of acceleration agreement, an employer considering acceleration will look to the quantity surveyor to provide advice on the practicalities, risks and costs involved. In particular, it is likely to fall to the quantity surveyor to review and comment on any acceleration quotation provided by a contractor.

Note, however, that providing advice on the cost and contractual consequences arising from an acceleration instruction is listed as a supplementary service under the RICS’ Quantity surveying services published for use with the RICS Standard Form of Consultant’s Appointment or RICS Short Form of Consultant’s Appointment.

It is likely, therefore, that an additional fee will need to be agreed for this work.

Guidance is given under the following headings, which map to the Assessment of Professional Competence (APC):

- General principles (level 1: knowing)
- Practical application (level 2: doing)
- Practical considerations (level 3: advising).

1 General principles: level 1 (knowing)

Guidance is given within this section in respect of:

a how acceleration is dealt with in the main standard forms of contract currently in use

b separate acceleration agreements and

c certain general points relating to all acceleration agreements.

The reader is advised to check the precise wording if working with earlier or later versions of the standard forms that are not specifically reviewed in this practice information.

Note also that not all standard form building contracts support acceleration, so it is important to check beforehand that there is an appropriate mechanism and procedure to be followed.

1.1 Acceleration agreements

When reading this contract, it should be remembered that the term 'completion date' may be the original date for completion, as stated in the contract, or a different date following a revision to the completion date being calculated in accordance with the contract. Therefore, an employer who wishes to investigate the possibility of achieving practical completion before the completion date may simply be seeking to have the works finished by the original (or revised) date of completion despite having caused delays for which it may be liable.

There could also be circumstances where the delay has been caused by the contractor, and, in agreeing to pay the contractor to accelerate the works, the employer will therefore usually waive its right to claim damages for that delay.

1.1.1 Acceleration under the JCT Standard Building Contract

The JCT Standard Building Contract deals with acceleration under the heading of variation quotations and acceleration quotations, which includes wording to the effect that:

> 'If the Employer wishes to investigate the possibility of achieving practical completion before the Completion Date... the Architect/ Contract Administrator shall invite proposals from the Contractor in that regard'.

If a contractor receives an invitation to make such proposals, they are either required to provide an 'acceleration quotation' or explain why it would be impracticable to achieve an early completion of the works.

It is stipulated in the contract that the 'acceleration quotation' must identify the amount of time that can be saved and the amount of the adjustment to the 'contract sum' that the contractor would require. The quotation must include direct costs, consequential loss and expense and an allowance for the cost of preparing the quotation.

The quotation must be provided within 21 days (unless otherwise agreed), starting from either the date the contractor receives the invitation or the date it receives sufficient information to enable a quotation to be prepared, whichever is later. The quotation must remain open for acceptance for seven days.

On many projects, a total period of 28 days to agree acceleration may be too long. If an employer is sufficiently concerned about the completion date that it invites the contractor to quote for accelerating, it may be unlikely that it will want to see a month or more go by before any action is taken.

The time periods for the production and acceptance of a quotation may be varied by agreement, so this time period may be reduced by agreement, but it is important to note that an ill-conceived acceleration arrangement may well result in at least one of the parties suffering significant unrecoverable additional costs and may lead to disagreement and dispute.

Therefore, a balance should be struck between allowing as much time as possible for acceleration measures to be effective and allowing sufficient time to ensure that the agreement is properly thought out.

1.1.2 Acceleration under the NEC4 form of contract

Acceleration is described in one of the 'core clauses' of the NEC4 Engineering and Construction Contract.

Either party to the contract may propose acceleration under the contract, and, if deemed necessary, the project manager may instruct the contractor to submit an acceleration quotation. As with the JCT form, the stated aim of acceleration is to achieve completion before the 'completion date'. The 'completion date' may be the original date stated in the 'contract data' (the final section of the NEC form) or a revised date arising out of an extension of time award. Unlike the JCT acceleration clause, it is not for the contractor to state what acceleration it can achieve; under the NEC, it is the project manager who informs the contractor of the revised date, or dates, that it is required to achieve.

Following receipt of an instruction, the contractor must provide a quotation and a revised programme showing how it can achieve the early completion date(s). If agreed, the revised programme then becomes the 'accepted programme'. The contractor may decline to quote but, if it does, it must state why. Presumably, the usual reason for declining to quote will be that the contractor considers the revised dates are not achievable.

