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Types of Claims

1.1 What Are Claims?

A claim is an application for additional payment and/or request for an extension of the time for completion due to some change that has affected the construction process, content or timing of the works, and caused additional costs for which recompense is sought. Most internationally recognised standard forms of contract and bespoke forms of contract contain similar clauses that detail the Contractor's entitlement to make a claim for additional payment and/or an extension to the time for completion for any variation or change that was not of its own volition and which causes additional costs or delays and is the liability of the Employer/Owner. Variations and instructions issued by the Owner or its representative may result in a change to the contract scope either by requiring additional work or changing the constituents of the work already included – for example, by varying the specified materials that are to be used. Changes to the design may also affect the complexity of the construction process, making the work more difficult, or perhaps altering the planned method of construction and temporary works required. Changes may also be made to the timing of work and sequence of construction. The typical sources of claim can arise from any one or a combination of the following:

- Instructions and variations issued.
- Late provision of design information or correction of information.
- Revised specifications for materials.
- Stoppages or suspension of work instructed.
- Changes to the access to and egress from the works.
- The impact of adverse weather.
- Increased quantities of work as compared to those set out in the contract.
- Incorrect descriptions of work items in the Bills of Quantities.
- Changes in the laws and customs of the country where the project is being built will also result in claims for payment or additional time.
- Claims may also arise where the Employer instructs the Contractor to accelerate the works either to recover lost time caused by variations or some other reason (perhaps even political).

The Conditions of Contract will detail what type of events enable the Contractor to pursue claims for extension of time and/or additional payment from the Employer. Some contracts do not recognise claims but deal with them either as variations or by calling them different names such as 'compensation events' or 'change orders'. All forms

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of contract require two things to be established for a claim to succeed: first and foremost, it must be notified as soon as possible and certainly within any period stipulated under the terms of the contract; and, second, adequate contemporary records must be kept in order to prove the impact of the event in terms of costs and time. The following is a typical list of events or changes that entitle the Contractor to make a claim for time, extra payment or both, that are included in most forms of contract:

a) An instruction, variation or other substantial change in the quantity of an item of work included in the contract.
b) A cause of delay giving entitlement to an extension of time.
c) Unforeseen physical conditions or artificial obstructions (e.g. changes to the ground conditions from those described in the contract or perhaps the discovery of some artefact that has to be preserved).
d) Adverse or exceptionally adverse climatic conditions.
e) Unforeseeable shortages in the availability of personnel or goods caused by government actions (e.g. changes in the law, customs regulations, or visa requirements).
f) Any delay, impediment or prevention caused by or attributable to the Employer, the Employer's personnel or the Employer's other contractors on the site.
g) Strikes, lockouts, civil unrest or similar unexpected 'neutral' events that may entitle the Contractor to an extension of time but not to any reimbursement for the costs associated with the delay.

The important point is that any source of change or delay to the works must be reviewed and a notice given, since, under most forms of contract, there are strict time limits within which a claim notice must be made in order to preserve the Contractor's rights to make a claim for time or money. It is becoming more common to find that many standard contracts contain (or have inserted under amendment clauses) more stringent time bar clauses or condition precedent clauses that, if not complied with, result in the Contractor forfeiting its rights to an extension of time and payment of additional costs. Therefore, it is imperative that, on starting any new contract, the Conditions of Contract be examined to see what amendments have been made to the standard forms of contract.

1.2 Measurement Claims

These are claims arising from incorrect measurement of the works or incorrect quantities stated on which the tender bid was based and which may change the integrity of the rates and prices for the work. For example:

- Incorrect application of any standard method of measurement specified in the contract.
- Incorrect or misleading descriptions of the work.
- Major differences between the original and actual quantities of work to be performed.

Measurement disputes are no longer as common as they once were as many modern contracts are made using a design-and-build form of contract. These do not rely on measurement (or re-measurement of the works performed) and Bills of Quantities; instead,

they stipulate the Employer's requirements and specifications for quality and end performance to be met. In such contracts, there are no formal Bills of Quantities, and it is left to the Contractor to provide its own quantities and estimate its price for the scheme. Previously, most construction contracts included references to methods of measurement, Bills of Quantities and the rules of measurement that applied. This still occurs in some contacts, particularly large civil engineering works where the quantities given in the Bill of Quantities are approximate and must be re-measured on completion based on drawings, instructions and the actual quantity of work performed. While measurement is a practical, partly academic process, the application of measurement rules can cause disputes to arise if the original Bill of Quantities was incorrectly drawn; items for work performed are found to be missing; or misleading descriptions were used, resulting in arguments about the description quality and quantity of work and the requirement for revised rates and prices. Measurement claims also deal with events that arise because of either a change in the character, quantity, timing or nature of the work, or because of considerable differences between the works described in the Bill of Quantities and the work carried out. When disputes arise, these claims rely either on a proper interpretation of the measurement rules applicable to the work, or on the impact of a change that has occurred which has affected the timing, quantity, quality, and price of the item concerned. Correct measurement and/or application of the rules governing measurement of the work is usually a straightforward issue to determine. However, such matters can easily become a large dispute, depending on the quantity of work, the degree of change imposed or revised prices sought for the actual work performed.

1.3 Changes to the Character, Timing, Quality and Content

Some contracts contain restrictions on the entitlement to claim revised prices depending on the proportion of increase or decrease in quantities or other changes that occur. The Contractor must make out a case for new rates and prices for the work as actually performed due to the differences identified. These differences can be a change in the timing, season or variations from the envisaged method of work due to some imposed restraint on how or when the work can be done. Generally, claims for new rates are based on alterations to the character, quantity, quality, timing or method of working. When the Contractor claims that the work has varied, or that the method of work has been changed, this is usually caused by some alteration to the anticipated production rate. The rates and prices can also be affected by the height above ground, the depth below ground, access and egress, and any other relevant factors that would change the price per unit for that work, providing the change was not made by the Contractor or was due to it misinterpreting the type of work described in the contract.

1.4 Revised Rates and Prices

Every rate or price in a Bill of Quantities or estimate is comprised of the following:

- Labour.
- Plant and equipment (including temporary works equipment).

- Materials
- Risk.
- Overheads and profit.

To derive a unit rate for an item from first principles, there are two main elements/methods used:

1. Work out a production rate or factor for the type of work using 'norms' obtained either from internal records and historical project information, or from industry norms, and use that to calculate the unit cost.
2. Work out how long the operation is expected to take for the entire quantity of work described based on experience and norms. Then, by using the cost of the chosen resources, divide the answer by the total quantity to obtain the unit cost. This would be useful for calculation of a long-term operation such as concrete work on a major project where the concrete gang, plant and equipment (batching plant, distribution plant, vibrating pokers, pumps, etc.) have to be on site from the first pour to the last, and the overall duration divided by the total quantity will provide a more realistic answer than a basic unit rate using norms.

The common factor is always the time required for the work described to derive the unit rate. If the quantity is understated, then, depending on the degree of error, the unit rate may not recover the actual costs. If the design changes (shape height, width, depth, etc.), this may affect the planned temporary works (e.g. formwork and falsework support or perhaps pumping and shoring activities). Other constituents may also change the price per unit as described earlier; changes to the diameter and shape of bar reinforcement or a concrete design mix and aggregate sizes can all influence the unit cost.

Changes within bulk earthworks can also dramatically affect the unit cost. For example, on a major road scheme, the earthworks pricing will depend on the anticipated materials to be excavated and embankment construction volumes. Unforeseen changes in the volumes of suitable fill material, unsuitable material, contaminated material, rock, etc., will affect the work carried out, the haul distances and perhaps the equipment being used. Most bulk earthworks projects are priced based on a mass haul diagram that shows where the cuts and fills are located, what they contain and where the material is to be deposited. This provides a method statement in a tabular format that describes the volume, distance travelled and plant used for each material. Changes to the constituents may dramatically change the unit cost and result in a claim for a revised rate for the work. I had a project where the embankments had been overstated in the Bills of Quantities; when this was discovered during construction, it dramatically increased the volume of material to be disposed of in off-site tips. The volume change represented a little over 10% of the original figures, but when you are dealing with a major project that has a total of 2 200 000 m^3 of cut to fill, then suddenly discovering that there is, in fact, a surplus of nearly 250 000 m^3 to be removed from site presents a major challenge.

1.5 Access and Possession of the Site

All contracts generally provide for the Contractor to be given unrestricted access to and possession of the site, although this may not be sole possession, as access may be

required for the Employer's other contractors and artisans deployed on the project. However, on a complex project where there are several other contractors, access and egress can become a battle for space and progress, as all the contractors want to progress their own part of the works. This is a common issue on major infrastructure or energy projects where there are vast mechanical, electrical, building and civil engineering works, all being carried out concurrently. Typically, claims for interrupted access or delayed access arise for the following reasons:

- Delayed or late possession of the site, or parts of the site, contrary to the dates and periods stipulated in the contract.
- Disrupted access to the site or obstructions or restrictions caused by others affecting part or all of the site. These can be blockages caused by others, the Employer's agents, its other contractors or workmen, all performing work or temporarily blocking or severing access routes or the availability of particular areas of the site.
- Restricted access after work starts may involve altered or restricted working hours imposed.
- Restricted traffic routes and/or changes in specified access routes instructed.

The main issue to establish is the duration of the late provision of access or when access became restricted by others or on instructions from the Employer. Written notice of the event, together with documentary evidence for it, is essential where a blockage has occurred because of the occupation of the site or part of the site by another Contractor. It is wise to take photographs showing the blockage and recording the date and time of the incident, and including such pictures in the letter of notice, so there can be no confusion about where and what happened, and it will help prevent the Employer later denying that the incident occurred. The next matter is to record the effect that the loss of access had on the progress of the works, and finally to record the costs incurred due to standing time or relocation of resources while access was not available. If access to the site is stopped for any considerable period, it may be grounds for renegotiation of the contract or termination, depending on the length of the stoppage and the impact it has on the performance of the work.

1.6 Changes

1.6.1 Varied Works

All forms of construction contracts contain clauses about changes and other instructions, and these are variously described in forms of contract as 'Variation Orders', 'Change Orders', 'Compensation Events', 'Site Instructions' and so on. They may have slightly different names but they all have one thing in common: they change the scope, quality, quantity, method of working, timing and/or duration of work.

There are two elements under the heading of 'varied works':

- Claims arising from variation orders instructed, and the timing of such instructions.
- Claims arising from work that the Contractor claims have been varied and should properly be dealt with by a variation order.