1.1.3 Acceleration under the Infrastructure Conditions of Contract (ICC)

In the ICC, the employer may request the contractor to complete the works earlier than 'the time or extended time for completion prescribed' by reference to the relevant clause and the completion date in the Appendix to the Form of Tender.

If the employer requests the contractor to complete early and the contractor agrees, then 'any special terms and conditions of payment shall be agreed … before any such action is taken'.

1.1.4 Separate agreements to accelerate

If there is no mention of acceleration in the contract itself, that does not mean that the employer cannot ask the contractor to accelerate. Under contract law, it is always open to the parties to any contract to agree additional or separate contractual terms, so an acceleration agreement can be drawn up and entered into whether expressly envisaged under the construction contract or not.

However, in order to produce a workable and reasonably comprehensive acceleration agreement, the parties must consider and take account of a wide range of possibilities and permutations and must agree who carries the risk for each situation that may arise. This is likely to take some time to sort out, and, if parties cannot reach an agreement in a relatively short space of time, the opportunity to accelerate may be lost. For every day that it takes to reach an agreement, the project will drift ever closer to the overrun that acceleration was intended to avoid.

That is not to say the parties should rush into an agreement. As already noted, an ill-conceived and/or incomplete acceleration agreement may well result in at least one of the parties suffering significant unrecoverable additional costs and may lead to a major dispute. If in doubt, specialist legal advice should always be sought.

1.1.5 Implied instructions to accelerate

An employer may be under severe pressure to have construction work completed by a particular date, and a failure to meet that date may have serious or even catastrophic consequences. It is, therefore, not surprising that employers occasionally tell contractors that the project must be completed and handed over by the completion date, come what may. The contractor may point to the extension of time clause in the contract, but an employer who is under pressure may be extremely resistant to granting extensions of time and may try to impress onto the contractor the imperative to finish by the specified dates, regardless of any additional cost.

It may be argued that a statement along these lines should be deemed to be an implied instruction to accelerate. Whether a court of law would agree with this argument is a moot point. If a contractor thinks it is being asked to take action to accelerate the works, it would be well advised to clarify the situation rather than to take action in the belief that additional

costs will be reimbursed. Equally, professional advisers to an employer making a statement like this ought to seek to clarify the situation.

1.1.6 Does a contractor have a duty to accelerate in any event?

There is a long-established English common law principle that a party has a duty 'to take all reasonable steps to mitigate the loss consequent on the breach', and this duty debars that party 'from claiming any part of the damage which is due to his neglect to take such steps' (*British Westinghouse Electric and Manufacturing Co Ltd v Underground Electric Railways Co of London Ltd* [1912] AC 673).

There also may be an express contractual duty imposed upon a contractor to mitigate delay. In the JCT Standard Building Contract, the contractor must:

> 'constantly use [their] best endeavours to prevent delay … however caused, and to prevent the completion … being delayed or further delayed beyond the relevant Completion Date'.

The same duty is imposed on subcontractors operating under the JCT Standard Building Sub-Contract, and similar provisions are found in many other construction contracts.

Therefore, it may be thought that a contractor/subcontractor has a duty to accelerate the progress of the works to recover delays ('mitigate the loss'), even when the delays have been caused by the employer.

However, in the case of *British Westinghouse*, it was held that the duty to mitigate does not impose 'an obligation to take any step which a reasonable and prudent [person] would not ordinarily take in the course of [their] business'.

Therefore, there is no obligation on a contractor to take any steps to recover delays that a reasonable and prudent contractor would not ordinarily take. It is suggested that, on this authority, a contractor would not be obliged to take any significant risks and/or incur any significant additional costs in an attempt to recover delays caused to the project by the employer.

The specific duties imposed by the JCT Standard Building Contract clearly do not require a contractor to accelerate the works. The wording referred to earlier imposes a duty on the contractor to 'prevent delay' and to prevent 'further delay' but it does not impose a duty to accelerate to recover delays.

Therefore, a contractor does not have a general duty to accelerate the works to recover delays caused by the employer. However, a contractor may well decide to accelerate progress, at its own cost, in order to recover any delays it has caused, so as to avoid liability for damages that may result.

1.1.7 Risk allocation

If a contractor provides a fully detailed acceleration quotation, setting out precisely which resources it intends to increase and what extra hours it intends to work, and if that quotation is accepted by the employer, and if the contractor duly provides the extra resources and works the extra hours, who is responsible for the additional costs if, in the event, no acceleration is achieved?

The standard forms of contract referred to in this practice information do not address this question. They provide terms to facilitate an acceleration agreement to be made but do not say who carries the risk if the early completion date is not achieved.

Such an outcome may, at least initially, be thought to be unlikely. If the resources and hours worked are increased, for example, then the rate of progress of the works ought to, and is perhaps highly likely to, increase. However, as explained in section 3.1, there are a number of reasons why acceleration measures may not work, and there may be other delay events that occur after the acceleration agreement is entered into, which make the early completion date unachievable.

It is for this reason that great care must be taken when entering into acceleration agreements. If, for example, the employer wants the contractor to provide a warranty that the acceleration measures will be successful, it must make that clear when inviting the contractor to provide a quotation. This is likely to lead to a relatively high price being quoted, because the contractor will have to price in the risk of failure.

If an employer does not want to pay a premium price, it could accept that the contractor would not carry the risk of failure to achieve acceleration. In this case, the employer should firstly be satisfied that the proposed acceleration measures have a high chance of succeeding and, secondly, should ensure that the proposed measures can be monitored, so that checks can be made to confirm that the contractor is keeping to its side of the bargain. It may be possible, for example, to identify milestones for progress, and, in some circumstances, this could trigger payments under the acceleration agreement. In cases like these, a lump sum quotation from the contractor may not be suitable. The employer would need details of each and every change that the contractor proposed to make and how much each change would cost.

When preparing an acceleration quotation, the contractor is advised to ensure that it includes a caveat disclaiming liability in the event that further delays are caused by new events that would entitle it to an extension of time. A failure to clarify this point may lead to disagreements and disputes.

The parties may also want to provide terms in their agreement for a means of ending the acceleration measures. If things change after the agreement has been made, for any reason, or if it can be seen that the acceleration measures are not working as planned, the parties may want to abandon the acceleration agreement and revert to the terms of the original contract. It will be easier to change back if terms for doing so are thought out and clearly stated prior to concluding the acceleration agreement.

1.1.8 When is a project 'complete'?

In order to decide whether acceleration has been achieved, the parties must be able to agree on what is meant by 'completion'. What might be considered completion on one project or by one person may not be considered completion on another project or by another person. And if the parties cannot agree when the works were completed, they will not be able to say whether acceleration measures were successful or not.

A precise and workable definition of 'practical completion' is almost impossible to specify, but, if possible, the parties should attempt to clarify what each understands by 'completion' before entering into an acceleration agreement. Please see RICS' Defining completion on construction works for best practice in this area.

2 Practical application: level 2 (doing)

This section looks in more detail at how acceleration measures can be achieved in practice and what factors should be considered.

2.1 How can acceleration be achieved?

The standard forms of contract and their associated guidance do not give any indication as to what measures a contractor might consider for inclusion in an acceleration quotation. This probably reflects the fact that acceleration is not a feature of most projects and also the diversity of actions that might be considered.

In order to work faster than planned, and in order to complete the works earlier than would otherwise be the case, the contractor and/or the employer will clearly have to make changes to the way in which things have been or are due to be carried out.

In order to improve the rate of progress, the contractor may be able to change:

- the site working hours
- the level of resources deployed
- the programme and sequence of working
- the temporary works and
- the methods of working.

The employer may be able to make changes to:

- the specification
- the design and
- the work scope and conditions of working.

2.1.1 Extended working hours

The introduction of longer working hours ought generally to increase the overall rate of progress of works and enable completion to be achieved earlier than would otherwise have been the case.

For example, if site working hours were increased by one hour per day, weekend working was introduced or holiday periods worked, then one would expect to see the rate of progress increase.

Alternatively, progress on site may be improved simply by increasing the hours worked by operatives engaged in loading out materials. This can apply particularly on a large project with only one crane, where different trades often vie for 'hook time' to enable sufficient materials to be in place for operatives to progress the works.

A more dramatic change to working hours would be to introduce shifts. The introduction of one or two additional shifts in each 24-hour period ought to bring about very significant increases in output.