Types of variation:

- Instructions requiring additional work and/or changes to the type or scope of work required.
- Changes to workmanship or material specifications from those defined in the contract.
- Increases in performance requirements for the scheme.
- Changes in the laws of the country, which may alter taxes, import levies, labour costs, etc.

Some of the preceding claims are self-evident – for example, a change in the labour taxes, VAT (value added tax), and increases in the rate of fuel taxes or import levies by the relevant government. The impact of these changes should be relatively simple to identify as the tax increase would be part of materials invoices or wages costs.

1.6.2 Changes to Scope

Changes in quality, scope, quantity, timing and/or character of work are raised where the Contractor believes that the work has been varied from that envisaged at the time of tender. In other words, a claim is made that there was a change between the work described in the contract and the actual work performed, or the conditions under which it was performed. This is a claim for an alleged change, which has been caused or imposed on the Contractor, sometimes by the Employer's agent/Engineer, demanding the use of materials of a higher quality or altering work methods to suit personal preferences. The Contractor must first set out what the change is as compared to what was stated in the contract in the drawings and specifications, or set out in the Employer's Requirements, and ensure that records are kept justifying the additional costs claimed. By way of an example, there was a case[1] where such issues were resolved in arbitration by the arbitrator awarding sums for the extra work and variations that the Engineer had failed or refused to instruct. This was taken to the Court of Appeal on the grounds that, unless the Engineer had instructed work, an arbitrator could not award payment. However, the Contractor won its case for additional payment as the Court determined that the arbitration clause allowed the arbitrator to rectify the deficiency by awarding that such instructions should have been confirmed. Consequently, the Contractor was awarded payment for the variations that the Engineer had refused to instruct. The changes complained of included payment for higher-quality materials that had been insisted upon, and for additional work that had been carried out, all of which were beyond what was set out in the original contract.

1.6.3 Quality of Materials

The reasons for such imposed changes can be specification errors or the insistence of the Contract Administrator on something more than was specified in the original contract documents – for example, materials of a higher quality than originally specified or reasonably implied by the contract. It is not uncommon to find the Contract Administrator insisting on the use of a material from a preferred source, or preferring another (alternative) material that is better or of higher quality or price than was detailed in the Specification. Where this occurs, it should be a matter of determining what material was

1 *Brodie v Corporation of Cardiff* [1919] AC 337.

used and/or instructed as compared to the material described in the original specification on which the Contractor priced the works. This type of claim requires disclosure of the Contractor's tender information and quotations, together with details of the specifications used for materials to compare with the cost of the alleged alternative materials procured based on the alleged instructions or directions of the Contract Administrator.

1.6.4 Design Changes/Increased Scope of Work

Design claims usually arise where the Engineer or Architect issues a new or revised drawing that changes some aspect of the work. Such changes should require a variation order, but sometimes are merely issued and not always with a covering letter or instruction asking the Contractor to comply with the new drawing.

For example:

- Additional quantities of work to be performed or changes to its location.
- Increased depths or height of work that may also change the temporary works needed during construction.
- Delays caused by the time taken for the Engineer/Architect to respond to queries about design errors or omissions.
- Delays caused by scheduling errors relating to reinforcing bar.

One of the more difficult arguments to manage is a claim for what is termed 'scope creep', especially where the project is a design-and-build contract and the Employer or its agent want more work or an increased quantity of work or higher-quality materials than detailed in the original Contract specification and/or implied by the Employer's Requirements documents. It is not unusual for a Contractor to pursue a claim for increased scope and/or increased complexity as compared to the information available at the time of tender. However, as with all claims, this argument must be proven, and the change identified and linked to the effect it causes. It is vital to see the original contract information to establish the type of work required, and its quantity and complexity in terms of the shapes to be constructed and their constituents. If, at the time of tender, the Contractor had drawings, specifications, Bills of Quantities and bending schedules that clearly depict the work required, these can be compared to the drawings issued for construction to show whether the work content has changed. Increased complexity can be caused by several factors – for example:

Reinforcement changes:

- Changes to the mix of diameters of reinforcing bars, their shape codes and sizes.
- Changes to the number of bars or weight/per cubic metre of concrete may increase disproportionately (smaller diameters).
- Change in the ratio of straight bars to bent bars and overall bar lengths may differ.

These changes must be carefully analysed to show how the alterations made would impact on the time required for installation and/or the costs of the material. The shape code of reinforcement may change, resulting in more bent steel than originally envisaged; or, for example, the introduction of smaller-diameter closed links may make the installation slower and reduce production, consequently increasing the man hours per ton.

Formwork changes:

- Sizes of shutters measured as compared to those used may change.
- More small-section formwork than previously indicated; subtle small elements that were not envisaged at the time of tender.
- The ratio of formwork to concrete volumes will indicate if the overall size of concrete pours has changed.
- Shapes to be constructed may become more complex, perhaps requiring more or varied temporary support work than envisaged.

Changes can be very subtle, but may still cause problems, especially where the form of contract places an obligation on the Contractor to notify its intention to claim within a specified period of receiving new drawings or instructions. The revisions box or table on drawings is a notorious place for understatement or obfuscation; it is not uncommon to receive a new drawing which simply states 'Various revisions' in the revisions box, or merely 'Issued for construction'. The Contractor must be on the alert for drawing changes and increased scope or varied scope of works being slipped in under the cover of a general revision to a drawing with only that all-too-common 'Minor changes' note in the revisions box. Situations can occur that, on the face of it, are not major changes, but which manifest when the work commences as events causing delay and/or additional costs. The main problem in these circumstances is one of knowledge and notice of claim. At what point did the Contractor become aware of the event or change, and when did he give contractual notice of intention to make a claim? Where there are significant time bar clauses in a contract, it is important to establish the theoretical point at which the Contractor became aware that a (major) change has been instructed.

Here is an example: A new drawing added a small additional tonnage of reinforcement for the construction of a cattle underpass (an increase of 10% by weight). However, when the new drawing and accompanying bending schedules were examined, it was found that the entire concept of the reinforcement had changed. Instead of walls and roof slab with vertical and horizontal bars, it had been converted into a wall that had an additional 1000 closed links (8 mm, shape code 35) added to the vertical reinforcement at 200 mm centres, with similar detailing for the roof slab. This caused the steel fixing to take much longer than planned as each link had to be lowered onto the vertical steel and fixed at the same time as the horizontal bar at the same level, since otherwise these links would have to be threaded in between the wall steel afterwards, which would have taken even longer. Therefore, although the additional weight of reinforcement was approximately 10% of the original total, the impact of the small bar size and change to the configuration caused by the variation greatly extended the duration for fixing the reinforcement and added over 2 weeks to the construction programme.

If a formal variation order had been issued, this matter would have been much easier to resolve, as the claim element would only concern any alleged delay or disruption to the works, arising from the impact of the variation, and not a dispute over whether the work was indeed a variation in the first place. When the matter relates to an alleged variation, it is more complex, since the claim submission must first clear the hurdle of showing that the subject work was in fact varied somehow from the work originally contemplated by the contract, either relating to the specification or the drawings on which the bid was based.

1.6.5 Value Engineering

Essentially, this is where the Contractor may put forward proposals for alternative designs that may be easier and/or quicker to build, thus saving time and costs as compared to the original design. In theory, this saves the Employer money, in addition to making the construction easier for the Contractor. In contracts where the concept of value engineering is written into the form of contract, it is usual to describe how the proposal is to be reviewed and what happens to the financial saving identified due to the speedier construction duration. In the FIDIC (*Fédération Internationale Des Ingénieurs-Conseils*) suite of contracts, the concept of value engineering is detailed under Sub-clause 13.2, and there is a prescribed mechanism for dealing with payment of the saving/value proportion earned by the Contractor's expertise and detailed within its value engineering proposal.

1.6.6 Preferential Engineering

This term covers the situation where a Contractor is responsible for a portion or all of the design, and has to have its design details vetted by a third-party checking engineer. This often causes issues when the independent checking engineer asks for changes to the design to suit his/her personal preference for a method of construction or type of design. If the change is minimal, it may not cause an issue, but delays to the approval of drawings will inevitably delay construction on site. Such changes and modifications required by a third-party checking engineer have no contractual basis unless the checking engineer can show that his/her changes allow the design to meet the Employer's requirements and/or design standards as stipulated in the contract, whereas the proposal from the Contractor did not. If it is just the checker's personal preference, and this change causes additional costs or delay, then the Contractor must notify this change as a variation, or at the very least insist that a variation order be issued before the changes are implemented. Such changes may also affect the temporary works designs as well as the final permanent work design.

1.6.7 Varied Temporary Works

Changes to temporary works can arise from:

- Late information, resulting in changes to methods of construction.
- Changes to temporary works caused by varied or unforeseen ground conditions. This may involve additional propping work or pumping of excavations, etc.
- Changes to temporary works caused by design changes shown on revised or construction issue drawings. For example, changes to the shape or configuration of a structure that alters the formwork required.

Here is an example: In a water treatment plant, a revised drawing added a 1.5 m-long, 'L'-shaped continuity reinforcement between an adjacent wall and a supporting floor for water nozzles approximately 1.0 m above the base level. The length and positioning of these bars meant that the wall formwork had to be changed and the wall poured on two lifts instead of one. After a detailed analysis, this was found to add 1 week to the duration of each section of the unit, and there were 20 identical sections. The Contractor had

planned to construct these walls re-using the formwork from each pour, but, because of the change, it chose to make an additional set of shutters, thus reducing the delay from 20 weeks to 10 weeks. As part of the claim for the 10-week delay, the Contractor also claimed for the additional set of shutters. The Contractor received payment for the additional formwork costs and an extension of time for the delay to completion, together with reimbursement of its prolongation costs arising from the delayed completion.

Most contracts require the Contractor to issue method statements for each major operation undertaken. However, it is common to find the Contract Administrator discussing the method statement and then asking the Contractor to modify its submission in some way to secure approval before work can commence. This may be to mask the time needed for the Contract Administrator to reconsider the design, and for altering something that he/she only realised was incorrect or incomplete when the method statement was received. If method statement approvals are withheld without good reason, it is a delay caused by the acts or omissions of the Contract Administrator, and the Contractor should be able to make a claim for the delay and/or additional costs incurred.