2.1.2 Increased resources

The speed of progress of works on a construction site is usually proportionate to the amount of labour, plant and/or supervision resources deployed. In general, the rate of progress increases if the amount of resources is increased and vice versa.

Therefore, one of the ways in which a contractor might accelerate a project is to increase the level of resources. For example, the contractor might increase the number of bricklaying gangs, mixers, forklifts (or other plant used to distribute materials around the site) and supervisors. All other things being equal, such increases should boost output and speed up progress.

It is perhaps worth noting, however, that there is a theoretical maximum number of resources that can be applied to a particular task. While in principle more resources can mean that more tasks can be completed, it does not necessarily follow that a single task can be completed more quickly. For example, a task that only requires two people may not be able to be done quicker by three people.

2.1.3 Alterations to the programme

More efficient programming of the works may enable completion to be achieved earlier than would otherwise be the case, and this may be achieved without making any changes to the resource levels and/or the working hours. Progress can sometimes be accelerated simply by altering the sequence of activities or by increasing the amount of overlap between activities.

On many newbuild projects, it will be impossible to alter the planned sequence, but it may be possible, for example, to carry out the first coat of emulsion paint to walls in advance of the planned period for decorations, and this may enable overall progress to be accelerated. On most refurbishment works, there are likely to be more options available for re-sequencing the programme as there are generally more work faces available at any one time.

Introducing or increasing the amount of overlap between activities may also boost progress. For example, it may be that a contractor's programme for the project shows the final activity, floor coverings, commencing in week 25, immediately following the completion of decoration works. If the floor coverings take three weeks to complete, then it will be week 28 before the project will be completed. However, it may be that decorations in the first part of the building can be completed and sufficiently dried for floor coverings to commence in that area in week

24. The introduction of this one-week overlap should, all other things being equal, accelerate completion by one week.

The contractor may also argue that they have already formulated the most efficient programme for the work, so there will usually be more discussion on these points.

2.1.4 Introduction of temporary works

The rate of progress on a project may be increased simply by introducing additional temporary works measures.

For example, progress may be expedited by the introduction of temporary weather protection, in the form of temporary roof sheets or temporary screens at openings. Such action would allow finishing trades, which require relatively dry conditions, to commence work earlier than would otherwise be the case, and this should accelerate progress.

Alterations to scaffolding would also fall into this category. If more scaffolding is erected, or more boards provided to existing scaffold structures, then more work output ought to be achieved, providing this measure is combined with an increase in resources.

2.1.5 Working methods

Other measures that may be beneficial to progress include the provision of generators (to provide power prior to the mains connection being made), floodlighting (to allow work to continue after daylight hours) and dehumidifiers (to expedite the drying out of the works).

2.1.6 Specification changes

As stated above, there are some changes that can be made by the employer. One of these is to change the specification.

If a particular material has a long delivery period, it may be that it can be replaced by another similar material with a shorter delivery period. If this change is acceptable to the employer, then this will reduce the time required to complete that operation, and this may benefit the overall project.

Equally, if a prefabricated unit can be used in lieu of materials that require a long period for site installation, this may accelerate the works. For example, if a reinforced concrete staircase to a building was due to be cast on site, it may be that changing it for a pre-cast unit will reduce the time required, particularly if the weather is very cold and casting concrete on site is not permitted.

Another example of a change to the materials specification is the use of plasterboards in lieu of rendering. Rendered walls and ceilings will take some time to dry out, particularly in cold and damp weather. Plasterboarded walls and ceilings should be ready for following trades much sooner.

2.1.7 Design changes

Design changes are similar to changes to the specification. If the design can be simplified or altered to reduce installation periods, then the effect may be to accelerate overall progress.

Such changes may include the substitution of bespoke joinery items with standard 'off-the-shelf' products or may involve the redesign of an intricate or complex element of the structure so that construction is made simpler and quicker.

2.1.8 Work scope changes

In general, omitting works from the contract ought to reduce the contract period and thereby bring forward the completion date. In this way, a change to the work scope may be made to accelerate progress of the project.

If work cannot be omitted altogether, it may be possible to defer some of the work until after handover, particularly if it is not absolutely essential for that item to be complete at handover.

For example, it may be that the external soft landscaping works can be carried out after practical completion or that minor internal parts of a building can be completed after the rest of the building has been handed over.

Such changes generally bring forward the date of 'completion'.