1.6.8 Unforeseen Conditions

Claims for unforeseen ground conditions are common in civil engineering projects, especially those that cover a large geographical area – for example, tunnels, roads, pipelines, and railways. The Employer may have provided a Ground Investigation Report or similar geotechnical information at the time of tender but, due to the physical size of these projects, the boreholes and trial pits can miss isolated variances in the ground conditions – for example, encountering materials not shown or known about at the time of tender, such as rock, unsuitable materials, running sand, contaminated materials, excessive groundwater (higher water table, perched water table, artesian water), etc.

Claims for the discovery of unforeseen ground conditions require careful examination of the site investigation data provided at the time of tender and any notes of site inspections or tests undertaken by the Contractor during the tendering period. This is necessary to provide the basis for claiming that a change has occurred from what could reasonably be foreseen from the information provided at the time of tender. As soon as any change in the ground conditions is encountered, it is vital to give notice to the Engineer and keep records of what has been observed and any action that was taken – for example, surveys, trial holes, photographs, site tests or laboratory tests, any standing time recorded, measures taken (e.g. pumping) and/or sheet piling/propping/similar additional work caused by the unforeseen condition. It is important that the Engineer be asked to visit the offending area and determine what the change is and any actions to be taken to overcome the varied ground conditions. This visit is important not only to ensure that the Engineer is fully aware of the conditions, but also to establish records of what has been encountered and the measures to be taken to overcome the problem. It may also be necessary for the Engineer to check and ensure that the original design is still appropriate and sound due to the potential effects of the ground conditions encountered. Of course, it may be that the Engineer immediately agrees that the ground is unsuitable and different from what was envisaged, instructs a change to the design and participates in discussions about how to overcome the problem. In this case, the event is not really a claim anymore, but the valuation of a variation.

Nevertheless, detailed records need to be kept to ensure recovery of additional costs, but there would be no argument over whether the ground was unforeseen. If the alleged unforeseen ground conditions are disputed, this may require an inspection and report by an independent expert/geotechnical engineer to record and report on the conditions and advise on whether they constitute a change from that interpreted from the ground investigation data.

1.6.9 Contaminated Materials (e.g. Asbestos or Hydrocarbons)

Within existing buildings to be demolished or refurbished, there could be asbestos or wildlife (e.g. rare species of bats living in the loft) that were not identified or dealt with by the Employer. Any rare animals discovered must be reported as there are strict statutory rules governing how and when they may be disturbed. Discovery of any potentially hazardous materials requires immediate notification of the suspected hazardous material encountered, followed by stoppage of all work surrounding the area. In the case of asbestos within existing structures or pipework, this will require laboratory testing and removal by trained and properly equipped specialists (containment suits and covered vehicles to take the material to a licenced disposal facility). Similarly, hydrocarbons or heavy metals discovered in or beneath the existing ground will require testing and identification, as specialist disposal facilities will need this information before accepting that it can be processed at their site.

1.6.10 Adverse Weather

Delays caused by adverse weather are slightly more complicated to define as it depends on the form of contract and the particular amendments to the Conditions of Contract in respect of calculations, nomination of weather stations, and the average weather or normal weather anticipated for the site location.

- For example, the NEC (New Engineering Contract) uses a formula to assess adverse weather delays.
- The JCT (Joint Contracts Tribunal) only considers exceptionally adverse weather, leading to arguments about what is meant by 'exceptional'.
- FIDIC leaves it to the 'Particular Conditions' to insert clauses dealing with nominated weather stations and weather records for the purposes of claiming delay due to adverse weather events.

Adverse weather, sometimes referred to as 'exceptionally adverse weather', is a claimable event under most forms of contract. However, arguments arise over what is meant by 'exceptionally adverse weather'. This is a vague term, but it cannot mean extreme weather conditions such as severe flooding, hurricanes, tornados, tsunamis, etc., as these would be so extreme as to be considered a force majeure event. Generally, adverse weather claims are founded on the difference between the 'normal' or 10-year average weather conditions for the site location and any weather conditions that exceed this average, and are considered as adverse weather that was not contemplated by the contract and included as part of the Contractor's risk. Adverse weather may not just mean increased rainfall; it could mean the incidence of very high temperatures, freezing temperatures, exceptionally high winds (which prevent cranes from working),

heavy snowfall, drought or some other phenomenon over and above what is usually expected for the location. Some forms of contract set out very clearly what constitutes adverse weather conditions for them to be considered, together with the location of the meteorological weather station applicable for obtaining records of actual weather during the contract, to compare with the normal (10-year average) weather at the site location.

On larger projects, most contractors will set up some form of temporary weather monitoring station on site to record the weather, rainfall, winds, temperatures, etc. This may be different from that recorded at the designated measuring station, which is often several miles away. Weather is extremely localised, and the site may be on top of a hill or in a valley. In some mountainous areas, the weather can change quickly and be completely different from that experienced a few miles away. Very few contracts allow the Contractor to claim additional payment for the delay caused by adverse weather; it is usually treated as a neutral event, meaning that neither party should take advantage of the matter. The Contractor would get an extension of time for completion but would not be entitled to any additional payment for prolongation costs arising from the weather delay, and the Employer would be prevented from deducting liquidated damages for delay. However, where the adverse weather results in damage to the works, this is a different matter, and the costs incurred in rectifying such damage are usually covered by contract insurances. However, weather delays can result in unusual circumstances if the contract depended on earthworks operations, and there is a large amount of cutting material or borrow pit material needed to form embankments, and this material deteriorates due to exceptional adverse weather conditions. If it can be determined that the weather so affected the properties of the indigenous material that it rendered it unsuitable for use in the works, such an event may entitle the Contractor to both an extension of time and payment of additional costs in supplying/importing suitable material from an alternative source.