3 Practical considerations: level 3 (advising)

This section looks at the practical considerations that should be taken into account when considering what acceleration measures to adopt and how to value those measures.

3.1 Factors to consider when suggesting/agreeing acceleration measures

The measures referred to above should, in general, whether employed individually or collectively, accelerate the progress of works on a construction site but, as with most choices in life, there are potential downsides, and these should be kept in mind.

Although the acceleration agreement may be a separate document, it is also essential to consider the existing contractual procedures that need to be followed. For example, in NEC contracts, the programme is an integral contract document, whereas this is not typically the case under JCT. Also, most contracts will require specific instructions to be given to make changes to the work, or the conditions under which it is to be carried out, while some require the express permission of the contractor to omit parts of the work.

One general point, which applies to any acceleration measure, is that the changes must be focused on activities that are critical to completion. If the progress of a particular activity is expedited, it will only bring forward the overall completion date if it is an activity that is on the critical path of the programme.

For example, if the critical path runs through the mechanical installation works, and the internal joinery works are not critical, any changes made to speed up the progress of the joinery works will not, in isolation, achieve the desired result of an earlier completion of the works. In this example, in order to accelerate completion, changes would have to be made to the mechanical installation works.

However, great care is needed when making decisions based on what appears to be the critical path of a construction programme. The identification of the critical path can be difficult, it may be subject to change, and, at any one time, there may be more than one path that can be identified as being critical to completion.

In the above example, accelerating the mechanical installation works may remove it from the critical path, and other activities will then become critical.

It should also be borne in mind that, in order to survive in the commercially competitive environment of the construction industry, contractors will generally have to carry out their works using optimum levels of resources and adopting efficient procedures and

methodologies. Therefore, by definition, any changes made to these resources, procedures and methodologies are likely to create an imbalance or loss of efficiency.

When an acceleration agreement has been reached, it is important that the parties make a careful and accurate record of progress achieved at the date when acceleration commences.

Other specific factors to consider are explained below.

3.1.1 Extended working hours

As stated previously, the introduction of extended working hours will generally increase the rate of progress of works and enable completion to be achieved earlier than would otherwise have been the case but (a) the improved rate of progress will come at a cost and (b) the initial increase in the rate of progress may not be sustainable.

The increased cost of employing operatives for longer hours will be offset by the increase in production, but it is likely that enhanced rates will have to be paid for overtime work, making the work undertaken relatively more costly to carry out, and it is likely that output will not rise in proportion to the increase in hours. This is because operatives will become increasingly tired the longer they work. For this reason, it is likely that the extra hours will produce only limited improvement in productivity, and the level of improvement may decline after the first few weeks if supervisors and operatives become weary.

In section 2.1.1, it was suggested that shift working could be introduced to increase the total hours worked each day, but this may not be allowed or may only be allowed subject to certain restrictions.

Construction sites are generally very noisy and require high levels of illumination. Therefore, unless the site is a long way from residential areas and hotels, it may be difficult to obtain approval for working outside of normal working hours, or approval may be so restrictive that it significantly reduces the impact of this acceleration measure, especially where statutory consent is required, for example under the *Control of Pollution Act* 1974.

Shift working may also lead to inconsistencies in the quality of work, with different supervisors and different operatives involved in each task, and it will certainly come at a high cost as operatives working at night and at weekends will generally require significantly enhanced rates of pay.

3.1.2 Increased resources

If progress is to be improved by increasing the level of supervision, labour, plant and materials, care must be taken to keep a correct balance between the resources. If the balance is lost, there may be little or no improvement in progress. For example, if labour resources are increased disproportionately to the other resources, there may be insufficient plant, materials and supervision on site, and this may lead to standing time. There may also be a decline in the quality of works carried out.

It is also necessary to ensure that there are, and will be, sufficient work areas for the additional resources. If the resources are doubled, but the work areas only increase by 50%, improvements in progress will be limited and the rate of increased output will not justify the level of increased costs incurred.

There is also the practical problem of workspace to consider. If there are too many people trying to work in a limited space, they will start to get in each other's way and work will slow down rather than speed up.

These are not insurmountable problems, but it is essential that decisions are fully thought through before being implemented. Otherwise, additional costs may be incurred without any benefits accruing.

When considering increasing the level of resources, it should also be borne in mind that more resources may mean more welfare facilities for operatives, more storage space for plant and materials and more office accommodation for supervisors.