1.6.11 Force Majeure Events

'Force majeure' is a French term meaning an irresistible compulsion or coercion. The phrase is used in commercial contracts to describe events that might affect the contract and which are completely outside the parties' control. It has been interpreted to mean all circumstances outside the will of man, and which are not in his power to control (*Lebeaupin v. Crispin [1920] 2 KB 714 per McCardie J*.).

Force majeure is generally taken to mean one of the following events: an act of God, inevitable accident, unavoidable catastrophe, major calamity, cataclysm, disaster and/or tragedy. Its meaning is wider than just an act of God, but it is also restricted in construction contracts because most standard forms of contract contain provisions for such matters as the outbreak of war, strikes and lockouts, fire and adverse weather events. In construction contracts, there are specific clauses that deal with this type of events, but, as a general comment, 'force majeure' means an exceptional event of circumstance:

a) Which is beyond a party's control.
b) Which the party or parties could not reasonably have provided against before entering into the contract.
c) Which, having arisen, the party could not reasonably have avoided or overcome.
d) Which is not substantially attributable to the other party.

Force majeure may include, but is not limited to, exceptional events or circumstances of the kind listed in the following:

(i) Wars, hostilities (whether war is declared or not), invasions and acts of foreign enemies.
(ii) Rebellion, terrorism, revolution, insurrection, military or usurped power or civil war.
(iii) Riot, commotion, disorder, strike or lockout by persons other than the Contractor's personnel and other employees of the Contractor and sub-contractors,
(iv) Munitions of war, explosive materials, ionising radiation or contamination by radioactivity, except as may be attributable to the Contractor's use of such munitions, explosives, radiation or radioactivity.
(v) Natural catastrophes such as earthquake, hurricane, typhoon or volcanic activity,

As can be seen from the preceding example, 'force majeure' is meant to be for unforeseen exceptional events or catastrophes. Normal events that happen regularly – for example, gales and wet weather – are not 'force majeure', so if it rains more than the 10-year average on the site, it may be classed as adverse weather, but it is not 'force majeure'.

1.6.12 Suspension Orders/Stop Work Orders

When the Contract Administrator/Engineer issues a suspension order or stop work order, this may be for several reasons – for example:

- Isolated stoppages instructed by the Employer or his agent for reasons which are not the Contractor's responsibility.
- Stoppages for safety violations.

Suspension of works by the Employer or its agents result in the Contractor being entitled to an extension of time for completion, unless the Employer or its agent can show that they had to stop the work due to unsafe working practices or similar issues.

Generally, contracts contain clauses that allow the Contract Administrator to stop work for a variety of reasons, and most of these entitle the Contractor to claim additional cost and extension of time, unless the stoppage is due to some fault on the part of the Contractor (e.g. a safety violation). Where the stoppage is a suspension lasting more than several months, the Contractor may be entitled to terminate the contract or renegotiate for demobilisation and remobilisation at a later date, if this is acceptable. For example, under FIDIC, a suspension of work lasting more than 3 months is one of the grounds for termination of the contract and/or the opportunity for the Contractor to renegotiate the contract price and time for completion.

1.6.13 Late Approval/Failure to Approve

The following are some examples of this:

- Failure to approve or late approval of method statements, temporary works designs or fabrication drawings.
- Failure to approve permits, for example, hot work permits, excavation permits or access permits to restricted areas of the site.

Most contracts stipulate that the Contract Administrator has the right to check and approve submissions (method statements, access permits, excavation permits, electrical isolation permits, etc.) before work can progress. However, such approvals must not be unreasonably delayed or withheld, otherwise the Contractor will be entitled to claim for the delay in approval due to an act or omission of the Engineer or the Employer. In modern contracts, there is usually a set period for the Contract Administrator to reply and a process of re-application by the Contractor in the event of rejection of a drawing, permit or method statement for any valid reason. For example, see FIDIC Sub-clause 8.4, as this would be a delay caused by or attributable to the Employer, and/or the Employer's personnel. A detailed schedule of all submissions and responses together with re-submissions should be maintained, so that any unreasonable delay in response can be identified and its impact assessed.

1.6.14 Late Information/Revised Information

Most construction contracts have provisions for the issue of further drawings or instructions during the progress of the works. However, arguments regularly arise about the timing of the issue of such instructions and whether the Contractor should have asked questions sooner. The fundamental point to remember is that, if additional information is needed and/or revisions to drawings are required for construction to proceed, the Contract Administrator must respond within a reasonable time in all the circumstances. While the contract may allow revisions to the drawings, the essential point is that the drawings are deemed to be correct when issued. Errors or omissions that must be corrected after issue, but perhaps immediately prior to or during construction, cause delay. It is not the Contractor's responsibility to check the drawings for errors months in advance. The Contractor is entitled to believe that the drawings are correct until an error manifests itself. One of the most common errors involve inconsistencies between the reinforcement and the concrete drawings, resulting in errors or changes to the reinforcement bending schedules. This type of error tends to arise during installation of the reinforcement and requires an urgent answer to avoid unnecessary delays. Some Engineers will try to defend any delay arising from such an error by arguing the Contractor should have noticed it sooner, but the fundamental point is that the design error rests with the Engineer, who should have checked and ensured that his/her design was correct prior to issuing the drawings and schedules.