3.1.3 Alterations to the programme

Altering the programme may, superficially, be the most attractive of the various measures available to parties when considering acceleration because changing the programme is relatively easy and relatively inexpensive. However, this action is likely to be the least effective method of acceleration.

Contractors and professional advisers rarely adopt a sufficiently cautious approach to programming, with the result that most programme durations for construction works are optimistic and rely on all (or most) things going to plan. If this abundance of optimism is adopted or even exaggerated when looking for ways to accelerate the works, the expected improvements may well prove to be illusory. In practice, it is likely that the contractor has already calculated the most efficient programme for completing works because (a) this will generate the best financial return and (b) the contract period imposed by the employer is likely to be tight in any event.

It was also suggested above that programme activities might be re-sequenced. The example given was to bring forward the application of the first coat of emulsion paint to walls. This may seem a good idea at the time but changing the sequence of work in this way may backfire. If work is carried out early, it is more likely to be damaged by other trades, leading to additional protection or repairs being required. If damage is extensive, the change in sequencing will come at additional cost but may produce no overall time benefits to the project at all.

Perhaps the only time that re-sequencing would be likely to produce significant benefits is if the original programme was flawed but, if that was the case, it is likely that the programme would be amended regardless of any conscious decisions being taken about acceleration.

The other change to the programme referred to was overlapping activities, but this too may lead to more damage to works carried out, in which case there may ultimately be significant additional costs but little or no overall acceleration of the works.

Such problems are not inevitable and may be entirely avoided by careful management and conscientious operatives, but the risks should not be ignored.

3.1.4 Introduction of temporary works

The problem with temporary works measures such as weather sheeting or screens is that the sheets/screens may not be robust enough to keep out particularly bad weather, with the result that completed works may get badly damaged. This may cause delays rather than acceleration to the rate of progress due to the time required to carry out repairs.

Alterations to scaffolding may increase the rate of progress of the works that rely upon that scaffold access, but this will only bring about overall acceleration of the project if the rate of progress of other works is maintained or improved.

As with all measures, it would be necessary to weigh the cost against the potential benefits/savings that these measures may produce. In some cases, there may be design costs associated with the introduction of additional temporary works.

3.1.5 Working methods

Other measures, such as artificial lighting, may impact adversely upon the quality of the work carried out, and dehumidifiers may cause shrinkage, leading to excessive cracking. Therefore, these measures must also be treated with caution.

3.1.6 Changes to the specification or design

The obvious drawback to changes to the specification or design is that the employer may end up with something it did not really want and may have to pay more for what amounts to its second choice.

Some changes to the specification or design may not be significant but, returning to the illustration given earlier, an employer who agrees to substitute bespoke joinery items with standard ‘off-the-shelf’ products, or who agrees to have a less intricate or complex design than planned, may regret settling for second best once the building is complete.

It should also be borne in mind that the designer may charge additional fees for changing the design, and changes to one part of the design may have an impact on other parts of the design. Therefore, care must be taken to ensure that the full implications of any changes are fully thought through.

3.1.7 Work scope changes

Omitting significant items of works, so as to bring forward the date of handover, is rarely possible or practical.

Deferring work until after handover is not strictly accelerating the works and may lead to other problems. If operatives have to go back to a substantially completed building, there is a risk of completed works and/or the employer's furniture and fittings getting damaged or dirty. There will also be disruption to the occupants of the building due to the noise and mess created by the works being carried out after 'completion'.

If work is omitted altogether, the contractor may claim for loss of profit on those items.

3.2 Acceleration quotations

3.2.1 Basic costs

None of the standard forms, or their associated guidance, suggest how a quotation for acceleration should be prepared by the contractor or assessed by the employer. Other than general requirements, such as including all loss and expense, there is no indication given as to what items should be included in the quotation or how those items should be priced.

However, it is clear that, in order to prepare a quotation, a contractor will have to decide: (i) what it can achieve; (ii) how it can achieve it; and (iii) how much it will cost.

The decision of what can be achieved is likely to be made by the contractor's construction or project manager, in conjunction with the site agent and, possibly, the site supervisor and subcontractors. The decision about how to achieve these aims is likely to be made by the construction/project manager and the contractor's project quantity surveyor. The project quantity surveyor is likely to be the person responsible for applying costs and prices to the decisions made by management.