1.6.15 Antiquities or Archaeological Discoveries

The discovery of ancient graves or artefacts may require access for archaeologists to examine and retrieve precious samples of ancient civilisations before work can continue. This is normally stipulated in the contract as a potential claim occurrence, and the Contractor must allow access for such specialists to examine artefacts before continuing construction. If the Contractor is required to provide access and attendance while archaeologists perform their work, this may be recovered on a time and material basis, depending on the wording of the contract. If this work is in a critical location, most contracts allow for an extension of time to be awarded to the Contractor (with costs).

1.6.16 The Prevention Principle

This forms the basis of a claim for relief from delay damages where the Contractor can show that it was prevented from completing the work on time by the acts or omissions of the Employer. The judgements in two notable cases that state this principle are briefly outlined in the following text:

In *Trollope and Coles v. North West Regional Hospital 1973 1WLR601(HL)*, by Lord Denning:

> … it is well settled that in building contracts and other contracts too when there is a stipulation for work to be done in a limited time, if one party by his conduct – it may be quite legitimate conduct, such as ordering extra work – renders it impossible for the other party to do his work within the stipulated time then the one whose conduct caused the trouble can no longer insist upon strict adherence to the time stated. He cannot claim any penalties or liquidated damages for non-completion in that time.

This was restated in *Multiplex Construction (UK) Limited v. Honeywell Control Systems Limited (2007 EWHC 447)* by Justice Jackson:

> … The essence of the prevention principle is that the promisee cannot insist upon the performance of an obligation which he has prevented the promisor from performing.

However, even if the prevention principle is accepted, it does not mean that a Contractor can take as long as it likes to finish the works; it is still obliged to complete the works within a reasonable time. What this means is that, while a delay has occurred which entitles the Contractor to relief from delay damages for the late completion caused by the event, the other terms of the contract remain in force – namely, that the works should progress with due diligence.

1.6.17 Tolerance Creep

Where the Employer or its Engineer or Architect undertakes the design of the works, this would be a claim for delay or additional costs caused by differing tolerances between design elements that cause clashes in the installation of the works – for example, tolerances for reinforced concrete bases being different from the tolerance allowed for structural steel fabrication, which may affect the positioning of holding down bolts where there is a long span (e.g. in the case of steel sign gantries or similar). This can result in both the fabricated steelwork being in accordance with the specification and the foundation bases being correctly positioned, both within their respective tolerances, but if both were at opposing ends of the tolerance (one at the extreme of the plus side and the other the negative side), the holding down bolts and structural bolt holes may not match.

1.6.18 Utilities and Services

Most contracts include reference to utility providers (water, gas, electricity, telephone, oil pipelines, CCTV, Cable TV, etc.) that are located near or on the site, and whether such services must be diverted during or prior to construction. Generally, such services diversions are organised by the Employer, and a schedule of diversions is incorporated into the specification or Employer's requirements. Where these diversions take longer or interfere with the Contractor's operations, the contract should specify who is liable for managing the interface, and if the Employer is liable for any delays caused. Utility providers tend to operate under their own processes and procedures and cannot be managed by the Employer or the Contractor. Therefore, records need to be kept of the locations and duration of such diversion works, so that any delay can be established, and a claim prepared where such prolongation of the diversions causes delay or additional cost. Additionally, there may be services that cannot be diverted, but which must be protected during construction by the Contractor – for example, placing a reinforced concrete pad over a gas main or oil pipeline to protect it from construction traffic. Some services have specific shutdown periods when they are scheduled for maintenance, and access over and near such services may only be permitted during these shutdowns and may otherwise be prohibited during their normal operating periods. The contract should schedule such matters so that the Contractor can incorporate this obstruction into the programme of works.

1.6.19 Insurance Matters

All forms of contracts require insurances for the works under construction, and whether this is to be effected by the Employer or the Contractor is dependent on the wording of the contract. Such insurances cover, for example, weather damage, fire damage, flooding and the like, but not Contractor errors. The wording of the insurance clause in the contract and details of the policy will dictate what can be claimed and what is not covered. There are circumstances where the insurance will cover the direct costs of an event but will not reimburse the prolongation costs of the delay to the project – for example, severe storm damage, where the insurance will cover some of the costs of the damage repairs, but the Contractor must claim an extension of time for the delay caused. If the Contractor has to effect the insurance, the amount or proportion of costs that can be claimed will depend on the uninsured losses figure (policy excess) before any claim can be made. Insurance policies always limit claims or require the insured to accept part of the costs of repair. On major projects, this may be a fairly high figure before the costs incurred due to any damage or insured incidents exceeds the policy excess.

1.6.20 Disruption Claims

Disruption is generally a loss of production and/or increased costs incurred due to changes in the sequence, timing and duration of works caused by an Employer event. This means that the planned sequence is lost, and production levels are not achieved, causing interrupted or fragmented working and resulting in an increased unit cost beyond the allowances made in the original tender calculations. Disruption may also affect other operations not directly altered by the claimable events, but which also

suffer a loss of production. Claims of this nature are usually termed 'Global Claims', 'Cardinal Change'[2] or 'Cumulative Impact Claims'. Where the disruption is extensive, and numerous changes and delays have destroyed the planned sequence, timing and duration of the works, it is common to find that the Contractor will increase resources to mitigate the impact on the works. Such increases may be required merely to cope with the interaction of numerous events or the absorption of resources by numerous overlapping delayed operations. This leads to more work activities being undertaken each week than was planned, had the delays not occurred. On congested sites, this may lead to further production losses due to the 'stacking of resources' and/or 'crowding' at the work face.

1.6.21 Mitigation Claims

These are usually claims made for reimbursement of additional costs incurred by the Contractor for taking measures to reduce or overcome a delay; they can be:

- Measures that were taken to mitigate or reduce a delay caused by the Employer.
- Taking measures to comply with the wording of a 'best endeavours' clause and what this means in terms of the duty to mitigate a claimable delay.

1.6.22 Acceleration Claims

These claims fall into two categories:

- Instructed (agreed) acceleration, where a price and target are agreed for the Contractor to recover an earlier delay which the Employer wishes to overcome rather than award an extension of time for completion.
- Uninstructed acceleration – sometimes referred to as 'constructive acceleration', where the Contractor chooses to put in place measures intended to recover all or part of a delay for which an extension of time has not been granted. Where this delay was caused by the Employer, the Contractor may have requested for an extension of time, or perhaps such a claim has been rejected, leaving the Contractor with the choice to either stand his ground and fight for the extension of time to which he believes he is entitled, or alternatively take action, and, introduce acceleration measures. This type of claim is difficult under most forms of contract, as there are clauses for extensions of time, but, other than a variation instruction requiring acceleration, there are no clauses that deal with constructive acceleration per se. Therefore, it is vital for the Contractor to have issued the extension of time request and then confirmed that, in the absence of any award of time or following the rejection of his claim, he is implementing measures to avoid the risks of overrun and deductions of liquidated damages for late completion.

2 In the United States, a cardinal change is typically a fundamental breach of contract by the Owner, and a contractor is not obligated to proceed with a cardinal change if directed to do so by the Owner. 'A cardinal change occurs when one party affects an alteration in the work so drastic that it effectively requires the contractor to perform duties materially different from those originally bargained for'. *Rumsfeld v. Freedom NY, Inc.*, 329 F.3d 1320, 1332 (Fed. Cir. 2003).

- Historically, any claim for constructive acceleration was rejected, but the Courts have accepted the argument in principle, but the claim still has to be proven to the same degree as any other claim for additional costs. Notices must have been issued, and records maintained to support the case (see *Motherwell Bridge v. Micafil (2002) CILL 1913*).

An acceleration claim will normally include claims for reimbursement of costs arising from:

- Additional resources deployed
- Other measures that were taken to accelerate the works – for example, expediting deliveries of imported materials
- Overtime working – extended working hours
- Weekend working
- Introduction of night shift working
- Changes to timing and sequence of work to side-step or mitigate a delay in one area which may involve additional costs and return visits to complete work.

1.6.23 Delayed or Wrongful Withholding of Payment by the Employer

Where the Employer fails to make payment for the work undertaken and certified for payment, the contract may stipulate what happens. For example, claims for:

- Interest – claims for late payment of certified monies due where such interest is a term of the contract.
- Financing charges – claimed for late payment of contractual claims up to the date when litigation begins, and thereafter until a payment is made on the justifiable amount due.
- Entitlement to terminate the contract due to the Employer failing to pay or being unable to pay for work done.

1.6.24 Termination of the Contract

One particular comment is regarding claims for termination, or alleged wrongful termination, of the contract. These are usually subject to litigation long after the event, but the important point to remember is the need to record the following:

a) The status of the project at the date of termination – a detailed report of the physical progress of work, including photographs, measurements and surveys of the remaining work required.
b) A quantified schedule of all materials delivered to the site and stored ready for incorporation into the works – this would include reinforcement, loose material stored in stockpiles (fill material or topsoil), aggregates, stone or bricks, steelwork, precast concrete units, etc.
c) Details of the site establishment mobilised at the date of termination – including personnel, offices, stores, utilities, welfare facilities, major items of plant and equipment – for example, batching plants, satellite communications equipment, generators, waste material disposal, etc.

d) Details of temporary works constructed – haul roads, fabrication shops, falsework, scaffolding erected, etc.
e) Details of materials procured but not yet delivered, and any cancellation charges arising from cancelled fabrication orders, equipment suppliers, etc.

In addition to the preceding status records, claims for wrongful termination require evidence of performance achieved at the date of termination, measured against the programme and details of any claim events suffered but not resolved. Details must show that the Contractor's performance of the contract was hindered or prevented by the acts or omissions of the Employer or its agent, whether contemplated within the contract (e.g. variations and instructions) or resulting from other actions, such as lack of access or stoppages or suspension of work by the Employer.

Claims for wrongful termination include claims for general damages for the losses incurred at the date of termination – for example, redundancy payments for labour and staff laid off, loss of profit, etc. – due to the cancellation of the contract, and claims for financing and/or interest charges incurred on any unpaid sums or expenses incurred prior to termination.