The quantity surveyor should have little difficulty pricing the basic labour, plant and materials items, as this task is no different to pricing any other variation.

The project manager and quantity surveyor may have more difficulty estimating the amount to include for loss and expense, but it should be possible to come up with a reasonable estimate for items such as non-productive overtime, additional supervision and extra site accommodation, if required. The addition to these basic costs and loss and expense items for overheads and profit is likely to be a standard percentage used for all other variations.

3.2.2 Allowance for risk

The main difficulty faced by the contractor when preparing an acceleration quotation is assessing and pricing the risk. Most experienced estimators have little difficulty assessing and pricing the 'normal' risk events associated with a project, such as adverse weather conditions, price rises or difficult ground conditions, but, subject to the risk allocation under

the acceleration agreement, assessing the risk associated with acceleration quotations may be far more difficult.

For example, if the employer has asked the contractor to warrant that it will achieve an earlier completion date, and if the contractor is to carry the risk that it will receive no additional payment for the acceleration measures if it fails to complete early, it will have to include an allowance for taking such risks.

Exactly what factors a contractor would take into account when assessing risk will vary from project to project, and the amount of the allowance will depend on commercial considerations and attitude to risk.

If the risk allowance is itemised separately in the quotation, it may appear to the employer to be profiteering, in which case the relationship between employer and contractor is likely to be damaged.

However, a risk allowance is like an insurance premium – it may appear high until you need it. If all goes well and there are no costs to set against the risk allowance, then it may appear that the contractor has made an unreasonably high return, but if things do not go well, the contractor may end up with significant additional unrecoverable costs.

3.2.3 Lump sum or itemised quotations?

If all the risk is to be placed on the contractor, it may be better for a lump sum quotation to be provided, although this will make it difficult for the employer to assess the merits of the quotation. It may be that the employer is far less concerned about whether individual elements of the contractor's quotation appear to be high and more about whether the money that can be saved by completing early justifies the money that will have to be spent on acceleration.

If the employer wants as low a quotation as possible and is prepared to accept the risk of failure to achieve an early completion date, it will be more important for a detailed price breakdown to be obtained from the contractor. This will allow the employer to see that the proposed measures are being undertaken and that the additional costs are being properly incurred.

3.2.4 Assessments based on actual cost

Although the standard forms of contract envisage a quotation being provided before an acceleration agreement is made, the parties may agree to value acceleration measures on the basis of costs actually incurred. If that is the case, then there may be some arguments as to whether a cost item has been incurred due to acceleration or some other reason, but, in general, this method of valuation should prove no more difficult than other valuations prepared retrospectively based on actual costs incurred.

If an assessment is to be made on the basis of actual cost, the employer will not, of course, know the additional cost it will have to pay out until after the measures have been put in

place and the costs expended. Therefore, in this case, the employer will have to base its decision on an estimate of the likely (not actual) cost of accelerating. If the estimate proves to be wrong, the decision to accelerate may also turn out to be wrong.

3.3 Conclusions

Decisions about acceleration will ultimately come down to a cost–benefit analysis. If an employer is faced with a potential additional cost of, say, £250,000 if the project is completed late, or with making a payment to a contractor of, say, £100,000 to accelerate and achieve early completion, the conclusions of the cost–benefit analysis will not be difficult to reach. However, in most cases, decisions about acceleration will not be simple or straightforward.

As explained above, there are risks associated with acceleration measures. The most fundamental is that measures may be carried out and costs incurred but, due to unforeseen factors, the works are not completed early. As set out previously, there are many other risks for the contractor and employer, depending on which measures are adopted. It is the assessment of these risks that makes most decisions about acceleration difficult to make, particularly when the clock is ticking and a decision one way or the other is required urgently.

When considering acceleration, the following questions should be borne in mind.

- Does the contract allow for acceleration?
- Is a separate agreement required?
- How can acceleration be achieved?
- Is the activity to be accelerated on the programme's critical path?
- What is the total cost of acceleration?
- What costs will be saved by achieving an earlier completion date?
- What allowance should be made for risk?
- Is the contractor to warrant completion by an earlier date?
- How is failure to achieve an earlier completion date to be dealt with?

Once these questions have been answered, an informed decision can be taken as to whether or not to instruct acceleration.

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